

January 3, 2025

Re: Final Permit Decision on Riverview ND, LLP “Abercrombie Dairy”

Dear Sir or Madam:

Under the authority of North Dakota Century Code (NDCC) § 61-28-04, the North Dakota Department of Environmental Quality (Department), has issued the State Animal Feeding Operation Permit NDAFO-0906 with modified conditions for Abercrombie Dairy. This facility is to be located four miles south of Abercrombie, ND.

During the permit application process, the Department reviewed all comments received during the 47-day public comment period. In addition to considering all comments, the Department followed North Dakota Administrative Code (NDAC) § 33.1-16-03.1 and the *North Dakota Livestock Program Design Manual*, Revision Date December 3, 2021, in making its final decision.

The State Animal Feeding Operation Permit and fact sheet have been updated as a result of public input during the public comment period.

Enclosed is a copy of the final State Animal Feeding Operation Permit and updated fact sheet. Additional documents, such as the Department response to all comments, with appendices are available on the Department’s webpage https://deq.nd.gov/WQ/2_NDPDES_Permits/. A set of these documents, cover letter, permit, and fact sheet, will also be provided to the city of Abercrombie’s government office and the Richland County Auditor’s Office.

They also may be obtained by contacting the Department at 701-328-5210 or can be viewed at:

North Dakota Department of Environmental Quality
NDPDES Program
4201 Normandy St.
Bismarck, ND 58503

Requests for printed copies may be charged a fee for copying of the records.

Sincerely,

NDPDES Program
Division of Water Quality

Enc.

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State Animal Feeding Operation Permit NDAFO-0906

STATE ANIMAL FEEDING OPERATION PERMIT

NDAFO-0906

In compliance with North Dakota Administrative Code (NDAC) 33.1-16-03.1 of the North Dakota Department of Environmental Quality rules as promulgated under Chapters 61-28 and 23-25 of North Dakota Century Code (NDCC), authorization of the Abercrombie Dairy facility located in the West ½ of Section 27, Township 134 North, Range 48 West, in Richland County, North Dakota is granted provided the following conditions are met:

- 1) The application indicated the facility is a CAFO that will house 12,500 dairy cattle. The dairy cattle consist of 10,625 milking dairy cows with an average weight of 1,250 lbs. and 1,875 dry dairy cows with an average weight of 1,250 lbs. The department must be notified in writing if there is an expansion in the number of livestock, change in ownership of the facility, significant changes in the physical operation of the facility or the barn where livestock are concentrated is expanded. Changes may require an update to the permit or issuance of a new permit.
- 2) Operation and Maintenance plans and standard operating procedures must be followed as submitted to the department. Changes to the Operation and Maintenance plan must be reviewed by the department prior to being implemented. There must be regular and adequate maintenance and upkeep to prevent degradation of the structures, to ensure the system continues to operate as designed, to ensure the storage pond does not overflow, and to ensure manure or wastewater does not discharge into waters of the state. Operation and maintenance plans shall include:
 - a. Weekly inspections of all storm water diversion devices, runoff diversion structures and devices channeling runoff to the manure storage structure;
 - b. Daily inspection of water lines, including drinking water or cooling water lines; and
 - c. Weekly inspections of the manure storage structures noting the level of liquid in the structure as indicated by the depth marker. (North Dakota Livestock Program Design manual, section 6)
- 3) The operator shall notify the department within thirty days of construction completion of the manure storage or water pollution control structures. The operator shall provide certification from the engineer or the designer that construction of manure storage and water pollution control structures was completed according to designs provided with the application or the department-approved changes. (NDAC 33.1-16-03.1-07(5))
- 4) Mortality shall be disposed of in accordance with NDCC section 36-14-19, in a manner acceptable to the North Dakota Board of Animal Health, and so they will not impact waters of the state. The facility plans to ship all mortalities off-site every 72 hours using a rendering service. Prior to shipment off-site, the dairy would store mortalities in a roofed building with concrete sides and floor. The building is designed to allow conversion to a composting building if a rendering service becomes unavailable.
- 5) Land application of manure shall be in accordance with the nutrient management plan. Manure shall be applied in a manner so it will not be washed into waters of the state. When applying manure within ½ mile of an occupied residence, building, or public area where people may be present; it is recommended that the operator review and follow the guidelines of the North Dakota Livestock Program Design Manual, 7.6, section 4 and incorporate the manure within 8 hours of land application.
- 6) The following records pertaining to nutrient management shall be maintained for a minimum of 5 years:
 - a. The crops grown and expected realistic crop yields;
 - b. The date(s) manure, litter or process wastewater is applied to each field;
 - c. Weather conditions during application, 24 hours prior and following application;
 - d. Test methods used to sample and analyze manure, litter, wastewater and soil;
 - e. Results from annual testing of manure, litter, and process wastewater, and annual soil sample results for land where manure was applied that year;
 - f. An explanation of how the application rates were determined in accordance with standards established by the department;

- g. Calculations showing nutrients applied to each field, including other nutrient sources;
 - h. Total amount of nutrients actually applied to each field, including documentation of calculations for the total amount applied, and;
 - i. Method used to apply the manure, litter or process wastewater; inspection of manure application equipment including method, frequency, dates and repairs made if leaks were found; and setbacks, vegetated buffers or other alternative practices used when land applying manure near surface water or potential conduits to surface water. (North Dakota Livestock Program Design Manual, 7.7, section 2)
- 7) If manure is transferred to other persons or entities not associated with the facility, the following conditions shall apply:
- a. Owners/operators shall provide the recipient of the manure, litter or process wastewater with the most current nutrient analysis prior to transfer;
 - b. The analysis provided shall be consistent with the requirements of section 7.4 in design manual, and;
 - c. The owners/operators of the CAFO shall retain records for five years after the transfer date documenting the recipient's name and address, the approximate amount of manure transferred, and the date the manure was transferred. (North Dakota Livestock Program Design Manual, 7.7, section 3)
- 8) All open manure storage structures shall maintain a depth marker which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation from a 25-year, 24-hour rainfall event.
- 9) Any deficiency discovered during an inspection shall be corrected as soon as possible. Chemicals or other contaminants handled on site shall not be disposed of in a structure used for storage or treatment of manure, process wastewater or stormwater unless it is specifically designed for that purpose. The operator of a livestock facility should maintain a rain gauge at the production area and record measurable rainfall events. (North Dakota Livestock Program Design manual, 6.2)
- 10) The owner/operator of a CAFO shall make the following records available to the department for review upon request:
- a. Records documenting the visual inspections;
 - b. Weekly records of the depth of the manure and process wastewater in the liquid manure storage structure as indicated by the depth gauge in storage structure; records documenting any actions taken to correct deficiencies;
 - c. Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction;
 - d. Records of management and practices used;
 - e. Record documenting current design of any manure storage structures, including solids accumulation volume, design treatment volume, total design volume and the approximate number of days of storage capacity;
 - f. Records of the date, time and estimated volume of any overflow; and records documenting the land application of manure. (North Dakota Livestock Program Design Manual, 6.5)
- 11) This permit shall in no way authorize the discharge of any objectionable odorous air contaminant which is in excess of the limits established in NDAC Chapter 33.1-15-16 of the North Dakota Air Pollution Control Rules. If the department determines odors from the facility exceed limits, steps shall be taken, within a reasonable time, to control and reduce odors from the facility site. This may include requiring the installation of a cover on the ponds or other odor control measures.
- 12) There must be regular and adequate maintenance and upkeep to prevent degradation of the structures, to ensure the system continues to operate as designed, to ensure the containment system does not overflow, and to ensure manure or wastewater does not discharge into waters of the state.
- 13) The department must be notified if there is a change in address or other contact information for the facility.
- 14) The operator shall install three monitoring wells at the facility, one up-gradient and two down-gradient of the facility. Groundwater monitoring shall be completed on an annual basis. If groundwater

Effective Date: Date of Signature
Expiration Date: October 31, 2029

monitoring indicates that the facility is detrimentally impacting groundwater, the facility will need to take corrective action to prevent groundwater impacts.

The above conditions are considered part of the proper operation of the facility. If any of the above conditions are not met, the department must be notified in writing, within five (5) days. Any noncompliance with the permit conditions or with state requirements must be reported to the department as soon as possible after the facility becomes aware of the noncompliance condition. Failure to meet these requirements may result in monetary penalties and/or revocation of this permit.

Construction may begin upon signature of this permit by the department. The permit is based on construction being completed as per the design plans reviewed by the department. If any structural changes are made that are different than these design plans, the department must be notified in writing and prior approval obtained, before making these changes.

Authorized department personnel shall be permitted access to the facility to determine compliance with department rules and regulations. Department inspections will abide by all security measures implemented by the owner or operator to protect the health and safety of the workers and animals at the facility.

The owner/operator of this facility shall comply with all State and Federal environmental laws and rules, and shall also comply with all local building, fire, zoning and other applicable ordinances, codes, and rules.

Notice of Completion and results of testing completed on the clay liner or the manure storage structures shall be received by the department within 30 days of completion of construction.

I certify that I have read and understand the above information and agree to operate the facility in a manner that will meet all the conditions listed herein.

OWNER/OPERATOR CONSENT

FOR THE NORTH DAKOTA
DEPARTMENT OF
ENVIRONMENTAL QUALITY

By _____
(signature)

By _____

By _____
(print name here)

By Karl Rockeman, Director
Water Quality Division

Date _____

Date _____

**Application to Obtain a State Permit Associated with Animal
Feeding Operations**



**APPLICATION TO OBTAIN A STATE PERMIT
ASSOCIATED WITH ANIMAL FEEDING OPERATIONS**
NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
SFN 8296 (08-2021)

FOR DEPT. USE ONLY

Application Number RECEIVED
Date Received DEC 20 2024

DIV OF WQ

GENERAL INFORMATION

1. Legal Name of Organization Responsible for Facility Riverview ND, LLP		2. Telephone Number 320-392-5609	
3. Mailing Address 26406 470th Avenue	4. City Morris	5. State/Province MN	6. Zip Code 56267
7. Name of Facility Abercrombie Dairy	8. Contact Person Name Brady Janzen	9. Contact Telephone Number 320-392-5609	
10. Contact Mailing Address 26406 470th Avenue	11. City Morris	12. State/Province MN	13. ZIP Code 56267
14. Contact Email Address brady.janzen@riverviewllp.com			
15. Location of the facility 1/4 1/2 W SEC. 27 TWP. 134 N RGE. 48 W		16. County Richland	

ANIMAL INFORMATION

17. Animal Type Dairy Cow, Milking	18. Max Number of Animals 12,500	19. Avg Weight of Animals Mature Dairy Cows	20. Days Animals Handled per Year 365	21. Confinement Type Under Roof
22. Animal Type Dairy Cow, Dry	23. Max Number of Animals	24. Avg Weight of Animals	25. Days Animals Handled per Year	26. Confinement Type Under Roof
27. Animal Type Dairy Heifer	28. Max Number of Animals N/A	29. Avg Weight of Animals	30. Days Animals Handled per Year	31. Confinement Type <input type="checkbox"/>

WASTE CONTAINMENT AND STORAGE

32. Containment/Storage Type Ponds	33. Max Capacity (indicate units) 36,129,645 Cu. Ft.	34. Est. amt. Waste Generated per Year (indicate units) 13,690,554 Cu. Ft.	35. Material Manure
36. Containment/Storage Type Ponds	37. Max Capacity (indicate units) 3,429,543	38. Est. amt. Waste Generated per Year (indicate units) 3,061,719 Cu. Ft.	39. Material Process Wastewater
40. Containment/Storage Type Concrete Pad	41. Max Capacity (indicate units)	42. Est. amt. Waste Generated per Year (indicate units)	43. Material Manure

WASTE HANDLING

44. Total Acres Controlled and Available for Land Application 14,215	45. Est. amt. of Waste Transferred per Year (indicate units) 13,690,554 Cu. Ft.	46. Material Manure
47. Total Acres Controlled and Available for Land Application 14,215	48. Est. amt. of Waste Transferred per Year (indicate units) 3,061,719 Cu. Ft.	49. Material Process Wastewater
50. Total Acres Controlled and Available for Land Application	51. Est. amt. of Waste Transferred per Year (indicate units)	52. Material <input type="checkbox"/>

53. Provide a brief description of how animal mortalities will be handled

Mortalities will be removed from the facility with equipment and located in a secure rendering depot facility with impervious concrete floor surface and locked gate. Mortalities will be picked up daily by a professional livestock rendering service.

The following additional attachments must be submitted at least 180 days prior to the time permit coverage is needed in addition to this application:

1. A topographic map of the area where the facility is or proposed to be located which shows the specific production area.
2. Designs, including location, for all manure storage and water pollution control structures and site-specific background information as specified in the North Dakota Livestock Program Design Manual. Design plans developed by anyone other than the facility owner must be signed by the engineer who prepared or supervised the preparation of the plans under North Dakota Administrative Code chapter 33.1-16-03.1-08.
3. Site-specific information on topography, surface water, groundwater, and soil geology.
4. A nutrient management plan or information related to a nutrient management plan as specified in subsections 4 and 5 of North Dakota Administrative Code 33.1-16-03.1-08.
5. All submitted applications where local zoning has been properly established shall contain documentation of approval from the zoning authority. If such documentation has not been provided, the application process shall be put on hold until the required approval documentation has been received by this department.

Facilities must receive department approval prior to construction.

SIGNATURE

RETURN COMPLETED APPLICATION TO: North Dakota Dept. of Env. Quality Division of Water Quality 4201 Normandy Street Bismarck, ND 58503-1324 Telephone: (701) 328-5210	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
	54. Printed Name of Applicant(s) <i>Brady Janzen</i>	55. Title <i>Authorized Partner</i>
	56. Signature of Applicant(s) <i>Brady Janzen</i>	57. Date <i>12/11/24</i>

(Attach additional pages if needed)

FOR DEPT. USE ONLY

<input type="checkbox"/> Individual	<input type="checkbox"/> General	
Design	NMP	Zoning

Fact Sheet for State AFO Permit NDAFO-0906

**FACT SHEET FOR STATE AFO PERMIT
NDAFO-0906**

**Abercrombie Dairy
Abercrombie, ND**

DATE OF THIS FACT SHEET – August 13, 2024

INTRODUCTION

The North Dakota Department of Environmental Quality (department) has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is hereby authorized to take all action necessary or appropriate to secure to this state the benefits of the act and similar federal acts. The department's authority and obligations for the control of pollution from animal feeding operations in the North Dakota Administrative Code (NDAC) chapter 33.1-16-03.1 which was promulgated pursuant to the North Dakota Century Code (NDCC) chapter 61-28. The State of North Dakota is delegated primacy of the Animal Feeding Operation program by EPA. The Rules and Regulations for the Control of Pollution from Certain Livestock Enterprises were first issued in 1972 and updated in 1989, 2005, and 2018.

The following rules or regulations apply to feedlot operations permits:

- Operations requiring a permit (NDAC Section 33.1-16-03.1-05),
- Authority for issuing Feedlot Permits (NDAC Section 33.1-16-03.1-01),
The Department of Environmental Quality has been authorized to provide and administer this chapter relating to the control of pollution from animal feeding operations under the provisions of North Dakota Century Code Section 61-28-04.
- Procedures the department follows for issuing Feedlot permits (NDAC Chapter 33.1-16-03.1),
- Standards of Quality for Waters of the State (NDAC Chapter 33.1-16-02.1)

According to the NDAC section 33.1-16-03.1-13, if the department determines a significant degree of public interest exists regarding new or expanding facilities, it shall issue a public notice requesting comment on applications for both individual permits and general state animal feeding operation permits. The department shall provide a period of not less than thirty days during which time interested persons may submit comments.

For more information regarding preparing and submitting comments about the fact sheet and permit, please see **APPENDIX A – PUBLIC INVOLVEMENT INFORMATION**. Following the public comment period, the department may make changes to the draft permit. The department will summarize the responses to comments and changes to the permit in **APPENDIX D – RESPONSE TO COMMENTS**.

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BACKGROUND INFORMATION**Table 1 – General Facility Information**

Applicant:	Riverview ND, LLP
Facility Name and Address:	Abercrombie Dairy 7071 177th St SE Wahpeton, ND 58075
Permit Number:	NDAFO-0906
Permit Type:	CAFO
Hydrologic Code:	09020104 – Upper Red

FACILITY DESCRIPTION

Abercrombie Dairy is located four miles south of Abercrombie, ND, in Richland County. The planned facility sits in the West ½ of section 27, Township 134 North, Range 48 West, 5th Prime Meridian. The coordinates are Latitude 46.387168, Longitude -96.714208.

An application was received by the department on March 8, 2024, which indicates the facility is proposing to maintain a maximum of 12,500 dairy cattle. These dairy cattle would consist of 10,625 milking dairy cows with an average weight of 1,250 lbs. and 1,875 dry dairy cows with an average weight of 1,250 lbs. Livestock would be living in a free-stall barn. The facility would have two manure storage ponds, one feed pad drainage wastewater pond, and four stormwater storage ponds. The manure storage and wastewater ponds have been designed to contain all generated manure and wastewater as well as precipitation from a 25-year, 24-hour rainfall event.

GROUNDWATER AND SURFACE WATER**Geology:**

The facility's geography lies in the Lake Agassiz lake-plain region. This is in the southeast corner of the Red River Valley in Richland County. The Red River Valley is a division of the Central Lowlands province of the Interior Plains physiographic region.

The site is mapped as river sediment from the Oahe Formation. It can be classified by dark, obscurely bedded clay and silt (overbank sediment); generally overlying cross-bedded sand (channel sediment); as thick as 10 meters (30 feet); on flood plains of modern streams. The lake-plain is divided into two units, an upper "silt" unit and a lower "clay" unit. (U.S. Geological Survey, [Geological Map of North Dakota](#), 1980) (Claud H. Baker, [Geology and Ground Water Resources of Richland County Part 1 - Geology](#), 1967, p. 6, 41).

Topography:

The Lake Agassiz lake-plain area has a surface expression that is characterized as nearly flat. Except for the beach ridges and stream valleys, local relief is commonly less than 5 feet (Claud H. Baker, [Geology and Ground Water Resources of Richland County Part 1 - Geology](#), 1967, p. 6).

Slope:

The slope is 0.4 percent (%) in the proposed facility area. Slope is used to estimate runoff flow calculations when precipitation can contact areas containing manure.

Runoff:

All manure produced on the proposed facility would be contained in the barn or working areas until it can be processed through the solid separation process. The solids separation process consists of a mechanical rotary screw press, that produces dewatered manure solids and a liquid manure portion. The solids would be stored on the manure stacking pad and the pad runoff would enter the leachate storage pond. The separated manure solids would be repurposed as packed bedding in the barn. The 22.3-acre feed storage pad wastewater would be caught by the leachate storage pond.

Elevation:

According to the United States Geological Survey Quadrangle maps, this facility is at an approximate elevation of 943 feet.

Site Drainage:

The facility site would be located on a field section with drainage into Richland County Ditch No. 1 (HUC [090201040401](#)). The ditch then flows east to the Red River. During storm events, the four stormwater basins would catch rainwater from the barn roof. The proposed design should not allow any discharge into surface water.

Water Bodies:

The Wild Rice River is approximately 1.4 mile west of the proposed site, and the Red River is approximately 1.8 miles east of the proposed site.

Soils:

The primary soils at the site, as indicated by National Resource Conservation Service (NRCS) web soil survey, include Fargo silty clay, Dovray silty clay, Fargo silty clay depressional, Fargo Enloe complex, Fargo-Ryan, thick solum silty clays, and Ryan-Fargo silty clays. These soils consist mostly of clay of high plasticity (CH) and elastic silt (MH) materials. The seasonal water table is 0 to 0.75 feet deep. (See Appendix C, Table 8)

Aquifers:

The facility overlies the Wahpeton Buried Valley surficial aquifer.

Public Wells:

There are no irrigation wells, two municipal wells, seventeen observation wells, and six monitoring wells located within two miles of the site. Wells in the general area range from 59 to 480 feet deep (Appendix C, Table 7).

Private Wells:

Within two miles of the site there are twenty-seven domestic wells, one stock well, and one domestic/stock well identified. Wells in the general area range from 52 feet to 407 feet deep (Appendix C, Table 7).

MANURE HANDLING AND DISPOSAL

Facility Operation:

The facility would incorporate a free-stall barn, milking parlor, holding pen, shop, and separator building. This facility would develop its own heifers including milking and dry cows which would both be on-site for 365 days a year.

Manure Handling:

Manure handling would be conducted as follows according to the Operations and Maintenance (O&M) Plan. Manure would be generated in the free stall barn, holding pen, and parlor facilities. These structures are proposed to be cleaned daily. Manure would be collected from the barn to the day pit located in the separator building by vacuum trucks. Manure from the holding pen and the parlor gravity drains into the wastewater tank adjacent to the holding pen and pumps into the day pit. The day pit would route manure through screw press solid separators to reduce solids. The liquid portion is pumped to Manure Pond 2 which can flow into Manure Pond 1. Both ponds would have a synthetic cover to reduce odors. The solids portion is collected in the separator building and then hauled to the manure stacking pad. These solids would be used as bedding in the free stalls. The liquid manure would be land applied according to the nutrient management plan (NMP).

Expected Manure Quantities:

The amount of manure generated estimated to be produced at the facility is detailed in the table below.

Table 2 – Manure Quantities from Design Plans

Livestock Information	Amount	Type	Average Weight (lbs)	Manure Production (ft ³ /day/head)
	10,625	Dairy Cow, Milking	1,250	2.1
1,875	Dairy Cow, Dry	1,250	2.1	
			<i>ft³/year</i>	<i>Mgal/year</i>
Total Predicted Annual Manure Generation			9,581,250	71.67
Total Predicted Annual Wastewater Generation			4,684,045	35.04
Total Volume Needed for Manure Storage			14,265,295	106.71

**Manure generation values sourced from USDA Ag Waste Management Field Handbook, Part 651, Ch. 4 Agricultural Waste Characteristics*

Mortality Disposal:

Mortality shall be disposed of in accordance with NDCC section 36-14-19, in a manner acceptable to the North Dakota Board of Animal Health, and so they will not impact waters of the state. The facility plans to ship all mortalities off-site every 72 hours using a rendering service. Prior to shipment off-site, the dairy would store mortalities in a roofed building with concrete sides and floor. The building is designed to allow conversion to a composting building if a rendering service becomes unavailable.

ODOR CONTROL

Potential Sources:

A source of potential odors appears to be the wastewater ponds, solids stacking area, and feed storage area. Odors from the barns and ponds would be minimized with good house-keeping practices. All manure storage ponds would be covered with synthetic covers to control odors. The barns would utilize a cross-ventilated design to ensure properly ventilated animal housing for odor mitigation. Land application may present a source of short-term odor events. However, land application is exempt from state odor restrictions (NDAC Section 33.1-15-16-02(3)). The township regulates the nature, scope, and location of this operation. Setbacks for this facility can be found in the “Abercrombie Township Zoning Regulation” updated February 2023. Riverview LLP received Abercrombie Township zoning approval on March 15, 2024. The nearest residence is located 1.0 mile east from the proposed dairy.

CONSTRUCTION SPECIFICATIONS

Manure and Wastewater Storage Structures:

The storage structures on site would be constructed according to the design plans. The following tables show the dimensions of the ponds and the evaluation of design capacity.

Table 3 – Manure and Wastewater Storage Structures

	Manure Storage Pond 1	Manure Storage Pond 2	Wastewater Storage Pond 3
	2024	2024	2024
	Cell 1	Cell 2	Cell 1
Structure’s Dimensions	560 by 1000 <i>ft</i>	560 by 1000 <i>ft</i>	400 by 750 <i>ft</i>
Top Liquid Area	530,420 <i>ft</i> ²	530,420 <i>ft</i> ²	265,138 <i>ft</i> ²
Bottom Surface Area	363,800 <i>ft</i> ²	363,800 <i>ft</i> ²	190,422 <i>ft</i> ²
Design Volume	8,722,072 <i>ft</i> ³	8,722,072 <i>ft</i> ³	3,024,500 <i>ft</i> ³
Storage Depth	21 <i>ft</i>	21 <i>ft</i>	15 <i>ft</i>
Total Depth	24 <i>ft</i>	24 <i>ft</i>	20 <i>ft</i>
Total Volume Capacity	20,468,644 <i>ft</i>³ or 153.1 <i>Mgal</i>		

Table 4 – Required Storage Volume

Facility Information	Feed Pad and Pond Precipitation	Volume (ft ³)
Feed Pad (acres)	25-Year, 24-Hour Storm Event (4.44 in)	339,688
22.3	25-Year, 24-Hour Runoff (4.09 in)	362,937
Stacking Pad (acres)	Unpumpable Solids Buildup	minimal
2.15	Annual Evaporation (37 in)	0
Pond Area (acres)	Total Wastewater Generated Annually	14,967,900
31.34	Total Storage Volume Available	20,468,644
<i>The facility has the capacity to store the wastewater and manure produced on the facility, as well as runoff from a 25-year, 24-hour storm event.</i>		

Both manure storage ponds and the feed pad wastewater storage pond were designed to hold up to 445 days of manure and runoff generation as well as a 25-year, 24-hour storm event. This is more conservative than the ND DEQ requirements of 270 days of storage of manure generation and a 25-year, 24-hour storm event.

Soil Summary:

The proposed location appears suitable based on soil survey and ground water survey information. The borings indicate that the Unified Soil Classification for the subsoil at the site is generally clay material (CL) to a relative (~) depth of about ~24 to ~36 feet below the pond floor. The bottom of the proposed manure storage ponds would be at a relative elevation of 16 feet below surface grade (Appendix C, Table 9).

Clay Liner Construction Testing:

A two-foot clay liner is required in both the manure storage ponds and wastewater pond due to the required depths of standing liquid manure and runoff according to the North Dakota Livestock Program Design Manual ([Design Manual](#)). Clay material onsite is suitable for the construction of the clay liner and would be installed in 6-inch lifts. Each lift would be compacted using controlled travel compaction equipment so that fill area would be uniformly compacted to 95% Standard Proctor Density (ASTM D-698). Moisture content during compaction shall be maintained between 1% dry of optimum to 3% wet of optimum. For both ponds, permeability falls well below 1/16-inch per day (0.0015 and 0.002 inch/day), a standard in the NDLPDM Section 5.3.5. During construction, compaction and moisture testing to ASTM standards would be conducted on the clay liner.

Manure Storage Structure Considerations:

The facility has incorporated two manure storage ponds into the design. The manure storage pond floors would each be 425 feet by 856 feet with a 3:1 embankment slope. The ponds would each have a top dimension of 560 feet by 1000 feet. The influent pipe would enter the pond onto a concrete chute/splash pad. The chute would run from the pipe outlet down and extending onto the pond floor. It would be 6 inches thick, 12 feet across, and be reinforced with #4 rebar. Each pond would have a LLDPE cover in place.

Each pond has been designed to be pumped out. Each pond would have a concrete manhole for pump out access. The manholes would extend down below the grade of the floor of the pond, and each would have a 30" SDR26 PVC pipe extending out to the pond floor. This design should enable all sludge and wastewater to be pumped out as described in the Operations & Management Plan.

Each pond would have a liquid level gauge. The liquid level gauges would be constructed of pressure-treated wood, steel, PVC, fiberglass, or concrete. They would be permanently installed to be easily visible, with clearly marked divisions marking depth.

Concrete & Rebar:

The splash pad concrete and rebar specifications follow the guidelines of the American Concrete Institute's publication "Building Code Requirements for Structural Concrete", ACI 318. Concrete would be air entrained ranging from 5% to 8%. The compressive strength of the concrete for the base slab and footings would be 4,000 psi.

Earth Fill:

The facility would be constructed as the design plans indicate. Vegetation and organic material would be stripped and removed from the footprint of the embankment. Appropriate topsoil would be used as cover material on the outside slopes of the embankment. The embankment would be seeded to a shallow rooted perennial grass and vegetation would be maintained. The embankment would be constructed out of existing soils located on site. These soils would contain no frozen material, ice, snow, sod, brush, roots, other perishable materials, rocks, or debris larger than two inches in diameter.

Groundwater Monitoring Plan:

The area of interest (AOI) overlies the Wahpeton Buried Valley (WBV) aquifer, which is a surficial aquifer. The WBV aquifer is approximately 200 feet thick and about 16 miles long and two miles wide (Froelich, [Geohydrology of the Wahpeton Area](#), 1974). Based on the most current information from the North Dakota Department of Water Resources and the ND GIS Datahub, water levels from wells located within 1 mile of the facility indicate water levels to be approximately 18-20 feet below ground surface. A search of the NRCS' web soil survey indicates that the soil within the AOI is primarily a silty loam complex.

The Department has updated the record to require one upstream and two downstream monitoring wells to be placed by the wastewater storage ponds. Riverview ND, LLP, is located at T134N R48W Section 27, west half. This siting places the facility over the Wahpeton Buried Valley aquifer. This aquifer is rated through the North Dakota Geographic Targeting system which is composed of three scores averaged for Monitoring Priority. The Wahpeton Buried Valley aquifer is rated as High Sensitivity and High Risk Rating and Low Vulnerability Rating averaged for a Moderate Monitoring Priority. The vulnerability is assessed on the area activities and area of aquifer. The

Wahpeton Buried Valley aquifer has a smaller lateral area which contributes to its low vulnerability ranking as well as primarily surficial agricultural activities, but this aquifer has a high risk rating and sensitivity based on the aquifer characteristics of depth to water, recharge, hydraulic conductivity and aquifer material. As this facility's ponds would remove the natural overburden of the aquifer, the high sensitivity and risk rating of the aquifer is heavily considered. Groundwater movement in the Wahpeton Buried Valley aquifer shows a natural tendency of groundwater flow northerly, however studies have shown that pumping in the aquifer can heavily influence flow directions (Berg and Ripley, 2012). The city of Wahpeton currently has three municipal wells that draw from the Wahpeton Buried Valley Aquifer in T133N R48W Section 20, however the city has plans to move their wellfield to T133N R48W S2 and has already drilled 4 test holes, with plans to draw from the Wahpeton Buried Valley aquifer. The proposed wells are within 2.5 miles of the facility site and the proposed wellhead protection area based on current well pumping rates, will be within 1.5 miles of the facility. Based on sensitivity and risk analysis of the Wahpeton Buried Valley aquifer, and the facility's location to a future wellhead protection area, it is advisable to enact a groundwater monitoring plan on the facility as a preventative measure to protect the Wahpeton Buried Valley aquifer as a source water resource.

Operation and Maintenance Plan:

The operation and maintenance plan would be as follows: Settling areas would be required to be cleaned and repaired as needed to maintain original condition. Ponds must be pumped when wastewater reaches maximum capacity indicated by each individual pond marker. Earth work and concrete must be inspected annually and repaired to original design grades and specifications. Drains and diversions must be mowed and maintained when soil is dry and firm. Sediment buildup or erosion in drainage ways must be cleaned and re-graded to original condition. According to the nutrient management plan, accumulated manure would be removed annually, and land applied.

NUTRIENT MANAGEMENT PLAN AND MANURE APPLICATION

General Conditions:

Managing and applying manure to ensure surface waters are not impacted and minimize nuisance concerns for nearby residents is a requirement. Factors to consider when choosing methods of manure management and application include but are not limited to: the volume of manure, the topography, location of surface and ground water sources, and distance from neighboring residents.

Application Rates:

Liquid manure and wastewater would be pumped from the ponds and injected into fields with a knifing system in spring and/or fall. Manure application on fields would be at agronomic rates. This rate is dependent on crop variety grown, crop yield goals, and soil test results. Manure shall be land applied at a rate not to exceed nitrogen levels recommended for the crop of the following production year.

Separated manure solids would be spread onto fields with a manure spreader at agronomic rates. Solid manure would be spread and incorporated in spring and/or fall.

Record Keeping:

The facility is required make the following records available to the department for review upon request for a minimum of 5 years from the date they are created:

- Document routine visual inspections of the production area and containment structures.
- How, when, and where the manure, litter, or process wastewater was reused or disposed.
- Weather conditions at the time and 24 hours prior to manure application.
- Mortalities management and practices used.
- The date, time, and estimated volume of any overflow outside of the containment area.
- Annual nutrient sampling of: manure, litter and/or process wastewater and soil samples where manure has been applied that year.
- An explanation of how the manure application rates were determined with calculations of the planned and actual total nitrogen and phosphorus to be applied to each field.
- The crops grown and crop yields for all fields where manure was applied.
- If manure, litter, or process wastewater is transferred to other persons or entities; the recipient's name and address, approximate amount transferred, and the date of the transfer should be documented.
- Any actions taken to correct deficiencies.

Land Application of Manure:

The endpoint for all manure produced at the proposed facility is to be land applied on local fields. The table below details the quantity of manure and nutrients estimated to be produced on the facility.

Table 5 – Expected Manure Nutrient Generation*

Facility Source	Manure/Wastewater (gal/day)	Nitrogen (lbs/day)	P ₂ O ₅ (lbs/day)	K ₂ O (lbs/day)
Dairy Cows, Milking	166,909	3,672	1,385	3,672
Dairy Cows, Dry	29,455	648	244	648
Flush Water	95,991	2,112	797	2,112
Wastewater Daily Total		Nutrient Daily Total (lbs/day)		
292,355 gallons		6,432	2,427	6,432
Annual Wastewater Generation		Nutrient Annual Generation (lbs/yr)		
106,709,425 gal/yr		2,347,607	885,688	2,347,607
Total Per Year after 30% N storage loss, 2% N application loss, and 80% P availability		1,610,459	708,551	2,347,607

*Manure nutrient values sourced from manure nutrient test submitted from Riverview, Morris Dairy: 22 lbs N/1000 gal, 8.3 lbs P₂O₅/1000 gal, 22 lbs K₂O/1000 gal

When estimating land needed for manure application, if the nutrient management plan's phosphorus risk assessment indicates a medium to low risk of movement of phosphorus, facilities are allowed to apply at agronomic nitrogen rates in accordance with the phosphorus index. If the nutrient management plan's phosphorus risk assessment indicates a high potential for movement or if soil test show phosphorus levels in the high range, the facility is required to apply the manure at agronomic phosphorus rates.

Table 6 – Agronomic Application Rates and Crop Nutrient Uptake

Crops Grown	Planned Acres	Crop Ratio	Projected Yield	Nitrogen* uptake/unit	N rate lbs/acre	Total N lbs	P ₂ O ₅ Rate lbs/acre	Total P ₂ O ₅ lbs
Corn, Silage	6,459.2	55%	20.5 ton/yr	10.4 lbs/ton	213	1,377,101	103	662,068
Soybeans	1,174.4	10%	40 bu/yr	2.5 lbs/bu**	100	117,440	48	56,371
Alfalfa	2,348.8	20%	2.8 ton/yr	0 lbs/ton	0	0	47	111,145
Wheat	1,761.6	15%	54.7 bu/yr	2.5 lbs/bu	137	240,899	55	96,360
Total	11,744	100%				1,735,440		925,944

*NDSU Ag Extension publication SF-822 (revised), (May 2007), Tables 2, 9, 23, and 26.

** "Nutrient Removal Values for Major Agronomic Crops in Missouri" by Manjula V. Nathan and Yichang Sun, and David Dunn, (2006) Table. 2

Amount of land needed for spreading on nitrogen basis: 10,898 acres.
 Amount of land needed for spreading on phosphorous basis: 8,986 acres.
 Amount of land identified by applicant for land application: 11,744 acres.

The department realizes that the nitrogen in manure is not all available to the crop the first year and therefore the manure would typically be applied at rates higher than the rates listed above. However, the organic nitrogen becomes available the following year(s) so the manure cannot be applied at the same rate subsequent years. These figures are used to estimate the total acres that would be needed over several years of application using proper rotation of cropland and/or calculating nitrogen that is carried over to the following years. Table 6., above, details how all generated nutrients might be taken up by crops on the reported application acres.

Fields 120, 141, and 142 were removed from the NMP due to the fields lying within the 100-year flood zone. This flood zone was determined by using the Department of Water Resources mapping services. The Department's approval of the NMP will be updated to reflect this change.

Disclaimer:

This design review is intended to assess a livestock facility's ability to contain, divert, store, and properly apply manure and/or runoff water to meet department requirements, to prevent detrimental impacts the quality of waters of the state, and to minimize the potential for odor concerns from livestock facilities. It does not include an assessment of the structural integrity of livestock facilities or manure handling structures such as those made of concrete, metal, wood, plastic, or other material.

PERMIT ISSUANCE PROCEDURES

PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

PROPOSED PERMIT ISSUANCE

This proposed permit application meets all statutory requirements for the department to authorize a State Animal Feeding Operation Permit. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to issue a permit to **Abercrombie Dairy**. This fact sheet describes the facility and the department's rationale for requiring permit conditions.

The department will place a Public Notice of Draft on August 17, 2024 in the **Wahpeton Daily News** to inform the public and to invite comment on the proposed draft North Dakota State AFO Permit and fact sheet.

The Notice-

- Indicates where copies of the draft Permit and Fact Sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges individuals to submit their comments before the end of the comment period.
- Informs the public that if there is significant interest, a public hearing will be scheduled.

You may obtain further information from the department by telephone at (701)328-5210, or by writing to the address listed below.

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck, ND 58501

The primary author of this permit and fact sheet is Cameron Gilley.

FACT SHEET FOR STATE AFO PERMIT NDAFO-0906

Abercrombie Dairy – Abercrombie, ND

EXPIRATION DATE: October 31, 2029

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**North Dakota Department of Environmental Quality Public Notice
Issue of an AFO Permit**

Public Notice Date: 8/19/2024

Public Notice Number: ND-2024-012

Purpose of Public Notice

The Department intends to take public comment to ensure the following Animal Feeding Operations AFO Permit follows the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 3/8/2024

Application Number: NDAFO0906

Applicant Name: Abercrombie Dairy

Mailing Address: 26406 470th Ave, Morris, MN 56267

Telephone Number: 320.392.5609

Proposed Permit Expiration Date: 10/31/2029

Facility Description

The application is for a dairy cattle facility that would be located four miles south of Abercrombie, ND, in Richland County. The planned facility site is the West 1/2 of Section 27, Township 134N, Range 48W. The application indicates the facility would have a maximum of 10,625 milking dairy cattle with an average weight 1,250 lbs., and 1,875 dry dairy cows with an average weight of 1,250 lbs.

Tentative Determinations

The submitted application and supporting documentation have been reviewed by the Department. They assure that State Water Quality Standards will be protected and the system will be constructed and can be operated in compliance with the North Dakota state requirements for storage and handling of manure and wastewater for an Animal Feeding Operation.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by September 19, 2024 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice.

The NDDEQ will consider every request for reasonable accommodation to provide an accessible meeting facility or other accommodation for people with disabilities, language interpretation for people with limited English proficiency (LEP), and translations of written material necessary to access programs and information. Language assistance services are available free of charge to you. To request accommodations, contact the NDDEQ Non-discrimination Coordinator at 701-328-5210 or deqEJ@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

APPENDIX B – DEFINITIONS

DEFINITIONS Standard Permit (BP 2019.09.23)

1. “Animal feeding operation” means a lot or facility, other than an aquatic animal production facility, where the following conditions are met:
 - a. Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of forty-five days or more in any twelve-month period; and
 - b. Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.
2. “Bedding material” means an absorbent substance applied to dirt or concrete flooring systems, including wood shavings, wood chips, sawdust, shredded paper, cardboard, hay, straw, hulls, sand, and other similar, locally available materials.
3. “Best management practices” means schedules of activities, prohibitions of practices, conservation practices, maintenance procedures, and other management strategies to prevent or reduce the pollution of waters of the state. Best management practices also include treatment requirements, operating procedures, and practices to control production area and land application area runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
4. “Concentrated animal feeding operation” means an animal feeding operation that is defined as a large, medium, or small concentrated animal feeding operation or any animal feeding operation designated as a concentrated animal feeding operation under section 33.1-16-03.1-04. For purposes of determining animal numbers, two or more feeding operations under common ownership are considered to be a single animal feeding operation if they adjoin each other or if they use a common area or system for the disposal of wastes.
5. “Earthen storage pond” or “pond” means a topographic depression either below or above ground level, manmade excavation, or diked area formed primarily of earthen materials, although it may be lined with man-made materials or other seepage control materials, and used to store manure, process wastewater and runoff from the production area of a facility.
6. “Engineer” means a professional engineer registered to practice in the state of North Dakota.
7. “Facility” is an animal feeding operation.
8. “General permit” means a general state animal feeding operation permit. This is a permit issued to cover multiple facilities of the same or similar type, without requiring each facility to be covered under an individual permit.

9. “Large concentrated animal feeding operation” means any animal feeding operation that stables or confines as many as or more than the numbers of animals, not including unweaned young, specified in any of the following categories:
 - a. Seven hundred mature dairy cows, whether milked or dry;
 - b. One thousand veal calves;
 - c. One thousand cattle other than mature dairy cows or veal calves. “Cattle” includes, but is not limited to, heifers, steers, bulls, and cow/calf pairs;
 - d. Two thousand five hundred swine, each weighing 55 pounds or more;
 - e. Ten thousand swine, each weighing less than 55 pounds;
 - f. Five hundred horses;
 - g. Ten thousand sheep or lambs;
 - h. Fifty-five thousand turkeys;
 - i. Thirty thousand laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;
 - j. One hundred twenty-five thousand chickens (other than laying hens), if the animal feeding operation uses other than a liquid manure handling system;
 - k. Eighty-two thousand laying hens, if the animal feeding operation uses other than a liquid manure handling system;
 - l. Thirty thousand ducks, if the animal feeding operation uses other than a liquid manure handling system; or
 - m. Five thousand ducks, if the animal feeding operation uses a liquid manure handling system.
10. “Litter” means a mixture of fecal material, urine, animal bedding material, and sometimes waste feed.
11. “Manure” means fecal material and urine, animal-housing wash water, bedding material, litter, compost, rainwater, or snow melt that comes in contact with fecal material and urine, and raw or other materials commingled with fecal material and urine or set aside for disposal.
12. “Manure handling system” means all of the water pollution control structures used at the production area of a facility.

13. “Manure storage pond” means an earthen storage pond that stores liquid manure and process wastewater from indoor confined animal feeding operations.
14. “Manure storage structure” means any water pollution control structure used to contain or store manure or process wastewater. It includes earthen manure storage ponds; runoff ponds; concrete, metal, plastic, or other tanks; and stacking facilities.
15. “Medium animal feeding operation” means any animal feeding operation that stables or confines the numbers of animals, not including unweaned young, specified within any of the following ranges:
 - a. Two hundred to six hundred ninety-nine mature dairy cows, whether milked or dry;
 - b. Three hundred to nine hundred ninety-nine veal calves;
 - c. Three hundred to nine hundred ninety-nine cattle other than mature dairy cows or veal calves. “Cattle” includes, but is not limited to, heifers, steers, bulls, and cow/calf pairs;
 - d. Seven hundred fifty to two thousand four hundred ninety-nine swine, each weighing 55 pounds or more;
 - e. Three thousand to nine thousand nine hundred ninety-nine swine, each weighing less than 55 pounds;
 - f. One hundred fifty to four hundred ninety-nine horses;
 - g. Three thousand to nine thousand nine hundred ninety-nine sheep or lambs;
 - h. Sixteen thousand five hundred to fifty-four thousand nine hundred ninety-nine turkeys;
 - i. Nine thousand to twenty-nine thousand nine hundred ninety-nine laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;
 - j. Thirty-seven thousand five hundred to one hundred twenty-four thousand nine hundred ninety-nine chickens (other than laying hens), if the animal feeding operation uses other than a liquid manure handling system;
 - k. Twenty-five thousand to eighty-one thousand nine hundred ninety-nine laying hens, if the animal feeding operation uses other than a liquid manure handling system;
 - l. Ten thousand to twenty-nine thousand nine hundred ninety-nine ducks, if the animal feeding operation uses other than a liquid manure handling system; or
 - m. One thousand five hundred to four thousand nine hundred ninety-nine ducks, if the animal feeding operation uses a liquid manure handling system.

16. “Medium concentrated animal feeding operation” means a medium animal feeding operation that meets either one of the following conditions:
 - a. Pollutants are discharged into waters of the state through a manmade ditch, flushing system, or other similar manmade device; or
 - b. Pollutants are discharged directly into waters of the state which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.
17. “North Dakota Livestock Program Design Manual” means the guidelines established for use by the department in the review and permitting process for animal feeding operations.
18. “Nutrient management plan” means a written description of the equipment, methods and schedules by which:
 - a. Manure, litter, and process wastewater is beneficially reused in an environmentally safe manner such as being applied to land at appropriate agronomic rates as nutrients or fertilizers; and
 - b. Water pollution and air pollution, including odors, are controlled sufficiently to protect the environment and public health.
19. “Open lot” means livestock pens, feeding or holding areas at the production area of an animal feeding operation which are outside and not under roof, and where rain can fall directly on the lot area.
20. “Open manure storage structure” means an earthen pond or storage tank for holding liquid manure which is not covered so rainfall can fall directly into the pond or tank.
21. “Operation and maintenance plan” means a written description of the equipment, methods, and schedules for:
 - a. Inspection, monitoring, operation, and maintenance of the animal feeding operation, including manure storage structures, water pollution control structures, and the production area; and
 - b. Controlling water pollution and air pollution, including odors sufficient to protect the environment and public health. It includes emergency response actions for spills, discharges or failure of a collection, storage, treatment, or transfer component.
22. “Operator” means an individual or group of individuals, partnership, corporation, joint venture, or any other entity owning or controlling, in whole or in part, one or more animal feeding operations.

23. “Overflow” means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or storm water can be contained by the structure.
24. "Pollutant" means "wastes" as defined in North Dakota Century Code section 61-28-02, including dredged spoil, solid waste, incinerator residue, garbage, sewage, sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.
25. “Process wastewater” means water directly or indirectly used in the operation of the animal feeding operation for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts, including manure, litter, feed, milk, eggs, or bedding material.
26. “Production area” means those areas of an animal feeding operation used for animal confinement, manure storage, raw materials storage, and waste containment. The animal confinement area includes open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milking rooms, milking centers, cattle yards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes lagoons, runoff ponds, storage sheds, stockpiles, under-house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes feed silos, silage bunkers, and bedding materials. The waste containment area includes settling basins, areas within berms, and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility and any area used in the storage, handling, treatment, or disposal of mortalities.
27. “Runoff” means rainwater or snow melt that comes in contact with manure at an open lot or open manure storage area and, therefore, is defined as manure.
28. “Runoff pond” means an earthen storage pond that is used to collect and store runoff from an open lot or from a manure storage area.
29. “Seepage” means the volume of flow through a manure storage structure.
30. “Sensitive groundwater area” means vulnerable hydrogeologic settings as determined by the department such as glacial outwash deposits or alluvial or aeolian sand deposits that are critical to protecting current or future underground sources of drinking water. Areas designated as sensitive groundwater areas by the department include alluvial or aeolian sand deposits shown on Geologic Map of North Dakota (Clayton, 1980, North Dakota geological survey) and glacial drift aquifers listed in North Dakota Geographic Targeting System for Groundwater Monitoring (Radig, 1997, North Dakota department of health), or most recent editions of these publications, with DRASTIC scores greater than or equal to 100 based on methodology described in DRASTIC: A Standardized System For

Evaluating Groundwater Pollution Potential (Aller et al, 1987, United States environmental protection agency).

31. “Small animal feeding operation” means any animal feeding operation that stables or confines less than the numbers of animals specified for a medium animal feeding operation.
32. “Small concentrated animal feeding operation” means a small animal feeding operation designated as a concentrated animal feeding operation under section 33.1-16-03.1-04.
33. “State animal feeding operation permit” means a permit issued by the department under this chapter to an animal feeding operation.
34. “Surface water” means waters of the state that are located on the ground surface, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, and all other bodies or accumulations of water on the surface of the earth, natural or artificial, public or private.
35. “Unconfined glacial drift aquifer” means a glacial drift aquifer that does not have an impervious soil layer which acts to prevent or minimize movement of water into, through, or out of the aquifer.
36. “Water pollution control structure” means a structure built or used for handling, holding, transferring, or treating manure or process wastewater, so as to prevent it from entering the waters of the state. The term also includes berms, ditches, or other structures used to prevent clean water from coming in contact with manure.
37. “Water quality standards” means the water quality standards contained in chapter 33.1-16-02.1.

APPENDIX C – DATA AND TECHNICAL CALCULATIONS**Table 7 – Water Commission Well Data**

Location	Use	Depth (ft)	Diameter (inches)	Aquifer
13404814DDCBA	Domestic	407	unknown	undefined
13404817AAD	Domestic	80	2"	Wahpeton Sand Plain
13404823ACBCAD	Domestic	391	unknown	undefined
13404823DBDD	Domestic	365	5"	Dakota Group
13404821BBB	Observation	395	1.25"	Wahpeton Buried Valley
13404821BBB2	Observation	260	2"	Wahpeton Buried Valley
13404821BBB3	Observation	140	2"	Wahpeton Sand Plain
13404821BBB4	Observation	59	2"	Wahpeton Shallow Sand
13404820ADD2	Observation	262	5"	Wahpeton Sand Plain
13404826CDA	Domestic	unknown	2"	Dakota Group
13404826CDAA	Domestic	345	4"	Dakota Group
13404825CCB	Domestic	unknown	2"	Dakota Group
13404836ACB3	Observation	118	2"	undefined
13404832DAA	Observation	120	1.25"	Wahpeton Sand Plain
13404832DAA2	Observation	100	2"	Wahpeton Sand Plain
13304801DDD1	Domestic	unknown	2"	Dakota Group
13304802ADA	Observation	280	1.25"	Wahpeton Sand Plain
13304802CBB	Observation	452	2"	Wahpeton Buried Valley
13304802CBB2	Observation	400	2"	undefined
13304802DCD	Observation	265	2"	Wahpeton Buried Valley
13304802DDC	Observation	252	2"	Wahpeton Buried Valley
13304802DDD	Observation	320	2"	Wahpeton Buried Valley
13304802DDD2	Observation	480	2"	undefined
13304802DDD4	Domestic	unknown	5"	Wahpeton Buried Valley
13304803ABB1	Observation	400	1.25"	Wahpeton Sand Plain
13304803ABB2	Observation	140	1.25"	Wahpeton Sand Plain
13404823DBDD	Domestic	365	5"	-
13404823D	Domestic	366	4"	-
13404822A	Domestic	346	4"	-
13404822AAD	Domestic	360	5"	-
13404821AAA	Domestic	52	4"	-
13404821A	Domestic	52	2"	-
13404821AAA	Domestic	78	4"	-
13404820BBB	Domestic	85	4"	-
13404829BAC	Domestic	61	4"	-
13404826CDAA	Stock	345	4"	-
13404835DDD	Domestic/Stock	84	4"	-
13404832DDA	Domestic	57	4"	-
13404832DDA	Domestic	64	4"	-
13304801CBB	Domestic	135	4"	-
13304802ACA	Domestic	350	4"	-
13304802ACD	Domestic	80	4"	-
13304802DDC	Monitoring	264	2"	-
13304802DD	Municipal	285	12"	-

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Abercrombie Dairy – Abercrombie, ND

EXPIRATION DATE: October 31, 2029

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Location	Use	Depth (ft)	Diameter (inches)	Aquifer
13304802DD	Municipal	285	12"	-
13304802DDD	Monitoring	290	4"	-
13304802DDC	Monitoring	240	2"	-
13304802DDC	Monitoring	240	2"	-
13304802DDD	Monitoring	290	4"	-
13304802DDD	Monitoring	290	4"	-
622183 (MN)	Domestic	125	-	-
476298 (MN)	Domestic	65	4"	-
543633 (MN)	Domestic	310	5"	-
129716 (MN)	Domestic	248	2"	-
175732 (MN)	Domestic	250	4"	-

*Wells closest to facility.

Table 8 – Soil Survey Data

Map unit	Name	Description	Bedrock depth	Seasonal water table	Unified soil class*	Ksat $\mu\text{m/s}$	Lagoon Restrictions
I229A	Fargo silty clay, 0-1% slopes	The Fargo series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in calcareous, clayey lacustrine sediments. These soils are on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains.	0-60"	0-0.75'	MH	0.9200	Very limited: Ponding, Depth to saturated zone
I231A	Dovray silty clay, 0-1% slopes	The Dovray series consists of deep poorly and very poorly drained soils that formed in clayey glacial lacustrine sediments or till on glacial lake plains and moraines. These soils have slow and very slow permeability.	0-60"	0	MH	1.3645	Very limited: Ponding, Depth to saturated zone
I235A	Fargo silty clay depressional, 0-1% slopes	The Fargo series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in calcareous, clayey lacustrine sediments. These soils are on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains.	0-60"	0-0.5'	MH	0.9200	Very limited: Ponding, Depth to saturated zone

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Map unit	Name	Description	Bedrock depth	Seasonal water table	Unified soil class*	Ksat $\mu\text{m/s}$	Lagoon Restrictions
I237A	Fargo-Enloe complex, 0-1% slopes	The Fargo series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in calcareous, clayey lacustrine sediments. These soils are on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains. The Enloe series consists of very deep, poorly drained, slowly permeable lacustrine sediments. These soils are in shallow basins and swales in lake plains.	0-60"	0-0.75'	MH	0.9200	Very limited: Ponding, Depth to saturated zone
I241A	Fargo-Ryan, thick solum silty clays, 0-1% slopes	The Fargo series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in calcareous, clayey lacustrine sediments. These soils are on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains. The Ryan series consists of very deep, poorly drained, very slowly permeable soils that formed in alkaline clayey sediments. These soils are on stream terraces and glacial lake plains.	0-60"	0-0.75'	CH	0.6925	Very limited: Ponding, Depth to saturated zone
I242A	Ryan-Fargo silty clays, 0-1% slopes	The Ryan series consists of very deep, poorly drained, very slowly permeable soils that formed in alkaline clayey sediments. These soils are on stream terraces and glacial lake plains. The Fargo series consists of very deep, poorly drained and very poorly drained, slowly permeable soils that formed in calcareous, clayey lacustrine sediments. These soils are on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains.	0-60"	0-0.75'	MH	0.3075	Very limited: Ponding, Depth to saturated zone
MH-elastic silt, CH-clay of high plasticity							

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Table 9 – Soil Boring Information

	B117	B126	B201	B202	B203	B204	B205	B206	B207	B401	B501	B601
Elevation	942.89	943.24	942.65	943.65	943.54	943.56	943.83	943.28	943.56	943.11	942.99	943.42
0 to 1	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
1 to 2	OH-CH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH	OH
2 to 3	CH	CH	CH	OH-CH	CH	OH	CH	CH	CH	OH	OH-CH	OH-CH
3 to 4	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
4 to 5	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
5 to 6	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
6 to 7	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
7 to 8	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
8 to 9	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
9 to 10	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
10 to 11	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
11 to 12	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
12 to 13	CH	CH	CH	CH	CH	CH	CL	CH	CH	CH	CH	CH
13 to 14	CH	CH	CH	CH	CH	CH	CL	CH	CH	CH	CH	CH
14 to 15	CH	CL	CH-CL	CH	CH	CL	CL	CH	CH	CH-CL	CH	CH
15 to 16	SP	CL	CL	CH	CH	CL	CL	CH	CH	CL	CH	CH
16 to 17	SP	CL	CL	CH	CH	CL	CL	CH	CH	CL	CH	-----
17 to 18	SP	CL	CL	CH	CL	CL	CL	CH	CH	CL	CH	
18 to 19	SP	CL	CL	CH	CL	CL	CL	CH	CH	CL	CH	
19 to 20	SP	CL	CL	CH-CL	CL	CL	CL	CL	CH-CL	CL	CH	
20 to 21	SP	CL	CL	CL	CL	CL	CL	CL	CL	CL	CH	
21 to 22	SP	CL	CL	CL	CL	CL	CL	CL	CL	-----	CH	
22 to 23	SP	CL	CL	CL	CL	CL	CL	CL	CL		CH	
23 to 24	SP	CL	CL	CL	CL	CL	CL	CL	CL		CH	
24 to 25	SP	SP	CL-CH	CL	CL	CL	CL	CL	CL		CH-CL	
25 to 26	SP	SP	CL-CH	CL	CL	CL	CL	CL	CL		CL	
26 to 27	SP	SP	CL-CH	CL	CL	CL	CL	CL	CL		-----	
27 to 28	SP	SP	CL-CH	CL	CL	CL	CL	CL	CL			
28 to 29	SP	SP	CL-CH	CL	CL	CL	CL	CL	CL			
29 to 30	CL	SP-SM	CL-CH	CL	ML	CL	CL	CL	CL			
30 to 31	CL	SP-SM	CL-CH	CL	ML	CL	CL	CL	CL			
31 to 32	CL	SP-SM	CL-CH	CL	ML	CL	CL	CL	CL			
32 to 33	CL	SP-SM	CL-CH	CL	ML	CL	CL	CL	CL			
33 to 34	CL	SP-SM	CL-CH	CL	ML	CL	CL	CL	CL			
34 to 35	CL	SP-SM	CL-CH	SP-SM	CL	CL	CL	CH	CL-SC			
35 to 36	CL	SP-SM	CL	SP-SM	CL	CL	CL	CH	SC			

TS-top soil, OL-organic lean clay, CL- clay of low plasticity, CH- clay of high plasticity, SP-poorly graded sand, SC-clayey sand.

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APPENDIX D – RESPONSE TO COMMENTS

Comments received during the public comment period have been addressed and are part of a compilation of appendices for the facility.

Department Response to Public Comments

TO: File
FROM: Division of Water Quality
DATE: Tuesday, December 31, 2024
SUBJECT: Response to Public Comments for Proposed Riverview ND “Abercrombie Dairy”, LLP
South of Abercrombie, ND
Richland County

This memorandum is in response to comments received by the Department of Environmental Quality, Division of Water Quality (Department) regarding the proposed Riverview ND, LLP dairy facility in Richland County (application received March 8, 2024).

The proposed facility, Abercrombie Dairy, is a proposed animal feeding operation (AFO) located 4 miles south of Abercrombie, ND in the West ½ of Section 27, Township 134 N, Range 48 W, In Richland County. When the fact sheet and draft permit were completed, the Department issued a public notice that was published in the Wahpeton Daily News and posted to the Department’s webpage: <https://deq.nd.gov/PublicNotice.aspx>. Starting August 19, 2024, a 30-day public comment period public notice was placed in the Wahpeton Daily News because it is the paper of record for Richland County. A list of federal, state, and international government offices along with private entities were also notified of the webpage posting. The Department also maintains a list of mailing addresses to which letters of notification were sent. In addition, the Department sent the public notice information to be posted by the U.S. Postal Service located in Abercrombie, ND and the Richland County Auditor’s office. After receiving a petition and other emails for an extension of the Public Comment period, the Department issued a second public notice on September 19, 2024. The notice extended the public comment period starting August 19, 2024, and ending October 5, 2024, for a total of 47 days.

State water quality regulations require operators of AFOs to take adequate steps to prevent adverse impacts to waters of the state by obtaining an Approval to Operate permit. See North Dakota Administrative Code (NDAC) ch. 33.1-16-03.1. The requirements developed for a facility are specific to site conditions. The Department has the authority to address only environmental issues, such as protecting water quality (NDAC 33.1-16-02.1) and air quality. See North Dakota Century Code (NDCC) ch. 23.1-25. Addressing zoning, land use, road use, water appropriations, social and economic issues is the responsibility of the local zoning or other authorities and will not be addressed in this response as they are outside of the Department’s authority.

Below are summaries of the written comments received. Although there are specific responses to each comment, the document should be read in its entirety with the understanding that a response to one comment may be applicable to additional comments. The Department has updated the fact sheet to provide clarification and address comments received during the comment period. Substantive changes are discussed in the responses.

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Commenter 1-Dakota Resource Council

The document submitted by the Dakota Resource Council has been summarized. The introduction is included below, followed by specific comments and their respective department responses.

“Abercrombie Dairy proposes to operate 4 miles south of the rural town of Abercrombie, home to approximately 255 North Dakota residents. The Dairy’s permit application states the 12,500 head operation will produce 9,581,250 cubic ft/year (71.67 M gal/year of manure) and 4,684,045 cubic feet (35.04 Mgal/year) of wastewater. This would be roughly the equivalent of managing the waste stream of 525,000 people.¹ The permit states it has 14,553 acres leased and available to spread this waste as fertilizer. However, the operation and surrounding acres where the Dairy plans to spread its untreated waste is just 1.4 miles from the Wild Rice River, and 1.8 miles from the Red River. An operation of this size is unprecedented in North Dakota and, as described in this comment, is likely to adversely affect the land and water resources North Dakotans rely on for their health, happiness, and livelihoods.

Given the likelihood of adverse impacts to human health and the environment, we urge the Department of Environmental Quality to carefully consider the following concerns about the Abercrombie Dairy permit application in view of the authority and responsibility state law places on the Department. Because of the multiple sensitive water resources in this area and changing environment, the best option would be to deny the permit. Barring this, additional permit conditions—including but not limited to intensive monitoring, contingency plans, strict adherence to best nutrient management practices, and enforcement of same—must be in place to prevent pollution of both surface and ground water. Additionally, DEQ must require that the Dairy obtain a National Pollutant Discharge Elimination System (NPDES) permit because the size and proximity of the facility to vulnerable surface and groundwater all but ensure Abercrombie Dairy will discharge pollutants in a manner that degrades water quality.”

- A. **Comment:** In keeping with its goals, state law authorizes DEQ to prevent, control, and abate water pollution, including conducting studies and investigations into the causes of water pollution. ND Cent. Code § 61-28-04. As such, DEQ has the power to require any source of pollution to “install, use, and maintain monitoring equipment or methods” to detect and characterize discharges of pollutants to waters of the state. *Id.* § 61-28-04(10); ND Admin. Code 33.1-16-03.1-07(3). Additionally, DEQ can require polluting facilities to report monitoring data to the state. ND Cent. Code § 61-28-04(10), (26). If DEQ determines an industrial facility poses a threat to water quality, the agency may also require modifications in waste disposal systems. *Id.* § 61-28-04(7). Under no circumstances is any entity permitted to store or discharge waste in a manner that causes or contributes to any exceedance of a water quality standard, “unless affirmatively demonstrated, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, that a change in quality is necessary to accommodate important social or economic

development in the area in which the waters are located.” *Id.* § 61-28-06; see also ND Admin. Code 33.1-16-02.1-02.

Department Response: The Department has updated the record to require one upstream and two downstream monitoring wells to be placed by the wastewater storage ponds. Riverview ND, LLP, is located at T134N R48W Section 27, west half. This siting places the facility over the Wahpeton Buried Valley aquifer. This aquifer is rated through the North Dakota Geographic Targeting system which is composed of three scores averaged for Monitoring Priority. The Wahpeton Buried Valley aquifer is rated as High Sensitivity and High-Risk Rating and Low Vulnerability Rating averaged for a Moderate Monitoring Priority. The vulnerability is assessed on the area activities and area of aquifer. The Wahpeton Buried Valley aquifer has a smaller lateral area which contributes to its low vulnerability ranking as well as primarily surficial agricultural activities, but this aquifer has a high-risk rating and sensitivity based on the aquifer characteristics of depth to water, recharge, hydraulic conductivity, and aquifer material. As this facility’s ponds would remove the natural overburden of the aquifer, the high sensitivity and risk rating of the aquifer is heavily considered. Groundwater movement in the Wahpeton Buried Valley aquifer shows a natural tendency of groundwater flow northerly, however studies have shown that pumping in the aquifer can heavily influence flow directions (Berg and Ripley, 2012). The city of Wahpeton currently has three municipal wells that draw from the Wahpeton Buried Valley Aquifer in T133N R48W Section 20, however the city has plans to move their wellfield to T133N R48W S2 and has already drilled 4 test holes, with plans to draw from the Wahpeton Buried Valley aquifer. The proposed wells are within 2.5 miles of the facility site and the proposed wellhead protection area based on current well pumping rates, will be within 1.5 miles of the facility. Based on sensitivity and risk analysis of the Wahpeton Buried Valley aquifer, and the facility’s location to a future wellhead protection area, it is advisable to enact a groundwater monitoring plan on the facility as a preventative measure to protect the Wahpeton Buried Valley aquifer as a source water resource. A map and supporting documentation are in Appendix A.

- B. **Comment:** To comply with the CWA and maintain authorization to operate North Dakota’s NPDES permitting program, DEQ must ensure all point sources that discharge pollution to a water of the United States obtain and comply with a NPDES permit. 33 U.S.C. § 1311, 1342, 1362. Concentrated Animal Feeding Operations (AFOs that meet minimum size thresholds that the Abercrombie Dairy easily surpasses) are expressly designated as point sources. *Id.* § 1362(14); 40 C.F.R. § 122.23(b). Permits must meet minimum federal requirements established through the effluent limitations guidelines for CAFOs found at 40 C.F.R. part 412 as well as 40 C.F.R. §§ 122.23, 122.41, 122.42(e) and 122.44.

Department Response: Currently all concentrated animal feeding operations (CAFO)’s permitted in North Dakota are permitted under State rules NDAC § 33.1-16-03.1. The submitted application and supporting documentation do not indicate this proposed facility as

being a point source subject to a NPDES permit. Land application sites from a CAFO are not subject to NPDES requirements if the nutrient management plan (NMP) is followed as specified in 40 CFR 122.42(e)(1)(vi)-(ix). Agricultural storm water discharges are exempt from the NPDES as provided in 33 U.S.C. 1362(14).

- C. **Comment:** Among the many CAFO pollutants, pathogens and nutrients are of primary concern because of their prevalence and potential to adversely impact human and environmental health. As mentioned above, CAFO waste is laden with fecal coliform bacteria and other pathogens. Zoonotic pathogens commonly found in manure include *E. coli*, *Campylobacter*, *Salmonella*, *Listeria*, *Cryptosporidium parva*, and *Giardia*, all of which can cause acute gastrointestinal distress, fever, and other dangerous symptoms in humans who drink or have recreational contact with contaminated water.

CAFOs use a slew of antibiotics, hormones, and other pharmaceuticals to deal with these pathogens and keep animals alive in such concentrated and stressful environments. These products end up in CAFO wastes and ultimately make their way into nearby surface waters and domestic wells.

Department Response: According to the U.S. Center of Disease Control, *E. coli*, *Campylobacter*, *Salmonella*, *Listeria*, *Cryptosporidium parva*, and *Giardia*, are not spread through the air, a person must come into contact with the animal or feces. Manure handling according to response to comment 1(H) Nutrient Management Plan helps ensure that manure stays in the fields.

According to NDAC § 33.1-16-02.1 Standards of Quality for Water of the State has a criterion for *E. coli*. *E. coli* is used as a surrogate parameter for other pathogens in the environment. The water quality *E. coli* standard is:

“Not to exceed 126 organisms per 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall more than 10 percent of samples collected during any 30-day consecutive period individually exceed 409 organisms per 100 ml. For assessment purposes, the 30-day consecutive period shall follow the calendar month. This standard shall apply only during the recreation season May 1 to September 30.”

According to the CDC, MRSA is spread by skin-to-skin contact, shared equipment or supplies, and places that involve crowding with an infected source; MRSA is not spread through the air.

The North Dakota Board of Animal Health administers the rules for disease. Antibiotics are administered under the supervision of a licensed veterinarian. The Food and Drug Administration (FDA) administers rules on the use of antibiotics in livestock feed. This is beyond the scope of the proposed permit and outside the Department's authority.

The Department has reviewed numerous studies presented (Appendix B). The applicability of these studies to the proposed site can be affected by facility design, operations and maintenance, applicable state and local rules in addition to site specific conditions such as geology and meteorology. Also, how the studies are designed and conducted can affect how the results can be compared to other situations. State regulations have been developed through a public process to address many environmental and health issues discussed in the various studies, such as required setback from residences, statewide odor standard, and nuisance hydrogen sulfide standard. It has not been shown that these protections are inadequate nor that applicable health standards are likely to be exceeded.

- D. **Comment:** Further, heavy nutrient loads create algal blooms that can be toxic to humans and pets that come into contact with impacted waters. The economic cost of a single major harmful algal bloom can climb to tens of thousands of dollars, and the cumulative cost of the U.S.'s algae problem may be as high as 100 billion dollars annually. Low dissolved oxygen and nutrients are among the leading causes of water quality impairments in North Dakota.

Department Response: The Department agrees that nutrients continue to show environmental impacts to waters of the State. Here are some of the findings from the Department: *Harmful Algal Blooms* (HABs) according to the Watershed Management Program, Division of Water Quality within the Department show all 2024 reported and listed outbreaks are from lakes or reservoirs. Here is a link to the Department's webpage on HABs <https://storymaps.arcgis.com/stories/c875847d52864881a96cc591421cd1bc>

Current assessment of the Red River of the North in the Integrated Report 2020-2022 reveals there are no listings of nutrient impairment upstream of the proposed location or on the Red River of the North downstream. The Integrated Report can be found on the Department's webpage: https://deq.nd.gov/WQ/3_Watershed_Mgmt/2_TMDLs/TMDLs_IR.aspx

The proposed facility is regulated by state rule which places requirements to protect the environment and human health. Please refer to response to comments 1(H) Nutrient Management Plan and 2(B) Design.

- E. **Comment:** Bacteria in the environment convert nitrogen from manure into nitrates, another hazardous pollutant. Ingesting water contaminated with nitrates is associated with dangerous human health conditions like colorectal cancer, thyroid disease, birth defects, premature births, and methemoglobinemia (a potentially fatal condition commonly known as "blue baby syndrome")... Analyses conducted by the Environmental Working Group show numerous North Dakota municipalities with unsafe levels of nitrate in their drinking water.

Department Response: Lab results for all North Dakota municipal (community) water systems that have been sampled for nitrate-nitrite for 2023 through quarter three of 2024, indicate that all North Dakota municipalities are in compliance with EPA's Safe Drinking Water Act's nitrate-nitrite Maximum Contaminant Level (MCL). EPA's MCL for nitrate set to protect against blue-baby syndrome is 10 mg/l.

Please refer to response to comment 1(D) Harmful Algal Blooms

- F. **Comment:** Decades of inadequate regulation have allowed CAFOs to construct, design, operate, and maintain their facilities such that they discharge significant amounts of waste into state and federal waters, externalizing their pollution costs onto the environment and the public at large. Consequently, this industry is causing severe water quality deterioration that impacts the environment and threatens public health.

Department Response:

The Department performs an annual inspection of most CAFO permitted facilities. These facilities are inspected to ensure permit compliance is maintained, i.e., the facility is maintaining livestock numbers in accordance with the permit; the facility is spreading manure in accordance with the NMP; the facility is maintaining its manure management system; the facility is handling its mortality properly; and odor readings, along with observation of nuisances (such as flies), are conducted. The facility will also have an inspection plan which includes daily and weekly time frames.

Please refer to response to comments 1(B) Authority to Issue, 1(E) Nitrates, and 1(F) Inspection, 2(B) Design.

- G. **Comment:** Monitoring of these three waters of the state by ND has been sporadic (Table 1) and inconsistent in regard to metrics.

TABLE 1

RED RIVER	location	date of most recent data
Upstream: about 13 miles from dairy		
Station ID: 551481	Red River Below Wahpeton Dam	2012(ND)
S008-426	Wahpeton	2021 (MPCA)
Adjacent to manure applied fields and about 2 miles from dairy:		
Station ID: 380083	Red River at Brushvale	2024(ND)
		1993- pesticides
S000-012	Brushvale	2021 (MPCA)
Downstream: about 30 miles away		
Station ID: 385213	Red River 9 Miles S Of Fargo	2023 (ND)
WILD RICE RIVER:		
Upstream: Station ID 551427	3 miles S of Farmington	2016
Downstream: Station ID 551269	3.2 miles NW of	2016
	Abercrombie	
USGS 05053000	Abercrombie	2024
ANTELOPE CREEK:		
Upstream: Station 551271	Dwight	2015
USGS 05052500		2023
Station 385231	N Antelope Creek	2020
Mid Project: Station 380030	Confluence of Antelope	
	And Wild Rice River	1996-2024

Department Response: The Department manages an ambient water quality network (RAWQM) across North Dakota. This project collects samples for general chemistry (e.g. total suspended solids and total dissolved solids), trace elements (e.g. aluminum and Lead), nutrients (e.g. total nitrogen and total phosphorus), and biological (e.g. *Escherichia coli* or *E. coli*). Station ID 380083 (DEQ Red River Brushvale Bridge) is associated with RAWQM, with one hundred and ninety-seven (197) sample events conducted since January 20, 1993, and will continue to be sampled each year. The Department works with the United States Geological Survey (GRAWQMG) to fill the required needs of the Department's ambient network. This includes station ID 05052500 (USGS Antelope Creek at Dwight, ND) with one hundred and two (102) sample events since 4/18/2001 and station ID 05053000 (USGS Wild Rice River Abercrombie, ND) with one hundred and fifty-one (151) sample events since January 27, 1995, both of which will continue to be sampled each year.

The Department's monitoring and assessment program includes Station ID 551481 (DEQ Red River below dam Wahpeton, ND), which is associated with the Red River Mainstem Bioassessment Project (RBARED). This project consisted of multiple sample types including a water, physical habitat, fish, and macroinvertebrate samples collected on August 18, 2010.

The Department recognizes that with the small staff size and responsibility to cover the entire state, the monitoring and assessment team must conduct sampling events on a five (5) year rotational schedule by ecoregion. However, not every site within an ecoregion can be visited every 5 years so some sites may go more than 5 years without being assessed. This will ensure equal coverage across the state to assess water quality on rivers, streams, reservoirs, and lakes.

The Department's nonpoint source program (NPS) mission is to implement a voluntary, incentive-based program that restores and protects the chemical; physical, and biological integrity of the waters where beneficial uses are threatened or impaired due to nonpoint sources of pollution. The NPS program has been working with the Richland County Soil Conservation District Antelope Creek Watershed Wild Rice Corridor Project (RNPSRC) since 2006. This project includes Station ID 385231 (DEQ Antelope Creek North Branch Dwight), 380030 (DEQ Antelope Creek Abercrombie), 551269 (DEQ Wild Rice River Abercrombie), 551427 (DEQ Wild Rice River Farmington), and 551271 (DEQ Antelope Creek North Branch Dwight). Samples collected are water quality, physical habitat, and macroinvertebrates. The water quality parameters collected for this project include nutrients (i.e., total nitrogen, total Kjeldahl nitrogen, nitrate-nitrite, ammonia, total phosphorus), *E. coli* bacteria, and total suspended solids (TSS). RNPSRC project has conducted over eight hundred and fifty (850) water sample visits, five (5) macroinvertebrate sample visits, and conducted two (2) physical habitat site evaluations between all the sites since 2004. The Department compiles all water quality data at the end of the project and develops a final water quality report describing water quality trends and improvements as they relate to Best Management Practices applied in the watershed. The information mentioned above is available to the public upon request and some by department website.

Please refer to response to comment 1(Q) Aquifer.

- H. **Comment:** Richland County has extensive tiling that substantially increase the likelihood that land applied CAFO waste will run off fields and into nearby waterways. Any CAFO waste that enters a state water through this tiling is a jurisdictional discharge under the Clean Water Act, requiring a NPDES permit.

To evaluate the Dairy's effect on surface water pollution on the Wild Rice, Red Rivers and Antelope Creek, both at the project site and applied fields, up-to-date baseline measurements of basic chemistries, heavy metals, hormones, pesticides and biologics should be done pre-project, followed by consistent monitoring. Measurements immediately upstream from the bulk of the field applications will assign appropriate contributions by the dairy; monitoring closely downstream close to the project will diminish the effect of dilution on the dairy's contribution to pollution. Baseline studies of biota such as invertebrates and fish should be part of the pre-project evaluation, and regular monitoring must be conducted throughout the life of the Dairy to ensure wildlife is adequately protected.

Because of the extensive tiling in the affected area, baseline and ongoing monitoring of the pollutants at the major drain outlets would add to protection of the receiving streams. Moisture monitors in tiled field should be required to prevent application of manure at inappropriate times and to detect discharges to groundwater. Permit conditions specifying the manner and timing of monitoring must be included. Monitoring is only capable of providing representative data if conducted during and immediately following land application activities.

Ideally, 1965 water quality data should be located and used as a target. Monitoring data must be available to the public to facilitate citizen enforcement of effluent standards.

Department Response: Currently, there is no policy regarding the land application of manure on drain tiled fields within the Department. The NMP requires the submittal of precautions used to prevent manure from reaching waters of the state. The proposed NMP has 8,567.9 acres of tiled field. If a preferential connection has been established and manure has made its way into the drain tile, the Department will require future manure application on that field to halt and additional precautions be taken. Section 7 of the *North Dakota Livestock Program Design Manual*, as required by NDAC § 33-16-03.1-08, provides the authority to ensure the waters of the state are protected.

Under NDAC § 33.1-16-03.1-07(2)(k) and NDAC § 33.1-16-03.1-08(3), the department requires NMPs for regulated livestock facilities in the state. According to NDAC § 33.1-16-03.1-03(18), the definition of a "nutrient management plan" means a written description of the equipment, methods, and schedules by which:

- a. Manure, litter, and process wastewater is beneficially reused in an environmentally safe manner such as being applied to land at appropriate agronomic rates as nutrients or fertilizers; and
- b. Water pollution and air pollution, including odors, are controlled sufficiently to protect the environment and public health.

An NMP is upheld by NDAC § 33.1-16-03.1-10 - Enforcement and compliance.

The application rate of manure and nutrients will be monitored to ensure nutrients are applied in a manner so as not to impact waters of the state. Soils will be tested annually so that nutrients are applied at agronomic rates. The use of buffer strips can also reduce loading into rivers and streams. The use of a toolbar to inject manure directly into the soil also reduces the potential for nutrients to reach waters of the state. As stated in the *North Dakota Livestock Program Design Manual* Section 7.5:

1. The manure application rate shall not exceed the recommendations for nitrogen and phosphorous based on either the North Dakota Phosphorous Index (PI), as developed by the NRCS, or NDSU Extension Service recommendations based on soil testing.
2. The PI allows manure and other sources of nutrients to be applied at rates to meet the nitrogen needs of a crop if the PI rating is low or medium. If the PI is high, it allows manure and other sources of nutrients to be applied at rates to meet the

phosphorous removal in the crop biomass. If the PI is very high, it requires that no manure be applied to that field. Manure shall not be applied to fields where the soil test phosphorous exceeds 125 parts per million (ppm) (250 lbs per acre).

3. Manure and other sources of nitrogen must not be applied at rates that exceed:
 - a. The recommended nitrogen application rate during the year of application; or
 - b. The estimated nitrogen removal in harvested plant biomass for legumes during the year of application.
4. NMPs shall contain a field-specific assessment of the potential for nitrogen and phosphorous transport from the field. The assessment for phosphorous can be done using the phosphorous screening tool and soil tests, or the PI assessment.

There are many benefits to using manure for fertilizer:

1. Increases organic matter in the soil.
2. Slower release of nutrients than commercial fertilizer.
3. Increase soil water-holding capacity and in turn decreases runoff.

Note the “Nutrient Management Plan And Manure Application” section of the fact sheet has been updated along with the NMP.

The Department has the authority to issue a Permit under the NDCC § 61-28-04. Department approval addresses the health and environmental concerns relating to protecting air quality and water quality. Abercrombie Dairy must meet the setbacks and rules of the Department before a Permit is granted. The proposed permit has conditions on operation and maintenance, handling mortality, manure application requirements, minimum required records, notification requirements, etc.

- I. **Comment:** The only soil tests presented are from early in 2024. No further samples have been submitted as of this date; it appears there is no baseline soil data to determine how much waste can be applied safely. This should be remedied by following the agronomist’s recommendation and resampling and then adjusting the NMP as needed.

Department Response: The soil tests from early 2024 are sufficient for the approval of the NMP. Once an approved NMP is active a CAFO must follow section 7.4.6 of the *North Dakota Livestock Program Design Manual* which requires yearly sampling of fields used in that time frame. Please refer to response to comment 1(H) Nutrient Management Plan.

- J. **Comment:** Soil maps missing: No NRCS soil maps are seen for fields: 70, 73, 74, 76, 80, 81 through 90, 91 through 95, 98, 103,104,106 through 108, 111, 112, 128, 130, 131, 132, 138 through 140, 141 through 150, 151 through 160, 161

This data should be reported and NMP adjusted as needed.

Department Response: After further review, the Department found that 12 of the fields identified above meet the NMP minimum requirements as listed in section 7.3 Nutrient Management Plan Information. These include fields 139, 143 through 150, 159, 160, and 161. A NMP is a living document and may have fields removed or added as long as the facility maintains the minimum number of acres required in the fact sheet and the field meets all requirements of the Department.

The Department calculated a minimum of 10,898 acres would be required for the proposed facility. Currently, the proposed facility has 11,744 acres that meet the requirement of being in the NMP. The fact sheet will be updated to reflect this comment.

- K. **Comment:** A simple visual exam of the proposed manure disposal fields shows that:
10 fields abut or have Antelope Creek running through them
15 fields abut or have the Wild Rice River running through them
3 fields abut the Red River.
Another 42 are in contact with smaller unnamed streams.

Department Response: Fields included in an approved NMP have maps that show distances to water bodies. Section 7.6 of the *North Dakota Livestock Program Design Manual* have precautions to prevent surface water and air quality impacts. These precautions are also listed specifically or generally as permit conditions.

2. On land controlled by the operator, manure shall not be applied closer than 100 feet to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads or other conduits to surface waters, unless:
 - a. A 35-foot wide vegetated buffer on which there are no applications of manure is used;
 - b. The facility's owner/operator demonstrates that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equal to or greater than the reductions achieved by the 100-foot setback.

- L. **Comment:** When asked about the vulnerability to the streams from flooded and eroded fields, a representative from DEQ said:

"Proper manure and fertilizer application is dependent on operators using reasonable judgement and adequate precautions when applying. The risk of nutrient leaching or runoff from flooding can be mitigated or prevented by properly incorporating manure into the soil, following a proper setback from standing water or saturated areas, or by choosing to spread manure on more suitable areas." (personal correspondence).

The reason to have regulations is to avoid relying solely on an “operator’s reasonable judgement” to protect a common critical resource.

Department Response: The Department finds this statement to be accurate as it reflects section 7.6 of the *North Dakota Livestock Program Design Manual*:

1. When land applying manure, the operator shall use reasonable judgment and take adequate precautions to prevent surface water impacts and minimize odors to nearby residences and public areas. Land application shall not occur during rainfall events, except to prevent the catastrophic failure of a storage structure.

Please refer to response to comments 1(F) Inspection and 1(H) Nutrient Management Plan.

- M. **Comment:** This dairy project is in a very high risk for flood associated problems. We advise against granting this permit. At the very least, we recommend that areas that are at high or moderate risk for flooding and/erosion be ineligible for manure application. The NDRAM flood risk map should be used to disqualify areas at 1% risk for flooding from manure application.

Department Response: All fields were reviewed, field 141, 142, and field 120 of the proposed NMP were found to be partially or fully located in the 100-year flood zone. As a precaution, these fields will be removed from the current NMP. The flood zone was determined by using the Department of Water Resources mapping services. The Department’s approval of the NMP will be updated to reflect the removal of these fields.

- N. **Comment:** The calculations for pond and stacking pad volumes are based on 2013 Richland County data; this information is out of date and geographically too restrictive.

Department Response: The estimation of site runoff, rainfall, and storm events at the proposed facility was based on the methods presented in *National Engineering Handbook Part 650 Chapter 2. Estimating Runoff and Peak Discharges*, which is a Natural Resources Conservation Service (NRCS) publication (July 9, 2024 Version). This was supplemented by NRCS document *ND 650.290 Purpose of North Dakota Supplement* (October 2017 Version). This document provided annual evaporation, annual precipitation, and 25-year, 24-hour storm event data for Richland County.

- O. **Comment:** We would like to see contingency plans for exceedances in manure storage, either because of large rain events, freezing or flooding. Spreading manure on frozen fields must be illegal and the rule must have significant consequences and enforcement.

Department Response: The *North Dakota Livestock Program Design Manual* - Section 7.6 states, “Manure shall not be applied to frozen, snow-covered or saturated soils if there is a

likelihood of runoff.” The facility will be limited to injection of the manure, which is not possible into frozen ground. Conservation measures, such as manure field injection and setbacks from drainage areas, are effective at reducing runoff and are included in the facility’s NMP.

Abercrombie Dairy’s manure application rate plan: Liquid manure will be land applied by injection. Manure will be land applied at a rate not to exceed high phosphorus levels so it will be utilized for crop production and so manure will not get into waters of the state. The NMP is required under NDAC § 33.1-16-03.1-08, Abercrombie Dairy’s NMP must be consistent with the *North Dakota Livestock Program Design Manual*. The facility must take steps to ensure manure storage will not overflow, even if that means moving livestock to other locations.

Please refer to response to comment 1(F) Inspection and 2(B) Design.

- P. **Comment:** See Exhibit A: Hydrogeology and Sources of Recharge to the Buffalo and Wahpeton Aquifers in the Southern Part of the Red River of the North Drainage Basin, West-Central Minnesota and Southeastern North Dakota
<https://pubs.usgs.gov/wri/1997/4084/report.pdf>
This study raises the question of not only water quality, but also water quantity being at risk.

Department Response: Water quantity is beyond the scope of the proposed permit and outside the Department’s authority. Please refer to response to comments 1(A) Groundwater, 1(H) Nutrient Management Plan, and 1(G) Water Quality.

- Q. **Comment:** The DEQ Groundwater protection program samples target superficial aquifers every 5 years, but the WBV system is not part of the monitoring program. Pollution of this aquifer will occur unmonitored, likely putting the drinking water of not only the 27 private and 2 municipal wells listed in the Fact Sheet as being within 2 miles of project but also the larger communities of Wahpeton and Breckinridge.

Department Response: There are several aquifers identified in Richland County. The aquifers that we monitor in the Agricultural Ambient program include Sheyenne Delta, Milnor Channel and Hankinson. These aquifers are considered high priority through the Geographic Targeting System based on the shallow aquifer characteristics and size, high water use and high agricultural activity on the surface. These aquifers were recently sampled this 2024 field season during our year 3 rotation. Other aquifers in the county include the Wahpeton Buried Valley, Colfax, Fairmount, and West Fargo. These aquifers are rated as moderate priority, primarily based on smaller aquifer size so less susceptible when considering surface activities, aquifer characteristics and moderate water usage. Please refer to response to comment 1(A) Ground Water.

- R. **Comment:** We recommend that this permit be denied because of the risk to both the water quality and quantity of existing users. At the very minimum, after obtaining baseline

monitoring at the project site and the 3 aquifers affected (WBV, WSS, and WSP), robust monitoring with openly available data needs to be done. Provisions of the Safe Drinking Water Act must be strictly applied to the 2 municipal wells with information easily accessible to users. There must be a plan if quality standards are exceeded. Monitoring at private wells needs to be done at no cost to the user or the taxpayer. There should be a mitigation plan for loss of use of the wells, both private and public, with the liability born by the polluter. See Exhibit B. Response to Riverview ND, LLP application for the Abercrombie Dairy. See Exhibit C (<https://wrl.mnpals.net/islandora/object/WRLrepository%3A2332>)

Department Response: The Division of Municipal Facilities which oversees the Safe Drinking Water Act follows all federal and state requirements for municipal drinking water sources. Monitoring private wells are beyond the scope of the proposed permit and outside the Department's authority. However, the Department does provide water well information for private wells which can be found on the Department's webpage: https://deq.nd.gov/WQ/1_Groundwater/3_WW.aspx. A mitigation plan is drafted and implemented on a case-by-case basis. Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(P) Water Quantity, and 2(A) Water Quality Enforcement. Monitoring well sampling information will be maintained and available for review by the Department.

- S. **Comment:** Lake Winnipeg is the ultimate receiving body of nutrient pollution from the Red River. It is the 10th largest lake in the world. Warmer weather and higher nutrient loads, much of it from hog CAFO's in the Red River Valley have increased the frequency and severity of blooms since the 1990's.
Algal Blooms on the Rise in Lake Winnipeg - Province taking Action
<https://discoverwestman.com/articles/algae-blooms-on-the-rise-in-lake-winnipeg---province-taking-action>

Department Response: This article talked only about Manitoba. However, with counties in North Dakota that border the Red River of the North there are two permitted CAFO swine facilities. These facilities follow their NMP and are inspected by the Department. Please refer to response to comment 1(H) Nutrient Management Plan.

- T. **Comment:** Natural estrogens are potent endocrine disruptors. One dairy cow produces 250 mg of estrogens, as much as hormones taken by 1,000 post-menopausal women. 90% of estrogen load in the environment is from CAFO manure and can be found both in water and soil.
Fate, transport, and biodegradation of natural estrogens in the environment and engineered systems <https://pubmed.ncbi.nlm.nih.gov/17144275/>

Department Response: The Department found an article from 2012 titled "*Water quality, sediment, and soil characteristics near Fargo-Moorhead urban areas as affected by*

major flooding of the Red River of the North” web link:
<https://pubmed.ncbi.nlm.nih.gov/22370418/>. The article states:

Research found 17beta-Estradiol was detected in 9 of 24 samples, with an average concentration of 0.61 ng/L... All trace elements detected in the overbank sediments were within ranges for noncontaminated sites. Although flooding has economic, social, and environmental impacts, based on the results of this study, it does not appear that flooding in the RR in F-M led to decreased quality of water, sediment, or soil compared with normal river flows or resident soil.

- U. **Comment:** In Exhibit B, Erickson lists contaminants found in CAFO Lagoons and Drinking Water Wells. The following section is a brief discussion of selected pollutants on this list as well as known pathogens for which CAFOs provide a friendly environment.
1. Nutrients
 2. Hormones
 3. ANTIBIOTICS-direct effects:
 4. ANTIBIOTICS + BACTERIA=antibiotic resistance
 5. OTHER PATHOGENS:

Department Response: The Division of Municipal Facilities implements the Safe Drinking Water Act by following federal and state requirements, including MCLs for drinking water sources. Please refer to response to comments 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Commenter 2- David J Erickson CPG PG;

Principal Hydrogeologist; Water & Environmental Technologies;

“Response to Riverview ND, LLP application for the Abercrombie Dairy.”

- A. **Comment:** Allowing the contamination of the drinking water supply aquifer under and downgradient of the proposed dairy, and permitting the contamination of area soil, ground water and surface water bodies with more than 100,000,000 gallons of manure, feces and wastewater every year.

Department Response: An overflow of the storage structure would be a serious violation that would require immediate remedial action and would result in enforcement action. The facility would be subject to the penalties allowed in law under NDCC § 61-28-08. The Department will perform an annual inspection of Abercrombie Dairy. The manure lagoons of the Abercrombie Dairy have manure storage for over 365 days of storage, which is greater than the minimum requirement of 270 days of storage according to the *North Dakota Livestock Program Design Manual* - Section 5.2. Required Manure Storage as required by NDAC § 33.1-16-03.1 A NMP and other control/operational measures are designed to not

“allow” contamination of water resources. Please refer to response to comments 1(A) Ground Water, 1(H) Nutrient Management Plan, and 1(F) Design.

- B. Comment:** CAFO Lagoons are allowed to seep and leak resulting in soil, ground water and surface water contamination.

Department Response: The facility will engineer components to prevent runoff or seepage from occurring beyond the specifications allowed by regulation. The Department will require monitoring wells to be installed to assist in proactive monitoring of the facility site.

The design plans, design calculations, and specifications prepared by a registered professional engineer conform to the guidelines set forth by the American Society for Testing and Materials (ASTM). ASTM standards are developed by committees of relevant industry professionals who meet regularly in an open and transparent process to deliver standards, test methods, specifications, guides, and practices. According to the *North Dakota Livestock Program Design Manual*, Section 5.3 Earthen Storage Ponds, as required by NDAC § 33.1-16-03.1-08, the ASTM is an accepted source of standards regarding earthen structures. Section 5.3.4 Constructed Clay Liners provides the details used in constructing a pond using clay. Required conditions for constructed clay liners use test method ASTM D-2487. Once the clay pond is constructed section 5.3.5 provides the requirements for testing the clay liner by ASTM methods.

Please refer to response to comments 1(A) Ground Water, 1(H) Inspection-Design, 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, and 2(K) Construction.

- C. Comment:** Composting and silage areas produce large quantities of leachate that result in ground water contamination and contaminated runoff.

Department Response: Stormwater has been designed to be contained in constructed ponds at multiple locations for the proposed facility. Stacking areas shall be constructed to prevent runoff or contact stormwater from entering surface waters or from leaching into ground water. Please refer to response to comments 1(A) Ground Water 1(F) Inspection, and 2(B) Design.

- D. Comment:** Application of manure is imprecise and poorly planned resulting in ground water and surface water impacts to nearby seeps, wetlands, springs and lakes.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- E. Comment:** Application fields are not monitored resulting in the accumulation of nutrients and leaching to ground water.

Department Response: Please refer to response to comment 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- F. Comment:** The 106,700,000 gallons of manure waste handled annually by the Dairy will result in spills on the facility and on nearby roads, will result in rancid manure odors over a large area, and will result in a large increase in the number of flies and insects in the area.

Department Response: NDAC § 33.1-15-16-02(2) makes it unlawful to “discharge into the ambient air any objectionable odorous air contaminant that causes odors that measure seven odor concentration units or higher” as measured at a prescribed location. However, “[a] person is exempt from this section while spreading or applying animal manure or other recycled agricultural material to land in accordance with a nutrient management plan approved by the department.” NDAC § 33.1-15-16-02(3). If odors in violation of the standards prescribed in this rule are found, an enforcement action can be taken to address those odors. The three wastewater ponds are designed to have a synthetic cover which reduces vector concerns. The facility’s operation and maintenance plan shall include an emergency action for spills, discharges or failure of a collection, storage, treatment, or transfer component and defined in NDAC § 33.1-16-03.1-03(21). The proposed facility has designed both manure ponds and the silage leachate pond to have synthetic covers.

- G. Comment:** While the facility always describes measures to “reduce” odor, the sheer volume of manure, the anaerobic manure sludge in the lagoon, the application of over 100,000,000 gallons of manure waste on nearby fields, and the sheer mass of flies and insects from the manure, impacts area residents’ lives in a very negative manner.

Department Response: The facility design places synthetic liners on all three wastewater ponds along with impervious pads for easy clean-up which will reduce vector issues. Please refer to response to comment 1(H) Nutrient Management Plan, 1(C) Antibiotics-Disease-Human Health, and 2(F) Odor Enforcement.

- H. Comment:** Since these facilities have no independent inspectors and only rely on self-reporting, many of the activities go unregulated and unreported.

Department Response: Please refer to response to comment 1(F) Inspection and 2(B) Design.

- I. Comment:** The EPA has been studying the Dairy contamination issues in Yakima, Washington for 12 years and has sampled and documented these contaminant transport pathways ([Lower Yakima Valley Groundwater | US EPA](#)). Currently the US Department of Justice is intervening because the Dairy Owners missed most of the Administrative Order deadlines and has not complied with many of the requirements; therefore, contamination

from the Dairies continue to impact ground water and nearby residents. Data on the website shows large areas of contaminated drinking water aquifer directly impacting area residents.

Department Response: The geology in the Lower Yakima Valley consists of Ellensburg Formation and Columbia River Basalt Group covered by surficial alluvial deposits.

The Ellensburg Formation undifferentiated consists of pebble conglomerate, sand, and mud flows. The upper part of the formation is basaltic and with coarse brown sand, and andesitic with beds of fine ash.

The Columbia River Basalt Group is the youngest, smallest and one of the best-preserved continental flood basalt provinces. Flood basalts are the result of a giant volcanic eruption or series of eruptions that covers large stretches of land with basalt lava. The area was covered with numerous lava flows. The lava flows originated to the southeast of the area and flowed northwest. The area is in an active tectonic uplifting as it is in an active area of tectonic plates and volcanic activity. The area had glacial catastrophic flooding activity which occur in the valley area. The catastrophic flooding left behind soils that consist of gravelly clay loam, fine sandy loams, gravelly silt loam, stratified fine sandy loam to silt loam, stratified loamy fine sand to silt loam, and gravelly very fine sandy loams.

The Lower Yakima geological area is permeable to water movement. The Red River Valley geology restricts water movement to groundwater due to the silts and clays greatly reducing permeability in the area.

Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- J. Comment:** Dairies have very specific contaminants with unique and problematic fate and transport characteristics. While most of the seepage occurs in the ammonium form (NH₄), through oxidation and microbes it quickly converts to nitrate (NO₃). These compounds have very different sorption characteristics. While ammonium absorbs strongly to soil, nitrate moves quickly in soil moisture and ground water with no adsorption. Simply, large ground water plumes above human health standard form quickly and migrate rapidly in the drinking water aquifer.

Department Response: Please refer to response to comments 1(A) Ground Water and 1(E) Nitrates.

- K. Comment:** The proposed lagoons at the Abercrombie Dairy are 24 feet deep and constructed according to the North Dakota Livestock Program Design Manual (NDLPDM) with an allowable seepage rate of 1/16 inch per day. 1/16 inch per day is equal to 22 inches per year or approximately equal to a permeability of 1.84 X 10⁻⁶ cm/sec. At 24 feet deep or 16 feet into the subsurface, the bottom of the lagoon is approximately 2 feet above the water table. Simply, the 22 inches of seepage per year will contaminate the water table in just over

one year from beginning of operation, that assumes the lagoon meets the verbal construction standard in the permit, with no oversight or regulatory inspections.

Department Response: The department requires the use of laboratory calculated permeability results when determining lagoon suitability. The average overall hydraulic conductivity across the site was 5.78E-08 cm/s. When using Darcy's Law to estimate seepage on a gallons per acre per year basis, the result was 2,462,841 gallons/acre/year over the three ponds. This seepage is predicted to be further reduced by at least half an order of magnitude by the effects of manure sealing (NRCS D210-VI-AWMFH, Amend. 31, August 2009, Appendix 10D). That calculates to about 778,907 gallons/acre/year. Calculations and equations used are shown below.

Table 1 Estimated Seepage Rates

Pond	Hydraulic Conductivity K (cm/sec)	Hydraulic Gradient (unitless)	Flow Rate (gal/ac/day)	Seepage Velocity (in/day)	Initial Seepage (gal/year)
1 (12.42 ac)	6.34E-08	11.5	8365.29	0.0248	37,949,464
2 (12.42 ac)	5.66E-08	11.5	7468.06	0.0221	33,865,130
3 (6.49 ac)	5.05E-08	8.5	2574.54	0.0146	5,370,872
31.34 ac Total				Total	77,185,466
Seepage after manure sealing: 24,408,187 gallons/year					

Eq. 1 Darcy's Law Q

Eq. 2 Seepage Equation

$$V = \frac{K(h+D)}{D} = K \cdot i$$

Where:

Q = Flow rate in Gallons/Acre/Day
 i = Hydraulic Gradient (h+D)/D
 A = Area in sq ft.

Where:

V = Seepage in (in/day) (note: state limit 1/16 in/day)
 K = Hydraulic Conductivity of liner material (cm/sec)
 D = Thickness of liner (ft)
 h = head or depth of liquid (ft)

Concerning the distance between the water table and the finished bottom of the pond, a geotechnical report containing details of soil borings was submitted in the application. This included the depth at which the water table was encountered. The average groundwater elevation under the ponds was 922.1 feet. The planned floor of the lagoons is at 927.5 feet in elevation with 5.4 feet of separation from groundwater. The seasonal water table has been recorded within two miles of the site to fluctuate up to 2.3 ft. This fluctuation allows a separation distance of 3.1 feet or greater from ground water. Section 5.3.1 of the *North Dakota Livestock Program Design Manual* requires a minimum of 2 feet separation between the finished bottom of the earthen storage pond and the seasonal high-water table, which is met by the submitted design.

The manure and wastewater storage ponds are required to have moisture and density testing done during construction to ensure the construction specifications are achieved. This

is shown in the *North Dakota Livestock Program Design Manual* under section 5.3.5 Testing of Constructed Clay Liners. Department Staff engineers will visit the site and inspect during construction.

Please refer to response to comment 1(A) Ground Water.

- L. Comment:** Even at the unrealistic seepage rates proposed in the permit (0.0015 to 0.002 inches per day), these two lagoons will leak 6,500,000 gallons per day per acre on average of high strength wastewater into the aquifer with an average wastewater depth of 10.5 feet (see table below for seepage rate of Abercrombie manure waste lagoons based on Darcy's Law).

Department Response: Please refer to response to comments 1(A) Ground Water and 2(K) Construction.

- M. Comment:** The wastewater is very high in nutrient and bacteria (see Table 2), but also contains antibiotics and hormones from treating the cows and pesticides and herbicides from the feed.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan, 1(C) Antibiotics-Disease-Human Health, and 2(B) Design. Information on pesticides and herbicides can be found by contacting the North Dakota Department of Agriculture as this is beyond the scope of the permit and outside the Department's authority.

- N. Comment:** Table 3 contains a list of various compounds detected in ground water near the dairies in Yakima Washington. These compounds were detected in the drinking water aquifer used by area residents.

Table 3. Contaminants Found in CAFO Lagoons and Drinking Water Wells, Yakima Washington

Nutrients & Minerals

Nitrate
Nitrite
Ammonia
TKN
Chloride

Antibiotics

Tylosin
Enthromycin
Lincomycin
Sulfamethazine
Tiamulin
Virginiamycin
Monensin
Chlortetracycline
Tetracycline

Hormones

Estradiol
Androsterone
Testosterone
7-a-estradiol
Androstadienedione
17- β -trenbolone
Epitestosterone

Pesticides & Herbicides

Atrazine
Alachlor
DEHP
DEET
Bentazon

Department Response: Currently, the Wahpeton Buried Aquifer is not continually monitored by the Ground Water Program with the Department. The Department does monitor surficial aquifers throughout the State that have an elevated risk of contamination. The 2021 report shows 129 total wells were sampled across 15 aquifers. Pesticides were detected in 8 of 129 wells sampled, with one well having two different pesticide analytes detected. All detected pesticide detections were below the Prevention Action Levels established for specific pesticides. Consequently, the regulatory portion of the Pesticide State Management Plan was not engaged. The nitrate Maximum Contaminant Level was not exceeded in any of the 129 wells sampled.

Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, and 2(I) Yakima Valley.

- O. Comment:** The permit does refer to Fall applications. Unfortunately, when there is no crop growth, there is also no plant uptake of nutrients. The application in the Fall is one of the leading causes of ground water contamination since the nutrients have all winter to migrate through the soil with no mechanism to remove the nutrient from the soil.

Department Response: By utilizing best management practices like set back distances and injection of liquid manure greatly reduce the risk of nutrient runoff. Winters can have a freeze-thaw cycle. The first depth can reach to over 5 feet in the Red River Valley. This freezing process will hold all nutrients from moving until a thaw cycle takes place. Please refer to response to comment 1(H) Nutrient Management Plan.

- P. Comment:** This permit has no provisions for any meaningful monitoring. Year after year of application at agronomic rates with no monitoring is proven to build up nutrients throughout the soil column resulting in tons of nitrate moving through the soil column down to ground water and long-term contamination of the drinking water resources.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- Q. Comment:** The knifing system proposed for manure injection also greatly inhibits the field ability to capture nutrients. By plowing and planting the field every year, the root system rarely gets more than 6 months to grow and only extends a few inches deep. Thus, any nutrients below 6 inches migrate to ground water with no crop uptake.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

- R. Comment:** Detailed cross sections from a dairy in Wisconsin are included in Attachment A. This dairy had a concrete lined lagoon, concrete lined feed storage area and the correct acreage for application. By adding nutrients at the calculated crop uptake every year, ground water contamination from the fields was evident in the monitoring wells. In addition, algal blooms in Pentenwell Lake coincide with the dairy operation. As is shown in the cross

sections, nitrate contamination seeps to ground water from application fields and from the lagoons, travels along the ground water flow path and enters the lake. This is a direct example of impacts from the dairy operation contaminating downgradient receptors such as residential wells and surface water.

Department Response: The Department agrees that water, nutrients, etc. can move freely vertically and horizontally in this region of Wisconsin as the subsurface is sand and gravel which is very permeable. However, the region in the Red River Valley for the proposed dairy is silt and clay which are not very permeable. Please refer to response to comment 1(A) Ground Water, 1(H) Nutrient Management Plan, and 1(F) Inspection and 2(B) Design.

- S. Comment:** This permit should require a detailed nutrient management plan with field instruments to monitor leaching of nutrients, detailed calculation of the preapplication nutrient concentrations and post crop sampling to track the performance of the plan. Applications at crop requirement concentrations year after year without sampling and accounting for the existing nutrients causes excess leaching of nutrients to ground water and widespread contamination of the drinking water supply aquifer. At this location, if the Wahpeton Buried Valley aquifer is contaminated, the neighbors have no other options for water supply.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(H) Nutrient Management Plan, 1(F) Inspection, 1(E) Nitrates, and 2(B) Design.

- T. Comment:** Based on studies of dairy operations across the country and direct experience investigating and characterizing the contamination from these operations, current construction standards and the regulations in the State of North Dakota are not strict enough to prevent the facility from contaminating ground water.

Department Response: Permits are approved based on regulations and standards at the time of the permitting process. Regulations can vary from state to state to address specific geology, climate, agricultural practices, etc. These regulations and standards go through an approval process that includes review during a public comment period. Please refer to response to comment 1(A) Ground Water, 1(B) Authority to Issue, 1(E) Nitrates, 1(F) Inspection, 2(B) Design, and 2(K) Construction.

- U. Comment:** Dairy contamination of surface water occurs in several manners:

1. Storm water runoff from the facility enters surface water,
2. Overspray or overapplication on the fields,
3. Stormwater runoff from precipitation events transports manure waste to surface water,
4. Seepage and infiltration of nutrients to ground water transported to surface water,
or
5. Seepage into field drains transmitted directly to surface water.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(H) Nutrient Management Plan, 1(E) Nitrates, 1(F) Inspection, 1(G) Water Quality, and 2(B) Design.

V. **Comment:** Several types of bacteria are also readily transported through runoff events including E-coli. These bacteria can cause acute effects in humans and other animals that are in contact with the surface water.

Department Response: Please refer to response to comment 1(C) Antibiotics-Disease-Human Health.

Commenter 3-Abercrombie Citizens for Responsible Growth

This grassroots organization is local to Richland County and released a form letter to be used by **concerned citizens stating the following comments.**

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

RECEIVED

SEP 16 2024

DIV OF WQ

To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

1. The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.
2. DEQ should confirm that the current set back laws state that all animal agriculture non hog facilities over 5000 animal units have a setback of one mile. However, in light of the Ag Task Force meetings, if the proposed setback laws are enacted the facility would need a minimum of 1 and ¼ mile of setback. Language changes in the North Dakota Century Code may also include language that states "setbacks distance may be reduced or extended based on results of odor footprint tool." The DEQ is required by law to enforce the law as it is written, but given the nature that they are the advisors recommending these changes to the law, they should permit and require standards that they themselves are proposing during this time of transition.
3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

All form letters received with additional comments are addressed separately.

- A. Comment:** The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built.

Department Response: Air Quality has rules for hydrogen sulfide, ammonia, and odor.

Hydrogen Sulfide

Hydrogen sulfide (H₂S) is not regulated as a Hazardous Air Pollutant under the federal Clean Air Act. Although there is no federal (Environmental Protection Agency) ambient air quality standard for H₂S or federal odor standard for H₂S, the North Dakota Air Pollution Control Rules have established more stringent requirements for H₂S as follows:

1. **Ambient Air Quality Standards for Hydrogen Sulfide (Health Standards)**
The H₂S ambient air quality standards are established under Chapter 33.1-15-02 of the North Dakota Air Pollution Control Rules and are maximum H₂S levels allowed in the ambient air. These levels are established to protect human health and the environment. The ambient air quality standards for H₂S are summarized in the following table:

Maximum Permissible Concentration of H₂S	Averaging Period
10.0 ppm* (10,000 ppb**)	Maximum instantaneous (ceiling) concentration not to be exceeded
0.20 ppm (200 ppb)	Maximum 1-hour average concentration not to be exceeded more than once per month
0.10 ppm (100 ppb)	Maximum 24-hour average concentration not to be exceeded more than once per year
0.02 ppm (20 ppb)	Maximum arithmetic mean concentration averaged over three consecutive months

* ppm = parts per million

** ppb = parts per billion

2. **Hydrogen Sulfide Odor Standard**
An odor standard of 0.05 ppm (50 ppb) for H₂S is established under Chapter 33.1-15-16 of the North Dakota Air Pollution Control Rules.

Ammonia

Ammonia is known to be emitted from CAFOs. Ammonia is not regulated as a Hazardous Air Pollutant under the federal Clean Air Act and there is no federal ambient air quality standard for ammonia; however, ammonia emissions are evaluated under the Policy for the Control of Hazardous Air Pollutant Emissions in North Dakota (Air Toxics Policy).

As indicated above, the federal Environmental Protection Agency (EPA) has not established allowable ambient levels for ammonia; however, acceptable exposure levels have been developed by state agencies as shown in the following table:

State Agency	Acceptable Exposure Level (ppb*)	Averaging Period
Minnesota Dept. of Health	4,590	Acute (1-hour)
	115	Chronic (annual)
California OEHHA**	4,590	Acute (1-hour)
	200	Chronic (annual)

* Both agencies listed in the table establish acceptable levels for ammonia in units of micrograms per cubic meter. The values have been converted to parts per billion (ppb).

** OEHHA = Office of Environmental Health Hazard Assessment.

The Minnesota Department of Health acute acceptable exposure level (referred to as a health risk value or HRV) is equivalent to the California OEHHA acute acceptable exposure level (referred to as a reference exposure level or REL). The Minnesota Department of Health chronic HRV is more stringent than the California OEHHA chronic REL. The Department will utilize the more stringent Minnesota values for purposes of determining compliance with the Air Toxics Policy.

Odor Standard

There is no standard for odor established at the federal level. Odors from the facility must meet the requirements of Chapter 33.1-15-16 of the North Dakota Air Pollution Control Rules. Chapter 33.1-15-16 establishes that the facility may not discharge into the ambient air any objectionable odorous air contaminant that causes odors that measure seven odor concentration units or higher as measured at specific locations. NDAC § 33.1- 15-16-01(2) defines an "odor concentration unit" as follows:

An "odor concentration unit" is defined as a volume of odor-free air mixed with an equal volume of odorous air such that the combination would be at the threshold level of the olfactory senses. The intensity of an odor is determined by the ratio of the volume of odor-free air that must be mixed with a standard volume of odorous air so that a department-certified inspector or at least fifty percent of an odor panel can still detect the odor in the diluted mixture.

Note that Chapter 33.1-15-16 does not require non-detectable or "zero" odors. Instead, the odor standard is a state-wide standard which provides a maximum concentration that cannot be exceeded; local zoning requirements may be established to ensure that the location of the facility is acceptable (i.e., "local control" is maintained

over such factors as the land use compatibility of the facility at a given location).

The Abercrombie Dairy facility is required to be setback from any existing residence, church, school, business, public building, park, or campground as requirement by the Abercrombie Township Zoning Regulation. These regulations can be found on the Department's webpage:

https://deq.nd.gov/WQ/2_NDPDES_Permits/1_AFO_CAF0/CountyZoning/Richland/AbercrombieTownshipZoningFeb2023.pdf

Under Chapter 33.1-15-16 of the North Dakota Air Pollution Control Rules, any odor reading to determine compliance with the odor standard must be taken at either: a) any point located beyond one-half mile from the facility; or b) within 100 feet of any existing residence, church, school, business, public building, park, or campground. Under NDAC § 33.1-15-16-02(3), the odor standard does not apply "while spreading or applying animal manure or other recycled agricultural material to land in accordance with a nutrient management plan approved by the state department of environmental quality".

Please refer to response to comment 1(A) Ground Water, 1(H) Nutrient Management Plan, and 2(F) Air Quality Enforcement.

- B. Comment:** DEQ should confirm that the current set back laws state that all animal agriculture non hog facilities over 5000 units have a setback of one mile. However, in light of the Ag Task Force meetings, if the proposed setback laws are enacted the facility would need a minimum of 1 and ¼ mile of setback.

Department Response: The setback for this proposed facility is regulated by the Abercrombie Township. The Department is aware of the Task Force; however, the Department implements setback laws in accordance with NDCC § 23.1-06-15 unless local zoning has submitted their own ordinance prior to the proposed project and posted to the Department's webpage. Any change to the current setback regulations will need to go through the legislative process, this includes any findings from the Task Force.

- C. Comment:** This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

Department Response: Thank you for your comment. This is beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates.

Commenter 4-North Dakota Soybean Growers Association

September 20, 2024

ND Department of Environmental Quality
Division of Water Quality
4201 Normandy St, 3rd Floor
Bismarck, ND 58503-1324

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SEP 24 2024

DIV OF WQ

RE: Comments in support of the Abercrombie Dairy

The North Dakota Soybean Growers Association (NDSGA) appreciates the opportunity to provide support for projects like the Abercrombie Dairy.

NDSGA represents North Dakota soybean farmers on domestic and international policy issues important to the soybean industry. U.S. soybean growers have long been committed to producing the world's food, feed, fuel, and thousands of bioproducts in a sustainable and climate-smart way.

The NDSGA is a long-time supporter of animal agriculture projects done well. It appears that the proposed dairy is similar to other dairies operated nearby in Minnesota. Those dairies have a great track record with no citations by regulatory agencies in Minnesota. With a clean track record of more than 30 years in the business, it appears that Riverview has demonstrated that they do animal agriculture well.

Adding more dairy cows in the state will dramatically increase North Dakota's ability to attract new milk processing capacity into our rapidly shrinking infrastructure. This will, in turn, support existing state dairy farm families and their future generations.

We are confident that the local crops and the products produced during local value-added processing will provide sufficient quantities of high-quality feed stuffs for the dairy operation.

The nutrients contained in the manure are valuable fertilizer for crops and the organic matter is crucial for improving soil health. Local farmers will benefit from this valuable manure.

We appreciate your consideration of our comments. Thank you for your time.

Sincerely,



Justin Sherlock
President, NDSGA

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 5-Caitlin Johns

A concerned citizen of Richland County wrote in with the following,

- A. Comment:** The citizens of Abercrombie have not been given sufficient time or information from Riverview Farms to evaluate the effects of this project on our community.

Department Response: Please refer to introduction statement.

- B. Comment:** The Riverview Dairy project in Abercrombie was approved by the township with minimal input from the public.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority. However, more information can be found on the Abercrombie Township Zoning Regulations as they are posted on the Department's webpage:

https://deq.nd.gov/WQ/2_NDPDES_Permits/1_AFO_CAFO/CountyZoning/Richland/AbercrombieTownshipZoningFeb2023.pdf

Please refer to response to comment 4(B) Zoning.

- C. Comment:** The project will affect the water resources of surrounding residents.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(G) Water Quality, 1(H) Nutrient Management Plan, and 1(P) Water Quantity.

- D. Comment:** Extend the public comment period of the DEQ permit NDAFO0906 Abercrombie Dairy for 30 days to October 19, 2024, and upon completion of the comment period a public hearing be held at a location and time accessible to people most affected by the project.

Department Response: The public comment period was extended from 30 days to 47 days. Please refer to introduction of this document.

Caitlin Johns comments based on list of articles. October 4, 2024, email.

Additional comments from Caitlin John's letters.

- E. Comment:** My family and I live within the mile from the proposed site. We also have some concerns that our house may be within the 1-mile setback distance, to our knowledge no surveying has been done and we would request that the DEQ confirm that the site was accurately surveyed.

Department Response: Please refer to introduction. Zoning for the proposed facility is regulated by the Abercrombie Township and thus their responsibility to gather information to ensure setback distances are accurate. The Department has reviewed submitted information on the location of the proposed facility and applied the 1-mile setback distance from your residence. The Department found that your residence and outbuildings are greater than one mile from any odor producing structure at the proposed facility. More information on setbacks

can be found at NDCC § 23.1-06-15, NDAC ch. 33.1-15-16, and the North Dakota Livestock Program Design Manual, as required by NDAC ch. 33.1-16-03.1.

- F. Comment:** We're concerned that this dairy would dry up the whole county that gets water from the Wahpeton Buried Valley Aquifer.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- G. Comment:** Location is another key issue the dairy is located between the fork of two rivers, Red River and the Wild Rice and application of manure will be near Antelope Creek. The northern flow will mean that any runoff from application of manure will directly affect the citizens of Fargo Moorhead as well as any community further north with non-point pollution.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan, 1(E) Nitrates, 1(G) Water Quality, and 1(M) Flood Zone.

- H. Comment:** There are 27 active wells within 2 miles of the proposed site and most of us already had to have new ones dug when Cargill and Minn Dak came in. Minn Dak already has had contamination from leaks in their lagoons. Concerns with contaminants entering wells.

Department Response: Please refer to response to comment 1(A) Ground Water.

- I. Comment:** After reviewing your maps of proposed application sites there is a field near the proposed dairy along with a drainage ditch that runs to the west into the Wild Rice followed by another drainage ditch that runs to the east and then into the Red River. Will there be required testing sites by those waterways or any of our wells daily to make sure we are not drinking, swimming or fishing in these waters?

Department Response: Please refer to response to comments 1(A) Ground Water and 1(G) Water Quality. Testing private wells is beyond the scope of the proposed permit.

- J. Comment:** During the fall or winter when farmers can't get into the fields it shows they can do an emergency lay on fields. Manure is just laid on top of ground which means that come spring it will become an ecological disaster of contamination, along with the smell of it thawing.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, and 3(A) Air Quality.

- K. Comment:** Odor is another concern of being awful to the point of many getting sick. This was reported by a local in Campbell MN that kids at the school get sick from odors and

particulates in the air from the dairy farm there. There are 3 fields in the NMP that are right by the west, southwest, and south side of Abercrombie's elementary school. Who's responsible for the kid's health on days they are injecting manure? Will the DEQ take responsibility for this or the school?

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan and 3(A) Air Quality.

L. Comment: Liquid manure entering drain tile and contaminating ground and surface water.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

M. Comment: Incorrect average weight of the dairy cows. Their average weight is 1,400 pounds and they generate 14 gallons of feces and urine each day.

Department Response: The average weight for dairy cows comes from the permit application. Producers are in control of herd production and use strict diets to meet their business model. A facility is then designed to meet that business model. Please refer to response to comment 1(F) Inspection, and 2(B) Design.

N. Comment: Concern with high hydrogen sulfide levels coming from the dairy.

Department Response: Please refer to response to comment 3(A) Air Quality.

O. Comment: Foreign employees being treated unfairly.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority. More information can be found by contacting the U.S. Department of Labor.

P. Comment: Smaller farms are better for the environment than factory style farms.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Q. Comment: Natural disaster issues with dairy farms.

Department Response: Thank you for your comment. Please refer to response to comment 1(H) Nutrient Management Plan, 1(M) Flood Zone, and 2(A) Water Quality Enforcement.

R. Comment: Big dairies harm small family farms.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

S. Comment: Concerns with water usage.

Department Response: Thank you for your comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 6-Jessica Gallaher

A. **Comment:** It seems like a sneak behind the people's back type of enterprise, and I think the public needs to be informed and made part of decisions that are going on related to said dairy farm.

Department Response: Please refer to response to comments 4(B) Zoning and 7(E) Open House.

B. **Comment:** This is not good for the surrounding farming operations for the land and the people. We are an agricultural/farming community that use the land for crops, hunting, low crime, making jobs for our citizens (not foreigners as the dairy plant will be utilizing) and for the rural home life country feel. We enjoy the peace, night skies and low crime rate.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

C. **Comment:** This will greatly impact all of those along with water safety and quality.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

D. **Comment:** Please help us get a public hearing as it should be the citizens that have a say in these matters.

Department Response: Please refer to response to comment 7(E) Open House and introduction of this document.

Commenter 7-Lukas Kinneberg

A. **Comment:** I am sending this email as a resident of Abercrombie; I have many concerns regarding the proposed dairy project for the Abercrombie Township. Many of these concerns surround the impact on our water supply for the surrounding farmsteads and communities.

Of greatest concern to me is the potential contamination of Abercrombie's water supply (both the aquifers and the two rivers that run around the township).

Department Response: Please refer to response 1(A) Ground Water, 1(P) Water Quantity, and 1(Q) Aquifer.

- B. **Comment:** There have been numerous studies that have been done with results both in the United States and worldwide of the impact commercial feeding operations have on local waterways, and it isn't pleasant.

Department Response: Please refer to response to 1(A) Ground Water, 1(E) Nitrates, 1(G) Water Quality, and 1(H) Nutrient Management Plan.

- C. **Comment:** It's sad to see Riverview taking the approach of minimal communication with the community to get "their project" to go through. Much of the public has been left in the dark, and many have just found out about the project when the proposal was submitted in August.

Department Response: Please refer to response to comments 4(B) Zoning, 7(E) Open House, and introduction to this document.

- D. **Comment:** I do not believe the township has the resources to support a project of this nature and the risks that are associated with it regarding maintaining a safe water quality.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- E. **Comment:** Because of the lack of responsibility Riverview has taken in informing the public, I urge an extension of the comment periods so others in the Abercrombie township can be made aware of the project and its impact on them. Additionally, upon review I urge a public hearing in Abercrombie be held to address the concerns the township has. Water is the source of life for all of our towns and cities in North Dakota, and I feel it would be a disservice for any residents of North Dakota (and Abercrombie Township) to not have a formal townhall to address these concerns.

Department Response: On September 11, 2024, Riverview Dairy held an Open House on the project. Representative(s) from ND Department of Water Resources, ND Department of Environmental Quality, and the ND Department of Agriculture were present. The Departments were invited to help answer questions from the public. The sign-up sheet indicates that at least 50 people participated in the Open House. The Department was able to answer questions from the public. Specifically, the Department was able to visit with Caitlin Johns and others who live within a 2-mile radius of the proposed site. An extensive conversation was held on whether a hearing or information meeting is what was being requested. Based on feedback heard during the meeting, the takeaway message was to

have an information meeting and not a hearing. An email was sent to Caitlin Johns on September 12, 2024, to document the Public Notice extension and state that the Department would not hold a hearing.

Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, 4(B) Zoning, and introduction.

Commenter 8-Wes Heyen

- A. **Comment:** I would like to voice my concerns about the 12,500 head dairy barn that is proposed to be built in Abercrombie township, Richland County, ND. My concerns, living within 2 miles of the proposed site, are on safety, quality, and sustainability of the drinking water in our own personal wells and also the water quality of the nearby Red River and Wild Rice River.

Department Response: Please refer to response to comments, 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

- B. **Comment:** Location for this dairy in my opinion is a poor choice, due to the close proximity of 2 major water ways (Red River and Wild Rice River) 20+ personal wells within 2 miles, city of Abercrombie 4 miles away, along with 2 major businesses and the city of Wahpeton within 5 - 8 miles away from the proposed site of the dairy barn.

1. Are the aquifers sustainable to handle the use of 350,000-500,000 gallons of water daily?
 - What will this do to our personal wells and who will be responsible if the surrounding well levels are affected by this much water draw.

Department Response: Please refer to response to comments 1(P) Water Quantity and 4(B) Zoning.

C. **Comment:**

2. Water Quality and monitoring
 - Will there be monitoring wells to test for nitrates, *E. coli* and other contaminants due to concentration of manure in such a small area?
 - In Wisconsin, a dairy similar to the proposed dairy in Abercrombie township, had the same type of clay-based manure ponds. Their manure ponds leaked and contaminated the waterways and wells within 15 miles of the site.
3. Effects on river water quality due to manure ponds possibly leaking, or natural run off being located so closely to and between 2 rivers (Wild Rice 1.4 miles Red River 1.5 Miles)
 - Fields are ditched and/or drain tiled, to quickly drain water off the fields.

- All water ways 10 miles east or west of the Red River or Wild Rice River, drain into these 2 rivers. This drainage area will encapsulate the dairy farm and include all the fields that will have manure spread on them.
- The natural water table in this entire area is high, making it easier for any contaminants to enter into the water supplies.
- Are there setbacks from ditches, major drains, creeks, and the rivers where the manure would not be allowed to be injected?
- In wet falls or early freezes, where weather conditions do not allow for the injection of manure, what will be the allowable way to dispose of the manure in the ponds?
- Will they be allowed to spread the liquid manure on top of the frozen soil? This could possibly be an ecological disaster if it is allowed, any thaw in the winter or spring, run off from these fields will be directly into the ditches, creeks and will be concentrated in the Red River and Wild Rice River.
- What are the concerns and are there any safety protocols put in place to protect the water quality for any downstream cities such as Fargo who use the water from the Red as their drinking water supply.
- Any leaks or any forms of contamination from this large dairy will end up in the Wild Rice River and Red River. Wild Rice merges into the Red River just south of Fargo.

Department Response: Please refer to response to comments, 1(A) Ground Water, Geology, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 1(Q) Aquifer, and 2(B) Design.

Commenter 9-Cynthia Olson

- A. **Comment:** I have looked through the permit but can't see where the water sources for the proposed dairy will be. Do you know or can you tell me where I can find that information? Thank you for your time.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- B. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- C. **Comment:** The cost of running rural water to the farm is staggering. We ask that if wells in the area are impacted by low water levels or contamination, that Riverview be responsible for

the costs of new wells or installation of rural water to those affected farms. Can we request a public hearing to address questions regarding monitoring of runoff water, +wells.

Department Response: The cost of new well installation is beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comments on 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

Commenter 10-R. Sweeney

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** There is no way that the # of cows can sustain 350,000 to 500,000 gallons of water per day. The potential runoff would be hazardous to the local community.

Department Response: Please refer to response to comments 1(C) Antibiotics-Disease-Human Health, 1(F) Inspection, 1(P) Water Quantity, and 2(B) Design.

Commenter 11-Nicole Bohn Hagen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** 1. Exactly how much traffic will be in the area?

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

- C. **Comment:** 2. What is the emergency plan for any flooding?

Department Response: Please refer to response to comments 1(F) Inspection, 1(M) Flood Zone, 2(B) Design, and 2(K) Construction.

- D. **Comment:** 3. Diverse ecosystems by the creek in my land, will this kill off butterflies, bees, hummingbirds?

Department Response: By following the applicable rules and regulations the Department is ensuring the facility is protecting the environment including the diverse ecosystem. No comments were received from the Department of Parks and Recreation or ND Game and Fish relating to species of conservation priority.

Commenter 12-Derrick Harr

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I have some major concerns about being so close to the dairy farm. I am about a mile and half from the site. My well is my only supply for our family and farm animals. Who will be responsible for any issues down the road for future issues?

Department Response: NDAC 33.1-16-02.1-11(4) provides requirements for any spill or discharge of waste which causes or is likely to cause pollution of waters of the state. One part is the requirement to provide alternate water sources to water users impacted by the spill or accidental discharge. Please refer to response to comment 1(F) Inspection, 1(P) Water Quantity, 2(A) Water Quality Enforcement, 2(B) Design, and 2(F) Air Quality Enforcement.

Commenter 13-Mike & Cindy Zick

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** We live 1 mile NE along the Red River. We are very concerned about contamination of our water and land. This location is too close to major rivers, Red River supplies water to Fargo and Moorhead.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 1(Q) Aquifer, 2(B) Design, and 4(B) Zoning.

- C. **Comment:** Also, after rain events i.e. this summer of 2 ½ + inches at once. Also, runoff from snowmelt in the spring not to mention flooding from the 2 rivers. Once they contaminate our soil/water, what next? No way can they cleanup such a mess.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, 2(B) Design, and 2(K) Construction.

- D. **Comment:** Is having more dairy cows in ND such a priority that you risk livelihoods of so many people/communities? Solution: Move facility away from rivers & drainage ditches to the rivers; away from rural farmsteads & communities. There are a lot of more suitable locations for this massive operation. Would you like to live a mile from such an operation risking your water, soil, and air quality? I'm betting your answer would be no.

Department Response: Thank you for the comment. Land use is addressed at the local government level. Please refer to response to comments 4(B) Zoning.

- E. The word- "should" is used a lot in the permit when describing odor, & contamination. That doesn't mean much to us.

Department Response: The proposed draft permit contains one "should" when referring to maintaining a rain gauge, while "shall" was used 21 times in permit conditions. Please refer to response to comments 1(B) Authority to Issue, 2(A) Water Quality Enforcement, and 2(F) Air Quality Enforcement.

Commenter 14-Ronald & Barbara Strand

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Our biggest concern is the quality and quantity of the water supply in southern Richland County.

Department Response: Please refer to response to comments for 1(A) Ground Water, 1(E) Nitrates, 1(P) Water Quantity, and 1(Q) Aquifer.

- C. **Comment:** Pollutants of concern include Nitrates, Pathogens (E. Coli and antibiotic resistant bacteria), PFAS, antibiotics, heavy metals, salts, pesticides.

Department Response: Please refer to response to comments 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, 1(N) Various Compounds. To learn more on what the Department is doing to monitor PFAS, please visit our webpage: <https://deq.nd.gov/MF/PFAS/>

- D. **Comment:** Also concern of increase air pollutants and increase travel on roads that Riverview has no skin in the game-but taxpayers of Richland County do.

Department Response: Traffic is beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comment 3(A) Air Quality.

- E. **Comment:** Since the area already supplies water to Cargill, there is a drain on the aquifers supplying water to Southern Richland County. Riverview will need around 400,000 gallons of water daily, quite a strain on our local water supplies.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- F. **Comment:** One of my (our) biggest concerns- this is a Minnesota company-supplying milk to a Minnesota company-why not use Minnesota land for this dairy operation- duh the requirements are much stricter in MN-taxes are higher-inputs are higher- sorry folks- ND is being used! We don't benefit from this operation as it is not taxed as a business-but as a corn field leaving the cost of roads, etc. to the local taxpayer! Wake up people- Abercrombie doesn't want this. It will potentially put a strain on our school system- housing and local sheriff department.

Department Response: Out of state entities, taxes, school systems, housing, and the sheriff department is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 15-Hayden Hemmah

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Further concerns of this massive dairy farm trying to come in for me is: Well contamination, flies, smell. Manure runoff with two rivers being so close.

Department Response: Please refer to response to comments for 1(A) Ground Water, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

Commenter 16-Quentin Hemmah

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** What happens when there is winter storm, and the trucks can't come and get the milk? Where is that going to be dumped?

Department Response: The facility's current plan is to discharge milk into the manure storage ponds. Please refer to response to comment 1(H) Nutrient Management Plan.

- C. **Comment:** The water!!!! Where are they going to get this from?

Department Response: Please refer to response to comment 1(P) Water Quantity.

Commenter 17-Dallas Hemmah

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Further concerns. -Air quality, health issues, breathing problems.

Department Response: Please refer to response to comments 1(C) Antibiotics-Disease-Human Health and 3(A) Air Quality.

- C. **Comment:** -Traffic + damage to roads. Who pay for repairs?!

Department Response: Roads are beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comment 4(B) Zoning

- D. **Comment:** -Well contamination.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(Q) Aquifer, and 2(A) Water Quality Enforcement.

- E. **Comment:** -Pushing out the few remaining small dairy farms.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 18-Jessie Larson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Further concerns: The taxes for repairs of roads with that much traffic going right by our family farm a mile and a half away.

Department Response: Taxes and roads are beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comment 4(B) Zoning

- C. **Comment:** The contamination of our wells.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(Q) Aquifer, and 2(A) Water Quality Enforcement.

- D. **Comment:** Health concerns for the families that live in close proximity.

Department Response: Please refer to response to comment 1(C) Antibiotics-Disease-Human Health.

Commenter 19-Craig & Ila Myhre

- A. **Comment:** Two concerned citizens wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** From what we have heard at meetings there is no good outcome for the citizens, community, county, township, environment, odor control, water contamination and destruction to roads in Abercrombie (Richland County).

Department Response: Social and community issues, and roads are beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comments 1(A) Ground Water, 1(D) Harmful Algal Bloom's, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(Q) Aquifer, 2(B) Design, and 3(A) Air Quality.

- C. **Comment:** The proposed Abercrombie Dairy will not take any responsibility for their actions or restitution for what could be destroyed.

Department Response: Please refer to response to comments 2(A) Water Quality Enforcement and 2(F) Air Quality Enforcement.

- D. **Comment:** Detrimental to all of us. Plus the fact of bringing in migrant workers for this facility. What type of crime will be brought to this area. Schools are expected to teach these children English. The schools have enough on their plates with daily curriculum for our own kids, let alone trying to teach them English + dealing with any behavioral issues these kids may have. ONLY THE DAIRY BENEFITS!! We think this is a detriment to our area and they are a SELF Indulgent Business!!! We VOTE A DEFINITE NO FOR ABERCROMBIE DAIRY TO COME HERE!!!

Department Response: Taxes, crime, work force, and education are beyond the scope of the proposed permit and outside the Department's authority.

Commenter 20-Richard Hemmah

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Further concerns: Hiring out of country workers

Department Response: Facility employment is beyond the scope of the proposed permit and outside the Department's authority.

- C. **Comment:** Manure, toxins, nitrates seeping into our ground waters.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, 1(Q) Aquifer, and 2(K) Construction.

Commenter 21-Merrill & Stephanie Miranowski

- A. **Comment:** Two concerned citizens wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** As a concerned Citizen I am writing to you about the proposed Dairy in Richland County. I have seen many changes in the water supply here on my Farm. When the Pro Gold plant come in, we lost all of our Free Flowing wells. My neighbors and I had to drill new wells. We were told at that time that we may not get a well. We were forced to drill very deep to get water. Our well now is at 333 ft. I then met with Dan Zwelling from the MN DNR. They

had put a monitoring well on our place and are keeping close records of the quality and quantity of this area.

Department Response: Please refer to response to comments 1(A) Ground Water and 1(P) Water Quantity.

- C. **Comment:** We now Know that there was contamination that has happened From the MinnDak plant in Wahpeton. We do not want those fear to return with a Large Dairy Operation as this one is. We were never compensated for the loss of our Last well. I am sure there would be none if we lost this well.

Department Response: Please refer to response to comment 1(A) Ground Water and 1(P) Water Quantity.

- D. **Comment:** This aquifer I am on is a smaller one that is fed by the Buried Valley Aquifer. Please consider all the people that will lose their homes due to the decisions you will make.

Department Response: Please refer to response to comment 1(P) Water Quantity.

Commenter 22-Colleen Paczkowski

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am a resident of Abercrombie. Water availability and quality are a serious concern if the Aber. Dairy goes through. Air Quality is also a concern.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(P) Water Quantity, 1(Q) Aquifer, 2(B) Design, and 3(A) Air Quality.

Commenter 23-Austin Hermunslie

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I believe that the environmental impact of this project will adversely affect the entire river basin flowing North on the Red River. Fargo, Grand Forks not to mention Winnipeg will be affected.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(D) Harmful Algal Blooms, 1(E) Nitrates, 1(H) Nutrient Management Plan, 2(B) Design, and 3(A) Air Quality.

- C. **Comment:** Nitrate levels are a serious concern for health and safety.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(Q) Aquifers.

Commenter 24-Craig Syvertsen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Water Resource is my biggest concern.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- C. **Comment:** They also included the following document.

This is the first part of Dani Replogle's (Food and Water Watch lawyer) list of things to comment on.

This, of course, does not include all the other issues such as:

- air pollution
- property values
- road use
- effect on utility prices electricity and availability (water)
- work force issues
- community cohesion
- diversion of profits to out of state corporations
- loss of remaining independent ND producers
- hormones

".....you should append any studies/documents you rely heavily on to your comments to ensure they're in the record"

- CAFOs contribute substantial amounts of hazardous pollutants to surface and groundwater (can pull from existing comments)
 - Pollutants of concern and their impacts on human and ecological health
 - Nutrients (N + P)
 - Algae blooms (including HABs that are toxic to humans, pets and wildlife)
 - Low dissolved oxygen (fish kills)
 - Nitrate
 - Blue baby syndrome
 - Cancer
 - Birth defects
 - Pathogens (including *E.coli* and antibiotic resistant bacteria)
 - Gastrointestinal illness
 - Fish kills and harm to other wildlife
 - PFAS
 - Carcinogenic
 - Antibiotics
 - Birth defects in wildlife
 - Heavy metals
 - Salts
 - Pesticides
 - Sediments
 - Discharge pathways
 - Land application areas
 - Seepage to groundwater from over application, ill-timed application
 - No information about hydrologic connectivity between groundwater and nearby surface water (particularly Red River)
 - Pollutants that enter groundwater can travel miles from the CAFO
 - Runoff to surface water
 - Discharge to surface-water via tile drain, agricultural ditch, or other conduits
- Production areas
 - Waste storage containment structures like ponds and compost areas seep, leak, breach, and overflow
 - Stormwater runoff

Department Response: Please refer to response to comments for this entire document.

Commenter 25-Karen Ellingson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Much has been made of the Diversions 100-year flood protection project in the Red River Valley. However, what will protect the Red River from the (manure) pollution runoff with the very minimal 2.5" freeboard on the clay dikes (in lieu) of the torrential rainfalls we have been experiencing due to climate change – i.e. Bismarck on 8/14 3-4" in less than an hour; Munich on 9/? With 5-8" in a 3 hr span. 2.5" in not going to be adequate to prevent overflow of the pits.

Department Response: The proposed facility was designed to hold 445 days of manure and runoff generation as well as a 25-year, 24-hour storm event which has a value of 4.44 inches according NRCS. The minimum requirement according to the *North Dakota Livestock Program Design Manual Section 5.2* for manure, runoff generation, and a 25-year, 24-hour storm event is 270 days. All storage structures shall be managed to handle all waste generation without discharging to the environment. The fact sheet shows that 3 feet of free board is available for the manure storage structures while 5 feet of free board is available for the wastewater storage pond. The estimation of site runoff, rainfall, and storm events at the proposed facility was based on the methods presented in *National Engineering Handbook Part 650 Chapter 2. Estimating Runoff and Peak Discharges*, which is a Natural Resources Conservation Service (NRCS) publication (July 9, 2024 Version). This was supplemented by NRCS document *ND 650.290 Purpose of North Dakota Supplement* (October 2017 Version). This document provided annual evaporation, annual precipitation, and 25-year, 24-hour storm event data for Richland County.

Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 2(K) Construction.

Commenter 26-Daryl Ellingson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** If you want to understand the magnitude of the dangers of CAFOs simply google articles on the state of Iowa issues from the CAFOs. Iowa has seen an astonishing increase in cancer numbers. It has the second highest cancer rate in the nation and is the ONLY state where cancer rates are increasing. This is due to the nitrates in the water. How can this be avoided & addressed in North Dakota?

Department Response: Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Commenter 27-Jacalyn Migler

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** We reside a short distance from the proposed dairy farm. We have great concerns about this corporate dairy farm coming to our area. We know that this amount of water usage could affect our well.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- C. **Comment:** We also have concerns about air quality and contamination of the land and rivers close to the proposed facility. There are many questions and concerns that have not been adequately addressed.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, 3(A) Air Quality.

Commenter 28-Douglas Haarstad

- A. **Comment:** As a citizen of Abercrombie, ND for over 65 years I am very concerned about the water consumption, and waste disposal methods of the Abercrombie Dairy. Please review all available data.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan and 1(P) Water Quantity.

Commenter 29-Kathy Mita

- A. **Comment:** I just moved to Abercrombie and have 10 months on my lease left. I find out that this dairy farm is going to monopolize the area. Spreading manure each day on these fields

and land next to the school!!! I understand it has to be 50 degrees. Over 365 days how many days are 50 degrees. So where does this manure sit while they wait for the weather to cooperate. How many truck loads a day is that. I understand the soil had to be tested. Who is doing that. Don't let the fox tend to that.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

- B. **Comment:** Then the truck traffic I understand is 88 loads of milk a day is shipped. There goes more wear and tear on the roads. I understand the company doesn't have to pay for the roads either because taxpayers will pay for them.

Department Response: According to Riverview Dairy, the proposed location would have an average of 11 truckloads transported per day. Road maintenance is beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comment 4(B) Zoning.

- C. **Comment:** I understand there isn't enough water to supply their needs. Where is the water coming from? We already have MinnDak and Cargill pulling excess water now! What will dry well produce?

Department Response: Please refer to response to comment 1(P) Water Quantity.

- D. **Comment:** Lifelong residents won't want their life ruined by this dairy farm.

Department Response: Quality of life is beyond the scope of the proposed permit and outside the Department's authority.

- E. **Comment:** I understand they have the option to increase their cattle size. How can they?

Department Response: The current application has a maximum of 12,500 head of dairy cattle. A new application and permit procedure in accordance with NDAC ch. 33.1-16-03.1 would need to take place to increase numbers. Also, please refer to response to comment 4(B) Zoning.

- F. **Comment:** Where is the next level of water coming from.

Department Response: Thank you for the comment. Please refer to response to comment 1(P) Water Quantity.

Commenter 30-Lori Jacobson

- A. **Comment:** I would like to voice my concerns about the 12,500 head dairy barn that is proposed to be built in Abercrombie township, Richland County, ND. My concerns, living within 2 miles of the proposed site, are on safety, quality, and sustainability of the drinking water in our own personal wells and also the water quality of the nearby Red River and Wild Rice River.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(D) Harmful Algal Bloom's, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 1(Q) Aquifer, 2(B) Design.

- B. **Comment:** Location for this dairy in my opinion is a poor choice, due to the close proximity of 2 major water ways (Red River and Wild Rice River) 20+ personal wells within 2 miles, city of Abercrombie 4 miles away, along with 2 major businesses and the city of Wahpeton within 5 - 8 miles away from the proposed site of the dairy barn.

Department Response: Please refer to response to comment 4(B) Zoning.

C. **Comment:**

1. Are the aquifers sustainable to handle the use of 350,000-500,000 gallons of water daily?
 - What will this do to our personal wells and who will be responsible if the surrounding well levels are affected by this much water draw.

Department Response: Thank you for the comment. Please refer to response to comment 1(P) Water Quantity.

D. **Comment:**

2. Water Quality and monitoring
 - Will there be monitoring wells to test for nitrates, E.coli and other contaminants due to concentration of manure in such a small area?
 - In Wisconsin, a dairy similar to the proposed dairy in Abercrombie township, had the same type of clay-based manure ponds. Their manure ponds leaked and contaminated the waterways and wells within 15 miles of the site.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, 1(F) Inspection, 1(N) Various Compounds, 2(B) Design, and 2(K) Construction.

3. Effects on river water quality due to manure ponds possibly leaking, or natural run off being located so closely to and between 2 rivers (Wild Rice 1.4 miles Red River 1.5 Miles)
 - Fields are ditched and/or drain tiled, to quickly drain water off the fields.

- All water ways 10 miles east or west of the Red River or Wild Rice River, drain into these 2 rivers. This drainage area will encapsulate the dairy farm and include all the fields that will have manure spread on them.
- The natural water table in this entire area is high, making it easier for any contaminants to enter into the water supplies.
- Are there setbacks from ditches, major drains, creeks, and the rivers where the manure would not be allowed to be injected?
- In wet falls or early freezes, where weather conditions do not allow for the injection of manure, what will be the allowable way to dispose of the manure in the ponds?
- Will they be allowed to spread the liquid manure on top of the frozen soil? This could possibly be an ecological disaster if it is allowed, any thaw in the winter or spring, run off from these fields will be directly into the ditches, creeks and will be concentrated in the Red River and Wild Rice River.
- What are the concerns and are there any safety protocols put in place to protect the water quality for any downstream cities such as Fargo who use the water from the Red as their drinking water supply.
- Any leaks or any forms of contamination from this large dairy will end up in the Wild Rice River and Red River. Wild Rice merges into the Red River just south of Fargo
- Proposed map of where manure is contracted to be spread/knifed in fields, both side of Antelope Creek for 4.5 miles, drains directly into the Wild Rice River.
- Manure spread for 14.5 miles along the Wild Rice River, 1 mile along the Red River. All the area discussed are highlighted in red on map below. 8 miles or more of the wild rice will have manure spread in fields, on both sides, next to the river.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, 2(B) Design, and 2(K) Construction.

Commenter 31-Janie Johnson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Please add my name to the list of concerned citizens of Abercrombie. I was born and raised in Abercrombie, a wonderful town to grow up in, and am 100% against the proposed dairy farm nearby. Please do not let this corporate large farm destroy Abercrombie.

Department Response: Thank you for the comment. Contact the Concerned Citizens of Abercrombie group to be added to the list. Please refer to response to comment 1(B) Authority to Issue.

Commenter 32-Harry Clark

- A. **Comment:** As a Abercrombie township home and property owner, I have some real concerns about the proposed dairy for our township. I'm mostly concerned about the availability of water and the possible effects moving forward. My in-laws farm and ranch near Colfax and depend on having water available for their livestock. If this proposed dairy taps into their aquifer, it could jeopardize their available water.

Department Response: Please refer to response to comments 1(P) Water Quantity.

- B. **Comment:** I also have concerns about the spreading of manure and possible contamination of 2 nearby rivers, Red and Wild Rice. The odor of spreading this manure is also of great concern. Especially right adjacent to our elementary school in Abercrombie.

Department Response: Please refer to response to comments for 1(H) Nutrient Management Plan and 3(A) Air Quality.

- C. **Comment:** I'm also concerned about the impact on our school system as we know where the workers in these operations have limited English and it will be a burden on our school staffing. I just feel that there are too many negative impacts on our wonderful township and area towns that need to be considered. I hope you look into all aspects before approving such a drastic impact on all involved.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 33-Madeline Luke

- A. **Comment:** I am concerned for the quality of life for all North Dakotans who live in rural areas instead of cities because we like clean air, blue skies and clear water.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority. However, the Department's permitting process is designed to address and ensure environmental quality in accordance with state regulations.

- B. **Comment:** [N.D. Admin. Code 33.1-16-03.1-07](#)

3. *Permit conditions. The department **may** impose any conditions upon a state animal feeding operation permit to ensure proper operation of the facility to protect water and **air quality**, including:*
- a. *Sampling, testing, and monitoring at or adjacent to the facility or of manure, process wastewater, ground water, or runoff.*
 - b. *Steps to prevent the facility from causing exceedances of water quality standards or air quality standards and **to minimize odors during land application of manure.***

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 3(A) Air Quality.

- C. **Comment:** The DEQ should exercise its power to protect the community of Abercrombie from deleterious air pollution. Many of them live there because of long term ties to the land and the ability to be in a clean, quiet environment. I contend that being able to relax on your porch at the end of a long workday, go to school or church without gagging has monetary value, just as selling milk to an out of state corporation. Studies have shown the CAFO's have been linked with lower mental health and community wealth.

[Environ Health Perspect.](#) 2007 Feb; 115(2): 317–320.

Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations

[Kelley J. Donham](#),¹ [Steven Wing](#),² [David Osterberg](#),¹ [Jan L. Flora](#),³ [Carol Hodne](#),¹ [Kendall M. Thu](#),⁴ and [Peter S. Thorne](#)¹

Department Response: Please refer to response to comment 1(B) Antibiotics-Disease-Human Health and 3(A) Air Quality.

- D. **Comment:** The proposed dairy is either just under or just a mile from 2 residences. As of this date, the legislature- mandated siting committee is in the process of advising a setback of 1 and ¼ mile for CAFO's over 10,000 AU. This suggests that even the siting committee knows that odor will be a problem with the 1 mile setback. I understand that the approval for these siting rules are still in process, but practically speaking, if the Abercrombie Dairy is built at its present site and with the present permit, Riverview Farms ND and the neighbors will be in constant conflict over odor and health effects.

The DEQ does not have the authority to address the setback distance but as per : [N.D. Admin. Code 33.1-16-03.1-07](#), the DEQ should provide air quality protection for those working in and living near CAFO's.

Department Response: Please refer to response to comment 4(B) Zoning.

- E. **Comment:** PM 2.5: the EPA has revised the level of the primary (health-based) annual PM 2.5 standard from 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 9.0 $\mu\text{g}/\text{m}^3$, based on scientific evidence that shows the current standard does not protect public health with an adequate margin of safety, as required by the Clean Air Act (CAA).

I would recommend ongoing monitoring of pm 2.5 at both the dairy and at its closest neighbors, penalties and corrective actions. This will lower the incidence of avoidable respiratory and cardiovascular events as well as airborne bacterial and viral infections. The off gassing of ammonium from the lagoons and manure will contribute greatly to the secondary PM 2.5 particle formation. The ND standard must adopt the more stringent national EPA standard. The sites should be monitored for PM 10 as well.

Department Response: The Department is aware of the revised PM_{2.5} standard and will be incorporating it into NDAC ch. 33.1-15-02, Table 1. Even though the revised standard is not yet incorporated to the NDAC, the Department has evaluated all applicable proposed projects against the threshold of 9 $\mu\text{g}/\text{m}^3$ since it was finalized and will continue to do so.

The Department acknowledges your recommendation for ongoing PM_{2.5} (and PM₁₀) monitoring. The Department operates an ambient monitoring network in conjunction with North Dakota State Rules and EPA requirements. Based on our monitoring North Dakota is one of a handful of states consistently in attainment with all national ambient air quality standards. Further, North Dakota has not observed, or been made aware of, any PM_{2.5/10} emissions from similar sources (e.g., animal feeding operations) which have caused or contributed to a violation of PM_{2.5/10} national ambient air quality standards. For more information on North Dakota ambient air quality monitoring network, see <https://deq.nd.gov/AQ/monitoring/>.

- F. **Comment:** Methane: This should be monitored and regulated to the EPA occupational standard

Department Response: Occupational standard for methane is beyond the scope of the proposed permit and outside the Department's authority. If you would like to learn more about occupational standard for methane, please refer to the Occupational Safety and Health Administration or the National Institute for Occupational Safety and Health's recommendation for working environment.

- G. **Comment:** Hydrogen sulfide: This should be monitored and regulated to the ND standard which appears to be more stringent than the OSHA standard

Department Response: Please refer to response to comment 3(A) Air Quality.

- H. **Comment:** VOC: These are a likely major component of the odor issue and would be regulated under Ch 23.1-06-15. Currently, a complaint must be filed, and 2 exceedances must occur before any action is taken. I would recommend that monitoring at the dairy be done on an ongoing basis and corrective action be required on a timely basis. At manure application fields where there is likely to be a nuisance, again measurements should be done in conjunction with the spreading and corrective actions taken at the time of the offense. I believe that there are fields immediately adjacent to a church and a public school. These were in place BEFORE the proposed project; I contend that activities by Riverview Farms ND to cause harm to students, teachers and congregants is unfair and is illegal.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan and 3(A) Air Quality.

- I. **Comment:** Century code 42-01-01 Definition - A nuisance consists in unlawfully doing an act or omitting to perform a duty, which act or omission:
1. **Annoys, injures, or endangers the comfort, repose, health, or safety of others;**
 2. Offends decency;
 3. Unlawfully interferes with, obstructs or tends to obstruct, or renders dangerous for passage, any lake, navigable river, bay, stream, canal, basin, public park, square, street, or highway; or
 4. **In any way renders other persons insecure in life or in the use of property.**

Department Response: The definition of nuisance is beyond the scope of the proposed permit. Please refer to response to comment 1(B) Authority to Issue.

Commenter 34-Leon Heyen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I'm concerned about water usage, dropping water levels, contamination of aquifer water ways.

Department Response: Water usage is beyond the scope of the permit and outside the Department's authority. Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(P) Water Quantity, and 1(Q) Aquifer.

Commenter 35-Leonard Heyen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** With the amount of manure that is to be injected or spread in Abercrombie Township How will this affect our groundwater, stream + Rivers.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Commenter 36-Karen Heyen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** With the amount of water use of the proposed dairy. It has been indicated they will be possible using the aquifer our well is on. How will this affect our water sources?

Department Response: Please refer to response to comment 1(A) Ground Water, 1(E) Nitrates, 1(P) Water Quantity, and 1(Q) Aquifer.

Commenter 37-Tyler Wulfekuhle

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

Commenter 38-Cheryl Dalton

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I live right in front of the Wild Rice River which is prone to flood every year. I have well water I am concerned that my water could be contaminated I have been a lifetime resident of this area, and I don't believe we need to have CAFO's in our area. They cause pollutants and are hazardous to our way of life. We like clean + safe water We don't want an *E. coli* outbreak, nor Cancer, Birth defects I also believe in our remaining dairy farms They

don't have as many cows in one area. Our counties water supply is already tapped out, so where are they going to get their water supply from.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(M) Flood Zone, and 1(P) Water Quantity. Way of life is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 39-Sharyn Bohn

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Please deny this application.

Department Response: Please refer to response to comment 1(B) Authority to Issue.

Commenter 40-Linda Worner

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I live in Fargo and am very concerned this huge dairy operation will eventually fail and contaminate the soil, aquifers, and rivers. Our source of water comes from the Red River in which the Wild Rice connects to. If there were a breach in the holding ponds, or overland flooding from large rainfall the water will be contaminated. Is there a plan in place to remedy this? How do you know Riverview will be doing their self-monitoring honestly + correctly? Has anyone from Bismarck visited the proposed site? With the large drainage ditch that runs along the entire site to the Wild Rice River; I can't imagine granting this permit!

Department Response: Please refer to response to comments 1(A) Ground Water, 1(B) Authority to Issue, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, 2(B) Design, and 2(K) Construction. Department staff have visited the site.

Commenter 41-Gail Wanek

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** We are from Breckenridge, MN, and very concerned with this massive dairy operation proposed on such a concentrated area. Even with clay liners, there is history of them failing, spreading sewage and contamination to our soil, and rivers, not to mention our drinking water! Then what?? Water is our most precious resource, and you are responsible to protect it. We don't know how you can justify taking this risk when the proposed site sits between 2 rivers?

Department Response: Please refer to response to comments 1(A) Ground Water, 1(B) Authority to Issue, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 2(K) Construction.

Commenter 42-Casey Hammond

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I'm an Abercrombie resident and have been most of my 38 years. I fear this dairy operation will rob our water and resources and pollute our lands. It's a tremendous amount of water usage that is unsustainable over time. Thank you for taking the time to tread my concerns.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(P) Water Quantity.

Commenter 43-Kathy Haire

- A. **Comment:** My concerns are pertaining to the Abercrombie dairy also, trying to come within one and a quarter mile from my childhood family farm as well as the Abercrombie township community people. My grandparents started this farm with no electricity, running water, or automobiles. Not to mention, everything was done by hand not machines. They worked hard to provide a wonderful homestead for their future generations. There is now a soybean seed plant half a mile away, and 3/4 of a mile away is a subdivision for a rich farmer for at least a dozen homes or more. I no longer live here, but own land next to it towards the proposed dairy. I think our issues

need further investigation as I would be really disturbed to see my family farm and my nephew and his young children to be affected by this and have to eventually move.

Department Response: Please refer to response to comment 4(B) Zoning and all addressed comments within this document.

Commenter 44-Wanita Johnson

- A. **Comment:** Air quality~~my family farm is located 1 mile east of the site.

Department Response: Please refer to response to comment 3(A) Air Quality.

- B. **Comment:** Ground and surface water quality.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

- C. **Comment:** Profit to Richland County and surrounding farms and farmers. So far it looks like no one other than those involved with Riverview will benefit one iota. On the contrary, we risk water contamination, road wear and tear, out of country employees, dried up wells and no taxes being paid for by Riverview are for the land if even that.

Department Response: Profit, employees, roads, and taxes are beyond the scope of the proposed permit and outside the Department's authority. Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(P) Water Quantity.

- D. **Comment:** Knifing the manure will cause excessive stench.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan and 3(A) Air Quality.

- E. **Comment:** What happens if the contamination gets into the two rivers (Wild Rice and Red River?) Actually there is no benefit to ND whatsoever.

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan, and 2(A) Water Quality Enforcement.

- F. I think there should be a thorough investigation into this company and their motives.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 45-Barbara Myrhe

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

Additionally, they wrote in with the following,

- B. **Comment:** 1. I am very sensitive to smells-
- Current lagoon and Wahpeton beet plant with wind currents
 - Current chemicals in our water treatment
 - Smoke including backyard fire pits
 - detergents
- Therefore, I am extremely concerned about air quality with the addition of this dairy south of Abercrombie. South winds are a regular occurrence

Department Response: Please refer to response to comments 1(C) Antibiotics-Disease-Human Health, and 3(A) Air Quality.

- C. **Comment:** 2. In addition, the extreme amounts of wastewater with high nutrient content are very concerning affecting water availability and potential contamination for current and future residents

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(P) Water Quantity.

- D. **Comment:** 3. We lose valuable crop land with this proposal. Put a dairy in ranch country. But I guess money talks over common concerned citizens.

Department Response: This is beyond the scope of the proposed permit and outside the Department's authority. Please refer to this document in its entirety as the Department has addressed all concerns submitted during the public comment period.

Commenter 46-Steven Myrhe

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I want to keep the water + air clean.

Department Response: Please refer to response to comments for 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 3(A) Air Quality.

Commenter 47-David Hammond

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am worried about the water usage. It is a lot of water per day times that by 30-40 years or more.

Department Response: Please refer to response to comment for 1(P) Water Quantity.

Commenter 48-Sharon Tschakert

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I'm totally against this Dairy Barn Set up! There is too great a chance that this would affect our water supply.

Department Response: Please refer to response to comment 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(P) Water Quantity.

- C. **Comment:** There has to be more study done on this before allowing this Dairy System is set up.

Department Response: Please refer to response to comment 1(B) Authority to Issue.

- D. **Comment:** There also is too great a chance that the manure system would send seepage to the River System.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 2(K) Construction.

Commenter 49-Jennifer Moffit

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Concerned about water + Smell + future of growth of town.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 3(A) Air Quality. Future growth of town is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 50-Dennis Hulne

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** It is about the water and what is going to be a lack of it.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- C. **Comment:** And the smell.

Department Response: Please refer to response to comment 3(A) Air Quality.

- D. **Comment:** Property values and standard of living will go down.

Department Response: Property values and standard of living are beyond the scope of the proposed permit and outside the Department's authority.

- E. **Comment:** They don't have a good plan for the manure. Just outside of town is unacceptable.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 2(K) Construction.

Commenter 51-Mary Hanson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Very concerned regarding water!

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Commenter 52-Mary Sahl

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** 1). Aber dairy will be located 4 miles south of Abercrombie, ND., west ½ of Section 27, township 134 N, range 48 W, 1.4 miles west of Wild Rice River – there is a ditch (a deep dirt one to the Wild Rice River) that was dug in the last year by the farmer putting up this dairy (or in partnership with it). The discharge – direct discharge of 12,500 cows is similar to the waste stream of 525,000 people. The overflow should need another permit for direct discharge to a water source like the Wild Rice – a national permit I would believe is needed.

Department Response: The proposed permit does not allow a direct discharge of waste to the environment. Please refer to response to comments 1(B) Authority to Issue, 1(F) Inspection, 2(B) Design, and 2(K) Construction.

- C. **Comment:** 2). The Aber dairy permit states it will produce 9,581,250 cubic ft/year or 71.67 Million gallon/year of manure + 4,684,045 cubic feet or 35.04 Million gallon/year of wastewater. The permit states it has 14,553 acres (of land) to spread this waste on – more than half of it is in a flood zone that floods almost every spring. Who is going to oversee this?

Department Response: Please refer to response to comments 1(H) Nutrient Management Plan and 1(M) Flood Zone.

- D. **Comment:** 3). CAFO's seep Nitrates into ground water – this permit does not even have a liner - that would reduce seepage of nitrates yet it still would probably contaminate the ground water to an unacceptable EPA level.
- a). How do you intend to monitor local wells?
 - b). Is it up to us to pay \$1500 for a water test to see if we can drink our water?
 - c). Is the dairy farm going to put in Reverse Osmosis (for us) – it is not in the permit to monitor local wells, or replace wells that go dry, or even test local wells. There should be at least a 5-10 mile radius that they have to test wells as there have been numerous reports of wells being affected (Washington state – 300 wells within 3 mile radius of CAFO) -Lower Yakima Valley Groundwater |US EPA- see hydrologist report sent by DRC
 - d). The proposed lagoon is only 2 feet above the water level!! We will have water contaminated within 1 year of start of operation!!

Department Response: The proposed facility was designed with clay liners. Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 2(B) Design, 2(I) Yakima Valley, and 2(K) Construction. Private wells and Reverse Osmosis are beyond the scope of the proposed permit and outside the Department's authority.

- E. **Comment:** 4) Their lagoons are only large enough to hold a 25 year/ 24 hour rain event. In the last 10 years rain amounts from NOAA have ↑ 24% for the 1% of extreme rainfalls that happen in N.D. We can see that with the rains in N.D. this summer – 7 inches in Bismarck, Jamestown flooding, northern N.D. flooding this last summer! There will be no way to stop the runoff because they will not have enough “emergency time to lower their lagoons by spreading manure in time. Did Bismarck have 2-3 days notice before they got dumped on? No! And we won't either! It will flow west to the Wild Rive River + east to the Red River – the ditch goes both ways, take your pick. They all end up in Fargo though – so not sure what the diversion people are going to think of all this sewage in their retention ponds.

Department Response: Please refer to response to comments 1(F) Inspection, 2(B) Design, 2(K) Construction, and 25(B) Freeboard.

- F. **Comment:** 5). They knife in all their manure in the fall, this allows for seepage of nitrates right to ground water as none of it is absorbed by plant growth – need a newer approach to waste management.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management.

- G. **Comment:** 6). Atrazine is found in the wastewater from CAFO's – how will this affect our local bee population (ND is #1 in honeybee's) Atrazine kills bee's.

Department Response: The use of Atrazine is beyond the scope of the proposed permit and outside the Department's Authority. The Department of Agriculture regulates the use of pesticides such as Atrazine. Please refer to response to comment 1(G) Water Quality.

- H. **Comment:** 7). I am a nurse (RN) of 40+ years of service at the Roger Maris Cancer Center in Fargo. The #1 thing I have learned is the greatest impact we can have on cancer is preventing cancer in the first place. This CAFO will not only introduce contaminants to the water for years to come but may result in the death of nearby citizen's due to salmonella, e-coli (illegible) poisoning. MSRA + C-difficile are also tied to CAFO's. This is the most disastrous proposal anyone could come up with. I beg you to think about the ramifications of granting a permit that has absolutely no checks balances to keep our land + water safe.

Department Response: According to the CDC healthy people do not get infected often even if the *Clostridioides difficile* (*C. diff*) spores reach the intestines. The CDC states that "*C. diff* infection is more common among patients in healthcare settings, such as hospitals and nursing homes. *C. diff* germs spread from person to person in poop, but bacteria are often found in the environment. Finding *C. diff* germs in the home is not unusual, even when no one in the home has been ill with *C. diff* infection.: If your immune system is weak or you've recently taken antibiotics, you could get sick. Taking antibiotics can affect your microbiome, making you more susceptible to illnesses like *C. diff*. Contact your personal care physician with any concerns.

Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Mary submitted the following additional comment.

- I. **Comment:** Here are two reference articles to support my other list of complaints or concerns about the environmental impact of the proposed Aber CAFO. I am also a 2.5 year breast cancer survivor + am worried about my health due to the potential ↑ in nitrates in the water.

The following articles were attached to the submission.

Flatt, C. (2020, June 2). *Washington cracks down on mega-dairy water pollution*. opb. <https://www.opb.org/news/article/washington-dairy-pollution-regs/>

Environmental Protection Agency. (2024, July 2). *EPA, Department of Justice sue Lower Yakima Valley dairies for manure practices endangering neighboring well-users*. EPA. <https://www.epa.gov/newsreleases/epa-department-justice-sue-lower-yakima-valley-dairies-manure-practices-endangering>

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(Q) Water Quantity, 1(P) Aquifer, and 2(I) Yakima Valley.

Commenter 53-Dean Hendrickson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Worry about the water polluted.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

Commenter 54-D. (Illegible)

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** 4- Abercrombie school, campgrounds, Federal Park and a new housing development may be affected by the smell. The CAFO is only 3 miles from town.

Department Response: Please refer to response to comment 3(A) Air Quality.

- C. **Comment:** 5- We have visited Campbell and have talked with farmers and school principal about smell. And it smells at school 7 miles away. We worry about our health from the manure smell.

Department Response: Please refer to response to comments 1(C) Antibiotics-Disease-Human Health and 3(A) Air Quality.

- D. **Comment:** 6- Concerned about dropping well pressure from the volume of water the cow's drink. That would not be covered by Riverview. That would be a cost to me. Cows cannot have more rights to water than us.

Department Response: Please refer to response to comment 1(P) Water Quantity.

- E. **Comment:** 7- I'm concerned that the DEQ Does not have rigid enough regulations for such a large number of cattle. There're no repercussions for breaking regulations.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(B) Authority to Issue, 1(E) Nitrates, 1(F) Inspections, 1(H) Nutrient Management Plan, 2(A) Water Quality Enforcement, and 2(B) Design.

- F. **Comment:** 8- I live 1.1 miles from facility planned to be constructed and I am very concerned about my family health from possible pathogens from the # of cattle.

Department Response: Please refer to response to comment 1(C) Antibiotics-Disease-Human Health.

- G. **Comment:** 9- I don't think that that large number of livestock should have to risk my water quality and well pressure. I farm and believe that we need to take better care of our water that we drink. I don't understand why people are getting last dibs on water. Why do people have to sacrifice their air quality and water quality. This one is populated by 27 wells in a 2-mile radius.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 1(P) Water Quantity, 1(Q) Aquifer, 2(B) Design, and 3(A) Air Quality.

- H. **Comment:** 10- Please review the hydrogeologist report. Sent to you by the DRC. I have had a zoom meeting with David Ericksen CPG PG North Dakota needs to listen to what has happened in other state and lead in proper regulations of these large CAFOs. This is not a small operation. Let's lead in good regulations.

Department Response: Please refer to response to comments for Commenter 2.

Commenter 55-Bruce Amundson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am worried about running out of water

Department Response: Please refer to response to comment for 1(P) Water Quantity.

Commenter 56-Lisa Amundson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am very concerned about my water getting polluted or running out of water.

Department Response: Please refer to response to comment for 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, 1(P) Water Quantity, and 1(Q) Aquifer.

Commenter 57-Loretta Hendrickson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** What's going to happen to our water supply We don't need this!!"

Department Response: Please refer to response to comment for 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(Q) Aquifer.

Commenter 58-Eric Andreasen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am very worried the quality of our water will be severely affected by this dairy operation.

Department Response: Please refer to response to comment for 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(Q) Aquifer.

Commenter 59-Deana Andreasen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I have concerns of water contamination and additional chemicals potentially in our water source.

Department Response: Please refer to response to comment for 1(A) Ground Water, 1(E) Nitrates, 1(H) Nutrient Management Plan, and 1(Q) Aquifer.

Commenter 60-Raeann Zander

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I am concerned of the extra contamination to our water supply & the livelihood of existing local family farms in the area.”

Department Response: Please refer to response to comments 1(A) Ground Water and 1(H) Nutrient Management Plan. Livelihood is beyond the scope of the proposed permit and outside the Department’s authority.

Commenter 61-Scott Myrha

- A. **Comment:**

I don’t like the secrecy of this endeavor and have spoken to experts at Southeast Water users in Montador who supplies me rural water and they say they don’t have water for anything that extreme. A guernsey cow ways 1400-2000 lbs. and need clean up and is like 10 people for maintenance. 12,000 cows is like 120,000 people in a half mile square added.

Department Response: Please refer to response to comments for 1(P) Water Quantity and 4(B) Zoning.

Commenter 62-Alex Pazkowski

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** Worried about water quality

Department Response: Please refer to response to comments 1(A) Ground Water and 1(H) Nutrient Management Plan.

Commenter 63-Emily Sahl

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** I live 1 mile from the proposed facility. I am concerned the future of my farm will be forever damaged due to smell & flies + polluted water.”

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

Commenter 64-Jenny Wulfekuhle

- A. **Comment:** As landowners near the proposed dairy operation, we are deeply disappointed that we weren't ever contacted by mail, email, phone, or in person by the state, county, township, or the owners of the proposed project to address any concerns that we may or may not have. All the information we have received has been second-hand, which is very disappointing to us.

Although, we don't live near the location at this time, Abercrombie is a community that will always be home for us, and we are concerned for and about the current citizens that live not only in the rural areas surrounding the proposed dairy operation but in the town of Abercrombie as well.

Department Response: Please refer to response to comment 4(B) Zoning.

- B. **Comment:** We are concerned with the water, not only what it will do to the current levels but also any contamination that may come from this operation to the nearby rivers and ditches.

Department Response: Please refer to response to comment 1(A) Ground Water, 1(E) Nitrates, and 1(H) Nutrient Management Plan.

- C. **Comment:** We are concerned about the smell that will be emitted from the operation. No matter how good of an operation it is, there will always be a horrendous smell for miles from the proposed operation. We have been by many large dairy operations in the south and the smell is not anything most people would want to live by if they had a choice. It is one thing if

you move to an area where a dairy operation is established but it is a totally different situation for those that have lived there for most of their lives and an operation comes in.

Department Response: Please refer to response to comments 1(F) Inspection, 2(B) Design, and 3(A) Air Quality.

- D. **Comment:** Also, if anyone would want to build on our current land, that would be a deal breaker for sure.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 65-M.K.

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 66-Cassie Wulfekuhle

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 67-Tom Wulfekuhle

- B. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 68-Zachary Wulfekuhle

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 69-Steven Ritchie

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 70-Midge Tschakert

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 71-Lesley Hulne

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 72-Rose Ann Hulne

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 73-Kirk Kappes

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 74-Larry Syvertsen

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

Commenter 75-Amber & Barb Strand

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

Commenter 76-Jacob Sahl

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

Commenter 77-Dylan Johnson

- A. **Comment:** A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter Commenter 3.

Department Response: Please refer to response to comments for Commenter 3.

- B. **Comment:** The site is unsuitable due to its location.

Department Response: Please refer to response to comment 4(B) Zoning.

- C. **Comment:** The clay lagoons have been proven to fail and contaminate ground water and peoples' wells.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(F) Inspection, 2(B) Design and 2(K) Construction.

- D. **Comment:** What will happen when my well runs dry due to the dairy?

Department Response: Please refer to response to comment 1(P) Water Quantity.

- E. **Comment:** What happens when the lagoons fail and overland flooding occurs.

Department Response: Please refer to response to comments 1(F) Inspection, 1(M) Flood Zone, 2(A) Water Quality Enforcement, 2(B) Design, and 2(K) Construction.

- F. **Comment:** Riverview won't be monitoring wells.

Department Response: Please refer to response to comment 1(A) Ground Water.

G. **Comment:** There will be too much manure produced that is at risk of being improperly applied.

Department Response: Please refer to response to comments 1(F) Inspection, 1(H) Nutrient Management Plan, and 2(B) Design.

H. **Comment:** The dairy will cause too many odor issues.

Department Response: Please refer to response to comments 1(F) Inspection, 2(B) Design, and 2(F) Air Quality Enforcement.

I. **Comment:** The dairy brings a risk of blue baby syndrome, cancer, birth defects, breathing problems, and gastrointestinal illness. Things like; algae blooms (which are toxic to humans and wildlife), low dissolved oxygen (which leads to fish kills), pathogens including E. coli and antibiotic-resistant bacteria, carcinogens, antibiotics in the water, heavy metals, salts, pesticides, sediments, and discharge pathways.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(D) Harmful Algal Blooms, 1(E) Nitrates, 1(F) Inspection, 1(G) Water Quality, and 3(A) Air Quality.

J. **Comment:** Extension article on tile drain BMP's.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

K. **Comment:** Article with concerns about drain tile.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

L. **Comment:** Article with concerns about drain tile.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

M. **Comment:** Article addressing violations at Michigan CAFO's concerning drain tile.

Department Response: Please refer to response to comment 1(H) Nutrient Management Plan.

N. Comment: Article on CAFO's concerning greenhouse gas pollution, human health risks, and water contamination.

Department Response: Please refer to response to comment 1(A) Ground Water, 1(C) Antibiotics-Disease-Human Health, 1(E) Nitrates, 1(F) Inspection, 1(H) Nutrient Management Plan, 2(B) Design, and 3(A) Air Quality.

O. Comment: Article on liquid manure storage design.

Department Response: Please refer to response to comment 2(B) Design.

P. Comment: Article addressing how changes have pushed out smaller farms in favor of larger farms.

Department Response: Thank you for the comment. This is beyond the scope of the proposed permit and outside the Department's authority.

Commenter 78-Erik Olson

A. Comment: A concerned citizen wrote in with the Abercrombie Citizens for Responsible Growth form letter [Commenter 3](#).

Department Response: Please refer to response to comments for Commenter 3.

B. Comment: I have significant concerns pertaining to the water quality being affected negatively from several different aspects of this dairy operation. When it comes to the environment and water quality, many different factors can go into play with 2 major rivers just over a mile away to the east and west, spring flooding, overland flooding, waste management, etc.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(D) Harmful Algal Blooms, 1(F) Inspection, 1(H) Nutrient Management plan, 1(M) Flood Zone, and 2(B) Design,

C. Comment: Well water supply and contamination issues.

Department Response: Please refer to response to comments 1(A) Ground Water, 1(E) Nitrates, and 1(P) Water Quantity.

D. Comment: The design of clay liners is not sufficient to prevent contamination.

Department Response: Please refer to response to comments 2(B) Design and 2(K) Construction.

E. **Comment:** Lack of monitoring on manure application.

Department Response: Please refer to response to comments 1(F) Inspection and 1(H) Nutrient Management Plan.

F. **Comment:** The proposed location is unsuitable due to its risk of flooding.

Department Response: Please refer to response to comment 4(B) Zoning.

G. **Comment:** The 25-year 24-hour storm event is extremely low and obsolete.

Department Response: Please refer to response to comment 2(B) Design.

Commenter 79-North Dakota Livestock Alliance

A. Comment:



701.712.1488
amber@ndlivestock.org
ndlivestock.org

ND Livestock Alliance
PO Box 369
Bismarck, ND 58502

ND Department of Environmental Quality
Attn: Water Quality Division
918 East Divide Ave.
Bismarck, ND 58501-1947

Date: September 23, 2024

Submitted to the NDDEQ Division of Water Quality,

The North Dakota Livestock Alliance (NDLA) is writing this letter in support of the Abercrombie Dairy permit application NDAFO0906, contingent upon their compliance with the Animal Feeding Operations rules of the ND Department of Environmental Quality (NDDEQ) and the State Water Quality Standards. We also commend Abercrombie Dairy for their dialogue with neighbors and local community leaders including the Abercrombie Township and Richland County leaders.

NDLA is confident that the NDDEQ review process successfully protects the environment and natural resources of our great state. The engineer-designed manure storage systems, paired with a nutrient management plan, gives today's farmers the extremely beneficial use of manure while ensuring the land, water and communities are sustained for generations to come. The natural nutrients contained in manure are valuable fertilizer for crops and the organic matter is crucial to improving soil health.

There is another important reason NDLA supports this application. The addition of dairy cattle will dramatically increase North Dakota's ability to attract new milk processing capacity into our rapidly shrinking infrastructure, in turn, supporting existing ND dairy farm families and their future generations.

The NDLA Governing Board of Directors includes the ND Pork Council, ND Corn Utilization Council, ND Farmers Union, Midwest Dairy – ND Division, Agtegra Cooperative, ND Corn Growers Association and the ND Ethanol Council. NDLA also has an extensive membership of groups and individual farmer members, including the Milk Producers Association of ND, Northern Canola Growers Association and the ND Soybean Growers Association. This group was formed to unite all of agriculture to support, enhance and promote animal agriculture across North Dakota.

Respectfully Submitted,

Amber Wood

Amber Wood
Executive Director

NDLA is a non-profit organization with the vision to strengthen North Dakota's rural communities, farm and ranch families, businesses and natural resources through animal agriculture.

Department Response: Thank you for your comment.

Commenter 80-North Dakota Corn Growers Association

A. Comment:



October 4, 2024

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy St., 3rd Floor
Bismarck, ND 58503-1324

To Whom It May Concern:

The North Dakota Corn Growers Association (NDCGA), a statewide, farmer-led, membership organization, is the voice of the more than 13,000 corn producers in North Dakota. One of the top priorities for the NDCGA is the growth of animal agriculture in the state. Therefore, the NDCGA is in support of animal agriculture development, like that proposed by Riverview's Abercrombie Dairy in permit application NDAF00906.

Our corn producers have some of the worst basis in the country, for a number of reasons. In exporting about 40 percent of our corn, we are not able to use inland waterways like most of the other corn producing states in the country. Rather, North Dakota corn growers rely almost entirely on more costly rail transportation to the ports in the Pacific Northwest where our unprocessed commodity product is exported to foreign buyers, and subject to global demand and affected by geopolitical developments and events.

Another major factor in the price we get for our corn is the local supply and demand. Approximately one-half of the state's corn is used in ethanol production. And about 10 percent of our corn is used in livestock production. Ethanol and livestock development are value-added agriculture, when the corn is made into something else adding more value to it, and generating a larger demand and therefore better pricing for the North Dakota farmer.

We do not have a strong animal agriculture culture in the state, in large part because there is very little. While our neighboring surrounding states generate between 40 to 50 percent of farm gate receipts from livestock, North Dakota's is only about 15 percent. This has a ripple effect throughout our state, rural communities and farms. One repercussion is that our state's ethanol plants, must also transport out of state, (again via rail) 90 to 100 percent of their high-protein and valuable dried distiller's grains (DDGs), a major co-product from the production of ethanol from grain, for livestock consumption elsewhere. If DDGs could instead be absorbed by the local and regional animal ag instead, these plants would not have the additional costs of that transportation, and those resources could instead be put back into North Dakota plants and stay in our communities to be turned over many times. Those dollars create economic opportunity and local jobs.

-- continued --

4870 ROCKING HORSE CIRCLE S., FARGO, ND 58104
WWW.NDCORNGROWERS.ORG



Additionally, animal agriculture supports the continuance and expansion of family farms for additional generations. When there's not enough crop producing land to support multiple children of retiring farmers, animal agriculture can be that silver bullet so that more of the state's farm youth stay in North Dakota, and these emerging farmers can make a living in agriculture not otherwise possible. The number of farmers continues to decline. Additional animal agriculture in our state will not only diversify and strengthen our farms, but help us to retain more youth.

Many project opponents and anti-farm activists in the case of this proposed dairy prefer to generate fear by suggesting worst-case scenarios regarding water supply source, manure, odor management, and other issues instead of exhibiting a good faith effort to work with project proposers, who are working on practical, sustainable solutions. We are also confident that North Dakota's laws and regulatory structure does and will continue to address these matters. Our state's manure application oversight, for example, is stronger than that of Minnesota's, where Riverview already operates other dairies.

On the contrary, the natural fertilizer produced at large operations like this, is an extremely valuable input resource for other ag producers who will benefit from the additional supply when traditional sources have sometimes been scarce, and prices have spiked in recent years by double digits. Furthermore, manure is better for soil health.

Please give projects like the Abercrombie Dairy a chance to succeed, which will pay dividends to rural communities and our state.

Sincerely,

A handwritten signature in blue ink that reads "Brenda K. Elmer".

Brenda Elmer
Executive Director
North Dakota Corn Growers Association

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WWW.NDCORNGROWERS.ORG

Department Response: Thank you for your comment.

Public Comments

From: [Sam Wagner](#)
To: [Gilley, Cameron](#)
Subject: DRC Comments for Riverview Dairy in Abercrombie
Date: Friday, October 4, 2024 1:19:05 PM
Attachments: [Abercrombie Dairy DEQ Cover letter.docx.pdf](#)
[2024.10.3 ABERCROMBIE DAIRY COMMENTS.pdf](#)
[Abercrombie 10-1-24 David Erickson.pdf](#)

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Hello Cameron,

I wanted to submit to you from the Dakota Resource Council our comments regarding the Abercrombie Dairy Permit:

Application Date: 3/8/2024

Application Number: NDAFO0906

Applicant Name: Abercrombie Dairy

Mailing Address: 26406 470th Ave, Morris, MN 56267

Telephone Number: 320.392.5609

Proposed Permit Expiration Date: 10/31/2029

Enclosed you will find a cover letter outlining our comments and thanking you for the extension granted. A letter of comments from DRC, and a Hydrology Report from David Erickson for you to review and consider.

Please call me if you have any questions or concerns and I would like an email of confirmation that this message has been received.

Thank you for the work that you do and we hope to hear from you soon.

--

Samuel Wagner

701-371-5474

Ag Field Organizer

Dakota Resource Council



1902 E Divide Ave, Bismarck ND 58501 · 701-224-8587
~ sam@drcinfo.com ~ www.drcinfo.org

Department of Environmental Quality
Division of Water Quality
4201 Normandy Street, Bismarck ND 58503-1324

Dear Sirs:

The Dakota Resource Council appreciates the opportunity to submit comments on the proposed Abercrombie Dairy. DRC and the community, especially the 278 citizens who signed a petition asking for more time to evaluate this permit, are grateful for the 2 week extension granted. This project deserved our full attention and resources and we thank you for your forbearance.

As the proposed Abercrombie Dairy site is in an area with sensitive, highly used and complicated water resources, the DRC engaged the services of David Erickson of WET Technology as an expert hydrologist. Please accept his report as part of our formal comments.

Our motto is "Watchdog of the Prairies" and as the Department of Environmental Quality, our missions should be complementary, each striving to protect the best quality air, water and soil possible. North Dakota has spectacular natural resources, beauty and quality of life; please use your authority to preserve them.

Yours truly,

Sam Wagner
Ag and Food Field Organizer
Dakota Resource Council

I. Introduction

Abercrombie Dairy proposes to operate 4 miles south of the rural town of Abercrombie, home to approximately 255 North Dakota residents. The Dairy's permit application states the 12,500 head operation will produce 9,581,250 cubic ft/year (71.67 M gal/year of manure) and 4,684,045 cubic feet (35.04 Mgal/year) of wastewater. This would be roughly the equivalent of managing the waste stream of 525,000 people.¹ The permit states it has 14,553 acres leased and available to spread this waste as fertilizer. However, the operation and surrounding acres where the Dairy plans to spread its untreated waste is just 1.4 miles from the Wild Rice River, and 1.8 miles from the Red River. An operation of this size is unprecedented in North Dakota and, as described in this comment, is likely to adversely affect the land and water resources North Dakotans rely on for their health, happiness, and livelihoods.

Given the likelihood of adverse impacts to human health and the environment, we urge the Department of Environmental Quality to carefully consider the following concerns about the Abercrombie Dairy permit application in view of the authority and responsibility state law places on the Department. Because of the multiple sensitive water resources in this area and changing environment, the best option would be to deny the permit. Barring this, additional permit conditions—including but not limited to intensive monitoring, contingency plans, strict adherence to best nutrient management practices, and enforcement of same—must be in place to prevent pollution of both surface and ground water. Additionally, DEQ must require that the Dairy obtain a National Pollutant Discharge Elimination System (NPDES) permit because the size and proximity of the facility to vulnerable surface and groundwater all but ensure Abercrombie Dairy will discharge pollutants in a manner that degrades water quality.

II. Legal Background

North Dakota state law obligates the Division of Environmental Quality (DEQ) to (1) “act in the public interest to protect, maintain, and improve the quality of waters in the state;” (2) “to require necessary and reasonable treatment of sewage, industrial, or other wastes;” and (3) to cooperate with the federal government in accomplishing these goals. ND Cent. Code §§ 61-28-01, 61-28-04. DEQ's regulations emphasize that the agency's primary concern in administering the state's water quality program is “to maintain or improve, or both, the quality of the waters of the state and to maintain and protect existing uses.” ND Admin. Code 33.1-16-02.1. Importantly, the legislature defined waters of the state to include “all [] bodies or accumulations of water on or under the surface of the earth, natural or artificial, public or private, situated wholly or partly within or bordering upon the state, except those private waters which do not combine or effect a junction with natural surface or underground waters.” ND Cent. Code § 61-28-02.

¹ Michael Van Amburgh & Karl Czymmek, *Series: Phosphorus and the Environment, 2. Setting the Record Straight: Comparing Bodily Waste Between Dairy Cows and People*, Cornell University Field Crops Blog, <https://blogs.cornell.edu/whatscroppingup/2017/06/21/series-phosphorus-and-the-environment-2-setting-the-record-straight-comparing-bodily-waste-between-dairy-cows-and-people>.

In keeping with these goals, state law authorizes DEQ to prevent, control, and abate water pollution, including by conducting studies and investigations into the causes of water pollution. ND Cent. Code § 61-28-04. As such, DEQ has the power to require any source of pollution to “install, use, and maintain monitoring equipment or methods” to detect and characterize discharges of pollutants to waters of the state. *Id.* § 61-28-04(10); ND Admin. Code 33.1-16-03.1-07(3). Additionally, DEQ can require polluting facilities to report monitoring data to the state. ND Cent. Code § 61-28-04(10), (26). If DEQ determines an industrial facility poses a threat to water quality, the agency may also require modifications in waste disposal systems. *Id.* § 61-28-04(7). Under no circumstances is any entity permitted to store or discharge waste in a manner that causes or contributes to any exceedance of a water quality standard, “unless affirmatively demonstrated, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, that a change in quality is necessary to accommodate important social or economic development in the area in which the waters are located.” *Id.* § 61-28-06; *see also* ND Admin. Code 33.1-16-02.1-02.

“Classifications and standards are established for the protection of public health and environmental resources and for the enjoyment of these waters, to ensure the propagation and well-being of resident fish, wildlife, and all biota associated with, or dependent upon, these waters; and to safeguard social, economic, and industrial development.” ND Admin. Code 33.1-16-02.1-02. Thus, “[a]ll known and reasonable methods to control and prevent pollution of the waters of this state are required, including improvement in quality of these waters, when feasible.” *Id.* In allowing the lowering of existing quality, the department shall assure that existing uses are fully protected and that the highest statutory and regulatory requirements for all point sources and cost-effective and reasonable best management practices for nonpoint sources are achieved.” *Id.*

Recognizing the particular pollution threats created by Animal Feeding Operations (AFOs), DEQ established an entire regulatory chapter governing AFO permitting. ND Admin. Code 33.1-16-03.1-02. The purpose of AFO permitting is to “maintain beneficial uses of and prevent degradation of quality of the waters of the state.” *Id.* DEQ is only authorized to issue an AFO permit upon a determination that the facility “will not cause or likely cause pollution of waters of the state.” *Id.* § 33.1-16-03.1-07.

Importantly, DEQ must implement its AFO regulatory program in accordance with the federal Clean Water Act (CWA). The CWA established a cooperative federalism framework under which the U.S. Environmental Protection Agency may delegate aspects of NPDES permitting authority to state governments. DEQ has been delegated such authority and must therefore “take all action necessary or appropriate to secure to this state the benefits of that act and similar federal acts.” N.D. Cent. Code § 61-28-04(15). To comply with the CWA and maintain authorization to operate North Dakota’s NPDES permitting program, DEQ must ensure all point sources that discharge pollution to a water of the United States obtain and comply with a NPDES permit. 33 U.S.C. § 1311, 1342, 1362. Concentrated Animal Feeding Operations (AFOs that meet minimum size thresholds that the Abercrombie Dairy easily surpasses) are expressly designated as point sources. *Id.* § 1362(14); 40 C.F.R. § 122.23(b). Permits must meet minimum federal requirements established through the effluent limitations guidelines for CAFOs found at 40 C.F.R. part 412 as well as 40 C.F.R. §§ 122.23, 122.41, 122.42(e) and 122.44. These

federal requirements are merely a floor—DEQ is authorized to issue permits that are more protective or include additional terms and conditions. 40 C.F.R. §§ 122.4, 123.25.

III. Factual Background

The area in the vicinity of the proposed location for Abercrombie Dairy has significant environmental, cultural, recreational, aesthetic, and economic value. The area is also highly vulnerable to water pollution impacts due to its proximity to important surface and groundwater resources. Overall, these resources are deserving of maximum protections from pollution impacts. To deliver these protections, DEQ must require that Abercrombie Dairy obtain a NPDES permit that complies fully with federal and state law requirements.

A. CAFOs GENERATE AND DISCHARGE HARMFUL POLLUTANTS

Manure “is a primary source of nitrogen and phosphorus to surface and groundwater.”² But, CAFO manure is not just nutrients; it also contains a hazardous cocktail of bacteria, pathogens, sediments, pesticides, pharmaceuticals, salts, metals and ions such as magnesium, sodium, potassium, and chloride.³ Additionally, CAFOs handle a variety of other potential pollutants like process wastewater, hair and feathers, bedding materials, mortalities, cleaning products, and other chemicals.⁴ The potential harm these pollutants can cause is exacerbated when they are handled in liquid or slurry form. According to a soil scientist with USDA’s Natural Resources Conservation Service, liquid waste “behaves like water.”⁵ Because of this, dairy CAFO pollutants easily move through the environment and discharge to federal and state waters as surface flow or via hydrologically connected groundwater.

Among the many CAFO pollutants, pathogens and nutrients are of primary concern because of their prevalence and potential to adversely impact human and environmental health.

² U.S. EPA, *Estimated Animal Agriculture Nitrogen and Phosphorus from Manure*, <https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure>.

³ 68 Fed. Reg. 7,176, 7,181 (Feb. 12, 2003); JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, 115(2) ENV’T HEALTH PERSPS. 308 (Feb. 2007), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/> (attached as Exhibit C).

⁴ Environmental Protection Agency, RISK ASSESSMENT EVALUATION FOR CONCENTRATED ANIMAL FEEDING OPERATIONS, EPA/600/R-04/042, at 63, 72-73 (May 2004), https://cfpub.epa.gov/si/si_public_record_Report.cfm?Lab=NRMRL&dirEntryId=85107 (hereinafter, “EPA CAFO RISK ASSESSMENT”) (attached as Exhibit D); EPA, MANAGING MANURE NUTRIENTS AT CONCENTRATED ANIMAL FEEDING OPERATIONS at 2-1--2-4 (Dec. 2004), https://www.epa.gov/sites/default/files/2015-08/documents/cafo_manure_guidance.pdf (hereinafter, “EPA, MANAGING CAFO MANURE”) (attached as Exhibit E).

⁵ David Green, *Frank Gibbs: Liquid Manure Is Too Wet*, STATE LINE OBSERVER (2006) (“The problem is simple. We’re watering manure down to where it behaves like water. Let me repeat that. We’re watering manure down to where it behaves like water. You don’t need to be a rocket scientist to understand that.”) (attached as Exhibit F).

As mentioned above, CAFO waste is laden with fecal coliform bacteria and other pathogens.⁶ Zoonotic pathogens commonly found in manure include *E. coli*, *Campylobacter*, *Salmonella*, *Listeria*, *Cryptosporidium parva*, and *Giardia*, all of which can cause acute gastrointestinal distress, fever, and other dangerous symptoms in humans who drink or have recreational contact with contaminated water.⁷

CAFOs use a slew of antibiotics, hormones, and other pharmaceuticals to deal with these pathogens and keep animals alive in such concentrated and stressful environments. These products end up in CAFO wastes and ultimately make their way into nearby surface waters and domestic wells.⁸ While the individual risks presented by each drug used on CAFOs are too numerous to detail here,⁹ pharmaceuticals used on feedlots are commonly associated with endocrine disruption and reproductive disorders in fish and other aquatic wildlife.¹⁰ One study that specifically examined the impacts of CAFO effluent on fathead minnows found that “[w]ild fish collected below a feedlot exhibited altered reproductive biology.”¹¹ Further, the widespread use of antibiotics for non-therapeutic purposes in livestock animals also drives selective pressure for antibiotic-resistant bacteria, increasing health burdens for impacted humans and animals.¹² Researchers studying water pollution from a CAFO-dense area in California found “significant potential risk of groundwater contamination with antibiotic-resistant bacteria derived from CAFOs even if the subsurface environment is not suitable to transmit pathogenic bacteria.”¹³ Tellingly, those researchers concluded the paper by highlighting the importance of “continuous and effective groundwater monitoring” to safeguard public health.¹⁴

⁶ 68 Fed. Reg. 7,176, 7,186; Xunde Li et al., *Fecal Indicator and Pathogenic Bacteria and Their Antibiotic Resistance in Alluvial Groundwater of an Irrigated Agricultural Region with Dairies*, 44 J. Envtl. Quality 1435, 1435 (2015) (attached as Exhibit G).

⁷ Tucker Burch et al., *Fate of Manure-Borne Pathogens during Anaerobic Digestion and Solids Separation*, 47(2) J. Envtl. Quality 336, 336 (2018) (attached as Exhibit H); 68 Fed. Reg. 7,176, 7,263.

⁸ 68 Fed. Reg. 7,236; Laura M. Bexfield et al., *Hormones and Pharmaceuticals in Groundwater Used as a Source of Drinking Water Across the United States*, 53 Envtl. Sci. & Tech 2950, 2950-51, 2958 (2019) (attached as Exhibit I).

⁹ See generally Manvendra Patel et al., *Pharmaceuticals of Emerging Concern in Aquatic Systems: Chemistry, Occurrence, Effects, and Removal Methods*, (119)(6) Chem. Review (2019), <https://pubs.acs.org/doi/10.1021/acs.chemrev.8b00299> for a list of pharmaceuticals that have been researched and their impacts on aquatic species.

¹⁰ Edward F. Orlando et al., *Endocrine-Disrupting Effects of Cattle Feedlot Effluent on an Aquatic Sentinel Species, the Fathead Minnow*, 112(3) Envtl. Health Perspectives 353, 356 (2004) (attached as Exhibit J); Joan A Casey et al., *Industrial Food Animal Production and Community Health*, 2 Current Envtl. Health Rep. 259, 266 (Sept. 2015) (attached as Exhibit K).

¹¹ *Id.* at 356.

¹² Ya He et al., *Antibiotic Resistance Genes from Livestock Waste: Occurrence, Dissemination, and Treatment*, 3(4) Clean Water 1 (2020), <https://www.nature.com/articles/s41545-020-0051-0> (attached as Exhibit L).

¹³ Xunde Li et al., *supra* n.13 at 1445; Fabienne Wichmann, *Diverse Antibiotic Resistance Genes in Dairy Cow Manure*, <https://doi.org/10.1128/mbio.01017-13> (2014).

¹⁴ *Id.*

Nutrients, though naturally occurring in the environment, pose their own unique risks to animal and plant life when unnatural quantities are added to ecosystems. Excessive amounts of nitrogen and phosphorus in water create hypoxic dead zones where fish and other aquatic species cannot survive.¹⁵ Further, heavy nutrient loads create algal blooms that can be toxic to humans and pets that come into contact with impacted waters.¹⁶ The economic cost of a single major harmful algal bloom can climb to tens of thousands of dollars, and the cumulative cost of the U.S.'s algae problem may be as high as 100 billion dollars annually.¹⁷ Low dissolved oxygen and nutrients are among the leading causes of water quality impairments in North Dakota.¹⁸

Bacteria in the environment convert nitrogen from manure into nitrates, another hazardous pollutant. Ingesting water contaminated with nitrates is associated with dangerous human health conditions like colorectal cancer, thyroid disease, birth defects, premature births, and methemoglobinemia (a potentially fatal condition commonly known as “blue baby syndrome”).¹⁹ Importantly, CAFO pollution impacts are often compounded by the synergistic effects of pesticides, like those used in cattle ear tags or on nearby crop fields, whose rows are devoted to growing livestock feed inputs like corn.²⁰ For instance, a 2022 study of drinking water in rural Nebraska found that high levels of both nitrate and atrazine (a carcinogenic pesticide used widely on livestock feed crops in the U.S.) in drinking water were correlated with increased likelihood of birth defects.²¹ Analyses conducted by the Environmental Working

¹⁵ EPA, *The Effects: Environment*, <https://www.epa.gov/nutrientpollution/effects-environment>.

¹⁶ NDEE, *supra* n.15 at 15; GAO, *supra* n.2 at 9, 24-25, 72 (2008); 68 Fed. Reg. 7,176, 7,235; Burkholder, *supra* n.9 at 309; U.S. Office for Harmful Algal Blooms, *HAB Impacts on Wildlife*, <https://hab.who.edu/impacts/impacts-wildlife/> (last accessed Aug. 30, 2023).

¹⁷ National Centers for Coastal Ocean Science, *Assessing Environmental and Economic Impacts*, <https://coastalscience.noaa.gov/science-areas/habs/assessing-environmental-and-economic-impacts>.

¹⁸ DEQ, North Dakota 2020-2022 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads, https://deq.nd.gov/publications/WQ/3_WM/TMDL/1_IntegratedReports/2020_2022_Final_ND_Integrated_Report_20230824.pdf.

¹⁹ Mary Ward et al., *Drinking Water Nitrate and Human Health: An Updated Review*, 15(7) Int. J. Res. Public Health 22 (2018) (attached as Exhibit M); Burkholder, *supra* n.9 at 310; Roberto Picetti et al., *Nitrate and Nitrite Contamination in Drinking Water and Cancer Risk: A Systematic Review with Meta-Analysis*, 210 ENV'T'L RES. 112988 (July 2022), <https://www.sciencedirect.com/science/article/pii/S0013935122003152>.

²⁰ USDA, *2022 Census of Agriculture State Profile— Nebraska*, https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/Nebraska/cp99031.pdf.

²¹ Balkissa S. Ouattara et al., *Investigation of a Possible Relationship between Anthropogenic and Geogenic Water Contaminants and Birth Defects Occurrence in Rural Nebraska*, 14 Water (2022), <https://www.mdpi.com/2073-4441/14/15/2289> (attached as Exhibit N); *see also* Louise Boyle, Independent, *US Meat Industry Using 235m Pounds of Pesticides a Year, threatening Thousands of At-Risk Species, Study Finds*, <https://www.independent.co.uk/climate-change/news/pesticides-factory-farm-wildlife-food-chain-vegan-b2017811.html#comments-area> (Feb. 22, 2022).

Group show numerous North Dakota municipalities with unsafe levels of nitrate in their drinking water.

The EPA estimates that approximately 75 percent of all CAFOs discharge pollutants to water,²² and the proposed Abercrombie Dairy is likely to fall into this category due to its size and proximity to surface and ground waters. CAFOs are specifically designed to maximize production and reduce operator costs by departing from the traditional way of raising animals on the land. Because the amounts of manure and other pollutants generated “frequently exceed the assimilative capacity of land,” CAFO-dense watersheds often suffer severe water quality impacts.²³ Decades of inadequate regulation have allowed CAFOs to construct, design, operate, and maintain their facilities such that they discharge significant amounts of waste into state and federal waters, externalizing their pollution costs onto the environment and the public at large. Consequently, this industry is causing severe water quality deterioration that impacts the environment and threatens public health.

CAFOs discharge pollutants to waterways through a variety of pathways. Production area discharges occur when wastewater lagoons overflow or breach, allowing their contents to run off into adjacent surface waters.²⁴ Production areas also discharge wastewater because some operations are so large that they cannot possibly manage all contaminated run-on water or feasibly prevent cattle from accessing streams.²⁵ Additionally, CAFOs often stockpile silage in massive mounds and manure in uncovered windrows, both of which produce contaminated wastewater that can run off from production areas.²⁶ These pollutants discharge to surface waters through ditches and canals; manure and wastewater handling infrastructure such as pipes, pumps, and storage facilities; leaking equipment; and ventilation systems.²⁷

²² 73 Fed. Reg. 70,418, 70,469 (Nov. 20, 2008) (explaining that only about 25 percent of CAFOs are not designed to discharge).

²³ See e.g., American Public Health Association, *supra* n.3 (“Over the last several decades, food animal production in the United States has shifted from an extensive system of small and medium-sized farms to one characterized primarily by large-scale industrial operations that concentrate large numbers of animals in small geographic areas.”); Hribar, *supra* n.3; Gurian-Sherman, *supra* n.3 at 10.

²⁴ See Ryan McCarthy, Meat + Poultry, *Commissioners in Nebraska Contact JBS over Wastewater Lagoon Concerns*, <https://www.meatpoultry.com/articles/29768-commissioners-in-nebraska-contact-jbs-over-wastewater-lagoon-concerns> (Feb. 15, 2024).

²⁵ See, e.g., Lewis & Clark Natural Resources District, *supra* n.35 at 1-5 (“Unrestricted cattle access to streams allows for manure to be directly deposited into the stream. . . . Additionally, manure from pastureland is transported in overland runoff. This contributes to the bacteria and nutrient loading.”).

²⁶ Livestock and Poultry Environmental Learning Center, *Silage Runoff Characteristics* (Mar. 5, 2019), <https://lpec.org/silage-runoff-characterization/> (“Silage leachate is a high strength waste which contributes to surface and groundwater contamination of various pollutants from runoff, direct leaching through concrete storage structures, and infiltration of runoff.”).

²⁷ 68 Fed. Reg. at 7,181; EPA, MANAGING CAFO MANURE at 2-25—2-26 (discussing voluntary controls to minimize spills and leaks from storage structures), 4-2 (noting that certain CAFOs must have “reception pits..., diversions, sediment basins, and underground outlets”); 4-15

Land application areas can pose an even greater risk of discharges. Application of CAFO waste to saturated or frozen fields leads to runoff. Pressurized irrigation systems and other land application methods can also cause discharges due to faulty equipment or imprecise application. Many land application areas also contain subsurface drainage systems, such as tile drains, that act as conduits to surface waters. CAFOs also discharge large quantities of pollutants to groundwater— the drinking water source for approximately 62 percent of North Dakotans.²⁸ Land application activities and storage of silage and compost on bare ground or other permeable surfaces allow pollutants to leach through the soil and enter drinking water aquifers. At production areas, animal manure and process wastewater are stored in impoundment structures, or “lagoons,” that “are designed to leak” pollutants.²⁹

B. SURFACE WATER IMPLICATIONS

The Red River is a class I stream: The quality of the waters in this class shall be suitable for the propagation or protection, or both, of resident fish species and other aquatic biota and for swimming, boating, and other water recreation. The quality of the waters shall be suitable for irrigation, stock watering, and wildlife without injurious effects. After treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the water quality shall meet the bacteriological, physical, and chemical requirements of the department for municipal or domestic use.

(describing irrigation systems for applying CAFO waste), 7-2 (discussing “unplanned discharges” from pumps and pipes), O-10 (explaining that fields with subsurface (tile) drainage “creat[e] a surface water pollution hazard from direct tile discharge”); EPA, CAFO RISK ASSESSMENT at 52, 72--73; *Nat'l Pork Producers Council v. U.S. E.P.A.*, 635 F.3d 738, 748 (5th Cir. 2011) (agreeing with EPA’s position that “litter discharged through confinement house ventilation fans” would be a Clean Water Act violation); Institute of Agriculture and Natural Resources, *Contaminant Pathways*, <https://water.unl.edu/article/animal-manure-management/contaminant-pathways> (“Runoff from open lots, land application areas, and manure and feed storage units is a common pathway for contaminant transport.”).

²⁸ George Garklavs & Rick Nelson, *North Dakota Groundwater Quality 1*, <https://pubs.usgs.gov/of/1987/0744/report.pdf>.

²⁹ *Food & Water Watch*, 20 F.4th at 509; Xunde Li et al., *supra* n.13 at 1435.

The Wild Rice River is a class II stream: The quality of the waters in this class shall be the same as the quality of class I streams, except that additional treatment may be required to meet the drinking water requirements of the department. Streams in this classification may be intermittent in nature which would make these waters of limited value for beneficial uses such as municipal water, fish life, irrigation, bathing, or swimming.

The Wild Rice River: A Pollution Success Story

Historically, the Wild Rice was known to be a troubled stream. “Runoff from agricultural lands and septic systems led to high bacteria levels” that caused North Dakota to add the river to its section 303(d) list of impaired waters in 1998. Only after the Richland County Soil Conservation District implemented a plan mandating compliance with best management practices was the watershed able to recover its recreational uses. In fact, the Wild Rice River was spotlighted as a non-point pollution success story by the EPA.

“Watershed assessments by the Richland County Soil Conservation District (SCD) and Cass County SCD determined that pasture and rangeland, degraded riparian areas, livestock concentration areas and hobby farms in close proximity to the river could be negatively affecting water quality in the Wild Rice River.”

At a cost of \$75,000 for septic systems, fencing, cover crops, well decommissioning, watering and livestock feeding system, Richland County and the EPA reduced the coliform count from 700 cfu to less than 126 cfu, meeting state standards for a class 2 stream.

U.S. EPA, Nonpoint Source Success Story, https://19january2021snapshot.epa.gov/sites/static/files/2020-07/documents/nd_wildrice-508.pdf

Antelope Creek is a Class III stream: The quality of the waters in this class shall be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.

Numerical criteria for each of the classes is found in Chapter 33.1-16-02.1 “Standards of Quality for Waters of the State.”

1. Inadequate baseline conditions and monitoring:

Monitoring of these three waters of the state by ND has been sporadic (Table 1) and inconsistent in regard to metrics.

TABLE 1

RED RIVER	location	date of most recent data
	Upstream: about 13 miles from dairy	
	Station ID: 551481 Red River Below Wahpeton Dam	2012(ND)
	S008-426 Wahpeton	2021 (MPCA)
	Adjacent to manure applied fields and about 2 miles from dairy:	
	Station ID: 380083 Red River at Brushvale	2024(ND)
		1993- pesticides
	S000-012 Brushvale	2021 (MPCA)
	Downstream: about 30 miles away	
	Station ID: 385213 Red River 9 Miles S Of Fargo	2023 (ND)
WILD RICE RIVER:		
	Upstream: Station ID 551427 3 miles S of Farmington	2016
	Downstream: Station ID 551269 3.2 miles NW of	2016
	Abercrombie	
	USGS 05053000 Abercrombie	2024
ANTELOPE CREEK:		
	Upstream: Station 551271 Dwight	2015
	USGS 05052500	2023
	Station 385231 N Antelope Creek	2020
	Mid Project: Station 380030 Confluence of Antelope	
	And Wild Rice River	1996-2024

Richland County has extensive tiling that substantially increase the likelihood that land-applied CAFO waste will run off fields and into nearby waterways. Any CAFO waste that enters a state water through this tiling is a jurisdictional discharge under the Clean Water Act, requiring a NPDES permit.

To evaluate the Dairy’s effect on surface water pollution on the Wild Rice, Red Rivers and Antelope Creek, both at the project site and applied fields, up-to-date baseline measurements of basic chemistries, heavy metals, hormones, pesticides and biologics should be done pre-project, followed by consistent monitoring. Measurements immediately upstream from the bulk of the field applications will assign appropriate contributions by the dairy; monitoring closely downstream close to the project will diminish the effect of dilution on the dairy’s contribution to pollution. Baseline studies of biota such as invertebrates and fish should be part of the pre-project evaluation, and regular monitoring must be conducted throughout the life of the Dairy to ensure wildlife is adequately protected.

Because of the extensive tiling in the affected area, baseline and ongoing monitoring of the pollutants at the major drain outlets would add to protection of the receiving streams. Moisture monitors in tiled field should be required to prevent application of manure at inappropriate times and to detect discharges to groundwater. Permit conditions specifying the manner and timing of monitoring must be included. Monitoring is only capable of providing representative data if conducted during and immediately following land application activities.

Ideally, 1965 water quality data should be located and used as a target. Monitoring data must be available to the public to facilitate citizen enforcement of effluent standards.

2. Incomplete Data for Nutrient Management Plan

A. The nutrient management plan is required to prevent over application of manure with resultant excess nitrogen and/or phosphorus running into the surface or groundwater. In order to calculate how much N and P can be applied to a field, there should be measurement of baseline soil level, soil type and manure content. In a letter by the consulting agronomist Mark Hockel of April 23, 2024 to Karl Rockeman:

“I am writing in regard to anomalies in soil samples obtained this past winter by Riverview LLP. While sampling in the winter is not necessarily problematic as shown by recent research led by Dr. Dan Kaiser, U of MN extension, the problem in accuracy of these samples pertains to the fact that many were taken soon after a fertilizer application.

The warm fall of 2023 and lower fertilizer prices led to record amounts of fertilizer applications. Taking samples shortly after application can lead to contamination as the fertilizer prills may not have adequately dissolved and not been mixed into the soil like we would typically see after planting and certainly by the end of the growing season. This led to very high levels of nutrients appearing in the lab results. I have personally experienced this before and found there is no direct correlation of how much the true soil fertility levels are as no one knows how many prills were collected when sampling. While typical crop removal can range from 30#P -soybeans to 90#P-corn silage and we know that the typical Midwestern soil requires about 20 units of P to raise or lower the soil test 1 ppm on the Olsen scale, this minor change of 3-5 ppm per year is negligible compared to how a contaminated soil sample with prills of DAP or MAP can impact the soil sample by 40-80 ppm. *My recommendation would be to try to get soil sample results from before the fertilizer application was made or wait until after the crop is harvested to obtain accurate results to base future decisions.*” (emphasis added).

The only soil tests presented are from early in 2024. No further samples have been submitted as of this date; it appears there is no baseline soil data to determine how much waste can be applied safely. This should be remedied by following the agronomist’s recommendation and resampling and then adjusting the NMP as needed.

B. Soil maps missing:

No NRCS soil maps are seen for fields:

70,73,74,76,80

81 through 90

91 through 95, 98

103,104,106 through 108

111,112,128,130

131,132,138 through 140

141 through 150

151 through 160

161

This data should be reported and NMP adjusted as needed.

C. Flood risk and erosion:

A simple visual exam of the proposed manure disposal fields shows that:

10 fields abut or have Antelope Creek running through them

15 fields abut or have the Wild Rice River running through them

3 fields abut the Red River.

Another 42 are in contact with smaller unnamed streams.

According to the USGS monitoring station [05053000](#), the flood stage of the Wild Rice River is 20 feet, this was exceeded in 1997, 2009, 2011. On 12/29/23 the river was height was at 19.68 feet. Similarly, at the [05052500](#) monitoring station for the Red River at Wahpeton upstream from Abercrombie, the Red exceeded the flood stage of 11 feet in 1989,1997, 2009, and just this year on June 5, the river was at 11.93 feet.(USGS Flood Tracking Chart Builder).Antelope Creek as of Sept 30, 2024 is at 23.24 feet; USGS does not list the flood stage, but the crest has varied widely from 32 to 42 feet over the last 15 years. High flow events such as these result in bank erosion and/or overland flooding that will directly deposit manure pollution into the stream. Of the available (see above) soil maps, about 25 acres are frequently flooded and highly erodible while about 60 acres are moderately so. There are no allowances for flood setbacks in the fields submitted for the NMP. When asked about the vulnerability to the streams from flooded and eroded fields, a representative from DEQ said:

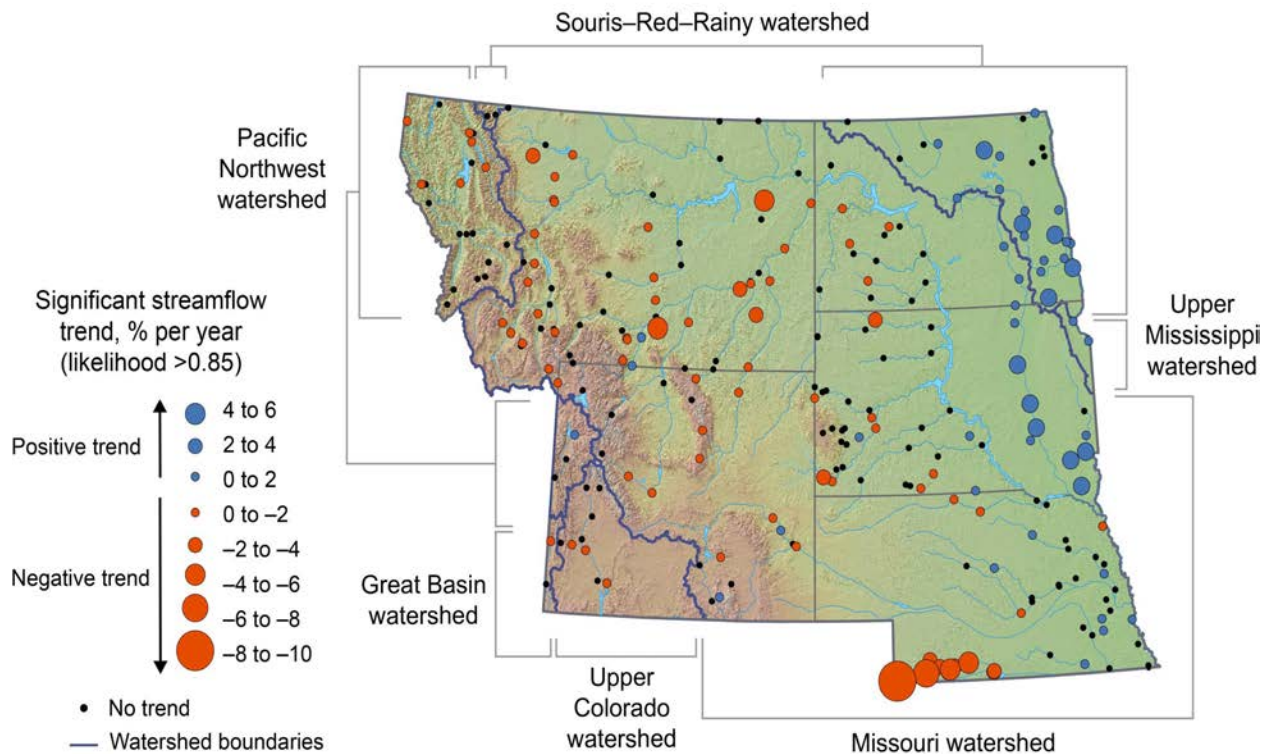
“Proper manure and fertilizer application is dependent on operators using reasonable judgement and adequate precautions when applying. The risk of nutrient leaching or runoff from flooding can be mitigated or prevented by properly incorporating manure into the soil, following a proper setback from standing water or saturated areas, or by choosing to spread manure on more suitable areas. “(personal correspondence).

The reason to have regulations is to avoid relying solely on an “operator’s reasonable judgement” to protect a common critical resource.

In the Fifth National Climate Assessment, peak stream flow was used as a proxy for flooding. The eastern Dakotas are in an area of increasing peak flow. With 3.6 to 7.2 degrees F global warming, the Northern Great Plains would expect to see some of the highest increases in annual flooding damage costs in the US due to climate change. Table 2 shows that Richland County is in the highest category of annual increase in stream flow with over 85 % probability of a 4-6 % annual rise.

Water Resource Regions and Rivers

Trends in annual peak streamflow, 1961–2020



Fifth National Climate Assessment (<https://nca2023.globalchange.gov/chapter/25/>)

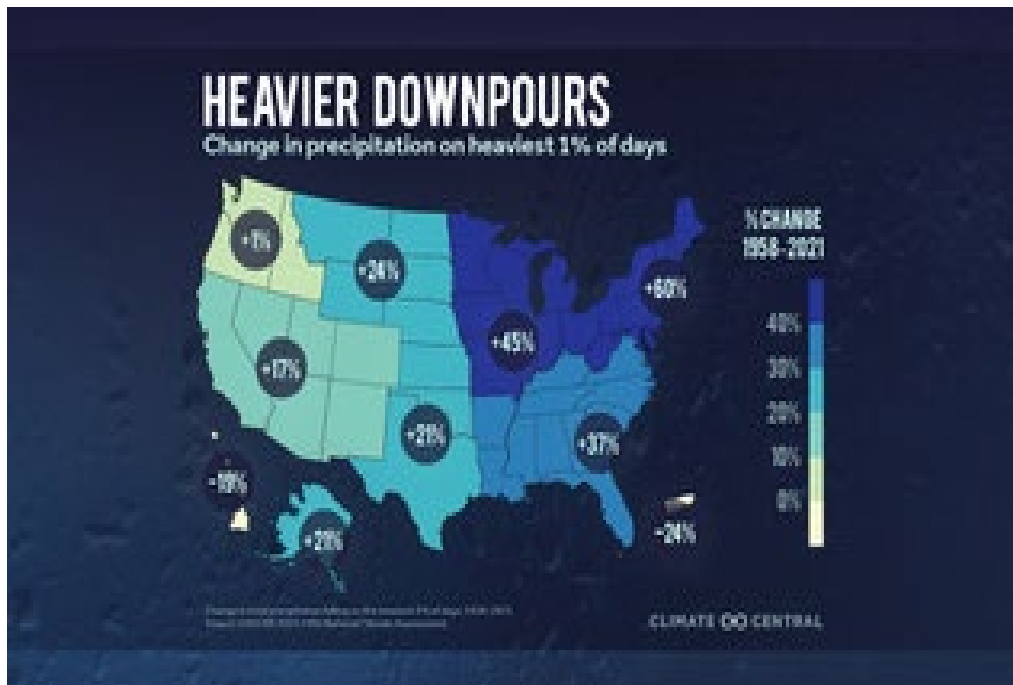
This dairy project is in a very high risk for flood associated problems. We advise against granting this permit. At the very least, we recommend that areas that are at high or moderate risk for flooding and/erosion be ineligible for manure application. The NDRAM flood risk map should be used to disqualify areas at 1% risk for flooding from manure application.

.....

D. Extreme weather-related issues:

The Fifth National Climate assessment also asserts that climate change is compounding the impacts of extreme events. Total annual precipitation will be relatively stable across the region but shifts in the form and timing of precipitation are expected. More intense precipitation events are expected to occur in all seasons, especially in the spring.

Table 3



Change in total precipitation falling on the heaviest 1% of days, 1958–2021. Source: USGCRP, 2023: Fifth National Climate Assessment.

Bismarck had 8 inches of rain August 14, Stutsman County flooded June 2 through July 17 with 6-9 inches of rain. The historical trend of for heavier downpours confirms the movement towards bigger, sporadic, unexpected and localized rain events we saw this summer. The calculations for pond and stacking pad volumes are based on 2013 Richland County data; this information is out of date and geographically too restrictive.

ND is famous for its low winter temperatures, but exactly when freeze-up occurs is somewhat unpredictable; that along with variable precipitation could make manure disposition challenging.

In 2017,2018,2019,2022 the November mean temp was under 32

In 2014,2017,2018,2019,2020,2022,2023 the March mean temp was under 32

<https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series/ND-077/tavg/1/4/2014-2024If>

Spring flooding, late harvest, early freeze-up, late thaw could either together or singly narrow the window for manure application. Dumping manure on frozen fields would directly pollute the receiving and is illegal. Is managing this massive amount of manure physically doable, especially with some of the fields miles away?

We would like to see contingency plans for exceedances in manure storage, either because of large rain events, freezing or flooding. Spreading manure on frozen fields must be illegal and the rule must have significant consequences and enforcement.

E. Drinking water concerns:

Surface water pollution from Abercrombie Dairy will add to the cost of cleaning up Red River water for cities which rely fully or partially on surface water: Fargo, Moorhead, Grand Forks and Grafton. An example of how CAFO's have affected municipal water supplies is the Raccoon River in Iowa.

“Twenty years ago, in 1991, Des Moines Water Works was forced to build one of the world’s largest — and most expensive — nitrate removal systems. This was necessary to treat the unsafe levels of nitrates entering the Raccoon River from factory farms and industrial agriculture fertilizer use upstream. Less than two decades later, the system was overwhelmed by the ever-increasing levels of nitrates flowing into the river from the proliferating factory farm operations in the watershed. As a result, in 2017, Des Moines Water Works had to expand this nitrate removal system. Ratepayers — not the polluting agribusinesses upstream — have borne these costs.”

Profit vs the People: The Clean Water Fight Over the Raccoon River

<https://www.americanrivers.org/2021/08/profit-vs-the-people-the-clean-water-fight-over-the-raccoon-river/>

In addition to pollutants entering drinking water through direct surface means, they may also enter aquifers via Red River recharging. A study of the Wahpeton Buried Valley (WBV) aquifer was published in 1997.

“The Buffalo and Wahpeton aquifers are the primary source of water for municipal, agricultural-product processing, agricultural, and domestic use in the southern Red River of the North drainage basin. Declining hydraulic heads in the Buffalo and Wahpeton aquifers are of concern to Minnesota Department of Natural Resources (MDNR) and local water managers because ground-water resources are limited in the southern part of the Red River of the North drainage basin. The MDNR is particularly concerned about the Buffalo and Wahpeton aquifers because these aquifers are susceptible to contamination, to hydraulic-head decline during drought, or to long-term withdrawals greater than long-term recharge.”

.... “Recharge from the Red River of the North to the Wahpeton aquifers was not estimated. The texture of the riverbed sediments of the Red River of the North, aquifer thicknesses, and their hydraulic properties are not known”

.... “The decline in hydraulic head between 1974 and 1993 indicates that pumpage has exceeded recharge in the Wahpeton Buried Valley aquifer. The pumpage from 1979 to 1993 averaged 560 Mgal/yr, or about 2.0×10^5 ft³”

See Exhibit A:Hydrogeology and Sources of Recharge to the Buffalo and Wahpeton Aquifers in the Southern Part of the Red River of the North Drainage Basin, West-Central Minnesota and Southeastern North Dakota <https://pubs.usgs.gov/wri/1997/4084/report.pdf>

This study raises the question of not only water quality, but also water quantity being at risk.

II. GROUND WATER CONCERNS

The Abercrombie Dairy describes the project site:” The dairy overlies the Wahpeton Buried Valley Aquifer, (WBV) classified as moderately vulnerable according to the DRASTIC system. DEQ at this point states monitoring wells are not necessary because of the lining of the manure pits and geology.”

According to the hydrology report by WET Company hydrologist David Erickson, this is inaccurate.

“The proposed lagoons at the Abercrombie Dairy are 24 feet deep and constructed according to the North Dakota Livestock Program Design Manual (NDLPDM) with an allowable seepage rate of 1/16 inch per day. 1/16 inch per day is equal to 22 inches per year or approximately equal to a permeability of 1.84×10^{-6} cm/sec. At 24 feet deep or 16 feet into the subsurface, the bottom of the lagoon is approximately 2 feet above the water table. Simply, the 22 inches of seepage per year will contaminate the water table in just over one year from beginning of operation, that assumes the lagoon meets the verbal construction standard in the permit, with no oversight or regulatory inspections.

..... My direct experience with earthen lagoons starting in 1988 provides me with the knowledge that construction of a lagoon with a permeability less than 1.8×10^{-6} cm/sec requires strict construction quality control and quality assurance and an experienced liner contractor. Dairy contractors are usually focused on agricultural construction and do not specialize in lagoon construction.

.... Even at the unrealistic seepage rates proposed in the permit (0.0015 to 0.002 inches per day), these two lagoons will leak 6,500,000 gallons per day per acre on average of high strength wastewater into the aquifer with an average wastewater depth of 10.5 feet.”

Erickson also has concerns about groundwater and manure application:

“..... In addition to the lagoons, the application fields are a major source of ground water contamination. The nutrient management plan does not account for existing nutrient in the field but just allows for full strength applications every year. It also does not account for the buildup and conversion of organic nitrogen to nitrate. The repeated application of manure waste results in high organic nitrogen transforming to nitrate every year and is not accounted for in the nutrient budget.

The application method also reduces the plants’ ability to use all the nutrients. The knifing operation destroys the root system and the plants only uptake the shallow (less the 1’) nutrient with the remainder migrating in soil moisture to ground water.

The fall applications are also a major source of contamination, since no plant uptake occurs

between fall and spring, but winter precipitation continues to flush nutrients to ground water. This is a major source of impacts to ground water and has been deemed to be waste disposal by a Federal Court in Washington.”

See Exhibit B. Response to Riverview ND, LLP application for the Abercrombie Dairy.

The WBV aquifer is a part of a groundwater system that includes the Wahpeton Sand Plain (WSP) Wahpeton Shallow Sand (WSS) aquifers. This system underlies both ND and Mn and provides drinking water for Wahpeton and Breckenridge, surrounding private citizens communities like Abercrombie and industries such as the Minn-Dak beet processing plant. In fact, when Wahpeton city wells pumped extra water for remediation from leaking Minn -Dak lagoons, water levels dropped in Breckinridge.

Buried Sand and Gravel Aquifers of the Breckenridge/Wahpeton Area, Minnesota and North Dakota

See Exhibit C (<https://wrl.mnpals.net/islandora/object/WRLrepository%3A2332>)

The DEQ Groundwater protection program samples target superficial aquifers every 5 years, but the WBV system is not part of the monitoring program. Pollution of this aquifer will occur unmonitored, likely putting the drinking water of not only the 27 private and 2 municipal wells listed in the Fact Sheet as being within 2 miles of project but also the larger communities of Wahpeton and Breckinridge.

We recommend that this permit be denied because of the risk to both the water quality and quantity of existing users.

At the very minimum, after obtaining baseline monitoring at the project site and the 3 aquifers affected (WBV, WSS, and WSP), robust monitoring with openly available data needs to be done. Provisions of the Safe Drinking Water Act must be strictly applied to the 2 municipal wells with information easily accessible to users. There must be a plan if quality standards are exceeded.

Monitoring at private wells needs to be done at no cost to the user or the taxpayer. There should be a mitigation plan for loss of use of the wells, both private and public, with the liability born by the polluter.

III.POLLUTANTS FROM DAIRY CAFOS

In Exhibit B, Erickson lists contaminants found in CAFO Lagoons and Drinking Water Wells. The following section is a brief discussion of selected pollutants on this list as well as known pathogens for which CAFOs provide a friendly environment.

1.NUTRIENTS:

Nitrogen (N) is a nutrient excreted from dairy cows in great amounts and is a pollutant that can contaminate air, soil, and water when manure is not properly managed. The loss can be

20 to 80% of the total N in fresh manure. A dairy cow producing 90 lb/day of milk excretes 1 lb of N in manure. Nitrogen runoff and nitrate leaching into ground water will directly produce water pollution. Ammonia volatilization from fresh manure during storage, handling and application can be redeposited on both and land water. Ammonia reacts with nitric and sulfuric acids in the atmosphere to form fine particulate matter with a diameter $\leq 2.5 \mu\text{m}$ (**PM2.5**; ammonium nitrate and ammonium sulfate). Atmospheric PM2.5 is a grave threat to human health.

After field application, N is also lost through nitrous oxide (N_2O) emissions during the process of soil microbial nitrification and denitrification. Nitrous oxide is one of the powerful greenhouse gases and is 298 times stronger in global warming potential compared with CO_2

Phosphorus: The P requirement for lactating dairy cows has been estimated to be 0.32 to 0.42% in dietary DM. When a dairy cow producing 90 lb of milk is fed a 0.35% P diet, about 0.07 lb of P is secreted in milk and 0.11 lb of P is excreted in manure.

.....When oversupplied to the field, P is lost from the field through runoff, which increases the risk of manure P causing water quality problems, such as eutrophication and harmful algae blooms.

Nutrient Losses from Dairy Operations and Their Environmental Issue

<https://dairy.osu.edu/newsletter/buckeye-dairy-news/january-2016/nutrient-losses-dairy-operations-and-their-environmental>

Human health implications:

The EPA set an enforceable limit of 10 mg/L as nitrate-nitrogen ($\text{NO}_3\text{-N}$) in 1965 to prevent methemoglobinemia, blue baby syndrome in 1965. The nitrate prevents binding of oxygen to hemoglobin. Since then, an Environmental Working Group review of epidemiological studies suggests that there is a higher risk of colorectal, ovarian, thyroid, bladder and kidney cancers among people exposed to nitrate from drinking water at levels between 1.55 and 5 mg./L. Thyroid cancer was associated with levels of 2.5 and 6.5 mg/l. Nitrate levels of 1.0 mg/L was associated with birth defects, preterm labor and low birth weight babies.

Nitrate in Drinking Water https://static.ewg.org/reports/2020/covid-stimulus/EWG_Nitrate_Factsheet_PP01.pdf?_gl=1*1f1pva5*_gcl_au*MTczMTIyNDIzNy4xNzI3NzYzNzkz*_ga*MTM1NDY0MjY5NS4xNzI3NzYzNzky*_ga_CS21GC49KT*MTcyNzgyMDgyNi4zLjAuMTcyNzgyMDgyNi42MC4wLjMwODk1NzYxOQ..

Wildlife effects: Nitrogen and Phosphorus promote the growth of algae. The blooms deplete Oxygen levels in the water leading to fish kills. Some blooms contain cyanotoxins which can harm people and pets (nausea, vomiting, headache, diarrhea, skin/eye irritation, fever, muscle and joint pain, respiratory symptoms, allergic reactions). The Environmental Working Group identified through media reports a steady increase nationally from 80 blooms in 2010 to over 400 in 2022.

Animal feeding operations harm the environment, climate and public health

<https://www.ewg.org/research/animal-feeding-operations-harm-environment-climate-and-public-health>

Lake Winnipeg is the ultimate receiving body of nutrient pollution from the Red River. It is the 10th largest lake in the world. Warmer weather and higher nutrient loads, much of it from hog CAFO's in the Red River Valley have increased the frequency and severity of blooms since the 1990's.

Algal Blooms on the Rise in Lake Winnipeg - Province taking Action

<https://discoverwestman.com/articles/algal-blooms-on-the-rise-in-lake-winnipeg---province-taking-action>

2.HORMONES:

Natural estrogens are potent endocrine disruptors. One dairy cow produces 250 mg of estrogens, as much as hormones taken by 1,000 post-menopausal women. 90% of estrogen load in the environment is from CAFO manure and can be found both in water and soil.

“Estrogens at polluting levels have been detected at sites close to wastewater treatment facilities and in groundwater at various sites globally. Estrogens at pollutant levels have been linked with breast cancer in women and prostate cancer in men. Estrogens also perturb fish physiology and can affect reproductive development in both domestic and wild animals. Treatment of plants with steroid estrogen hormones or their precursors can affect root and shoot development, flowering and germination”

Fate, transport, and biodegradation of natural estrogens in the environment and engineered systems <https://pubmed.ncbi.nlm.nih.gov/17144275/>

Hormonal wells found in state's karst region; dairy farms possible source

<https://wisconsinwatch.org/2013/12/hormonal-wells-found-in-states-karst-region-dairy-farms-possible-source/>

Environmental impact of estrogens on human, animal and plant life: A critical review (International Volume, February 2017, Pages 107-119)

3.ANTIBIOTICS-direct effects:

Last year, 11.1 million kgs of antibiotics were sold for use in animal agriculture in the US. Antibiotics from this waste stream have been recognized as a significant pollutant to water and soil for years.

Between 40–90% (depending on the class of drugs) of the administered antibiotic dose is excreted in the faeces and urine as parent compound - in the active form, eventually reaching the environment, contaminating soils, waters, plants, etc. For example, only 25% of a tetracycline dose is absorbed with the rest being excreted unchanged. About 1.8 million kg of tetracycline were sold for use in cattle in 2022. (FDA)

How long antibiotics stay active and whether they are bound to soil or enter the water is specific to the type as well as environmental conditions. For example, macrolides like erythromycin had

halves in the soil from 5 to 120 days. Tylosin is irreversibly bound to soil. Tetracyclines are stable in both water and soil

Tetracyclines cause chromosomal aberrations and inhibit plant growth, induce DNA breakage and changes in the enzymatic activities of *Eisenia fetida* (earthworms) zebra fish, Daphnia, algae, mussels. Tetracyclines also affects phytoplankton and zooplankton communities. Tetracycline is capable of inducing the **cyanobacterial** bloom increasing the density of bacteria more than two-fold. (These are the algae that can produce toxins harmful to people and pets). Antibiotics in the environment: causes and consequences

(<https://pubmed.ncbi.nlm.nih.gov/32832887/>)

The Impact of Tetracycline Pollution on the Aquatic Environment and Removal Strategies

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10044355/>)

4. ANTIBIOTICS + BACTERIA=antibiotic resistance

“More and Longer Contact with other animals are a setup for bacteria and viruses to mutate” Bacteria develop resistance to antibiotics when exposed frequently and especially at low amounts. Bacteria swap resistance genes with they get together. They have multiple ways to cause human disease. In 2019(most recent data) 2.8 million antibiotic resistant infections with 35,000 deaths from antibiotic resistant infections were reported in the US. It is widely agreed that heavy use of antibiotics in animal agriculture has played a major role in the threat to return to a world of untreatable infections.

NARMS is a federal agency which tracks antibiotic resistance in food animals. In dairy cow cecum (large intestine) 10-year trends included:

- Campylobacter: Ciprofloxacin resistance in 2013 was 11%, this was up to 31% in 2013.

Ciprofloxacin has now been supplanted by azithromycin as the first line drug for this campylobacter diarrhea.

- Quinupristin/dalfopristin: the first available macrolide-lincosamide-streptogramin antibiotic, has only been available since 2000 but each of the 3 components have been used extensively in animal agriculture for years. This current formulation is a drug of last resort for vancomycin-resistant *Enterococcus faecium* (VREF) and for the treatment of complicated skin and skin structure infections caused by *Staphylococcus aureus* (methicillin-susceptible) or *Streptococcus pyogenes*. In 2013, 3.9% of enterococci were resistant; by 2023, this had increased to 30%.

- The pleuromutilin class has been used by veterinarians for over 30 years with little resistance occurring; this may be because it was never widely used as a growth enhancer. A drug in this class was approved in 2019 for human skin and lung infections and thus far resistance has been infrequent.

The National Antimicrobial Resistance Monitoring System

(<https://www.fda.gov/animal-veterinary/antimicrobial-resistance/national-antimicrobial-resistance-monitoring-system>)

Pleuromutilins: Potent Drugs for Resistant Bugs—Mode of Action and Resistance

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5204327/>)

5. OTHER PATHOGENS:

The crowding of many animals that is inherent in CAFO's provides a breeding ground for infectious disease agents that can transfer to humans. Data from one recent study suggest that since 1940, agricultural drivers were associated with >50% of zoonotic diseases in humans.

PARASITES:

Cryptosporidia is a parasite which causes diarrhea in people.

Cryptosporidium parvum is particularly common on dairy farms, with virtually all farms examined in industrialized nations being positive for *C. parvum*. *Outbreaks* of zoonotic *C. parvum* infections have occurred in caretakers of sick calves, farm visitors, children attending agricultural camps, and emergency responders rescuing calves in traffic accidents and burning barns while waterborne outbreaks have also occurred.

Giardia is another parasite that can cause diarrheal illness in humans. The global incidence of giardia carriage is estimated to between 16 and 24% of all cattle.

Association of Common Zoonotic Pathogens with Concentrated Animal Feeding Operations
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8784678/> Exhibit D

E. Coli 157:H7 on romaine lettuce contaminated by water and/or air from neighboring cattle feed lots caused outbreaks in 2018, 2019 and 2020.

Attachment A: Hydrogeology and Sources of Recharge to the Buffalo and Wahpeton Aquifers in the Southern Part of the Red River of the North Drainage Basin, West-Central Minnesota and Southeastern North Dakota <https://pubs.usgs.gov/wri/1997/4084/report.pdf>

Attachment B: Response to Riverview ND, LLP application for the Abercrombie Dairy.
David J Erickson CPG PG
Principal Hydrogeologist

Water & Environmental Technologies

Attachment C: Buried Sand and Gravel Aquifers of the Breckenridge/Wahpeton Area, Minnesota and North Dakota (<https://wrl.mnpals.net/islandora/object/WRLrepository%3A2332>)

Attachment D: Association of Common Zoonotic Pathogens with Concentrated Animal Feeding Operations
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8784678/>

**Response to Riverview ND, LLP application for the Abercrombie Dairy.
David J Erickson CPG PG
Principal Hydrogeologist
Water & Environmental Technologies**

Background

Much has been learned in the last 10 years about the impacts to human health and the environment from CAFO operations across the US. By granting this permit, North Dakota is permitting and encouraging the polluting of 1000's of acres around the proposed Abercrombie Dairy. Allowing the contamination of the drinking water supply aquifer under and downgradient of the proposed dairy, and permitting the contamination of area soil, ground water and surface water bodies with more than 100,000,000 gallons of manure, feces and wastewater every year.

After investigating approximately 30 existing CAFOs across the US (Washington, California, Georgia, New York, Wisconsin, and Oregon), several characteristics remain consistent:

1. CAFO Lagoons are allowed to seep and leak resulting in soil, ground water and surface water contamination.
2. Composting and silage areas produce large quantities of leachate that result in ground water contamination and contaminated runoff.
3. Application of manure is imprecise and poorly planned resulting in ground water and surface water impacts to nearby seeps, wetlands, springs and lakes.
4. Application fields are not monitored resulting in the accumulation of nutrients and leaching to ground water.
5. The 106,700,000 gallons of manure waste handled annually by the Dairy will result in spills on the facility and on nearby roads, will result in rancid manure odors over a large area, and will result in a large increase in the number of flies and insects in the area.
6. While the facility always describes measures to "reduce" odor, the sheer volume of manure, the anaerobic manure sludge in the lagoon, the application of over 100,000,000 gallons of manure waste on nearby fields, and the sheer mass of flies and insects from the manure, impacts area residents' lives in a very negative manner.

I have investigated at least 30 CAFOs in the last 10 years and all facilities had active releases of manure that impacted human health or the environment. These investigations included well over 100 lagoons, 1000s of application fields, many compost, silage and feed storage areas, and included underground piping, overapplication and catastrophic leaks and releases. Since these facilities have no independent inspectors and only rely on self-reporting, many of the activities go unregulated and unreported.

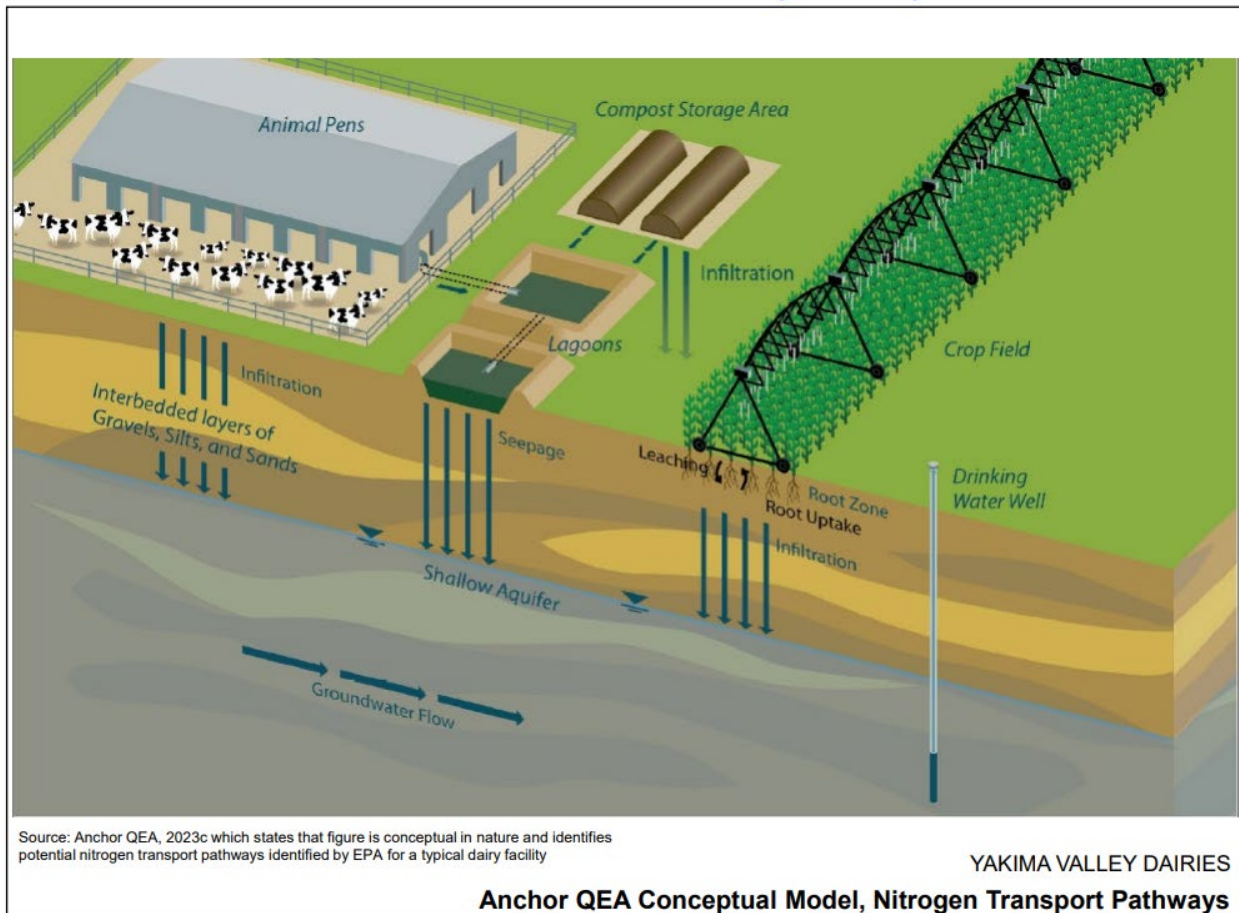
Conceptual Dairy Contamination Model

The Region 10 EPA has accepted a conceptual model for Dairy operations that describes contaminant sources from day-to-day operation of a Dairy CAFO. The EPA has been studying the Dairy contamination issues in Yakima, Washington for 12 years and has sampled and documented these contaminant transport pathways ([Lower Yakima Valley Groundwater | US EPA](#)). Currently the US Department of Justice is intervening because the Dairy Owners missed most of the Administrative Order deadlines and has not complied with many of the requirements; therefore,

contamination from the Dairies continue to impact ground water and nearby residents. Data on the website shows large areas of contaminated drinking water aquifer directly impacting area residents.

As shown below in a graphical representation of the conceptual model, seepage and release of contamination is possible from all aspects of the operation, mainly because of the large volume of waste generated from feces, urine, waste milk, animal mortalities and storm water runoff. All these waste sources seep to ground water then move downgradient to the nearest receptor. Those receptors are either domestic water supply wells or surface water bodies. In Yakima, these specific dairies have contaminated over 7 square miles (4600+ acres) of the aquifer and contaminated more than 300 residential wells.

Dairies have very specific contaminants with unique and problematic fate and transport characteristics. While most of the seepage occurs in the ammonium form (NH_4), through oxidation and microbes it quickly converts to nitrate (NO_3). These compounds have very different sorption characteristics. While ammonium absorbs strongly to soil, nitrate moves quickly in soil moisture and ground water with no adsorption. Simply, large ground water plumes above human health standard form quickly and migrate rapidly in the drinking water aquifer. The ammonium acts as a continual source as it nitrifies into nitrate in the soil.

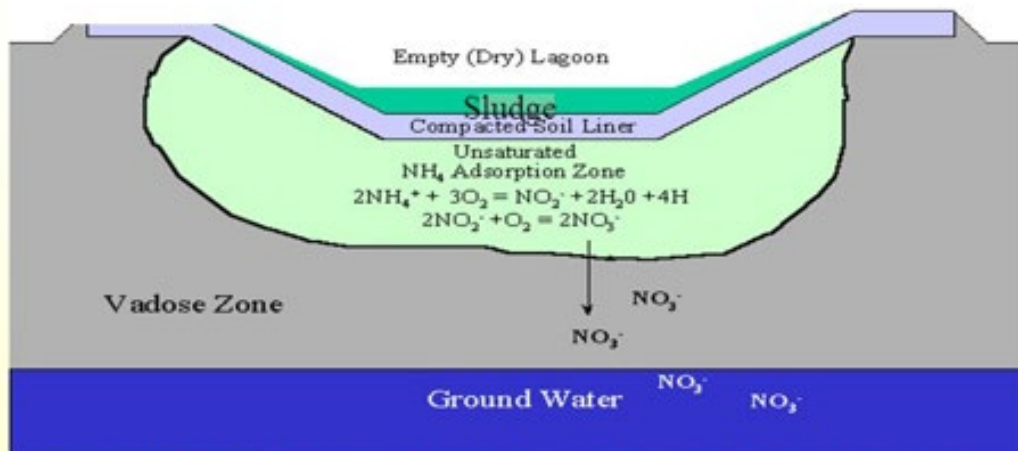


Lagoons

The proposed lagoons at the Abercrombie Dairy are 24 feet deep and constructed according to the North Dakota Livestock Program Design Manual (NDLPDM) with an allowable seepage rate of 1/16 inch per day. 1/16 inch per day is equal to 22 inches per year or approximately equal to a permeability of 1.84×10^{-6} cm/sec. At 24 feet deep or 16 feet into the subsurface, the bottom of the lagoon is approximately 2 feet above the water table. Simply, the 22 inches of seepage per year will contaminate the water table in just over one year from beginning of operation, that assumes the lagoon meets the verbal construction standard in the permit, with no oversight or regulatory inspections.

CAFO lagoons have been studied for years; however, many studies failed to look at the complete picture. The figure below shows an early study where Dr. Ham did not find a specific leak, but concluded that the resulting nitrate ground water plume was from lagoon seepage.

Conditions Around Lagoon Before Closure



Ham, J.M. 1999. Seepage Losses from Animal Waste Lagoons: Potential Impacts On Groundwater Quality. Kansas State University.

I have personally studied 1000s of lagoons and earthen lagoons leak and seep. Most of my career since 1988 has been spent remediating seepage from lagoons and this facility, as proposed, will definitely result in contamination of the drinking water aquifer.

My direct experience with earthen lagoons starting in 1988 provides me with the knowledge that construction of a lagoon with a permeability less than 1.8×10^{-6} cm/sec requires strict construction quality control and quality assurance and an experienced liner contractor. Dairy contractors are usually focused on agricultural construction and do not specialize in lagoon construction.

Even at the unrealistic seepage rates proposed in the permit (0.0015 to 0.002 inches per day), these two lagoons will leak 6,500,000 gallons per day per acre on average of high strength wastewater into the aquifer with an average wastewater depth of 10.5 feet (see table below for seepage rate of Abercrombie manure waste lagoons based on Darcy's Law).

Table 1. Seepage estimates. Abercrombie Manure Lagoons

K (cm/sec)	K (ft/day)	I	Gallons Per year	Dairy lagoons - 16.7 Acres
		Unitless	Per Acre	gallons per year
1.84E-06	5.22E-03	1	620,373	10,360,237
		2	1,240,747	20,720,474
		3	1,861,120	31,080,711
		4	2,481,494	41,440,948
		5	3,101,867	51,801,185
		6	3,722,241	62,161,422
		7	4,342,614	72,521,659
		8	4,962,988	82,881,896
		9	5,583,361	93,242,133
		10	6,203,735	103,602,370
		11	6,824,108	113,962,607
		12	7,444,482	124,322,844
		13	8,064,855	134,683,081
		14	8,685,229	145,043,318
		15	9,305,602	155,403,555
		16	9,925,976	165,763,792
		17	10,546,349	176,124,029
		18	11,166,723	186,484,266
		19	11,787,096	196,844,503
		20	12,407,469	207,204,740
		21	13,027,843	217,564,977
		22	13,648,216	227,925,214
		23	14,268,590	238,285,451
		24	14,888,963	248,645,688
		Darcy's Law		
		Q= Kia		
		Q = Discharge		
		K = permeability		
		I = gradient or change in Head = depth of liquid in pond		
		A = area liquid flows through		

The wastewater is very high in nutrient and bacteria (see Table 2), but also contains antibiotics and hormones from treating the cows and pesticides and herbicides from the feed. Table 3 contains a list of various compounds detected in ground water near the dairies in Yakima Washington. These compounds were detected in the drinking water aquifer used by area residents.

Table 2. Contaminant Concentrations in CAFO Wastewater

.pH	TDS	Chloride	Ammonia	TKN	Phosphorus	Calcium	Potassium
s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
7.6	3100	230	330	1600	358	122	80

TKN = Total Kjeldahl Nitrogen

Table 3. Contaminants Found in CAFO Lagoons and Drinking Water Wells, Yakima Washington

Nutrients & Minerals	Antibiotics
Nitrate Nitrite Ammonia TKN Chloride	Tylosin Enthromycin Lincomycin Sulfamethazine Tiamulin Virginiamycin Monensin Chlortetracycline Tetracycline
Hormones	Pesticides & Herbicides
Estradiol Androsterone Testosterone 7-a-estradiol Androstadienedione 17- β-trenbolone Epitestosterone	Atrazine Alachlor DEHP DEET Bentazon

Application Fields

Application of manure waste to crop fields is much more difficult than depicted in the permit and requires more monitoring to apply correctly. “Agronomic Rates” refers to an application in the amount of nutrients that the crop will use for maximum growth for one crop. Unfortunately, overapplication and leaching commonly occurs for the following reasons:

1. The farms application method is imprecise,
2. The lagoon sample is often collected without agitation, so the result is a minimum nutrient measurement while the application is at a much higher nutrient content,
3. The excess nutrient applied to the crop washes below the root zone with precipitation and is lost to ground water,
4. Phosphorous is always overapplied due to ammonium off gassing and the resulting nitrogen loss in the anerobic lagoon process, and
5. Storm water transports nitrogen, phosphorous and bacteria to the nearest surface water.

In addition, the odor from the application process is overwhelming and rancid for days after the application regardless of the application method. Nearby residents will have to contend with rancid odors, spills and releases on the roadways from hauling, additional manure truck traffic and routine misapplication by farm personnel.

The permit does refer to Fall applications. Unfortunately, when there is no crop growth, there is also no plant uptake of nutrients. The application in the Fall is one of the leading causes of ground water contamination since the nutrients have all winter to migrate through the soil with no mechanism to remove the nutrient from the soil.

At other facilities where the activities described in the permit has resulted in ground water contamination and in States where they recognize the impacts of CAFO operation, soil sampling at 1', 2' and 3' is required prior to each application. Soil moisture probes are placed in the field to monitor precipitation events and soil wetting fronts that move the nitrate to ground water.

This permit has no provisions for any meaningful monitoring. Year after year of application at agronomic rates with no monitoring is proven to build up nutrients throughout the soil column resulting in tons of nitrate moving through the soil column down to ground water and long-term contamination of the drinking water resources.

The knifing system proposed for manure injection also greatly inhibits the field ability to capture nutrients. By plowing and planting the field every year, the root system rarely gets more than 6 months to grow and only extends a few inches deep. Thus, any nutrients below 6 inches migrate to ground water with no crop uptake.

Detailed cross sections from a dairy in Wisconsin are included in Attachment A. This dairy had a concrete lined lagoon, concrete lined feed storage area and the correct acreage for application. By adding nutrients at the calculated crop uptake every year, ground water contamination from the fields was evident in the monitoring wells. In addition, algal blooms in Pentenwell Lake coincide with the dairy operation. As is shown in the cross sections, nitrate contamination seeps to ground water from application fields and from the lagoons, travels along the ground water flow path and enters the lake. This is a direct example of impacts from the dairy operation contaminating downgradient receptors such as residential wells and surface water.

In many areas of the country, where dairies have operated in this exact manner proposed at Abercrombie, drinking water is contaminated above drinking water standards and the remedy is now both difficult, time consuming and very expensive. This permit application is leading directly to that scenario in Abercrombie.

This permit should require a detailed nutrient management plan with field instruments to monitor leaching of nutrients, detailed calculation of the preapplication nutrient concentrations and post crop sampling to track the performance of the plan. Applications at crop requirement concentrations year after year without sampling and accounting for the existing nutrients causes excess leaching of nutrients to ground water and widespread contamination of the drinking water supply aquifer. At this location, if the Wahpeton Buried Valley aquifer is contaminated, the neighbors have no other options for water supply.

Ground Water

Based on studies of dairy operations across the country and direct experience investigating and characterizing the contamination from these operations, current construction standards and the regulations in the State of North Dakota are not strict enough to prevent the facility from contaminating ground water.

The lagoons are allowed to seep and, given the depth (head pressure) of this lagoon, there will be significant discharge of high strength animal waste to the drinking water aquifer. The current standard for waste lagoons near a drinking water aquifer is a double synthetic liner with leak detection. Earthen liners are both allowed to seep and designed to seep and are not protective of human health or the environment.

In addition to the lagoons, the application fields are a major source of ground water contamination. The nutrient management plan does not account for existing nutrient in the field but just allows for full strength applications every year. It also does not account for the build up and conversion of organic nitrogen to nitrate. The repeated application of manure waste results in high organic nitrogen transforming to nitrate every year and is not accounted for in the nutrient budget.

The application method also reduces the plants' ability to use all the nutrients. The knifing operation destroys the root system and the plants only uptake the shallow (less the 1') nutrient with the remainder migrating in soil moisture to ground water.

The fall applications are also a major source of contamination, since no plant uptake occurs between fall and spring, but winter precipitation continues to flush nutrients to ground water. This is a major source of impacts to ground water and has been deemed to be waste disposal by a Federal Court in Washington.

Lagoon seepage and application fields are identified as a major source of groundwater contamination. This permit does not adopt policies to eliminate those sources. As a result, if the Abercrombie Dairy is allowed to operate, extensive ground water contamination will cause residential wells to become contaminated and surface water to be degraded in a large area.

Surface Water

Dairy contamination of surface water occurs in several manners:

1. Storm water runoff from the facility enters surface water,
2. Overspray or overapplication on the fields,
3. Stormwater runoff from precipitation events transports manure waste to surface water,
4. Seepage and infiltration of nutrients to ground water transported to surface water, or
5. Seepage into field drains transmitted directly to surface water.

All 5 transport mechanisms result in degradation of surface water quality through both contaminant lists shown in Table 2 and 3. The manure waste and nutrients cause long term impacts such as algal blooms and remobilization each time a runoff event causes turbid conditions.

Several types of bacteria are also readily transported through runoff events including E-coli. These bacteria can cause acute effects in humans and other animals that are in contact with the surface water.

Summary

The current permit application for the Abercrombie Dairy fails to protect North Dakota's surface water due to insufficient requirements for manure application locations, timing and methods. This facility directly threatens the Red River, the Wild Rice River and Antelope Creek. Through the North Dakota Century Code 61-28-04 and Administrative Code Chapter 33.1-16-02-1. The overall goal of these regulation is to maintain surface water quality for "beneficial uses and prevent degradation of quality of the waters of the State."

The operation of the dairy in the manner proposed has been documented to cause degradation of both surface water and ground water at many facilities across the US.

To be specific, of the application fields noted in the plan: 42 fields are in contact with tributaries to area rivers, 10 fields border Antelope Creek, 15 fields border the Wild Rice River and 3 fields border the Red River. Acute and immediate impacts to water quality will result from application of manure in the volume and locations described in the permit

Given the changes to our weather patterns, these nearby fields will discharge soil and manure to the area surface water.

Even if the 106,700,000 gallons of waste were applied perfectly, the application rate is based on the faulty assumption that all nutrients are used by the crop every crop year. A large portion of these nutrients will seep into the ground, enter ground water, contaminate the drinking water aquifer and eventually discharge to surface water. This problem creates long term contamination issues and chronic impacts to surface water resources.

The addition of this proposed dairy to Abercrombie will negatively impact the area and community both immediately and continue to increase over time.

1. The addition of traffic, manure odors and flies will be immediate.
2. The impacts to surface water will increase over time. If the State had required a reasonable surface water and ground water monitoring system, which is absent from the application requirements, the impacts could be tracked, documented and immediately stopped as impacts are detected.
3. Ground water contamination will first be noticed in taste and odor from residential wells, then sampling will reveal ground water is unsafe for consumption because of dairy related contamination.

These impacts are not imaginary or undocumented. They are actively present in Yakima Washington, Whatcom County, Washington, Wisconsin, California, Hawaii and documented by environmental investigations have been complete near CAFO operations.

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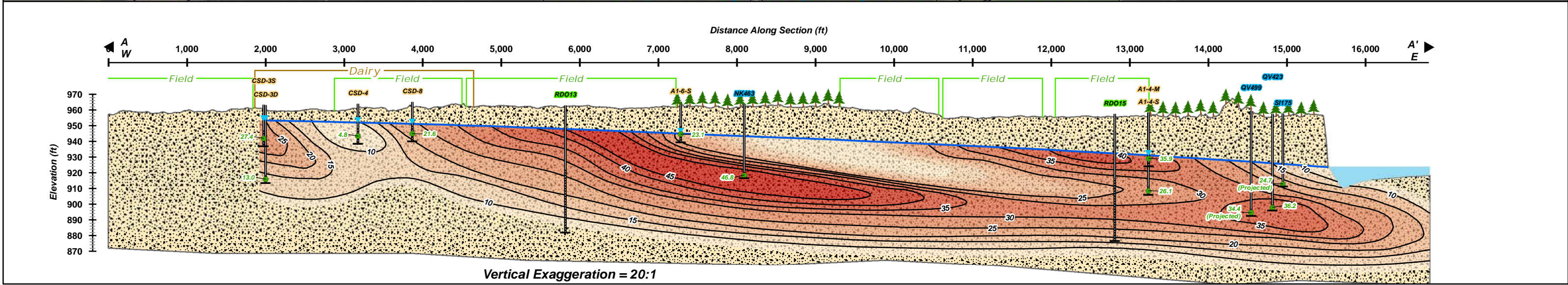
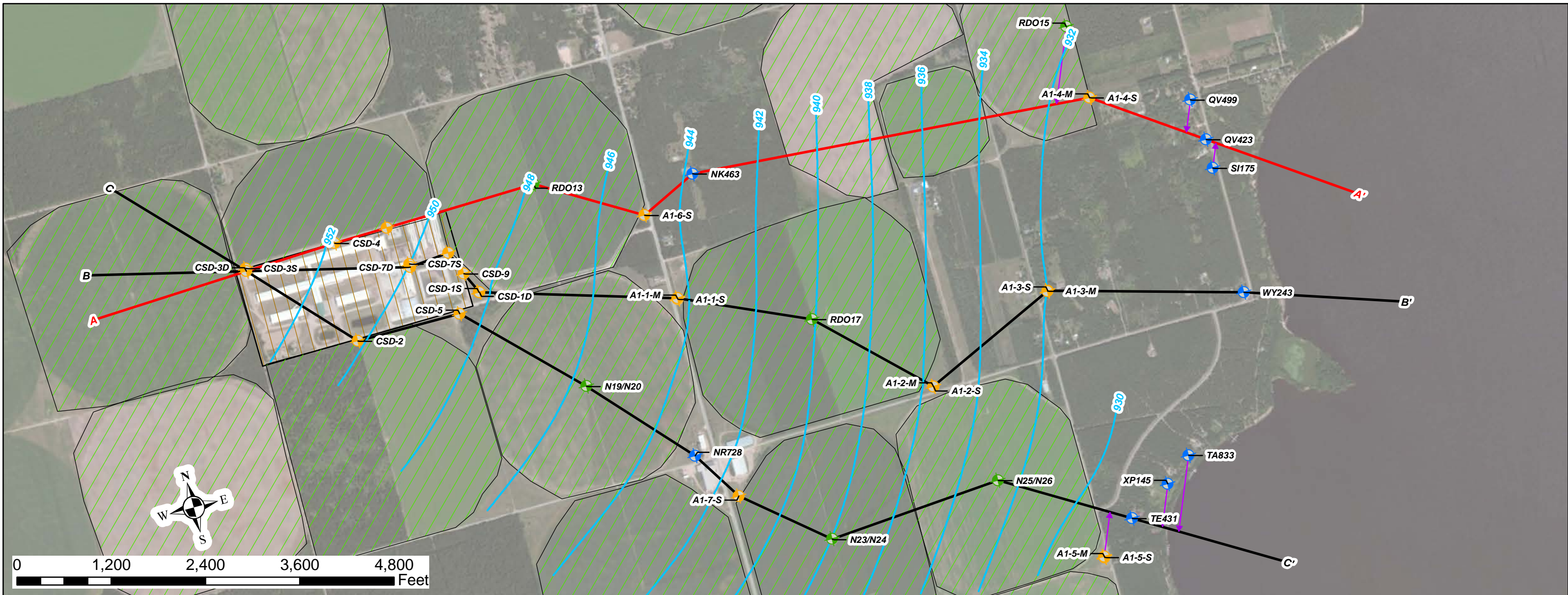
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Attachment A. Hydrogeologic Cross Sections



Legend

Irrigation Well	Groundwater Elevation in Well	Sand and Gravel	Nitrate Concentration (mg/L)	20-25	40-45
Monitoring Wells	Nitrate Concentration Sample - July 2020	Lagoon	0-10	25-30	>45 mg/L color swatch"/> >45
Potable Well	Groundwater Elevation	Petenwell Lake	10-15	30-35	
940 Groundwater Elevation Contour	Nitrate Concentration Contour (mg/L)		15-20	35-40	

Central Sands Dairy

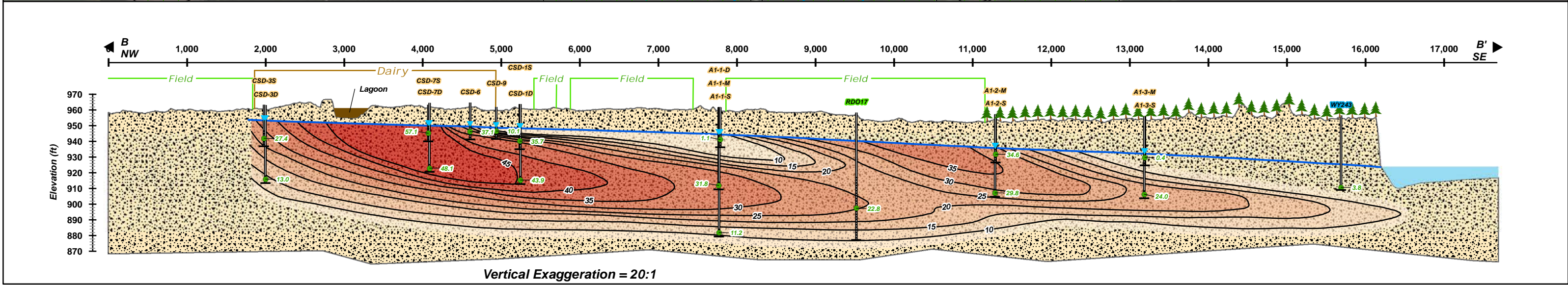
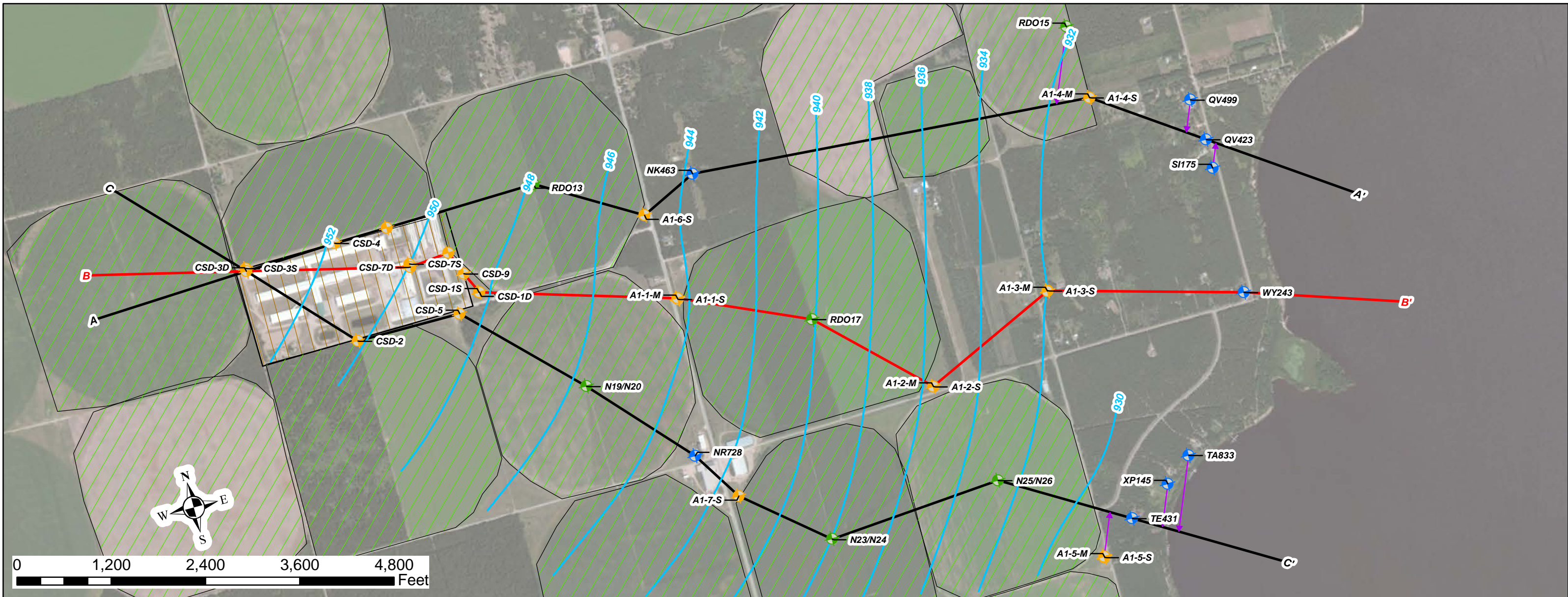
Cross-Section A-A'

Job#: PINESBACHM01

Date: 1/21/2021

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SHEET 1



Legend		Nitrate Concentration (mg/L)	
	Irrigation Well		0-10
	Monitoring Wells		10-15
	Potable Well		15-20
	940 Groundwater Elevation Contour		20-25
	Groundwater Elevation in Well		25-30
	Nitrate Concentration Sample - July 2020		30-35
	Groundwater Elevation		35-40
	Nitrate Concentration Contour (mg/L)		40-45
	Sand and Gravel	>45 mg/L color swatch"/>	>45
	Lagoon		
	Petenwell Lake		

Central Sands Dairy

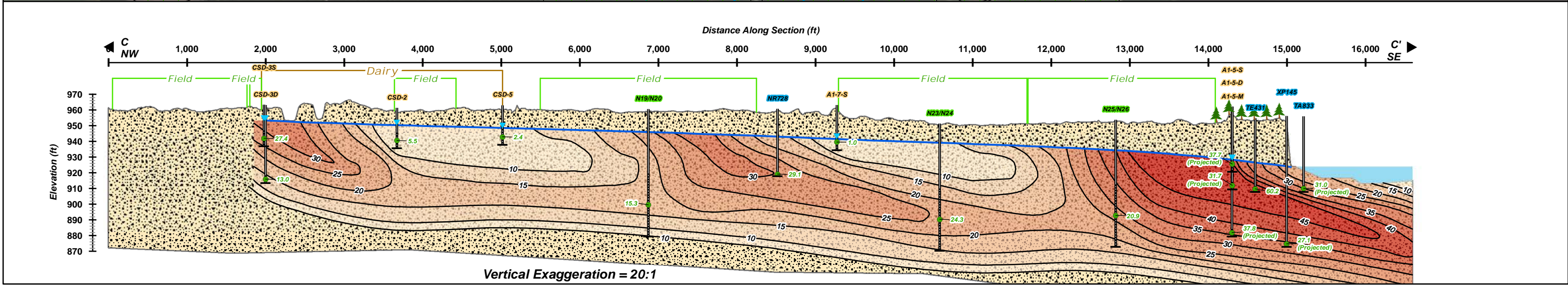
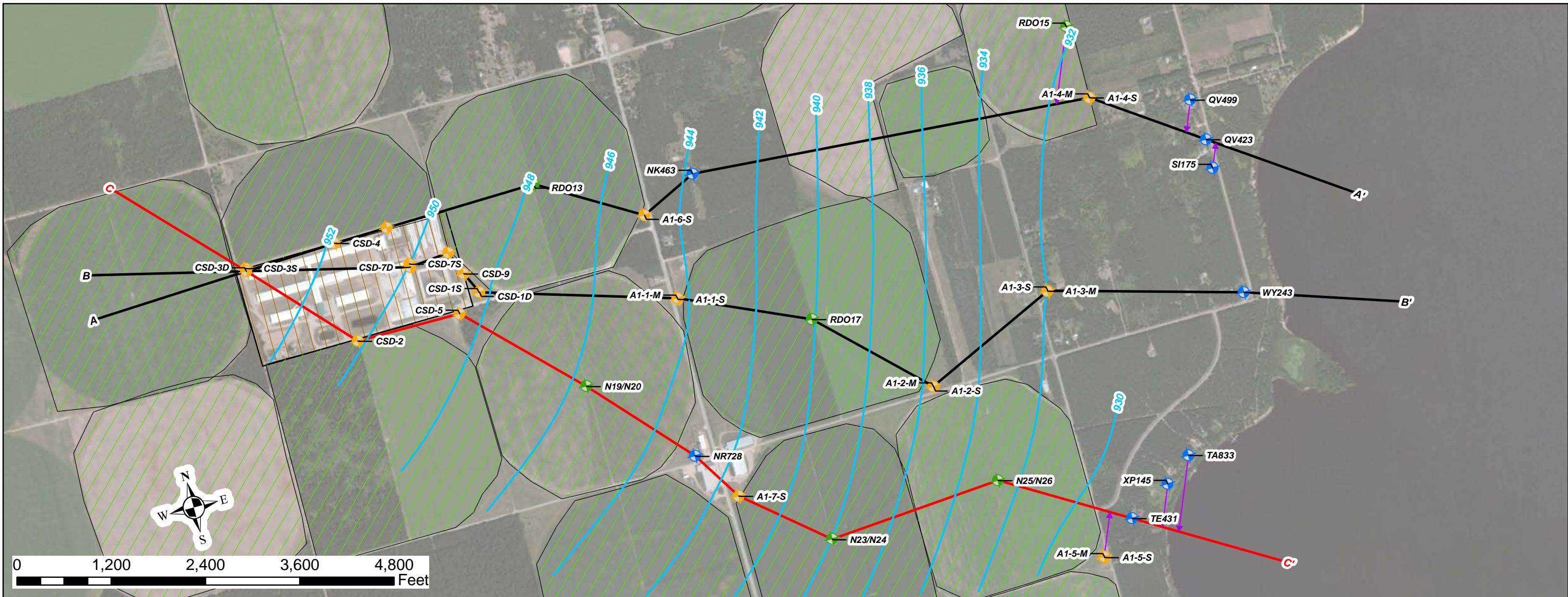
Cross-Section B-B'

Job#: PINESBACHM01

Date: 1/21/2021

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SHEET 2



Legend		Nitrate Concentration (mg/L)	
	Irrigation Well		0-10
	Monitoring Wells		10-15
	Potable Well		15-20
	940 Groundwater Elevation Contour		20-25
	Groundwater Elevation in Well		25-30
	Nitrate Concentration Sample - July 2020		30-35
	Groundwater Elevation		35-40
	Nitrate Concentration Contour (mg/L)		40-45
	Sand and Gravel	>45 mg/L color swatch"/>	>45
	Lagoon		
	Pettenwell Lake		

Central Sands Dairy

Cross-Section C-C'

Job#: PINESBACHM01	SHEET 3
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September 20, 2024

ND Department of Environmental Quality
Division of Water Quality
4201 Normandy St, 3rd Floor
Bismarck, ND 58503-1324

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RE: Comments in support of the Abercrombie Dairy

The North Dakota Soybean Growers Association (NDSGA) appreciates the opportunity to provide support for projects like the Abercrombie Dairy.

NDSGA represents North Dakota soybean farmers on domestic and international policy issues important to the soybean industry. U.S. soybean growers have long been committed to producing the world's food, feed, fuel, and thousands of bioproducts in a sustainable and climate-smart way.

The NDSGA is a long-time supporter of animal agriculture projects done well. It appears that the proposed dairy is similar to other dairies operated nearby in Minnesota. Those dairies have a great track record with no citations by regulatory agencies in Minnesota. With a clean track record of more than 30 years in the business, it appears that Riverview has demonstrated that they do animal agriculture well.

Adding more dairy cows in the state will dramatically increase North Dakota's ability to attract new milk processing capacity into our rapidly shrinking infrastructure. This will, in turn, support existing state dairy farm families and their future generations.

We are confident that the local crops and the products produced during local value-added processing will provide sufficient quantities of high-quality feed stuffs for the dairy operation.

The nutrients contained in the manure are valuable fertilizer for crops and the organic matter is crucial for improving soil health. Local farmers will benefit from this valuable manure.

We appreciate your consideration of our comments. Thank you for your time.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin Sherlock", written over a horizontal line.

Justin Sherlock
President, NDSGA

From: [CAITLIN SKYE JOHNS](#)
To: [Gilley, Cameron](#)
Subject: Comments and Concerns for the Abercrombie Dairy
Date: Friday, October 4, 2024 7:11:21 PM
Attachments: [IMG_3171.heic](#)
[Abercrombie 10-1-24 Hydrogeologist Report.pdf](#)
[CAFO Report - IWLA PW Chapter 8-2-24.pdf](#)

You don't often get email from caitlinskye@icloud.com. [Learn why this is important](#)

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Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

Below is a written letter from Citizens in the Area that will also support the following comments:

1. The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.
2. DEQ should confirm that the current set back laws state that all animal agriculture non hog facilities over 5000 animal units have a setback of one mile. However, in light of the Ag Task Force meetings, if the proposed setback laws are enacted the facility would need a minimum of 1 and ¼ mile of setback. Language changes in the North Dakota Century Code may also include language that states "setbacks distance may be reduced or extended based on results of odor footprint tool." The DEQ is required by law to enforce the law as it is written but given the nature that they are the advisors recommending these changes to the law, they should permit and require standards that they themselves are proposing during this time of transition.
3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I am reaching out to you to voice my concerns along with many others with the Abercrombie Dairy that is being proposed. My family and I live within the mile from the proposed site. We also have some concerns that our house may be within the 1-mile setback distance, to our knowledge no surveying has been done and we would request that the DEQ confirm that the site was accurately surveyed. We were told the day that they came to our farm that this dairy is being built and there is nothing we can do about it. We were also promised that my fiancé would benefit from this project because he owns a construction company and there would be plenty of projects for him to bid on. We were highly skeptical of this because we're aware most businesses like this usually have their own contractors and staff. They came in trying to sweet talk us all but it isn't working.

If this project is permitted it will not only ruin the lives of my family but also so many others that live within the county. Many of our concerns that have been brought up with Damon at Riverview have been met with changing the subject or simply saying that he doesn't have the answers. As experienced as they claim to be dodging these questions or not having sufficient answers is truly alarming.

For our family our most pressing concern is our water. Richland has a very sensitive aquifer that is right under where the proposed site is planned to be, this aquifer does not have enough water to supply the places that are tapped into the aquifer let alone a 12,500 dairy cow facility. The amount of water a day they need is between 300,000 to 500,000 gallons. This is extremely alarming to us. We're concerned that this dairy would dry up the whole county that gets water from the Wahpeton Buried Valley Aquifer. Wells would likely have to be dug deeper, or we would have to pay to get rural water mains brought to our house to supply drinking water. The Alternative, the Colfax Aquifer, drinking water which they would have to then build a Reverse Osmosis System that then takes 4 gallons of bad water to make 1 gallon of good water to water the cows. The size of that operation needed to purify the water for the dairy would be far too large and costly to be cost effective.

Location is another key issue the dairy is located between the fork of two rivers, the Red River and the Wild Rice and application of manure will be near Antelope Creek. The northern flow will mean that any runoff from application of manure will directly affect the citizens of Fargo Moorhead as well as any community further north with non-point pollution. The permit says that it is clay liners that will be lining that 2 manure lagoons and the wastewater lagoon. Other commenters will be providing evidence that CAFOs that these clay liners can be problematic in the long term. There is seepage along with overflowing and even if the DEQ and DWR require them to use concrete liners there is still studies done of the concrete liners cracking and seepage still happening. Along with the stack pads of the "dry waste/non liquid waste matter" there are concerns that a heavy rainfall will cause leaking. What is going to happen when all our waterways and wells are contaminated as it has happened in other places within 15 miles from the facility? Will you as our state officials tell us like Riverview did to get rural water that we would then have to pay for water lines to be dug to our properties or try boring new wells to maybe get water and water that is contaminated already?

This is not the first time this has happened to our community.

There are 27 active wells within 2 miles of the proposed site and most of us already had to have new ones dug when Cargill and MinnDak came in. MinnDak already has had contamination from leaks in their lagoons. The contamination of not just the ammonia and cow manure going into the water, but the pathogens, estradiol, nitrates, chloride, androsterone's, E. Coli, salmonella, campylobacter and all the antibiotics that are given to the dairy cows that comes out in their urine and fecal matter. After reviewing your maps of proposed application sites there is a field near the proposed dairy along with a drainage ditch that runs to the west into the Wild Rice followed by another drainage ditch that runs to the east and then into the Red River. Will there be required testing sites by those waterways or any of our wells daily to make sure we are not drinking, swimming or fishing in these waters?

The said field right next to the dairy farm has just been drain tiled in the last month, this field is also a proposed field for the Nutrient Management Plan. Manure has been shown to seep into the drain tile within two days of injection. The entire plan is reliant on the fact that all applicators are properly trained, and the weather conditions are optimal. They can only inject if the ground is under 50 degrees Fahrenheit. Manure can also be spilled in ditches and then into our waterways even with standard practices being followed, the natural water table in this area is high and very sensitive. If there is contamination, it will happen very quickly. In wet years, like fall and spring with most of this area we have flooding and especially along the Wild Rice and Antelope Creek. Most of the fields in the NMP are on those rivers. During the fall or winter when farmers can't get into the fields it shows they can do an emergency lay on fields. Manure is just laid on top of ground which means that come spring it will become an ecological disaster of contamination, along with the smell of it unthawing.

Odor is another concern of being awful to the point of many getting sick. This was reported by a local in Campbell MN that the kids at the school get sick from odors and particulates in the air from the dairy farm there. There are 3 fields in the NMP that are right by the west, southwest, and south side of Abercrombie's elementary school. Who's responsible for the kids' health on days they are injecting manure? Will the DEQ take responsibility for this or the school? Our town's elementary kids deserve to have clean air in the fall when that is the best time for them to be outside. Would you want yourself or your own children breathing and smelling that for a few days, or even everyday as the dairy is directly south and east of the town of Abercrombie (4 miles)? The normal calculated winds come from the south/southeast or the north/northwest that means everyone in the direction of those winds will be smelling this farm every single day not just outside but inside their own homes. This project will be a longer-term problem for everyone, not just the few that live within the two miles of this project.

Enclosed are references below and a map of the fields in the NMP into a bigger picture.

As a citizen and the family that will most directly impacted by this operation, please take all of our concerns into consideration before going further with this permit if not the least you can do is make sure they have everything needed in their permit to help make sure the locals that have been here for many many years and the others that will be impacted to make sure we are safe, our land is safe and specially our waterways.

Safe water to drink for ourselves and communities for now and future. WATER is our #1 concern; WATER is everyone's greatest concern when building this operation.

Thank you for your time and consideration.

Caitlin Johns
17857 County Road 8
Wahpeton ND 58075

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<https://www.minnpost.com/other-nonprofit-media/2024/07/we-should-have-a-sense-of-urgency-as-farm-drainage-tile-drives-nutrient-pollution/#:~:text=Tile%20changes%20the%20natural%20movement,flushed%20quickly%20into%20nearby%20waterways>

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https://www.theguardian.com/environment/2021/jun/01/there-are-ghosts-in-the-land-how-us-mega-dairies-are-killing-off-small-farms?fbclid=IwZXh0bgNhZW0CMTEAAR2h5ka7Yf77fFH6mqyNroul8E6FN-PuFbDPyIR41qLOa5Gay87eyK-9ofQ_aem_k6F6wdYQlgVSoyt68VK0bQ

https://www.hcn.org/issues/53-8/agriculture-a-mega-dairy-is-transforming-arizonas-aquifer-and-farming-lifestyles/?fbclid=IwZXh0bgNhZW0CMTEAAR2Vylh5k-yW67ZcUnVZzOSK4xHvOdg348UR6K3r2nUhqEdzaupW3z75ni0_aem_qh71Jcb_1gpQhUW3hJY5kQ

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Haroldson, Marty R.

From: Haroldson, Marty R.
Sent: Friday, September 6, 2024 3:51 PM
To: jessicalevery1982@gmail.com
Subject: Concerned about dairy farm Abercrombie ND

Hello Jessica,

Thank you for the inquiry.

Most of the concerns stated in your email are handled at the township and county level.

When it comes to the Statement of Basis and draft permit, comments received verbally during a hearing carry the same weight as written comments. If you have not already done so, please take a moment and visit the Department's website for insight into developing effective comments. <https://deq.nd.gov/PublicCommentTips.aspx>

Be reminded that a hearing is not a question-and-answer session, it is only a place to receive your verbal comments.

We hope this helps in the development of your comments for the proposed permit.

Marty

Marty Haroldson

NDPDES Program Manager

701.328.5234 (W) • 701.328.5210 (O) • mharolds@nd.gov • <http://deq.nd.gov>



4201 Normandy Street, 3rd Floor • Bismarck, ND 58503-1324



From: Jessica Gallaher

To: Gilley, Cameron

Subject: Concerned about dairy farm Abercrombie ND

Date: Saturday, August 31, 2024 3:02:41 PM

You don't often get email from jessicalevery1982@gmail.com. Learn why this is important

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Hi there, I'm writing this because I am a concerned citizen of Richland county ND. I'm concerned about the Abercrombie Dairy farm that is proposed for the county. It seems like a sneak behind the people's back type of enterprise and I think the public needs to be informed and made part of decisions that are going on related to said dairy farm. This is not good for the surrounding farming operations for the land and the people. We are an agricultural/farming

community that use the land for crops, hunting, low crime, making jobs for our citizens(not foreigners as the dairy plant will be utilizing) and for the rural home life country feel. We enjoy the peace, night skies and low crime rate. This will greatly impact all of those along with water safety and quality. Please help us get a public hearing as it should be the citizens that have a say in these matters. Thank you,
Jessica Gallaher

Haroldson, Marty R.

From: Haroldson, Marty R.
Sent: Friday, September 6, 2024 4:22 PM
To: lukasmkinneberg@hotmail.com
Subject: Abercrombie Dairy Concerns Regarding Notice ND-2024-012

Hello Lukas,

Thank you for the inquiry.

Most of the concerns stated in your email are handled at the township and county level.

When it comes to the Statement of Basis and draft permit, comments received verbally during a hearing carry the same weight as written comments. If you have not already done so, please take a moment and visit the Department's website for insight into developing effective comments. <https://deq.nd.gov/PublicCommentTips.aspx>

Be reminded that a hearing is not a question-and-answer session, it is only a place to receive your verbal comments.

We hope this helps in the development of your comments for the proposed permit.

Marty

Marty Haroldson

NDPDES Program Manager

701.328.5234 (W) • 701.328.5210 (O) • mharolds@nd.gov • <http://deq.nd.gov>



4201 Normandy Street, 3rd Floor • Bismarck, ND 58503-1324



From: Lukas Kinneberg
To: Gilley, Cameron
Subject: Abercrombie Dairy Concerns Regarding Notice ND-2024-012
Date: Wednesday, September 4, 2024 2:51:06 PM

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Hey Cameron,

I am sending this email as a resident of Abercrombie; I have many concerns regarding the proposed dairy project for the Abercrombie Township. Many of these concerns surround the impact on our water supply for the surrounding farmsteads and communities. Of greatest concern to me is the potential contamination of Abercrombie's water supply (both the

aquifers and the two rivers that run around the township. There has been numerous studies that have been done with results both in the United States and worldwide of the impact commercial feeding operations have on local waterways, and it isn't pleasant.

It's sad to see Riverview taking the approach of minimal communication with the community to get "their project" to go through. Much of the public has been left in the dark, and many have just found out about the project when the proposal was submitted in August. I do not believe the township has the resources to support a project of this nature and the risks that are associated with it regarding maintaining a safe water quality.

Because of the lack of responsibility Riverview has taken in informing the public, I urge an extension of the comment periods so others in the Abercrombie township can be made aware of the project and its impact on them. Additionally, upon review I urge a public hearing in Abercrombie be held to address the concerns the township has. Water is the source of life for all of our towns and cities in North Dakota, and I feel it would be a disservice for any residents of North Dakota (and Abercrombie Township) to not have a formal townhall to address these concerns.

Thanks you for your time.

Lukas Kinneberg

Resident of Abercrombie

From: [Kathy Haire](#)
To: [Gilley, Cameron](#)
Subject: Abercrombie Dairy
Date: Friday, October 4, 2024 12:49:59 PM

[You don't often get email from kathaire@wah.midco.net. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification>]

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Sent from my

My concerns are pertaining to the Abercrombie dairy also, trying to come within one and a quarter miles from my childhood family farm as well as the Abercrombie township community people. My grandparents started this farm with no electricity, running water, or automobiles. Not to mention, everything was done by hand not machines. They worked hard to provide a wonderful homestead for their future generations. There is now a soybean seed plant half a mile away, and 3/4 of a mile away is a subdivision for a rich farmer for at least a dozen homes or more. I no longer live here, but own land next to it towards the proposed dairy. I think our issues need further investigation as I would be really disturbed to see my family farm and my nephew and his young children to be affected by this and have to eventually move. Thank you for your Time.

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

1. The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,



worried about water quality

Alex Pazkowski
Aber resident

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OCT 07 2024

DIV OF WQ

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To Cameron Gilley,



Barb Strand

Aber Resident

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OCT 07 2024

DIV OF WQ

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To Cameron Gilley,

1. I am very sensitive to smells —
 - current lagoon and ~~Wahpeton~~ beet plant with wind currents
 - current chemicals in ^{air} water treatment
 - smoke including backyard fire pits
 - detergents

Therefore, I am extremely concerned about air quality with the addition of this dairy south of Abercrombie. South winds are a regular occurrence
2. In addition, the extreme amounts of waste water with high nutrient content are very concerning affecting water availability and potential contamination for current and future residents
3. We loose valuable crop land with this proposal. Put a dairy in ranch country. But I guess money talks over ^{concerned} common citizens.

Sincerely,
Barbara Myhre
Calling Abercrombie Home for 64 years.

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OCT 07 2024

DIV OF WQ

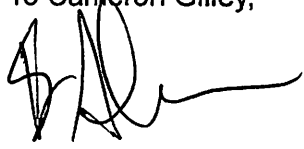
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To Cameron Gilley,

 I am worried about
running out of water

Bruce Amundson
Abercrombie

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OCT 04 2024

DIV OF WQ

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To Cameron Gilley,

This is Casey Hammond writing to you I'm an
Abercrombie resident and have been most of my 38 years
I fear this dairy operation will rob our water
and resources and pollute our lands Its tremendous
amount of water usage that is unsustainable over
time. Thank you for taking the time to read my
concerns.

RECEIVED

OCT 03 2024

DIV OF WQ

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Below is a handwritten letter from Citizens in the Area that will also support the following comments:

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

Sept. 27, 2024

To Cameron Gilley,

I live right in front of the Wild Rice River which is prone to flood every year. I have well water I am concerned that my water could be contaminated. I have been a life time resident of this area and I don't believe we need to have CAFO's in our area. They cause pollutants and are hazardous to our way of life. We like clean + safe water. →

We don't want an E. coli outbreak, Nor Cancer,
Birth defects

~~Sincerely,~~

I also believe in our remaining Dairy farms
They don't have as many cows in one area.

Our Counties water supply is already
tapped out, so where are they going
to get their water supply from.

Thank you!

Cheryl Walton
6145 172nd Ave SE
Waldorf, N.D.
58077

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DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
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To Cameron Gilley,

The cost of running rural water to the farm is staggering. We ask that if wells in the area are impacted by low water levels or contamination, that Riverview be responsible for the costs of new wells or installation ~~and~~ of rural water to those affected farms.

Cynthia Olson
Abercrombie, ND

• Can we request a public hearing to address questions regarding monitoring of runoff water, wells,

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To Cameron Gilley,

4- Abercrombie School, Campgrounds, ~~Federal~~ Federal park and a new housing development may be affected by the smell. The CAFO is only 3 miles from town.

5- We have visited Camble and have talked with Farmers and school Principle about smell. And it smells at school 7 miles away. We worry about our health from the manure smell

~~6 - Worry about well pressure~~

6 - Concerned about dropping well pressure from the volume of water the cows drink. That would not be covered by Riverview. That would be a cost to me. Cows can not have more rights to water than us.

7- I'm concerned that the DEQ Does not have rigid ~~enough~~ enough regulations for such a large number of cattle, There's no repercussions for breaking regulations.

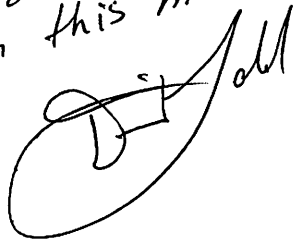
~~8- The number of cattle ~~can~~ could~~

8. I live 1.1 miles from facility planned to be constructed and I am very concerned about my family health from possible pathogens from the # of cattle.

9. I don't think that large number of livestock should have to risk my water quality and well pressure. I farm and believe that we need to take better care of our water that we drink. I don't understand why people are getting lost dibs on water. Why do people have to sacrifice there air quality and water quality. This area is populated by 27 wells in a 2 mile radius. ~~I don't~~

*10- Please review the ~~hydrogeologist~~ hydrogeologist report sent to you by the DRC. I have had a zoom meeting with David Erickson CPG PG North Dakota needs to listen to what has happened in other states and lead in proper regulations of those large CAFO's. This is not a small operation. Lets lead in good regulations.

Thank you time
for your time
and consideration
in this matter.



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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley, I am worried about the water usage. It is a lot of water per day times that by 30 - 40 years or more.

Dan 94 comment

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To Cameron Gilley,

I have concerns of water contamination and additional chemicals potentially in our water source.

Deema Andreasen

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To Cameron Gilley,

Worry about the water polluted
Dean Hendrickson

Dean Hendrickson
Abercrombie

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To Cameron Gilley,

It is about the water and what is going to be a lack of it. and the smell. Property values and standard of living will go down. they don't have a good plan for the manure. Just outside of town is unacceptable

*Dennis Gulne
Abercrombie, ND
58001*

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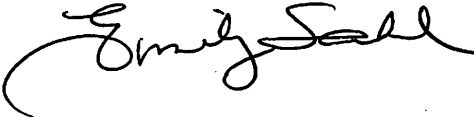
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To Cameron Gilley,
I live 1 mile from the proposed facility.
I am concerned the future of my farm will be
forever damaged due to smell & flies & polluted water,


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To Cameron Gilley,

I am very worried the quality of our water
will be severely affected, by this Dairy operation.

Eric Andrusen

Eric Andrusen
Aber resident

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To Cameron Gilley.

We are from Breckenridge, MN, and very concerned with this massive dairy operation proposed on such a concentrated area. Even with clay liners, there is history of them failing, spreading sewage and contamination to our soil, and rivers, not to mention our drinking water!

Then what?? Water is our most precious resource and you are responsible to protect it. We don't know how you can justify taking this risk when the proposed site sits between 2 rivers?

Sincerely, Gail Wanek

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To Cameron Gilley,



Jacob Sahl
Abercrombie resident

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To Cameron Gilley,

Concerned about water + smell
+ future of growth of town

Jennifer Moffett
107 Neuman Blvd N
Cottax, ND 58018

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To Cameron Gilley,

With the amount of water use of the proposed dairy, it has been indicated they will be possibly using the Aquifer our well is on. How will this affect our water source?

Karen J. Heyen

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To Cameron Gilley,



Kirk Kappes
Local resident

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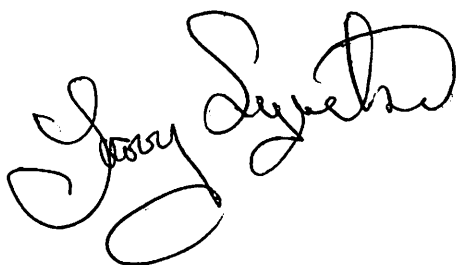
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To Cameron Gilley,



Larry Syvertsen
Abercrombie

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To Cameron Gilley,

With the Amount of manure that is to be injected or
Spread in Abercrombie Township ~~How~~ How will This affect
our ground water, stream + Rivers

Leonard & Hegen

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OCT 03 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

~~Below is a handwritten letter from Citizens in the Area that will also support the following~~
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I'm concerned about water usage, dropping water levels,
contamination of Aquatic water ways. Leon D. Heger

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To Cameron Gilley,

Jesley Hulme
823 Broadway
Abercrombie ND

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To Cameron Gilley. I live in Fargo and am very concerned this huge dairy operation will eventually fail and contaminate the soil, aquifers, and rivers. Our source of water comes from the Red River in which the Wild Rice connects to. If there were a breach in the holding ponds, or overland flooding from large rain fall - the water will be contaminated. Is there a plan in place to remedy this? How do you know Riverview will be doing their self-monitoring honestly & correctly?
Has anyone from Bismarck visited the proposed site? With the large drainage ditch that runs along the entire site to the →

^{Rice}
Wild River; I can't imagine granting this permit!

Sincerely,
Linda Worner

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To Cameron Gilley,

I am very concerned about my water getting polluted, or running out of water.

Lisa Amundson



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To Cameron Gilley,

Loretta Hendrickson

*What's gonna happen to our water supply
we don't need this!!*

*Loretta Hendrickson
Abercrombie*

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To Cameron Gilley,

Very concerned regarding water!
Mary Hanson

Aber resident
Mary Hanson

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At my first tour of a Riverview facility I was told "Smell is subjective." So I guess I can't even state I find cow poop offensive.

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From: Mary Sahl
To: Cameron Gilley

"there goes the family farmstead!"

To Cameron Gilley,

From Cornell University

1). Aber dairy will be located 4 miles south of Abercrombie, ND., west 1/2 of section 27, township 134 N, range 48W, 1.4 miles west of Wildkie River - there is a ditch (a deep direct one to the Wildkie River) that was dug in the last year by the farmer putting up this dairy (or in partnership with it). The discharge - direct discharge of 12,500 cows is similar to the waste stream of 525,000 people - the runoff should need another permit for direct discharge to a water source like the Wildkie - a national permit I would believe is needed.

2). The Aber dairy permit states it will produce 9,581,250 cubic ft/year or 71.67 Million gallon/year of manure + 4,684,045 cubic feet or 35.04 Million gallon/year of wastewater. The permit states it has 14,553 acres land to spread this waste on - more than half of it is in a flood zone that floods almost every spring.

Who is going to spread this?

3) CAFO's seep nitrates into ground water - this permit does not ~~even~~ even have a liner - that would reduce seepage of nitrates ~~out~~ yet it still would probably contaminate the ground water to an unacceptable EPA level.

a). How do you intend to monitor local wells?

b). Is it up to us to pay \$1500 for a water test to see if we can drink our water?

c). Is the dairy farm going to put in Reverse Osmosis fans - it is NOT in the permit to monitor local wells, or replace wells that go dry, or even test local wells. There should be at least a 5-10 mile radius that they have to test

Wells as there have been numerous reports of wells being affected (Washington state - 300 wells within 3 mile radius of CAFO) - Lower Yakima Valley Groundwater (US EPA - see hydrologist report sent by DRC).

4) Their Lagoons are only large enough to hold a 25 year / 24 hour rain event. In the last 10 years, rain amounts from NOAA have ↑ 24% for the 1% of extreme rainfalls that happen in N.D. We can see that with the rains in N.D. this summer - 7 inches in Bismarck, Teton flooding, northern N.D. flooding this late summer! There will be no way to stop the runoff because they will not have enough "emergency" time to lower their lagoons by spreading manure in time. Did Bismarck have 2-3 deep notices before they got dumped on? No! And we won't either! It will flow west to the wild Rice River + east to the Red River - the ditch goes both ways, take your pick. They all end up in Fargo though - so not sure what the diversion people are going to think of all this sewage in their retention ponds.

5). They keep in ~~the~~ all their manure, this allows for seepage of nitrates right to ground water as none of it is absorbed by plant growth - need a new approach to waste management.

6). Atrazine is found in the wastewater from CAFO's - how will this affect our local Bee population (ND is #1 in honeybees) Atrazine kills bees.

7). I am a nurse (RN) of 40+ years of service at the Roger Maris Cancer Center in Fargo. The #1 thing I have learned is the greatest impact we can have on cancer is preventing cancer in the first place. This CAFO will not only introduce contaminants to the water for years to come, but may result in the death of nearby citizens due to salmonella, e-coli, a campylobacter poisoning, MRSA + C-difficile are also tied to CAFO's. This is the most disastrous proposal anyone could come up with. I beg you to think about the ramifications of granting a permit that has absolutely no checks ^{on the land + water side.} balances to keep

d). The proposed lagoon is only 2 feet above the water level!! We will have water contamination within 1 year of start of operation!!

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To Cameron Gilley,

Here are two reference articles to support my other list of complaints or concerns about the environmental impact of the proposed Aber CAFO. I am also a 2.5 year breast cancer survivor + am worried about my health due to the potential ↑ in nitrates in the water.

Thank-you! Mary Sahl, RN, BSN, OCN.

Oncology Nurse / Roger Marie Cancer Center

40+ years!

Past-President of
The Red River Valley
Oncology Nurses
Society

Also treasures
for the North Dakota
Cancer Coalition.

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NOV 10 1904

NOV 10 1904

Approved by the Board of Directors
of the [illegible] Company
this 10th day of November 1904

Witness my hand and the seal of the
said Company at New York City
this 10th day of November 1904

[Faint, mostly illegible text, possibly a certificate or report]

[Faint, mostly illegible text, possibly a signature or date]

[Faint, mostly illegible text at the bottom of the page]



SEPT 12, 2024

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SCIENCE ENVIRONMENT

Washington Cracks Down On Mega-Dairy Water Pollution



By Courtney Flatt (OPB)

Jan. 18, 2017 6:45 p.m.



Washington is requiring dairies with 200 or more cows to apply for updated water quality permits. The new regulations are meant to curb water pollution from livestock manure.

Cows at a dairy farm in Whatcom County, Washington.

Eilis O'Neill, KUOW / EarthFix

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All Things Considered

This type of runoff can cause excessive nitrates in drinking water, which is harmful to infants, adults with compromised immune systems, and women who are trying to become pregnant. Pollution from manure can also contaminate shellfish beds and beaches.

The updated rules could increase the number of dairies that need water quality permits. Previously only a handful of dairies were required to follow stricter standards to manage runoff pollution. Now, about 200 farms will have to meet new water quality guidelines.

One of the bigger changes will be when dairies are allowed to spread manure on crops — dairies often use manure as fertilizer, but too much can cause nitrates to seep into groundwater. With the new rules operators can't spread an excessive amount of fertilizer on the land, and it can't be applied on saturated or snow-covered soil.

If soils test high for nitrate pollution, farmers will have to limit the amount of fertilizer they're spreading on crops or monitor the groundwater.

Dairies will also have to assess the pollution risk caused by their lagoons, which are pools that are part of how dairies manage waste.

"Most lagoons have clay liners that seep into the earth and the ground water," said Sandy Howard, a Department of Ecology spokeswoman. "We're not requiring all of the facilities to dig out the clay liners and put in synthetic liners [right now]. But we're requiring dairies to assess their lagoons and provide information about when they were built, their capacity, and to determine what pollution risk they pose."

Once the assessment is done, the department may make operators line their lagoons, if the pollution risk is too high.

Dan Wood is the executive director of the Washington State Dairy Federation. He said the federation is still reviewing the new rules and wants to make sure they are scientifically sound and affordable, especially in regards to lagoons.

"We can't make an assumption that [lagoons] leak just because they exist. That's not a defensible position based on observations," Wood said. "Dairy farmers are good stewards of the land and intend to be. We have to make sure we're changing things for a reason and not because people have a new idea."

... elevated level of nitrates in the groundwater. The permit will not apply to small dairy operations with fewer than 200 cows.

The Washington Department of Agriculture will continue to inspect dairies and will help implement the new rules, which will go into effect March 3.

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News Releases: Region 10

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EPA, Department of Justice sue Lower Yakima Valley dairies for manure practices endangering neighboring well-users

Agency urges area community members to get their wells tested

July 2, 2024

Contact Information

EPA: Bill Dunbar (Dunbar.bill@epa.gov)

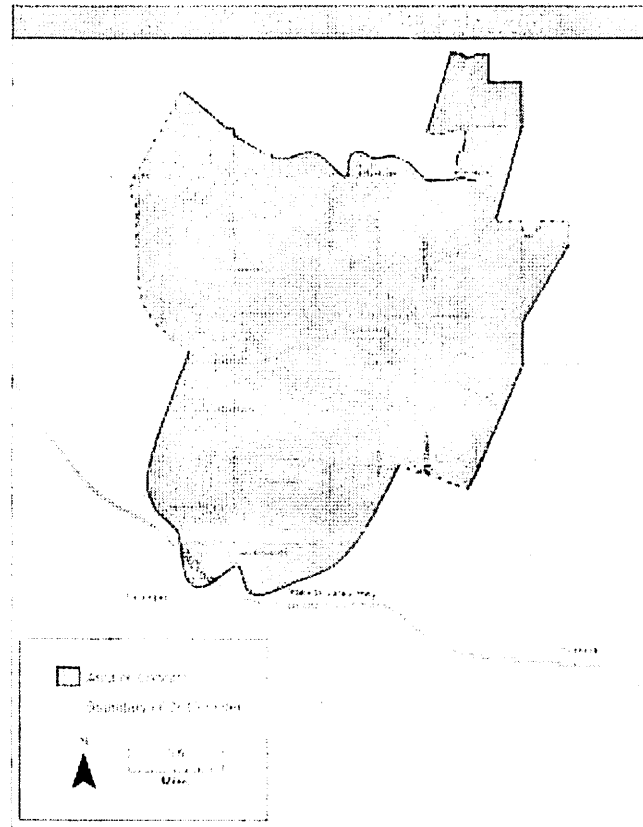
206-245-7452

U.S. Attorney's Office: Rob Curry (Robert.curry@usdoj.gov)

509-835-6333

SEATTLE -- Today, the U.S. Environmental Protection Agency and the U.S. Department of Justice asked the Eastern District Court of Washington to immediately force three large Lower Yakima Valley dairies to test down-gradient wells within an area approximately three-and-one-half miles south and southwest of the dairies and supply alternative drinking water to homes where well water exceeds the federal standard for nitrate of 10 milligrams per liter.

Today's "motion for preliminary injunction" follows the lawsuit EPA and DOJ filed on June 26 claiming the three dairies have failed to adequately control nitrate contamination from their operations. In the complaint EPA alleges the dairies, which collectively have over 30,000 animals, have failed to comply with a legal agreement they entered into with EPA in 2013 which aimed to reduce nitrate leaching from their facilities and protect downgradient community members with nitrate contaminated well water. The agencies believe this nitrate contamination may be contaminating the drinking water wells of nearby community members.



EPA is urging community members using a well within approximately three-and-one-half miles south and southwest of the dairies to visit www.epa.gov/lyvgw or call 509-204-1941 (local) or 888-508-6344 (toll free) for information on how to get their wells tested for nitrate.

Nitrate is an acute contaminant. A single exposure can pose health risks, including a condition in infants known as methemoglobinemia, also known as "blue baby syndrome," that can result in death. People who are pregnant or have other health concerns are also at high risk from other health effects from exposure to nitrate.

"People who live near these dairies are at risk," says **Ed Kowalski, Director of EPA Region 10's Enforcement and Compliance Assurance Division**. "It is critical that the dairies follow through on what they promised to do to protect their neighbors. The work remains unfinished and the contamination persists."

“Everyone deserves safe drinking water,” Kowalski continues. “And we’re going to do everything we can to ensure the people near these dairies get it sooner rather than later.”

“Strong and fair enforcement of environmental and public health laws ensures a healthy community for all families to live, learn, play, and work,” stated **Vanessa R. Waldref, United States Attorney for the Eastern District of Washington**. “Protecting access to safe drinking water is needed for a high quality of life and makes our region safer and stronger.”

Specifically, EPA has asked the federal judge to require the dairies to:

- Continue monitoring groundwater at their sprawling facilities
- Offer nitrate testing of drinking water wells to community members within an area approximately three-and-one-half miles hydrologically downgradient
- Offer to provide impacted homes with either a treatment unit or bottled water delivery if nitrate levels are above the maximum containment level of 10 mg/L
- Offer professional maintenance service for any impacted home with a treatment unit
- Immediately test a lined lagoon for leaks because the liner was seriously damaged during a windstorm and EPA suspects it is a source of a continuing leak of significant amounts of nitrate to groundwater

If the court agrees, EPA will notify the affected homes and will explain how affected homes can get free well testing and alternative water, if needed.

- *Read the complaint* <<https://epa.gov/system/files/documents/2024-07/lower-yakima-valley-groundwater-complaint-2024.pdf>>
- *Read the motion for preliminary injunction* <https://epa.gov/system/files/documents/2024-07/motion_order_appendix-a_combined.pdf>

Background

In 2010, EPA found that nitrate contamination of wells in the Lower Yakima Valley – an area historically overburdened by environmental and public health challenges -- may present an “imminent and substantial endangerment to human health.”

There are approximately 9,300 private wells in the Lower Yakima Valley that people rely on for drinking water. EPA understands that approximately 5,600 of these private wells are located in Yakima County and approximately 3,700 are located in neighboring Benton County.

Homes that receive drinking water from residential drinking water wells, or private wells <<https://epa.gov/privatewells/potential-well-water-contaminants-and-their-impacts>>, may be at risk. Residential drinking water wells include individual wells that serve one home, shared wells that serve two homes, and wells that provide drinking water to fewer than 15 service connections and fewer than 25 people per day, which are considered “Group B Public Water Systems” in the State of Washington.

While EPA is concerned about nitrate contamination in groundwater throughout the Lower Yakima Valley, it’s focused on these three large dairy operations concentrated in the Granger area where groundwater nitrate levels are particularly high, and the well-water of many downgradient homes has high levels of nitrates.

Dairies generate large quantities of liquid and solid animal waste, which contains nitrogen which can turn into nitrate in the soil. Nitrate can migrate into groundwater if not managed properly.

EPA is working with state agencies to reduce high levels of nitrate found in groundwater supplies throughout the Lower Yakima Valley and has provided funding to the Washington Department of Health to increase groundwater and air quality education and outreach in the Lower Yakima Valley. As part of this effort, Yakima County, in partnership with Washington Department of Health and the Yakima Health District, launched the Lower Yakima Valley Groundwater Management Area Safe Drinking Water Initiative [🔗 <https://www.yakimacounty.us/541/groundwater-management>](https://www.yakimacounty.us/541/groundwater-management) to offer free well testing and free drinking water for homes whose wells exceed EPA’s health-based standard for nitrate of 10 mg/L.

What are the health risks from nitrate in drinking water?

Too much nitrate in your body makes it harder for red blood cells to carry oxygen, and symptoms can appear within hours or days. A single exposure to high nitrate levels above EPA's maximum contaminant level can cause health effects in babies, people

who are pregnant and sensitive adult populations with certain health conditions. While most people recover quickly, consuming water with high nitrate levels can be dangerous for babies and some adults.

EPA recommends that people not use water with high nitrate levels to prepare baby formula.

Nitrate is not easily absorbed through healthy skin so bathing in water with high nitrate is generally considered safe, but caretakers should be cautious when bathing babies who can ingest water while bathing.

Washing clothes and most dishes in water with high nitrate levels is also generally considered to be safe, but EPA recommends using alternative water to wash and sanitize baby bottles, breast pump parts, pacifiers, and other infant feeding items that go into their mouths.

While it is considered safe to water fruit and vegetables in home gardens with water that is high in nitrate, EPA urges people to use alternative water to wash the surface of fruits and vegetables prior to cooking or eating.

Boiling water will NOT reduce nitrate levels. In fact, it will make the level of nitrate worse because some of the water will evaporate but the nitrate will not. This increases the concentration of nitrate in water.

en español <<https://epa.gov/newsreleases/la-epa-y-el-ministerio-de-justicia-demandan-vaquerias-del-bajo-valle-de-yakima-por>>

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LAST UPDATED ON JULY 5, 2024

Assistance <<https://epa.gov/lep/assistance>>

Ayuda <<https://epa.gov/lep/assistance#esp>>

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

Midge Tschakert
1391 235th St
Kent Mn. 56553

RECEIVED

OCT 07 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

1. The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I, Rheann Zander, am concerned of the extra contamination to our water supply & the livelihood of existing local family farms in the area.



Application Date: 3/8/2024
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DIV OF WQ

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

Rose Ann Helne
1976 170th AVE
Wolverton, mn 56594

RECEIVED

OCT 07 2024

10-4-24

Hello Division of ^{DIV. OF} WATER

My name is Scott Murray Myhra,
I live @ 17560 County 8 Wehpeton, NB
58075.

I am located in tract 32 Abercrombie
Township.

My family has been there since
1850 and the tract and acreage
this dairy farm on County 8
being proposed on land we owned until
1972 plus two sections.

I have been around some properties
since birth.

I know Kelly Miller and have
sold acreage to him. I was going
to at one time get 20 cows on
farm but as he said cows are
nothing but trouble. I don't like
the secrecy of this endeavor and
have spoken to experts at Southeast
Water Users in Montador who supplies
me, rural water and they say they
don't have water for anything that
extreme. A guernsey cow weighs 1400-
2000 lbs. and need clean up and is
like 10 people for maintenance. 12,000
cows is like 120,000 people in a
half mile square added.

Need many more questions answered.

Thank you,
Scott Myhra

I'd write more
but busy. SM

#701-866-2181

RECEIVED

OCT 07 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
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To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

1. The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I'm Totally Against this Dairy Barn Set up!

There is too great a chance that this would affect our water supply. There has to be more study done on this before allowing this Dairy System is set up.

There also is too great a chance that the Manure System would send seepage to the River System.

Sincerely -

*Sharon Tachakew
710 Broadway
Abercrombie N.D.*

APPLICATION DATE 3/8/2024

Application # **NDAF00906**

Address: 1000 47th Ave NW, MN 55412
Phone Number: (763) 429-1100
Permit Expiration Date: 10/31/2025



RECEIVED

OCT 03 2024

DIV OF WQ

To: The North Dakota Department of Environmental Quality

Re: A written notification letter from citizens in the Area that will allow support the following comments:

- The addition of 106 million gallons of wastewater containing high nutrient content will affect the Local air quality, ground and surface water quality in the township of Aker, north of the facility. There are no sewer lines will allow prevent contamination and it will be the DQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Sewer water should also be filtered if they will or will not be using any trucking to transport manure.
- DQO should confirm that the current setback laws state that all animal agriculture non-point runoff over 5000 animal units have a setback of one mile. However, in light of the Ag Task Force meetings, if the proposed setback laws are enacted the facility would need a minimum of 1/2 mile setback. Language in the 2010 North Dakota Century Code may also include language that state, separately, a permit may be granted on a case-by-case basis on results of a risk assessment. The DQO should try to enforce the law as it is written, but note the nature that they are the authority recommending the permit to the law they should not be the authority to determine that they themselves are not going to enforce the setback.
- This project will impact local air quality, ground water quality, surface water quality, and also have an impact on the local economy, local businesses, and citizens that will...

On 10/03/2024

Please deny this application

*Sharon Bohm
Resident of Aker, north of Aker, ND, Tract #
7060 17th Ave NW
Wapeton ND 58075.*

RECEIVED

OCT 07 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029


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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I want to keep the water + air clean.



RECEIVED

NOV 10 1954

NEW YORK

Mr. J. Edgar Hoover

Director, Federal Bureau of Investigation

Washington, D. C.

Dear Mr. Hoover:

I am writing to you regarding

the information you received

from the New York office

on November 8, 1954.

I have reviewed the matter

and find it of interest.

I am sure you will continue

to keep me advised of any

developments.

Very truly yours,

J. Edgar Hoover

Director

Enclosed for you are two copies of a letterhead memorandum (LHM) dated and captioned as above. The LHM contains information received from the New York office on November 8, 1954, regarding the activities of the [redacted] in the New York area. The LHM also contains information regarding the activities of the [redacted] in the New York area.

I have reviewed the LHM and find it of interest. I am sure you will continue to keep me advised of any developments.

Very truly yours,

J. Edgar Hoover

Director

[Handwritten signature]

RECEIVED

OCT 07 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
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To Cameron Gilley,

Steven H Ritchie
Steven W Ritchie
Kent Mn.
Fargo ND

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
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To Cameron Gilley,



Tyler Wulfekuhle
Aber Landowner

From: [Jessica Gallaher](#)
To: [Gilley, Cameron](#)
Subject: Concerned about dairy farm Abercrombie ND
Date: Saturday, August 31, 2024 3:02:41 PM

You don't often get email from jessicalevery1982@gmail.com. [Learn why this is important](#)

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Hi there, I'm writing this because I am a concerned citizen of Richland county ND. I'm concerned about the Abercrombie Dairy farm that is proposed for the county. It seems like a sneak behind the people's back type of enterprise and I think the public needs to be informed and made part of decisions that are going on related to said dairy farm. This is not good for the surrounding farming operations for the land and the people. We are an agricultural/farming community that use the land for crops, hunting, low crime, making jobs for our citizens (not foreigners as the dairy plant will be utilizing) and for the rural home life country feel. We enjoy the peace, night skies and low crime rate. This will greatly impact all of those along with water safety and quality. Please help us get a public hearing as it should be the citizens that have a say in these matters. Thank you,
Jessica Gallaher

From: [Wes Heyen](#)
To: [Gilley, Cameron](#)
Subject: Concerns on New Dairy Barn in Richland County
Date: Thursday, September 12, 2024 7:46:18 AM

You don't often get email from wheyen@crystalsugar.com. [Learn why this is important](#)

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Good Morning Cameron

I would like to voice my concerns about the 12,500 head dairy barn that is proposed to be built in Abercrombie township, Richland County, ND.

My concerns, living within 2 miles of the proposed site, are on safety, quality, and sustainability of the drinking water in our own personal wells and also the water quality of the nearby Red River and Wild Rice River.

Location for this dairy in my opinion is a poor choice, due to the close proximity of 2 major water ways (Red River and Wild Rice River) 20+ personal wells within 2 miles, city of Abercrombie 4 miles away, along with 2 major businesses and the city of Wahpeton within 5 - 8 miles away from the proposed site of the dairy barn.

1. Are the aquifers sustainable to handle the use of 350,000-500,000 gallons of water daily?
 - What will this do to our personal wells and who will be responsible if the surrounding well levels are affected by this much water draw.
2. Water Quality and monitoring
 - Will there be monitoring wells to test for nitrates, E.coli and other contaminants due to concentration of manure in such a small area?
 - In Wisconsin, a dairy similar to the proposed dairy in Abercrombie township, had the same type of clay-based manure ponds. Their manure ponds leaked and contaminated the waterways and wells within 15 miles of the site.
3. Effects on river water quality due to manure ponds possibly leaking, or natural run off being located so closely to and between 2 rivers (Wild Rice 1.4 miles Red River 1.5 Miles)
 - Fields are ditched and/or drain tiled, to quickly drain water off the fields.
 - All water ways 10 miles east or west of the Red River or Wild Rice River, drain into these 2 rivers. This drainage area will encapsulate the dairy farm and include all the fields that will have manure spread on them.
 - The natural water table in this entire area is high, making it easier for any contaminants to enter into the water supplies.
 - Are there setbacks from ditches, major drains, creeks, and the rivers where the

manure would not be allowed to be injected?

- In wet falls or early freezes, where weather conditions do not allow for the injection of manure, what will be the allowable way to dispose of the manure in the ponds?
- Will they be allowed to spread the liquid manure on top of the frozen soil? This could possibly be an ecological disaster if it is allowed, any thaw in the winter or spring, run off from these fields will be directly into the ditches, creeks and will be concentrated in the Red River and Wild Rice River.
- What are the concerns and are there any safety protocols put in place to protect the water quality for any downstream cities such as Fargo who use the water from the Red as their drinking water supply.
- Any leaks or any forms of contamination from this large dairy will end up in the Wild Rice River and Red River. Wild Rice merges into the Red River just south of Fargo

Thank you, Cameron, for taking the time to read my concerns on the proposed dairy.

Wes Heyen

Wes Heyen

Beet Seed Processing Supervisor

Wheyen@crystalsugar.com

Office: 218-236-4780

Mobile: 701-238-9667

www.crystalsugar.com



1700 North 11th Street - Moorhead - 56560 - MN

This message is confidential. It may also be privileged or otherwise protected by work product immunity or other legal rules. If you have received it by mistake, please let us know by e-mail reply and delete it from your system; you may not copy this message or disclose its contents to anyone. The integrity and security of this message cannot be guaranteed on the Internet.

From: jlmigler@gmail.com
To: [Gilley, Cameron](#)
Subject: Concerns over proposed dairy farm - Abercrombie Township
Date: Sunday, September 29, 2024 6:32:49 PM
Attachments: [image.png](#)

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

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To Cameron Gilley,

We reside a short distance from the proposed dairy farm. We have great concerns about this corporate dairy farm coming to our area. We know that this amount of water usage could affect our well. We also have concerns about air quality and contamination of the land and rivers close to the proposed facility. There are many questions and concerns that have not been adequately addressed.

Sincerely,
Jacalyn Migler

From: [Kathy Mita](#)
To: [Gilley, Cameron](#)
Subject: Dairy Farm by Abercrombie ND
Date: Monday, September 30, 2024 9:21:53 PM

You don't often get email from mitakathy01@gmail.com. [Learn why this is important](#)

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I just moved to Abercrombie and have 10 months on my lease left. I find out that this dairy farm is going to monopolize the area. Spreading manure each day on these fields and land next to the school!!! I understand it has to be 50 degrees. Over 365 days how many days are 50 degrees. So where does this manure sit while they wait for the weather to cooperate. How many truck loads a day is that. I understand the soil had to be tested. Who is doing that. Don't let the fox tend to that. Then the truck traffic I understand is 88 loads of milk a day is shipped. There goes more wear and tear on the roads. I understand the company doesn't have to pay for the roads either because tax payers will pay for them. Oh more taxes like I'm happy about that. No!! What is in it for the common people? I understand there isn't enough water to supply their needs. Where is the water coming from? We already have MinnDak and Cargill pulling excess water now! What will dry well produce? There will be an uproar of people if water supplies go down. What advantage is it for this company to come here in the area. Everyone has to see a benefit not a burden on us tax paying people. Lifelong residents won't want their life ruined by this dairy farm. I understand they have the option to increase their cattle size. How can they? Where is the next level of water coming from. We can't give them an opened ticket to ruin our livelihood. If this farm benefits every one ok, but it doesn't. We can let big businesses ruin our area for their profits. There are more issues to discuss before decisions to give them a green light for this operation.

We need answers and discussion on what is best for everyone not just big businesses. Thank You for your time.

Kathy Mita
701-200-8593

From: [Lori Jacobson](#)
To: [Gilley, Cameron](#)
Subject: FW: Concerns on New Dairy Barn in Richland County
Date: Tuesday, October 1, 2024 7:11:30 PM
Attachments: [image001.png](#)

You don't often get email from lkjacobson0804@yahoo.com. [Learn why this is important](#)

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[Yahoo Mail: Search, Organize.](#)

From: "Jacobson, Lori

Good Morning Cameron

I would like to voice my concerns about the 12,500 head dairy barn that is proposed to be built in Abercrombie township, Richland County, ND.

My concerns, living within 2 miles of the proposed site, are on safety, quality, and sustainability of the drinking water in our own personal wells and also the water quality of the nearby Red River and Wild Rice River.

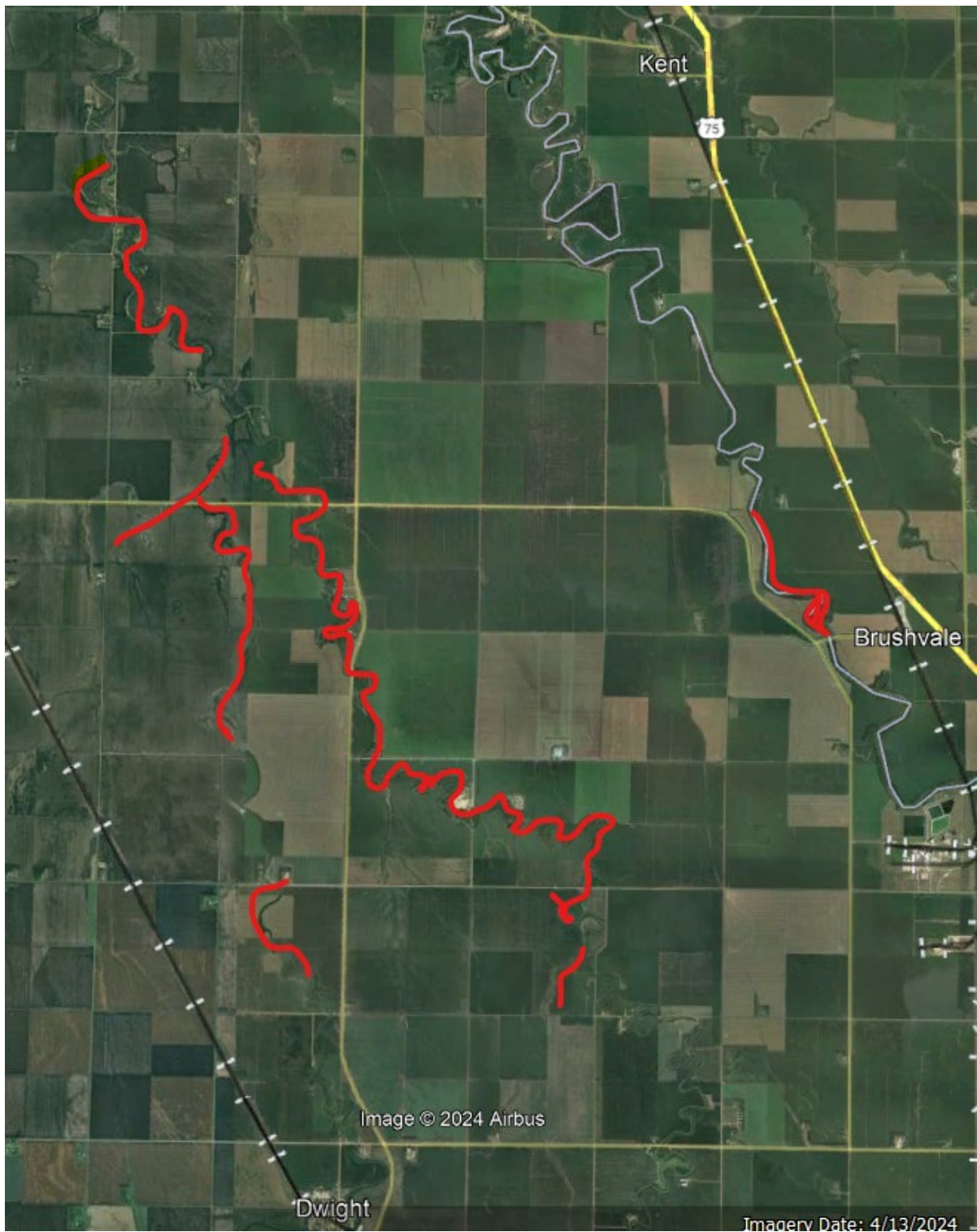
Location for this dairy in my opinion is a poor choice, due to the close proximity of 2 major water ways (Red River and Wild Rice River) 20+ personal wells within 2 miles, city of Abercrombie 4 miles away, along with 2 major businesses and the city of Wahpeton within 5 - 8 miles away from the proposed site of the dairy barn.

1. Are the aquifers sustainable to handle the use of 350,000-500,000 gallons of water daily?
 - What will this do to our personal wells and who will be responsible if the surrounding well levels are affected by this much water draw.

2. Water Quality and monitoring
 - Will there be monitoring wells to test for nitrates, E.coli and other contaminants due to concentration of manure in such a small area?
 - In Wisconsin, a dairy similar to the proposed dairy in Abercrombie township, had the same type of clay-based manure ponds. Their manure ponds leaked and contaminated the waterways and wells within 15 miles of the site.

3. Effects on river water quality due to manure ponds possibly leaking, or natural run off being located so closely to and between 2 rivers (Wild Rice 1.4 miles Red River 1.5 Miles)

- Fields are ditched and/or drain tiled, to quickly drain water off the fields.
- All water ways 10 miles east or west of the Red River or Wild Rice River, drain into these 2 rivers. This drainage area will encapsulate the dairy farm and include all the fields that will have manure spread on them.
- The natural water table in this entire area is high, making it easier for any contaminants to enter into the water supplies.
- Are there setbacks from ditches, major drains, creeks, and the rivers where the manure would not be allowed to be injected?
- In wet falls or early freezes, where weather conditions do not allow for the injection of manure, what will be the allowable way to dispose of the manure in the ponds?
- Will they be allowed to spread the liquid manure on top of the frozen soil? This could possibly be an ecological disaster if it is allowed, any thaw in the winter or spring, run off from these fields will be directly into the ditches, creeks and will be concentrated in the Red River and Wild Rice River.
- What are the concerns and are there any safety protocols put in place to protect the water quality for any downstream cities such as Fargo who use the water from the Red as their drinking water supply.
- Any leaks or any forms of contamination from this large dairy will end up in the Wild Rice River and Red River. Wild Rice merges into the Red River just south of Fargo
- Proposed map of where manure is contracted to be spread/knifed in fields, both side of Antelope Creek for 4.5 miles, drains directly into the Wild Rice River.
- Manure spread for 14.5 miles along the Wild Rice river, 1 mile along the Red River. All the area discussed are highlighted in red on map below. 8 miles or more of the wild rice will have manure spread in fields, on both sides, next to the river.



Thank you, Cameron, for taking the time to read my concerns on the proposed dairy.

Lori Jacobson

1

From: [Douglas Haarstad](#)
To: [Gilley, Cameron](#)
Subject: NDAFO0906
Date: Monday, September 30, 2024 8:02:01 PM

You don't often get email from dlhaarstad@gmail.com. [Learn why this is important](#)

******* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *********

As a citizen of Abercrombie,ND for over 65 years I am very concerned about the water consumption, and waste disposal methods of the Abercrombie Dairy. Please review all available data .

Thank you

Douglas L. Haarstad
706 Abercrombie ST
Abercrombie,ND 58001
My phone 701 261 7214

RECEIVED

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

SEP 25 2024

DIV OF WQ

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I believe that the environmental impact of this project will adversely affect the entire river basin flowing North on the Red River. Fargo, Grand Forks not to mention Winnepeg will be affected. Nitrate levels are a serious concern for health and safety. Please look into this project very seriously, and with the highest scrutiny.

Sincerely,



Austin Hermunstie

RECEIVED

SEP 25 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

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To Cameron Gilley,

Sincerely,
Cassie Wuefeler

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RECEIVED

SEP 24 2024

DIV OF WQ

To the North Dakota Department of Environmental Quality,

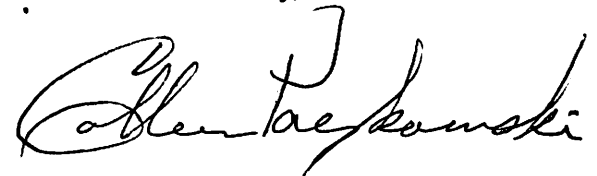
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

I am a resident of Abercrombie. Water availability and quality are a serious concern if the Aber. Dairy goes through. Air quality is also a concern.

Sincerely,



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RECEIVED

SEP 19 2024

DIV OF WQ

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To Cameron Gilley,

SEE ATTACHED Letter
Reply.

Sincerely,

Craig & Ilan Myhre

Sept. 17, 2024

North Dakota Department of Environmental Quality,

From what we have heard at meetings there is no good outcome for the citizens, community, county, township, environment, odor control, water contamination and destruction to roads in Abercrombie (Richland County).

The proposed Abercrombie Dairy will not take any responsibility for their actions or restitution for what could be destroyed. Detrimental to all of us. Plus the fact of bringing in migrant workers for this facility. What type of crime will be brought to this area. Schools are expected to teach these children English. The schools have enough on their plates with daily curriculum for our own kids, let alone trying to teach them English & dealing with any behavioral issues these kids may have. ONLY THE DAIRY BENEFITS!!

We think this is a detriment to our area and they are a SELF INDULGENT BUSINESS!!!

WE VOTE A DEFINITE NO FOR ABERCROMBIE DAIRY TO COME HERE!!!

Sincerely
Craig & Ira Myhre

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SEP 25 2024

DIV OF WQ

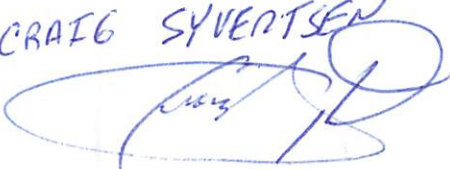
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To Cameron Gilley,

WATER RESOURCE IS MY BIGGEST CONCERN

CRAIG SYVERTSEN


P.O. BOX 25,
ABERCROMBIE

This is the first part of Dani Replogle's (Food and Water Watch lawyer) list of things to comment on.

This, of course, does not include all the other issues such as:

- air pollution
- property values
- road use
- effect on utility prices electricity and availability (water)
- work force issues
- community cohesion
- diversion of profits to out of state corporations
- loss of remaining independent ND producers
- hormones

".....you should append any studies/documents you rely heavily on to your comments to ensure they're in the record"

- CAFOs contribute substantial amounts of hazardous pollutants to surface and groundwater (can pull from existing comments)
 - Pollutants of concern and their impacts on human and ecological health
 - Nutrients (N + P)
 - Algae blooms (including HABs that are toxic to humans, pets and wildlife)
 - Low dissolved oxygen (fish kills)
 - Nitrate
 - Blue baby syndrome
 - Cancer
 - Birth defects
 - Pathogens (including *E.coli* and antibiotic resistant bacteria)
 - Gastrointestinal illness
 - Fish kills and harm to other wildlife
 - PFAS
 - Carcinogenic
 - Antibiotics
 - Birth defects in wildlife
 - Heavy metals
 - Salts
 - Pesticides
 - Sediments
 - Discharge pathways
 - Land application areas

- Seepage to groundwater from over application, ill-timed application
 - No information about hydrologic connectivity between groundwater and nearby surface water (particularly Red River)
 - Pollutants that enter groundwater can travel miles from the CAFO
- Runoff to surface water
- Discharge to surface-water via tile drain, agricultural ditch, or other conduits
- Production areas
 - Waste storage containment structures like ponds and compost areas seep, leak, breach, and overflow
 - Stormwater runoff

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RECEIVED
SEP 18 2024
DIV OF WQ

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

Further concerns:

- Air quality, health issues, breathing problems.
- Traffic + damage to roads. Who pay for repairs?!
- Well contamination
- Pushing out the few remaining small dairy farms.

Sincerely,
Dallas Kinnab

RECEIVED

SEP 26 2024

DIV OF WQ

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To Cameron Gilley,

If you want to understand the magnitude of the dangers of CAFOs simply google articles on the state of Iowa issues from the CAFOs Iowa has seen an astonishing increase in cancer numbers. It has the second highest cancer rate in the nation and is the ONLY state where cancer rates are increasing. This is due to the nitrates in the water. How can this be avoided & addressed in North Dakota?
Daryl Ellingson
D. Ellingson
Cedar Rapids, IA

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SEP 16 2024

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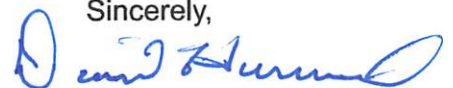
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To Cameron Gilley,

Sincerely,



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To Cameron Gilley,

I have some Major Concerns about Being so close to the Dairy farm. I am about a mile and half from the site. My Well is my only supply for our family and farm animals. Who will be responsible for any issues down the road for future issues.

Derrick Farr

RECEIVED

SEP 18 2024

DIV OF WQ

Application Date: 3/8/2024
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To Cameron Gilley,

Further concerns of this massive dairy farm trying to come in for me is:
Well contamination, flies, smell.
Manure runoff with 2 rivers being so close.

Sincerely,

Hayden Hemmah

RECEIVED

SEP 25 2024

DIV OF WQ

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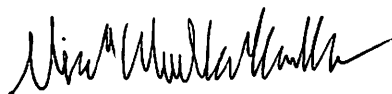
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To Cameron Gilley,

Sincerely,

A handwritten signature in black ink, appearing to be "Jim Mullen", written in a cursive style.

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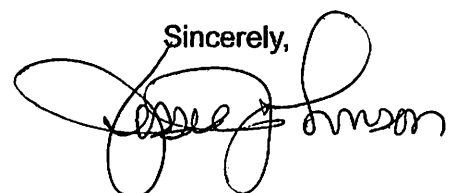
Further concerns:

The taxes for repairs of roads with that much traffic going right by our family farm a mile and a half away.

The contamination of our wells.

Health concerns for the families that live in close proximity.

Sincerely,

A handwritten signature in black ink, appearing to read "Jesse Johnson". The signature is written in a cursive, flowing style with large loops.

SEP 26 2024

DIV OF WQ

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To Cameron Gilley,

Much has been made of the Diversions 100 year flood projection project in the Red River Valley. However what will protect the Red River from the manure pollution runoff with the very minimal 2.5" freeboard on the clay dikes in lieu of the torrential rainfalls we have been experiencing due to climate change - i.e. Bismarck on 8/14 3-4" in less than an hour; Munich on 9/7 with 5.8" in a 3 hr span. 2.5" is not going to be adequate to prevent overflow of the pits.

K. Ellinger
Christine

From: [Lukas Kinneberg](#)
To: [Gilley, Cameron](#)
Subject: Abercrombie Dairy Concerns Regarding Notice ND-2024-012
Date: Wednesday, September 4, 2024 2:51:06 PM

You don't often get email from lukasmkinneberg@hotmail.com. [Learn why this is important](#)

******* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *********

Hey Cameron,

I am sending this email as a resident of Abercrombie; I have many concerns regarding the proposed dairy project for the Abercrombie Township. Many of these concerns surround the impact on our water supply for the surrounding farmsteads and communities. Of greatest concern to me is the potential contamination of Abercrombie's water supply (both the aquifers and the two rivers that run around the township. There has been numerous studies that have been done with results both in the United States and worldwide of the impact commercial feeding operations have on local waterways, and it isn't pleasant.

It's sad to see Riverview taking the approach of minimal communication with the community to get "their project" to go through. Much of the public has been left in the dark, and many have just found out about the project when the proposal was submitted in August. I do not believe the township has the resources to support a project of this nature and the risks that are associated with it regarding maintaining a safe water quality.

Because of the lack of responsibility Riverview has taken in informing the public, I urge an extension of the comment periods so others in the Abercrombie township can be made aware of the project and its impact on them. Additionally, upon review I urge a public hearing in Abercrombie be held to address the concerns the township has. Water is the source of life for all of our towns and cities in North Dakota, and I feel it would be a disservice for any residents of North Dakota (and Abercrombie Township) to not have a formal townhall to address these concerns.

Thanks you for your time.

Lukas Kinneberg
Resident of Abercrombie

RECEIVED

SEP 16 2024

DIV OF WQ

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To Cameron Gilley,

Sincerely,


RECEIVED

SEP 20 2024

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

Sincerely,

*Merrill, Stephanie
Miranowski*

(over)

9-13-24

To Whom it may Concern,

As a concerned Citizen I am writing to you about the proposed Dairy in Richland County.

I have seen many changes in the water supply here on my farm. When the Pro Gold plant came in we lost all of our Free Flowing wells. My neighbors and I had to drill new wells. We were told at that time that we may not get a well. We were forced to drill very deep to get water. Our well now is at 333 ft. I then met with Dan Zwelling from the MN DNR. They had put a monitoring well on our place and are keeping close records of the quality and quantity of this area.

We now know that there was contamination that has happened from the MinnDak plant in Wahpeton. We do not want those fears to return with a large Dairy Operation as this one is. We were never compensated for the loss of our last well. I am sure there would be none if we lost this well.

This aquifer I am on is a smaller one that is fed by the Buried Valley Aquifer. Please consider all the people that will lose their homes due to the decisions you will make.

Sincerely,
Merrill, Stephanie
Mironowski

RECEIVED

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

SEP 17 2024

DIV OF WQ

To the North Dakota Department of Environmental Quality,

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

We live 1 mile ^{NE,} along the Red River. We are very concerned about contamination of our water and land. This location is too close to major rivers; Red River supplies water to Fargo and Moorhead. Also after rain events i.e. this summer of 2 1/2 + inches at once. Also runoff from snowmelt in the spring not to mention flooding from the 2 rivers. Once they contaminate our soil/water, what next? No way can they cleanup such a mess. So having more dairy cows in ND such a priority that you risk livelihoods of so many people/communities? Solution: move facility →

away from rivers, & drainage ditches to the rivers);

Sincerely,

away from rural farmsteads & communities.

There are a lot of more suitable locations for this massive operation.

Would you like to live a mile from such an operation, risking your water, soil, and air quality? I'm betting your answer would be no. The word "should" is used a lot in the permit when ~~describing~~ describing odor,

& contamination. That doesn't mean much to us.

Sincerely,

Mike & Cindy Lick

17795 69th St. SE

Wahpeton, ND 58075

RECEIVED

SEP 16 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

1. Exactly how much traffic will be in the area?
2. What is the emergency plan for any flooding?
3. Diverse ecosystem by the creek in my land, will this kill off butterflies, bees, hummingbirds?

Sincerely,

Nicole Bohn Hagen

RECEIVED

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SEP 18 2024

DIV OF WQ

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

What happens when there is winter storm and the trucks can't come and get the milk. Where is that going to be dumped?

The water!!!! Where are they going to get this from?

Sincerely,

Quentin Hemmick

RECEIVED

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SEP 16 2024

DIV OF WQ

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To Cameron Gilley,

There is no way that the #
of Cows can sustain 350,000 to 500,000
Gallons of water per day. The potential
runoff would be horrendous to
the local community

Sincerely,
Robert Sweany

RECEIVED

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Mailing Address: 26406 470th Ave, Morris, MN 56267
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SEP 19 2024

DIV OF WQ

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3. This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.

To Cameron Gilley,

Further concerns:

Hiring out of country workers.

Manure, toxins, nitrates seeping into our ground waters.

Sincerely,

Richard Hemmick

RECEIVED

SEP 17 2024

DIV OF WQ

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Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
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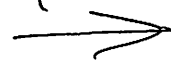
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To Cameron Gilley,

Our biggest concern is the quality and quantity of the water supply in Southern Richland County. Pollutants of concern include: nitrates, pathogens (E.colic and antibiotic resistant bacteria), PFAS, antibiotics, heavy metals, salts, pesticides. Also concern of increase air pollutants and increase travel on roads that ~~the Riverview~~ has NO skin in the game - but tax payers of Richland Cnty do.

Sincerely,

Ronald J. Strand
Barbara J Strand



Since the area already supplies water to Cargil, there is a drain on the aquifers supplying water to Southern Richland Cnty. Riverview will need around 400,000 gallons of water/daily - quite a strain on our local water supplies.

one of my (our) biggest concerns - this is a Minnesota company - supplying milk to a Minnesota company - why not use Minnesota land for their dairy operation - duh the requirements are much stricter in MN - taxes are higher - inputs are higher - sorry folks - ND is being used! we don't benefit from this operation as it is not taxed as a business - but as a corn field leaving the cost of roads, etc to the local tax payer.

Wake up people - Abercrombie doesn't want this. It will ~~put~~ potentially put a strain on our school system - housing and local sheriff department.

RECEIVED

SEP 25 2024

DIV OF WQ

Application Date: 3/8/2024
Application Number: NDAFO0906
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To Cameron Gilley,

Sincerely,



Tom Wulfekuhle

C. 701-306-3117

RECEIVED

SEP 25 2024

DIV OF WQ

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Application Number: NDAFO0906
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To Cameron Gilley,

Sincerely, Zachary Wulfekuhle



From: [Gilley, Cameron](#)
To: [Cynthia Olson](#)
Subject: RE: Permit NDAFO-0906 Abercrombie Dairy
Date: Friday, September 13, 2024 11:03:00 AM
Attachments: [image001.png](#)

Hello Cynthia,

Thanks for your patience.

As of right now, Riverview ND, LLP has not applied for a water appropriation permit with the ND Department of Water Resources. Their Water Appropriation Division would best be able to answer any questions you might have about what that process looks like or what options the proposed facility might have for water sources. They can be contacted by [e-mail](#), or at (701) 328-2754.

Best regards,

Cameron Gilley

*Environmental Engineer
NDPDES Program*

701.328.9129 • cgilley@nd.gov • <https://deq.nd.gov/>



4201 Normandy Street, 3rd Floor • Bismarck, ND 58503-132

From: Cynthia Olson <cynthia.olson58@gmail.com>
Sent: Friday, September 6, 2024 8:48 AM
To: Gilley, Cameron <cgilley@nd.gov>
Subject: Permit NDAFO-0906 Abercrombie Dairy

You don't often get email from cynthia.olson58@gmail.com. [Learn why this is important](#)

******* CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *******

I have looked through the permit but can't see where the water sources for the proposed dairy will be. Do you know or can you tell me where I can find that information? Thank you for your time.

From: [Harry Clark](#)
To: [Gilley, Cameron](#)
Subject: Riverview Dairy Concerns
Date: Thursday, October 3, 2024 10:21:47 AM

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10/03/2024

To whom it may concern,

As a Abercrombie township home and property owner, I have some real concerns about the proposed dairy for our township.

I'm mostly concerned about the availability of water and the possible effects moving forward. My in-laws farm and ranch near Colfax and depend on having water available for their livestock. If this proposed dairy taps into their aquifer, it could jeopardize their available water.

I also have concerns about the spreading of manure and possible contamination of 2 nearby rivers, Red and Wild Rice. The odor of spreading this manure is also of great concern. Especially right adjacent to our elementary school in Abercrombie. I'm also concerned about the impact on our school system as we know where the workers in these operations have limited English and it will be a burden on our school staffing. I just feel that there are too many negative impacts on our wonderful township and area towns that need to be considered. I hope you look into all aspects before approving such a drastic impact on all involved.

Sincerely,

Harry Clark
17040 Co. Rd. 6
Wahpeton, ND 58075

701-640-4868

From: [Wanita Johnson](#)
To: [Gilley, Cameron](#)
Subject: Riverview Dairy
Date: Friday, October 4, 2024 4:00:31 PM

You don't often get email from wonimarie@yahoo.com. [Learn why this is important](#)

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Hello~ I am contacting you about the Riverview Dairy farm north of Wahpeton. I am extremely concerned about this project.

Some of the issues are:

Air quality~~my family farm is located 1 mile east of the site.

Ground and surface water quality.

Profit to Richland County and surrounding farms and farmers. So far it looks like noone other than those involved with Riverview will benefit one iota. On the contrary, we risk water contamination, road wear and tear, out of country employees, dried up wells and no taxes being paid for by Riverview are for the land if even that.

Knifing the manure will cause excessive stench.

What happens if the contamination gets into the two rivers (Wild Rice and Red river?)

Actually there is no benefit to ND whatsoever.

I think there should be a thorough investigation into this company and their motives.

Sincerely,
Wanita Johnson

From: [Janie Johnson](#)
To: [Gilley, Cameron](#)
Subject: Abercrombie Dairy farm
Date: Sunday, September 29, 2024 5:18:58 PM

You don't often get email from janeaileenjohnson@gmail.com. [Learn why this is important](#)

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Please add my name to the list of concerned citizens of Abercrombie. I was born and raised in Abercrombie, a wonderful town to grow up in, and am 100% against the proposed dairy farm nearby. Please do not let this corporate large farm destroy Abercrombie.
Thank you,
Janie Johnson

Application Date: 3/8/2024
Application Number: NDAFO0906
Applicant Name: Abercrombie Dairy
Mailing Address: 26406 470th Ave, Morris, MN 56267
Telephone Number: 320.392.5609
Proposed Permit Expiration Date: 10/31/2029

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To Cameron Gilley.



From: [Dylan Johnson](#)
To: [Gilley, Cameron](#)
Subject: River View Dairy Concerns
Date: Thursday, October 3, 2024 4:47:51 PM
Attachments: [IMG_3171.heic](#)
[CAFO Report - IWLA PW Chapter 8-2-24.pdf](#)
[Abercrombie 10-1-24 Hydrogeologist Report.pdf](#)

You don't often get email from cdsconstruction333@gmail.com. [Learn why this is important](#)

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To Cameron Gilley,

I am writing this letter regarding the River View Dairy proposed in the Abercrombie ND township. I just want to start off by saying who in their right mind thinks this is a suitable location for this massive CAFO. I live 1 mile away from the proposed sight and have done a lot of research on these operations and I have found no good things about them. They are going to use clay lined lagoons, which have been proven to fail and contaminate ground water and peoples' wells. The concrete lagoons have been proven to fail. There are 27 active wells in a 2-mile radius of the site, mine being one of them. The dairy will be placed right between 2 rivers the Wild Rice River (1.4 miles) and the Red River (1.5 miles) a main water way (Creek) runs through my property which is 1 mile away and runs right to the Red River. Another main ditch that runs to the Wild Rice is touching the north side of the dairy property. I am genuinely concerned with how this could impact my well and livelihood of me and my family and my Childrens future family. This property has been in my family for well over 100 years. What happens when my well runs dry because the dairy used all the water in the aquifer that I get my perfectly good water from (as of now)? What will I have to do to get water replaced in my well? Will I have to get rural water at my expense because of the dairy? What happens when the lagoons fail and we get overland flooding (these two rivers flood every year), and it causes all the wells to become contaminated leading us to not having clean drinking water and causing diseases? Worse yet, it gets into the rivers and flows north, and it affects all the people that get their water from the rivers such as the city of Fargo. Who will be responsible to deal with all this nonsense? It will be all of us that wanted nothing to do with this massive dairy.

In the permit River View has stated they are not responsible for any of this. How is that even possible, considering they are going to be the ones causing this disaster? They are not going to monitor wells around here for contamination or if they are drying up. With this facility using 300,000 to 500,000 gallons (about 1,892,705 L) of water per day and if they get it from a clean water source... that is a lot of water coming out of the Aquifer. If they must refine it with a reverse osmosis system, then it could potentially quadruple that number.

Another reason this is a horrible spot for this facility is that the Richland 44 Elementary School is only a short 4 miles away from it. On average a dairy cow can produce up to 120 pounds of manure per day, times that by 12,500 that equals 1,500,000 of manure per day at this facility 547,500,000 pounds (about 248,341,620 kg) per year. That is way too much animal waste for one small area. You cannot tell me they can safely deal with all this manure without having a problem. They are going to be knifing this stuff into the soil every fall when the ground temperature is 50 degrees or less but not froze. Well, that does not give them much time to spread all this safely and correctly. If it is knifed in the fall, we often have wet falls where you cannot get into the fields, or the fields are too saturated meaning the manure knifed in will more than likely contaminate the ground water and could end up contaminating drinking water. They will be knifing this manure into fields that have drain tile. Well, one thing I know for sure about a drain tiled field is the water goes easier into the disturbed ground then the undisturbed ground. Meaning if the manure is in that soil, BAM right into the drain tile it goes and off to the rivers. They will also be doing this process smack dab next to the elementary school in Aber where my 2 children attend school, whom will all be affected by the stench and the flies.

It has been proven that many peoples' waters have been affected by these CAFOS all over the country and cannot be ignored. We may have different soils than other places, but I am sure some of them have similar soils. There will always be a "what if" if this stuff happens because it can and it has over and over again. Are we just supposed to be the Guinea pigs for North Dakota? How can

our state let them build this so close to the rivers and to people's houses, who have lived here all their lives? There are plenty of places in the

state that are not so heavily populated and do not have major water ways. Riverview Dairy always makes sure to tell people they really do not stink. I have talked to people who live next to their facilities, and they say there is a horrible stench that comes from their facilities. There is no way with that much manure it will not stink. I spoke to a gentleman, who will remain nameless, that lives 14 miles from one of their facilities and he says he can smell it from that far away at his home. The Campbell school principal says the smell is so bad at times, the kids start feeling nauseous. Does that seem safe or healthy to have this facility only 4 miles from a school let alone 1 mile from people's houses? I do not think so!

All this contamination has been proven to happen and has the potential to cause serious illnesses such as blue baby syndrome, cancer, birth defects, breathing problems, and gastrointestinal illness. Things like; algae blooms (which are toxic to humans and wildlife), low dissolved oxygen (which leads to fish kills), pathogens including E. coli and antibiotic-resistant bacteria, carcinogens, antibiotics in the water, heavy metals, salts, pesticides, sediments, and discharge pathways. This is all just scratching the surface of issues I have with this facility being put here or being allowed here, but I was told you all can only deal with the water issues. A lot of the "higher ups" in the state do not seem to care about any of this because they are pushing so hard for these CAFOS to come into the state and are making it so easy for them to do so. I really hope you care for the wellbeing of the residents around this facility and know that the "what if's" CAN become a reality, and they have over and over again. I really hope you will NOT allow this permit to go through. This project will affect thousands of people and not just the ones who live around it. I hope this opens your eyes a little bit and you share these comments to people who can help us "nobodies" that are trying to fight the "big company". If you do not help us, I am not sure who will stand up and fight for us, which is truly sad. I have sent multiple articles proving my points. I really appreciate your time for reading this and really hope you can help.

Thank you, Dylan Johnson

<https://sheboygan.extension.wisc.edu/files/2018/10/Best-Management-Practices-to-Keep-Nutrients-in-the-Field-and-Out-of-the-Tile.pdf>

<https://www.farmprogress.com/crops/tiling-and-nutrient-runoff-an-uneasy-relationship>

<https://www.minnpost.com/other-nonprofit-media/2024/07/we-should-have-a-sense-of-urgency-as-farm-drainage-tile-drives-nutrient-pollution/#:~:text=Tile%20changes%20the%20natural%20movement,flushed%20quickly%20into%20nearby%20waterways>

<https://nocafos.org/violations>

<https://acespace.org/blog/2021/08/06/why-are-cafos-bad-for-the-environment/#:~:text=CAFOs%20produce%20large%20amounts%20of,and%20the%20livestock%27s%20digestive%20processes>

<https://lpecl.org/liquid-manure-storage-ponds-pits-and-tanks/#:~:text=A%20mature%20dairy%20cow%20weighing,content%20of%20around%2012%20percent>
<https://hpr1.com/index.php/opinion/last-word/is-riverview-farms-good-for-north-dakota/>

https://www.forbes.com/sites/christinero/2024/09/16/big-problems-with-big-livestock-farms/?fbclid=IwZXh0bgNhZW0CMTEAAR07NZDXtug-f_QewP-pkPwkVl-XTuAww0XTw05hoNtqHNPSRLUoQj9ShuM_aem_g2aclIP1Wj61lhpHEoBiQw

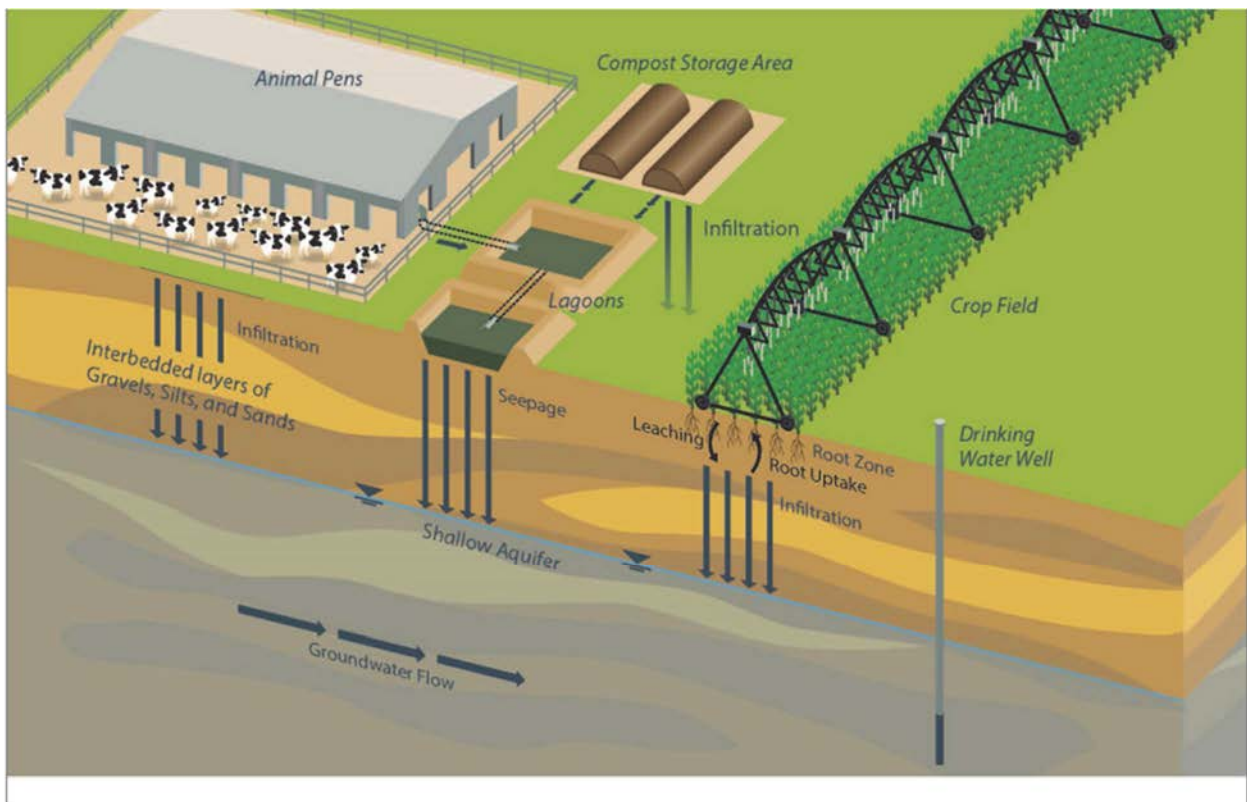
ADDRESSING AFO & CAFO IMPACTS IN BECKER COUNTY'S COMPREHENSIVE LAND USE PLAN, ZONING MAPS & ORDINANCES

An Izaak Walton League of America
Prairie Woods Chapter Special Report

to

The Becker County Board, the County Zoning Administrator, the County Planning Commission, the Comprehensive Planning Consultants and the Public on Confined Animal Feeding Operations (CAFOs)

August 1, 2024



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Photo Credit: Anchor QEA – Anchor Project – Yakima Dairy – 2017 Report to the Environmental Protection Agency

EXECUTIVE SUMMARY

The Becker County Board's decision to use a comprehensive plan update to address CAFO and Wake Boat issues has afforded the public and non-profit organizations unique opportunities to participate and even contribute their unique resources to the effort. With County Board Chair approval, members the local Izaak Walton League's Prairie Woods Chapter offered to perform research to fill technical information gaps that neither the staff or the planning consultant could fill. Thus, written reports were prepared on CAFOs and Wake Boats.

This report explains that the trend of more CAFOs migrating north into Becker County is real. The report dispels industry claims that they handle manure responsibly, by surveying other states and region's experiences. It describes how the evolving food industry model engenders industrial-sized feeding operations to maximize their profits, but to the detriment of smaller family farms and water quality. The report discloses that all manure storage facilities leak and can significantly affect sensitive groundwater, like that found in some regions of Becker County. State and Federal rules and permits are found to be too lax because the rules allow manure to be applied excessively enough to pollute both surface and ground waters. Manure leaks and spills are directly linked to fish kills. The spills resulted from heavy rainfall causing overflow from manure pits or were associated with manure transport tank wagon or pipeline accidents or failures.

The economic impact section of the report finds evidence that disputes nearly all industry claims that communities will benefit economically from industrialization of livestock farming. CAFOs are shown to ultimately be harmful to local economies because they displace family-scale family farms, reduce the number of farm worker needed, reduce hourly pay and can actually depopulate counties where CAFOs become dominant. Decreasing property values in counties with higher numbers of CAFOs is documented while lower CAFO counties experience increased property values. And many counties have been forced to raise taxes to offset increased costs of repairs to rural roads and bridges.

Credible monitoring of existing area wells and surface waters in any area designated for CAFO introduction or expansion, both before and after the first facilities are approved, is strongly recommended to establish baseline data. Therefore, private wells in areas zoned for more

intensive animal agriculture (CAFOs) in Becker County should have base-line testing done well in advance to protect well-owners, followed by regular sampling. Other states, and counties in the S.E. corner of Minnesota having experiences with CAFO's, are reviewed through published articles and each reveal significant unresolved levels of surface and groundwater pollution attributable to large and industrial scale feedlots. State and federal rules are reviewed and found inadequate to prevent or mitigate water pollution from CAFOs.

Minnesota is under Federal (EPA) orders to improve regulations for these areas, and new rules affecting eastern Becker County have already been judged as inadequate. Clean water supplies in quantities essential to Becker county's present and future economy, and for drinking purposes, are found to be inadequately regulated or apportioned by the state's water appropriation permitting program. Proposals for water quality and quantity (well-levels) monitoring for private well-owners could be recommended in the comprehensive plan. With state and federal regulations of CAFOs found inadequate to protect the health and welfare of Becker County citizens, zoning ordinances and permit conditions are considered quite important to fill these gaps. CAFO disease control methods are linked to the growing ineffectiveness of antibiotics in humans.

Testimonials are cited as evidence that small farmers can actually get financially trapped and even punished, by the CAFO industry when they find contract demands are draining their available capitol. A host of educational resources are included in the report that the League, other civic groups, county staff and the media can use to better inform the decision-makers and the public about these issues. Some of the resources listed in the full report are shown here below.¹

Izaak Walton League Chapter Produced Videos with CAFO experts and Citizen Testimonials at: <https://drive.google.com/file/d/17fEX-Wfztuq39zN4T4uXgnFkLOzasGNf/view>

Freshwater Futures' Webinar - Great Lakes HABs & CAFO Manure Conference Series | May 2, 2024 Freshwater Future
https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

¹¹ links in black font are not active, to access these files please cut and paste the URL into your browser.

Explosion of CAFOs in Iowa and its Impact on Water Quality and Public health at:
<https://roadactivist.org/wp-content/uploads/2018/01/Explosion-of-CAFOs-in-Iowa-and-Its-Impact-on-Water-Quality-and-Public-Health.pdf>

Economic Realities of CAFOs – Dr. John Ikerd - University of Missouri-Columbia at:
<https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos>

Antibiotic Use in Animal Medicine and Antibiotic Resistance.
<https://www.cidrap.umn.edu/antimicrobial-stewardship/study-predicts-global-increase-antimicrobial-use-food-producing-animals>

<https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics>

Addressing AFO & CAFO Impacts in Becker County’s Comprehensive Land Use Plan, Zoning Maps & Ordinances

A Special Report to the Becker County Board, Zoning Administrator, the County Planning Commission the Comprehensive Planning Consultants and the Public on Confined Animal Feeding Operations (CAFOs)

from

The Izaak Walton League of America’s Prairie Woods Chapter

Dr. Bill Henke, President

Erika Gilsdorf, Research Committee Chair

Charles Becker, Wake Boat Research Subcommittee Chair

Willis Mattison, Chief Science Advisor

August 1, 2024

Comprehensive Land Use Planning for CAFOs

Most land use decisions are inherently local. In Minnesota local governments create their own “comprehensive plan” for growth and development. The plan, in conjunction with zoning maps and ordinances establishes the way development occurs in that area. The primary purposes of the plan, zoning maps and the ordinances that implement it, is to “promote and protect the health, safety and general welfare” of the public, to “preserve and enhance the quality of surface waters” and to “provide for the wise use of water and related land resources of the County”²

Decisions about local planning and zoning, local utilities and other infrastructure are all made pursuant to the plan and maps. State law requires certain minimum elements in the plans, but leaves it to local units of government to develop and implement them through ordinances. The plans, maps and ordinances are ordinarily reviewed, updated and approved every 10 years.

The Becker County Public Engagement Survey used to gauge citizen priorities for the current planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams. When the nearly 500 respondents were asked to note their top priorities in terms of issues facing the county, 83% considered housing one of the three highest concerns. Further over 70% consider jobs and economic development a key priority and slightly more than 50% see the environment as an issue to be prioritized. Additionally,

² Quotes from statement of purpose section 101 in Becker County Zoning Ordinance

citizens raised two new issues to be addressed by the plan, animal feeding operations (AFOs) and confined animal feeding operations (CAFOs).

A county's land-use decisions about these livestock and poultry operations can have significant effects on the county's water quality, natural resources and human health, and economy, but impacts vary widely depending on sizes and locations of the operations. Factors such as soil types, depth to groundwater, topography and proximity to surface waters, proximity to neighbors, and compatibility of activities are important to consider along with the cumulative impacts of all other land uses on valued natural, cultural and aesthetic resources. Highly sensitive water bodies may need special protections and waters already impaired may need remedial measures in a land use plan. The impact of a single livestock or poultry project may seem small, but when we look at the bigger picture, the challenges to the environment and human health from both the small and industrial scale agriculture projects added together can be dramatic.

The livestock industry has experienced increasingly adverse conditions attributable to overcrowding; too many large facilities in close proximity, increasing animal disease risks, depletion of available clean water supplies, saturation of available crop lands with manure, and growing community animosity stemming from nuisance odor, traffic and insect (fly) populations.

Because industrial scale livestock agriculture is a recent arrival in Becker County the current comprehensive plan update is particularly well timed to perform its purpose serving to protect the county's water quality, natural resources and human health, as well as its economy.

The information provided here will serve to inform the County Board, the Planning Commission, County Planning and Zoning staff, and the public, on the consequences of allowing industrial scale animal feeding operations to first become established and then to possibly expand in Becker County. Potential impacts and risks to the public health and welfare of its current and future residents are identified. Factors that may potentially degrade the value of the county's natural resources and potential threats to the vitality of the County's rural economy are described in detail.

Filling the AFO/CAFO Information Gap

Conventional wisdom expressed in recent deliberations about these divisions of government responsibility for livestock facilities, led Becker County officials to defer to state and federal laws, permits and standards, to protect surface and ground water, as well as look after the general welfare and economic well-being of the county's citizens. The reliance on other entities to fill this role was examined for this report and was determined, at least in part, to be misplaced. And it was determined that neither the county zoning staff nor planning commission members had the assignment and neither had the time or resources to fully research the laws or the literature on large confined feeding operations. Zoning staff stated that no one had alerted them to issues relating to these operations and invited the public's assist in gathering more information.

Furthermore, the county planning a zoning staff found they did not have the necessary capacity or resources to research the impacts of, or find solutions to, either the industrial scale feedlot or the wake boat issues. And, the needed research was determined to be beyond the scope of work the consultants could be authorized to do for the money available.

When alerted to the need, the local IWLA chapter members met with county officials offering the League's wealth of expertise and volunteer time to research the controversial issues and generate fact-based reports and recommendations for inclusion in the draft comprehensive plan before the final plan was published.

The Izaak Walton League of America (IWLA) is well positioned to perform this public service. The League is a nation-wide, grassroots conservation organization that just celebrated its 100-year anniversary in 2022. Chapter membership includes conservation, natural resource, medical, pollution control, scientific research professionals, and other volunteers, many who are current, retired or former natural resource agency, university or consulting firm employees. Others are skilled, self-taught citizen scientists.

The local ILWA Prairie Woods Chapter, established in the 1940's has a long-standing collaborative relationship with area communities in a variety of conservation matters. Most recently, chapter members worked cooperatively with the Becker County Board the "Save the Trees Coalition" and other citizens to prevent unnecessary tree removals in the Smoky Hills

State Forest along the Lake Country Scenic Byway. The successes realized from these and other collaborations helped build the County Board's, the staff's and the public's trust in the IWLA member's scientific credibility and civic-mindedness.

The Izaak Walton League's Prairie Woods Chapter located in Detroit Lakes, the Becker County seat, has offered to help fill information gaps for both the livestock feedlot issue and for wake boats as well. This report will address the livestock feedlot issues while a separate companion report will similarly address wake boats.

CAFOs Are Migrating North Into the Lakes Region– Why?

New industrial scale feeding operations have been migrating north from Iowa and southern Minnesota, into northwestern Minnesota, in order to reduce animal disease risks, and have access to more clean water. In Iowa, an analysis by the Environmental Work Group produced a report that stated in part:

“The number of large concentrated animal feeding operations, or large CAFOs, in Iowa increased nearly fivefold in the past two decades, a new study from Environmental Working Group (EWG) reveals, with almost all of the growth from big hog-feeding operations.

EWG found that in 1990, Iowa had 789 large CAFOs – those housing 1,000 or more animal units – swelling to 3,963 in 2019. The findings are supported by the federal Census of Agriculture, which reported that Iowa, the top hog-producing state, housed more than 22.7 million hogs in 2017, an increase of 8.5 million since 1992.

Swine and other livestock raised in Iowa's large CAFOs now produce 68 billion pounds of manure a year – conservatively, 68 times the total amount of fecal waste produced each year by the state's 3.15 million residents.

Large hog CAFOs house a minimum of 2,500 pigs each, and the largest hog CAFO in Iowa houses 24,000 animals. In total, more than 60 percent of the animal waste produced

by the largest CAFOs in Iowa comes from hogs. The mountains of animal waste produced by these facilities pose a serious and growing threat to human health, the environment and water resources in the state.

EWG used satellite and aerial imagery to pinpoint where and when the new large CAFOs appeared in Iowa. The interactive map (found at the link in footnote 2) below shows their locations, the type of facility, the animals housed there and the growth in facilities over the past two decades.³

Industry Claims That They Handle Manure Responsibly Examined

Industrial farming representatives often claim farmers don't contribute to water nitrate or phosphorus pollution by over-applying fertilizers or manure because these materials cost too much, and to do so would be wasteful. However, Jeff Mitchell, Laboratory Supervisor for the Des Moines Iowa Water Works has found ever increasing concentrations of nitrates in the Des Moines and Raccoon Rivers, primary sources of the city's drinking water over the past 50 years. In an August, 2023 webinar entitled "*Nitrate in Drinking Water – Public and Private*" to the Izaak Walton League, Michell presented nitrate concentration trends for the Raccoon River from 1972-2023, shown in the graph below that was included in the presentation. By multiplying river concentrations, by river flow volumes, Michell calculated the total amount of nitrogen flowing past the city in 2018. If applied as anhydrous ammonia, it would have cost \$10 million and could have fertilized 400,000 acres, over 20% of the watershed. Since 1974, he calculated that 1.8 billion pounds of nitrogen had flowed past the city in the river. Using similar calculations Mitchell demonstrated that in 2015, 116,000,000 pounds of nitrogen was lost to the river at a cost of \$35,000,000, and as fertilizer it would have adequately treated (fertilized) 800,000 acres (40% of the watershed).⁴

³ EWG Study and Mapping Show Large CAFOs in Iowa Up Fivefold Since 1990 – See interactive map at: <https://www.ewg.org/interactive-maps/2020-iowa-cafos/>

⁴ Jeff Mitchell – 2023 Izaak Walton League Clean Water Webinar Series "*Nitrate in Drinking Water: Public and Private*" at: <https://www.youtube.com/watch?v=OpSnuGti2k0>

These data and calculations clearly show that farmers do over-apply both commercial and manure fertilizers at a great economic loss to the farmers themselves, and at great expense to municipal water suppliers such as Des Moines to remove that fertilizer. Nitrate removal has cost the city over \$317,000 in 2016 and over \$750,000 in 2015.

Nitrate in Drinking Water: Public & Private

Cost to Operate Nitrate Removal Facility

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Days in Operation	76	28	177	65	24	3	9	-	-	20
Number of Vessels Operated	313	96	726	265	72	9	58	-	-	70
Marginal Cost Per Vessel	\$1,015	\$1,015	\$1,038	\$1,159	\$1,045	\$1,090	\$1,199	\$1,199	\$1,199	\$1,199
Marginal Cost to Operate Facility	\$317,695	\$97,440	\$753,588	\$307,135	\$75,240	\$9,810	\$69,542	\$0	\$0	\$83,930

Public water supplies must meet drinking water standards (10 ppm), are routinely tested, and as shown above, treatment can be effective when the nitrate contamination is found to exceed safe levels, but it is expensive.

On the other hand, private well owners in rural areas lack testing or are tested only at the owner's expense, no standards are being enforced, and well-owners are "on their own" when contamination comes from their neighbor's activities. More information on private well contamination and aquifer draw-down issues can be found in the sections that follow.

All Manure Pits and Lagoons Leak

In Wisconsin and other states, including Minnesota, manure pits and lagoons are designed and allowed to leak, under provisions of regulatory permits, with a leak rate limit of less than 500 gallons/acre/day. This means that a three-acre lagoon is allowed to leak 1,500 gallons per day

and could total over one half-million gallons per year into the groundwater below. This has the potential to cause major problems for rural well owners.

A USDA study in Wisconsin examined this problem and found that not only nitrates were reaching private drinking water wells, but that fecal coliform bacteria from the manure pits were traveling over three miles from the source. (more on Wisconsin's experience issue later in this report)

The Minnesota Pollution Control Agency's construction standards for manure pits and lagoons are "theoretical" rather than practical. This means that if construction standards are followed, the pits should theoretically not leak more than the amount allowed, but the owner/builder need not demonstrate that they are not leaking in excess of the standard. Pits and lagoons are allowed to leak slightly less than 500 gal/acre/day leakage, but the standard is generally understood to be 500 gal/acre/day.

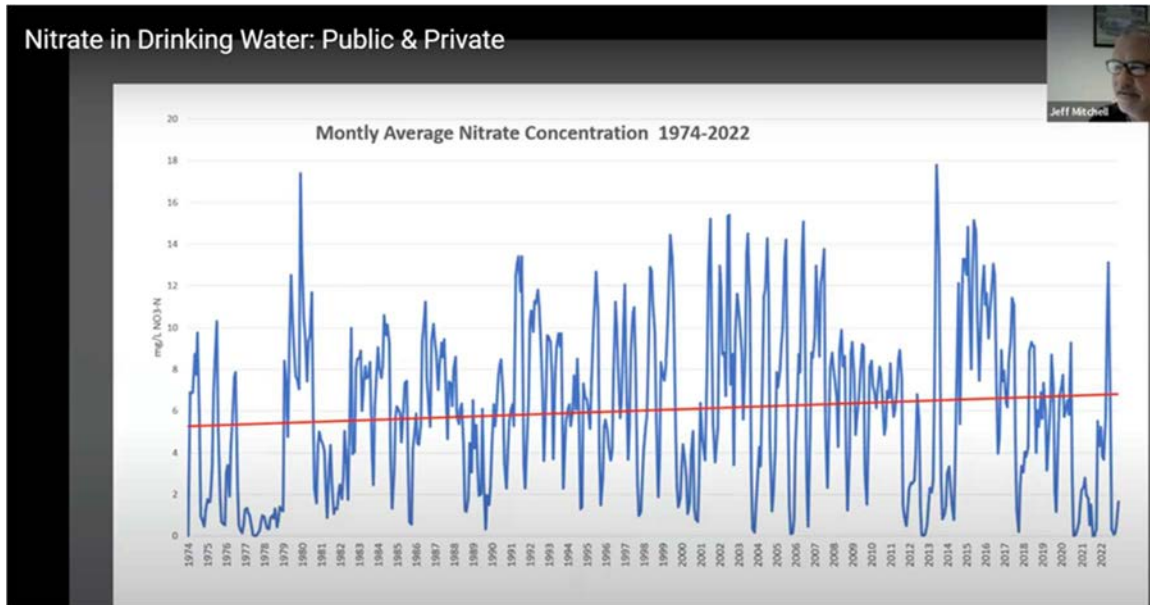
*"Minn. R 7020 requires that non-concrete liners for LMSAs be designed to achieve a theoretical seepage rate of no more than 1/56 of an inch per day. The required seepage standard is routinely considered to be approximately 500 gal/acre/day; however, this is slightly more than the actual 485 gal/acre/day allowed by the rule. Long-term protective and maintenance measures are required to meet this limit throughout the life of the structure."*⁵

This maximum leak-rate standard applies to manure storage facilities no matter what kind of liner is provided, including concrete, clay, Geotech (bentonite) or petroleum (plastic) liners.

It is important to note that while the MPCA rule requires this leak rate be maintained throughout the life of the pit or lagoon, and maintenance aimed at preventing greater leaking is required, there are no requirements for monitoring and actually demonstrating that the structures are not leaking more than this rate at the time of construction or after years of use and system deterioration.

⁵ **Liquid Manure Storage Areas MPCA guidelines for design, construction, and operation of all types of liquid manure storage areas** – p 30 of 60, found at: <https://www.pca.state.mn.us/sites/default/files/wq-f8-04.pdf>

Nitrate in Drinking Water: Public & Private



As part of the same Izaak Walton League webinar, Jesse Campbell, the Private Well Coordinator for the Midwest Assistance Program, shared information the Iowa Environmental Council had gathered about the presence of nitrate in groundwater and the challenges faced by private well users in avoiding nitrate contamination. In a 2019 Water and Land News report, Campbell revealed that “more than 6,600 private wells (12% of those tested) had nitrate averages at or above the EPA’s legal limit (10 ppm) for drinking water systems and more that 12,330 wells (22%) had nitrate levels at or above 5 ppm. Natural background nitrate levels in Iowa groundwaters are generally less than 1 ppm.

Becker County, like most other rural counties, does not have private well protection strategies in place via policy or ordinances, other than well setbacks from on-site sewer systems. And private well-owners seldom, if ever, have their wells tested to see if drinking water standards are being met. If a neighbor’s feed lot or CAFO should contaminate a private well, the well-owner has little recourse and will have the choices of either continuing to drink the contaminated water, purchase bottled water or drill a deeper well. In-home reverse osmosis treatment systems are effective at removing nitrates as well and may be more affordable than a new well. However, reverse osmosis technology is not designed to remove bacteria and viruses. If bacteria enter these systems, it can continually grow in pre-filters and deteriorate the osmotic membrane over time. Thus, most reverse osmosis system manufacturers specify that the system "must be used with biologically safe water".

Economic Impact of CAFOs on Rural Communities

Dr. John Ikerd⁶, who holds a PhD in Agricultural Economics, now retired from University of Missouri-Columbia, in a Freshwater Futures May 15, 2024 webinar presentation entitled “*Economic Fallacies of CAFOs*”⁷, presented the following conclusions from multiple peer reviewed studies⁸:

- 2008 Review: Reams of research dating to the 1940’s shows local economies suffer economically and socially from industrial agriculture;
- 2001 Study: Many CAFO counties are forced to raise taxes to offset increased costs of repairs to rural roads and bridges;
- 2008 Study: Lower income, greater income inequality, more poverty, less active “Main Street”, fewer stores, and less retail trade are found in CAFO counties;
- 2015 Study: Property values up to 7 miles from CAFO were lowered from 3.1% to 26%; while property values next to CAFOs were down 88%;
- 2022 Study: Personal incomes dropped 8% from 1982 to 2017 in Iowa counties with most CAFOs. Other rural counties with fewer CAFOs rose 41%.

Dr. Ikerd, in his own paper entitled: *Economic Realities of CAFOs*⁹ draws the same conclusions and more. He includes an extensive list of reference publications that support his findings in his paper. Below are some excerpts from that paper on rural community impacts:

“Defenders claim that regardless of the need for CAFOs to meet the needs of consumers, CAFOs are necessary for the economic survival of many farming communities. They point specifically to community economic benefits from local investments in CAFOs,

⁶ Dr. John Ikerd - University of Missouri-Columbia, in a Freshwater Futures May 15, 2024 webinar presentation entitled “*Economic Fallacies of CAFOs*”

⁷ **Freshwater Futures’ Great Lakes HABS & CAFO Manure Conference Series**, May 9, 2023. YouTube Recordings from the Conference can be found at:
https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

⁸ The many studies referenced by Dr. Ikerd will be made available to all who want to read them upon request.

⁹ *Economic Realities of CAFOs- Dr. John Ikerd, May, 2020 at:*

<https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos>

local sales of animals and animal products, and local employment in CAFOs and related local industries. However, decades of socioeconomic research and actual experience in CAFO communities reveal something very different. Whatever CAFOs contribute to local tax bases is more than offset by increased costs of maintaining rural roads and bridges that were not built to accommodate the heavy truck traffic associated with CAFOs. Also, local CAFO operators typically source construction materials and labor from outside their local communities. Feeder animals, feed, and other supplies are shipped in from elsewhere. Even animal health care is typically provided by corporate veterinarians. Few of the economic benefits from CAFOs remain in local communities.

The most frequent claim for community benefits is probably that CAFOs will increase local employment, which is sorely needed in many farming communities. However, the economic reality is that CAFOs employ far fewer people per dollar invested or unit of production than do the independent family farms they inevitably displace. The first research I personally did on this subject was an evaluation of CAFOs as a rural economic development strategy. I evaluated the employment implications of PSF's planned operation in north Missouri. My conclusion was that if PSF came into Missouri, their CAFOs would displace up to three independent Missouri hog farmers for every job they created.^[26] CAFOs came to Missouri, and Missouri lost more than 90% of its independent hog producers. I doubt that the number of workers employed in CAFOs in Missouri exceeds more than one-third of the independent hog farmers they displaced.

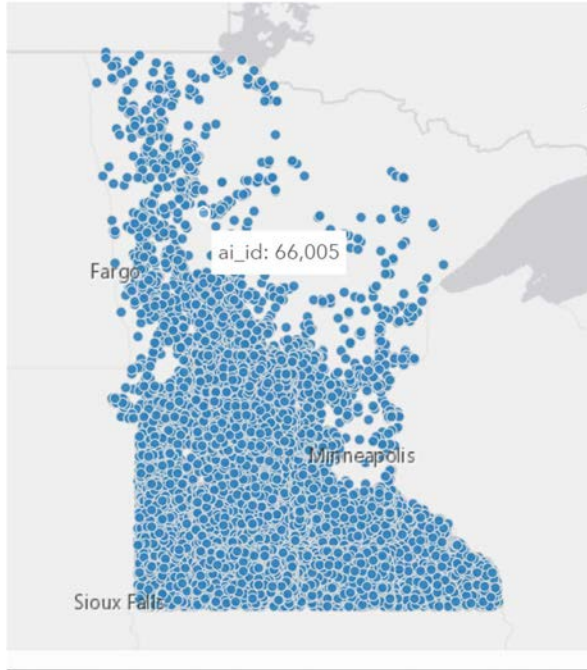
In the case of CAFOs, once livestock and poultry production became specialized, previously diversified family farms became specialized producers of either livestock or crops. Livestock and poultry were major sources of farm income that had made many diversified family farms economically viable. So, farmers who specialized in grain production were forced to farm more acres of land than before to maintain adequate family incomes. Larger crop and livestock operations meant fewer economic opportunities for farmers. With the industrialization of agriculture, the percentage of the U.S. labor force employed in agriculture dropped from 4.4% in 1970^[27] to less than 1.5% in recent years.^[28] Even in the communities where they locate, CAFOs do not actually

create jobs. They simply relocate and concentrate fewer lower-paying jobs in CAFO communities than had previously existed on family farms elsewhere.

In addition, this loss of farm families cannot be offset by people moving into rural communities from elsewhere. No one really wants to move to a CAFO community. A 2015 study reviewed thousands of assessed property values for residences located up to 7 miles distant from CAFOs. The review concluded: “Overall, the new studies confirm the [negative] valuation impacts reported in earlier studies, as they range from 3.1% to 26% losses depending on multiple factors, and that properties immediately abutting an AO [CAFO] can be diminished as much as 88%.”^[29] It takes people, not just production, to support rural communities. It takes people not only to buy farm supplies and equipment but also to shop on Main Street for cars, clothes, shoes, and haircuts. It takes people to send their kids to local schools, to attend local churches, and to serve on volunteer fire departments and local town councils. When independent family farmers are displaced by CAFOs, it’s not just a matter of losing employment; it’s a matter of losing the essence of what it takes to be a viable rural community.”

The map below depicts the northerly progression of large confined animal feeding operations AFOs into Minnesota now stretching to the far northwestern corner of the state.¹⁰

¹⁰ Source: MPCA on-line, data may not be current: <https://hub.arcgis.com/datasets/mpca::feedlots-2/explore?layer=3&location=45.932764%2C-92.791165%2C6.00>



These realities highlight the importance and necessity of using local land use plans and ordinances for proper siting, inspection and monitoring of large livestock facilities, so the public can have greater confidence local economies will thrive and that pollutants are not and will not enter surface or groundwaters without detection. Becker County has set an important protective precedent by requiring water sampling for large feedlots needing conditional use permits. But the design for the water sampling regime requested lacked science-based specificity and thus did not include sufficient sophistication to assure the monitoring would accomplish the intended purpose of detecting pollution and in turn, protecting surface and groundwater.

Industrialized Food System Engenders CAFOs.

Eric Schlosser in his recent book, *Barons – Money, Power, and the Corruption of America’s Food Industry* states:

“Over the last 250 years, almost every sector of the American economy has become dominated by a handful of corporations. The forces that drove that trend have also come together to transform the most important sector of the American economy: the food system. The way in which the United States produces and distributes its food has a profound effect on worker rights, animal welfare, air quality, water quality, the landscape, rural communities, public health, international trade, and the global climate.

*Livestock and poultry DNA are now owned, manipulated and sold to American farmers by a handful of corporations. Four companies control 66 percent of the hog genetics; three companies control 95 percent of the broiler chicken genetics; two companies control 99 percent of turkey genetics.*¹¹

*Iowa Select Farms employs more than 7,400 people, including contractors, and brings about five million pigs to market annually. Since Iowa Select was founded in 1992, the states pig population has increased more than 50 percent while the number of hog farms has declined by over 80%. Pigs now outnumber human residents by a ratio of more than seven to one, and they produce a volume of manure equivalent to the waste of nearly eighty-four million people, more than the populations of California, Texas and Illinois combined.*¹² *One expert estimated that each confinement facility produces “the same amount of waste as a city of 90,000 to 150,000 people,” spread over 640 acres with no sewage system.*¹³

State and federal laws do regulate some environmental impacts of livestock operations, but other than prohibiting siting in flood plains and wetlands, these regulations do little else to control the location of this particular agricultural land use. Recent findings by the Environmental Protection Agency show that Minnesota’s regulations are inadequate to protect surface and groundwaters from nitrate pollution (more details on these findings are found later in this report).

Therefore, local governments have an important role to play in the proper siting of industrial scale livestock facilities in Minnesota. And, this local government role takes on new importance now that the State and federal government’s protective network has not only been found to be incomplete, but has been shown to be ineffective as well. This means that local governments must exercise their authority and responsibility for deciding if and where large livestock facilities are located in their county, in order to close this loophole in the state and federal regulatory structure.

¹¹ From forward by Eric Schlosser in **Barons – Money, Power, and the Corruption of America’s Food Industry** – by Austin Frederick-Island Press 2024

¹² CNBC Interview with Warren Buffet, Feb 27, 2017 quoted in “BARONS” by Fredrick – See footnote #11 above

¹³ Natalie Gagliardi, “Walmart CEO outlines Omnichannel Retail Strategy to Stakeholder Associates”, SDNET, June 5, 2015 as cited in BARONS by Fredrick – See footnote #11 above.

How the Clean Water Act and U.S. Farm Bill Remedies Fail to Protect Water

Under the Federal Clean Water Act, *direct* discharges of manure to surface waters from livestock holding pits and lagoons is prohibited for large Confined Animal Feeding Operations (CAFOs are over 1000 animal units). However, the controls for on-land spreading of manure from both larger CAFOs or smaller AFOs (animal feeding operations under 1000 animal units) for disposal or as fertilizer are strictly voluntary. Furthermore, penalties for discharging manure, even when it kills fish, are small, and therefore have not served as an effective deterrent; spills, leaks and ruptures continue to occur in every state that has these facilities.

Manure management plans, whether for CAFOs or AFOs, generally adopt what is known as best management practices (BMPs) for manure spreading, based on so-called “agronomic rates” of application. Such agronomic rates are designed to maximize the crop growth that is nurtured by manure application. Because these rates are designed to maximize crop production alone, it becomes clear that they are not designed for surface or groundwater quality protection. These BMPs have time and time again, been demonstrated to be ineffective, not only in Minnesota, but in a number of states and watersheds around the country.

Once surface and groundwaters are degraded by concentrated livestock feeding operations (or other source, for that matter) little can be done to reverse these impacts. Given the Becker County’s location in the heart of the lake country’s tourism region, degraded surface water quality has potential significant adverse economic consequences. Therefore, Becker County officials can benefit greatly from the experience of other states and regions, by insisting on more effective pollution prevention measures for feedlots in the comprehensive planning process. Chapter members are aware of other proven measures and are prepared to do further research to identify more effective pollution prevention strategies if county officials indicated their interest.

The chapter has researched other regions of Minnesota and several other states, to gather the experience of others with industrial scale agriculture, beginning with the Chesapeake Bay.

Chesapeake Bay

Over forty years ago, Chesapeake Bay watchers and state officials noticed significant water quality and aquatic life deterioration. Chesapeake Bay's watershed drains part of six states so an umbrella foundation was formed to fund and coordinate point and non-point pollution remedies. In 2004, studies investigating severely degraded water in the bay revealed the primary causes were increased nitrogen and phosphorus from several sources, but mainly from agriculture, and especially from intensive livestock agriculture. A 2004 Report by the Chesapeake Bay Foundation stated:

“The Chesapeake Bay is choking on nutrient pollution from a myriad of sources – from urban runoff, industry, automobiles, and human sewage, but the largest source is agriculture and, increasingly, from the manure produced by livestock, which now outnumber the watershed's human population by 11 to 1. Most of that manure is spread on the surface of nearby cropland, and studies show that within two years as much as half of its nutrient pollution washes out of the soil and into rivers and streams or seeps into groundwater. Both of these pathways lead to pollution in local waterways and, ultimately, in the Bay.

“Of the nitrogen and phosphorus that reach the Bay, agriculture is the largest source and animal manure is the largest agricultural component. Chemical fertilizers and airborne pollutants such as ammonia gas—a common manure by-product – make up the rest of the agricultural sources. This makes animal manure not only the largest source of nitrogen and phosphorus deposited on the land, but also the second largest source that reaches the Bay, behind sewage, which is deposited directly into the water. Animal manure is a major source of the Bay's pollution and must be addressed swiftly and comprehensively.¹⁴”

After the 40 years of intensive, watershed wide efforts to restore water quality from this severe degradation caused by non-point pollution, the Chesapeake Bay is barely holding its own,

¹⁴ **Manure's Impact on Rivers, Streams and the Chesapeake Bay- Keeping Manure Out of the Water, A Report by the Chesapeake Bay Foundation** July 28, 2004 at: https://www.cbf.org/document-library/cbf-reports/0723manurereport_noembargo_7567.pdf

because crop and farm animal sources of nutrients have proven difficult if not impossible to cure. A 2024 Chesapeake Bay Foundation report¹⁵ (that is well worth reading) states:

“Controlling agricultural runoff, the largest source of nutrients, has turned out to be more complex. Significant regionwide reductions have proven difficult. Data suggest, though, that efforts over the last 15 years have held the line, despite increases in crop production and growing numbers of chickens and other farm animals.”

Now, as the Bay Program celebrates its 40th anniversary, its partners are contemplating what comes after 2025, the deadline for meeting most of the 31 outcomes set in its 2014 agreement. Of those, 15 are on track, 10 are off-course and the status of four others is unclear. Nutrient goals will be missed by a large margin.”

Maumee River in Ohio and Western Lake Erie in Michigan

Lake Erie water quality improved greatly in the 1980s-90s when point sources of nutrient pollution were mostly remedied by the Clean Water Act. However, recent expansion of intensive crop and animal agriculture (factory farms) have reversed these gains, and frequent toxic algae blooms have once-again become the norm. A recent joint report by the Environmental Working Group and the Environmental Law and Policy Center states:

“The Maumee River, overloaded with fertilizer and manure, is the single largest source of the phosphorus that triggers blooms of toxic algae in Lake Erie. Over half of the manure in the Maumee River watershed comes from an exploding number of unregulated factory farms, a new EWG and Environmental Law & Policy Center investigation reveals.

Outbreaks of toxic algae, fueled by pollution from manure and fertilizer from farm fields, are increasing in frequency and severity across the U.S. In 2014, a toxic bloom in Lake

¹⁵ **After 40 years, Chesapeake Bay Program Yields Mixed Results** – Bay Journal at: https://www.bayjournal.com/news/pollution/after-40-years-chesapeake-bay-program-yields-mixed-results/article_4af88180-92b0-11ee-9d06-ab0f3bb0d72f.html

*Erie imperiled the drinking water of 500,000 residents in Toledo, Ohio. The Lake Erie outbreak, now an annual event, is getting much worse.*¹⁶

Tim Boring, a sixth-generation farmer and Director of Michigan's Department of Agriculture and Rural Development, has bad news about Michigan's efforts to curb the farm pollution that fuels Lake Erie's toxic green algae. He finds that farm programs designed to protect water quality aren't working and that "factory-sized megafarms" are detrimental to the traditional farm economy.¹⁷

Lake Erie's phosphorus pollution problems have grown worse amid decades of consolidation in farm country. Diverse family farms have been steadily gobbled up by massive operations that primarily grow either cattle feed such as corn, or cows — and not on the same piece of land. The corn grown on one megafarm is shipped to a separate factory-sized livestock operation, which produces huge amounts of manure yet lacks the cropland on which cow poop becomes a valuable fertilizer.

The corn farm, in contrast, has plenty of acreage but no cows to fertilize it. So the farmer resorts to chemical fertilizers.

"It's not the problem that we have too much manure, it's that we have manure in all the wrong places," Boring said. Boring sees the state playing a bigger role in protecting small farms, which tend to grow more diverse crops while also raising livestock, and helping them succeed without expanding their acreage.

In doing so, he said, Michigan can bolster rural communities that rely on farming and food processing jobs.

Freshwater Futures based in Petoskey, Michigan recently hosted a day-long conference on CAFO manure impacts on surface and groundwater, and especially their contributions to harmful algae blooms (HABs) on Western Lake Erie. The conference was recorded and featured technical experts in all fields of concern, an attorney, a local politician, a pollution control engineer, and others. The recording of individual speakers and their PowerPoint slides can be

¹⁶ **Explosion of Unregulated Factory Farms in Maumee Watershed Fuels Lake Erie's Toxic Blooms** at: https://www.ewg.org/interactive-maps/2019_maumee/

¹⁷ Michigan farm czar: Our fight against Lake Erie pollution isn't working: <https://www.bridgemi.com/michigan-environment-watch/michigan-farm-czar-our-fight-against-lake-erie-pollution-isnt-working>

accessed at the links below. These programs would be well suited for viewing by Becker County elected officials, the Zoning Commissioners, and the public. The Izaak Walton League is prepared to co-sponsor a screening of these conference recordings, and possibly invite selected presenters to visit Becker County to explain their knowledge and first-hand experience in their fields of specialty.

Great Lakes HABs & CAFO Manure Conference Series.¹⁸

- [Great Lakes HABs & CAFO Manure Conference Recording](#)
- [Speaker Presentations](#) - Power Point Slides

For additional questions and concerns on the conference information on how to contact speakers please contact Sandy Bihn (sandylakeerie@aol.com) or Alexis Smith (alexis@freshwaterfuture.org) Jill M. Ryan, Executive Director, Freshwater Futures.

GREEN BAY WISCONSIN – ON LAKE MICHIGAN

The Green Bay Press Gazette¹⁹ carried this headline after covering the *Midwest Manure Summit* in Green Bay in 2019:

“Scientists are one step closer to understanding how dangerous contaminants from fecal matter are entering private wells in Kewaunee County. New research by U.S. Department of Agriculture microbiologist Mark Borchardt shows nitrate and coliform in the water mostly comes from agriculture — and not human waste.

¹⁸ See links to YouTube video recordings at the end of this report. This webinar, while useful to disclose the wide variety of environment, human health and economic problems with CAFOs may not be suitable for comp plan content. It may be better suited for a series of public education events for the Becker County Board, Planning Commission members and the public. Citizens, once well informed on CAFOs by these means can build fact-based support for the County’s leaders taking appropriate actions.

¹⁹ Green Bay Press Gazette, March 2019 by Sarah Whites-Koditschek and Coburn Dukehart -Wisconsin Public Radio and Wisconsin Center for Investigative Journalism found on line at; <https://www.greenbaypressgazette.com/story/news/investigations/2019/03/04/tainted-kewaunee-county-drinking-water-wells-tied-manure-pits/3054018002/>

“Where we see the strong relationships, the strong linkages, those are with agricultural factors. So that would suggest that agriculture is primarily responsible for those two contaminants,” he said in an interview.

Borchardt presented his updated findings on the risk factors associated with contamination in wells at the Midwest Manure Summit in Green Bay on Wednesday. In 2017, his research found over 60 percent of wells sampled in Kewaunee County were contaminated with fecal microbes, which can come from both septic systems or animal waste.

The new study aims to understand the precise sources of contamination and how certain factors can reduce or increase the risk of tainted drinking water. Borchardt used models to predict how those factors — like the distance of a well from a manure lagoon or agricultural field, weather and the quality of well construction — can impact contamination levels.

Borchardt’s study found that the No. 1 risk factor for contamination was the proximity of a well to a manure storage pit. Borchardt said the closest well in the study was 150 feet from a manure pit, but even wells three miles away still have some risk of being contaminated with coliform.”

Identifying and notifying owners of private (and public) wells within a 3-to-4-mile radius of any proposed industrial-scale feedlot may be an important public health function for consideration in Becker County’s planning process for these facilities. And zoning maps that are updated to depict where large or industrial scale feedlots can be allowed by standard permit or conditional use permits could be used as a guide for a county-sponsored and targeted private-well monitoring program.

EPA Intervenes to Protect Southeast Minnesota’s Ground and Surface Water – Orders Permit and Guideline Improvements

In April, 2023, citizens petitioned the U.S. Environmental Protection Agency, saying nitrate in the groundwater in southeast Minnesota’s karst region — largely from fertilizer and manure applied to crop land — poses an imminent danger to human health. They asked the Federal Environmental Protection Agency (EPA) to use its emergency authority under the Safe Drinking Water Act to intervene.²⁰

In response to the citizen’s petition, in an August 2023 letter to four Minnesota State agencies, the EPA stated that the MPCA’s permit and manure management requirements for CAFOs were inadequate and needed to be “more protective” of sensitive groundwater resources. The federal agency says state agencies need to take additional steps to protect drinking water in southeast Minnesota from nitrate contamination.

“While this letter is largely focused on addressing immediate health concerns regarding nitrate contamination in drinking water in the Karst Region, Minnesota must also develop and implement a long-term solution to achieve reductions in nitrate concentrations in drinking water supplies. Developing a complete understanding of potential sources of nitrate contamination is an important immediate step for the state. A risk analysis of current and future nitrate contamination of the impacted groundwater will be critical for determining long-term solutions, and such analysis should incorporate the latest science and technologies. Minnesota has tools to effect reductions in nitrate concentrations through the National Pollutant Discharge Elimination System (NPDES) and State Disposal System permit programs, including development and implementation of more protective NPDES/SDS CAFO permits. In addition, Minnesota should consider adopting monitoring requirements in NPDES/SDS permits related to (1) subsurface discharges from manure, litter, and process wastewater storage, as well as (2) discharges from land application, similar to those proposed by EPA as modifications to the EPA-issued CAFO general permit for Idaho: <https://www.epa.gov/npdes-permits/npdes-general-permitconcentrated-animal-feeding-operations-cafos-idaho>.

²⁰ EPA says 'further actions' needed to protect human health from nitrate in southeast Minnesota by Kristi Marohn - November 8, 2023 at: <https://www.mprnews.org/story/2023/11/08/epa-says-further-actions-needed-to-protect-human-health-from-nitrate-in-southeast-minn>

We also encourage Minnesota to consider modifications to the state’s Technical Standards for Nutrient Management with regard to land application of manure, litter or process wastewater, and any Minnesota guidelines for land application of commercial fertilizer, specific to Karst areas.²¹

In response to the citizen petition and an order from the EPA, MPCA has drafted revised permit conditions and manure management rules for large CAFOs, but the draft rules are drawing strong criticism from experts for falling far short of what the EPA ordered and what is needed to protect the state’s waters, and private well-owners. This is especially true in sensitive ground water and high value surface waters (trout streams) in S.E. Minnesota, and the central sand plains area, which includes eastern Becker County.

The Straight River is known as a premier trout stream although trout populations and species have declined and shifted to more tolerant species (i.e. Brown trout rather than Brook Trout.) Soils in the area known as the Ponsford Prairie consist primarily of glacial outwash sands and gravel, where the shallow ground water is not protected by less porous clay or silty soil layers nearer the surface. Many private wells in this rural area were developed to use these shallow waters because these wells are lower in cost than deeper water aquifer wells, and this water historically was fairly high quality in spite of its vulnerability to pollution from various land uses like those described above.

Minnesota Outdoor News published an article in July, 2024²² that quoted a groundwater hydrologist who is focused on private well owner interests:

Jeff Broberg is a founder of the Minnesota Wells Owners Organization and former president of the Minnesota Trout Association. Broberg, who lives in southeastern Minnesota, said the new proposed rules on the two feedlot permits are welcomed but long overdue and don’t go far enough.

“I’m pleased that the MPCA is finally starting this effort,” said Broberg, adding that

²¹ US Environmental Protection Agency August 2023 Letter to Minnesota Agencies found at: https://www.epa.gov/system/files/documents/2023-11/ao-rmod-reponse-letter_20230510-508.pdf

²² **MPCA Seeks Comments on Plan to Curb Pollution in State Waters** -Outdoor News Minnesota, Vol. 57, No. 29, Page 1 By Tori J. McCormick

Minnesota’s “regulatory environment for feedlots is far too friendly.”

“I’m dubious that it will have any effect. But we’ll see,” he said.

Broberg said if the MPCA is serious about tackling nitrate contamination in state lakes, rivers, and streams, the agency needs to better regulate all state feedlots – not just the largest 1,000. That’s a sentiment shared by other state groups, including the Minnesota Center for Environmental Advocacy and Land Stewardship Project.

“Feedlots are altering our environment and our public health,” said Broberg, who urged water quality advocates of all stripes to comment on the proposed changes to MPCA feedlot permits. “We need to recognize that ... and how our surface and groundwater are so vulnerable and being impacted.”

A similar petition to EPA has recently been filed by citizen groups in the Northeast corner of Iowa, where nearly identical topography and groundwater sensitivity exist. Private wells and public water treatments systems in this and other parts of Iowa, have experienced rapidly increasing nitrate concentrations in both ground and surface waters. In an article posted in their publication²³ Food & Water Watch staff attorney Dani Replogle said:

“The state’s failure to regulate industrial agriculture pollution has steadily eroded Iowans’ right to clean drinking water. For decades, Northeast Iowa residents have been exposed to dangerous levels of nitrate contaminated water. As the state reckons with high cancer levels and ongoing pollution regulation rollbacks, federal action is needed to safeguard the right to clean water. EPA must exercise emergency authority to hold polluters accountable and deliver safe drinking water in Iowa.”

With this information and the additional reference material below, Becker County can benefit from other’s experiences and take more effective planning and zoning actions to avoid the predictable outcome of industrial-scale agriculture migrating into the county without the necessary safeguards and monitoring in place.

Becker County’s sensitive surface and groundwater regions include its eastern Becker County sand plain areas, with its high value trout streams, its more highly developed central lakes area, and its western agricultural areas served by extensive patterned drain tile and drainage ditch

²³ <https://www.foodandwaterwatch.org/2024/04/16/iowa-environmental-groups-petition-epa-for-emergency-action-on-iowa-drinking-water/>

systems. Having sufficient, pre- and post-CAFO project construction ground and surface water monitoring in place, can be a useful tool for holding industrial agriculture accountable for its operations and providing the assurances Becker County citizens need to keep from reliving the regretful experience of others.

The MNDNR has recently completed a groundwater atlas for Becker County that could serve as a preliminary baseline for groundwater quality before industrial livestock agriculture has a greater impact. Groundwater sensitivity maps are also available from the MPCA. The MPCA also publishes an impaired (surface) waters list that is updated and submitted to the EPA and released to the public periodically. This information, along with the Watershed Restoration and Protection Plans (WRAPS) co-produced by the MPCA and local water management entities, provides much of the historical background information on water quality in Becker County. Here again, this background information can be used proactively to gauge and even predict the water quality trends attributable to increases in industrial agriculture, both in crops and livestock.

These realities highlight the importance of using local land use plans, zoning maps and ordinances for proper siting, inspection and monitoring of large livestock facilities, where the public can have greater confidence that pollutants are not and will not enter surface or groundwaters.

Importance of Water Sampling and Monitoring

The feedlot industry persistently claims that manure management plans limited to “agronomic rates” of application are sufficient to protect surface and groundwaters. The information presented in sections above demonstrate that this is not true.

One of the best strategies to test the performance of such plans is to actually monitor the water. New Mexico began requiring performance monitoring for large confined dairy operations as early as the 1990's. During the first six years of monitoring, significant increases in ammonia and nitrates were found in groundwater. A 1999 state agency report entitled: *Dairy Feedlot Contributions to Groundwater Contamination - A Preliminary Study in New Mexico* states:

*“Feedlot milk production has increased dramatically in New Mexico in the past decade, along with the potential for groundwater contamination from animal wastes. State statutes require animal feedlots to maintain groundwater-monitoring wells and report water quality analyses quarterly to the New Mexico Water Quality Control Commission. This preliminary study analyzed six years of groundwater quality data from seven dairy feedlots and found elevated levels of nitrate, ammonia, chloride, total Kjeldahl nitrogen, and total dissolved solids. Samples were obtained from groundwater-monitoring wells located around dairy wastewater lagoons that were lined with clay, concrete, or synthetic membranes. Mean nitrate concentrations were significantly higher in groundwater samples taken in the vicinity of lagoons with clay liners. Lagoons with synthetic liners produced the lowest mean groundwater concentrations of ammonia and nitrate. Mean concentrations for all contaminants tended to increase as the size of dairy herds increased. Nitrate was the only groundwater contaminant measured that showed a consistently increasing trend from 1992 to 1997.”*²⁴

*In 2015, the state adopted the Dairy Rule, which requires dairies to monitor groundwater impacts and to line waste lagoons. The rule came following a 2009 study by NMED’s Groundwater Protection Division that found 60 percent of the state’s dairies were polluting groundwater.”*²⁵

The Public Engagement Survey used to gauge citizen priorities for the current land use planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams.

Becker County has already set an important protective precedent by requiring a modicum of water sampling for large feedlots needing conditional use permits. But the water sampling required in a recent Conditional Use Permit lacks sufficient sophistication to ensure the

²⁴ **Dairy Feedlot Contributions to Groundwater Contamination - A Preliminary Study in New Mexico** – Sept, 1999. At: <https://go.gale.com/ps/i.do?id=GALE%7CA55884900&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=00220892&p=HRCA&sw=w&userGroupName=anon%7Ee4bab884&aty=open-web-entry>

²⁵ **New report looks at dairy operations in NM** -March 29, 2022
<https://nmpoliticalreport.com/news/new-report-looks-at-dairy-operations-in-nm/>

monitoring would provide useful information. Becker County could take a page from the New Mexico playbook and begin to require “performance monitoring” from new or expanding AFOs and CAFOs.

The comprehensive plan could present guidelines or suggest qualified consultants for designing appropriate ground or surface water monitoring regimes. Monitoring has been shown to clearly gauge the effectiveness of manure lagoon or pit containment and manure management plans that are supposed to protect both the surface and ground waters of the county. As has been found in New Mexico and Wisconsin, state and federal rules have, thus far, not proven effective enough. So, water quality monitoring, may be the county’s best defense to protect the public’s health.

MANURE PIT OVERFLOWS BECOME MORE FREQUENT WITH CHANGING WEATHER PATTERNS

Manure spills and pit overflow incidents present serious pollution risks to receiving waters and to human health. Risks that are increasing as the number of CAFOs increase and severe storms with high rainfall amounts increase in frequency under changing climate conditions. In June of this year seventeen CAFO owners were obliged to report overflows after heavy rains occurred in southern Minnesota. The state’s largest feedlots, which include dairies and pig and turkey operations that have roughly 1 million pounds of total livestock or more, are required to report any manure overflows to the state. There are about 1,000 feedlots of that size in the state. State regulators ask smaller farms to report overflows as well, but they are not required to.”

The Minneapolis Tribune account²⁶ of these overflows is quoted here below:

“Relentless rains this month have caused 17 manure pits at 15 large farms in southwestern Minnesota to overflow, releasing livestock waste into the environment.

²⁶ **Seventeen manure pits reportedly overflow at large feedlots in southern Minnesota**

Heavy rain has spilled an unknown amount of livestock waste into the environment. By Greg Stanley
Star Tribune JUNE 26, 2024. At: <https://www.startribune.com/manure-pits-reportedly-overflow-at-16-large-feedlots-in-southern-minnesota/600376074>

The overflows, all at open pit lagoons, happened in Rock, Nobles and Jackson counties, said Andrea Cournoyer, a spokeswoman for the Minnesota Pollution Control Agency (MPCA). The agency is working to monitor and mitigate any potential damage from the spills, she said.

High concentrations of manure can be dangerous to human health and can cause fish kills and threaten water quality even after floodwaters recede. But the manure in the basins overflowing from the extreme rainfall is heavily diluted, said Randy Hukriede, feedlot program manager for the MPCA. None of the basins that overflowed contained pure manure.

Manure pit overflows in Southeast Minnesota and Iowa have been linked to numerous fish kills. An Investigate Midwest report²⁷ in 2023 stated:

“Over the past four decades, 35% of fish kills are related to the state’s primary industry — agriculture, according to an Investigate Midwest analysis of state data from 1981 to 2022.”

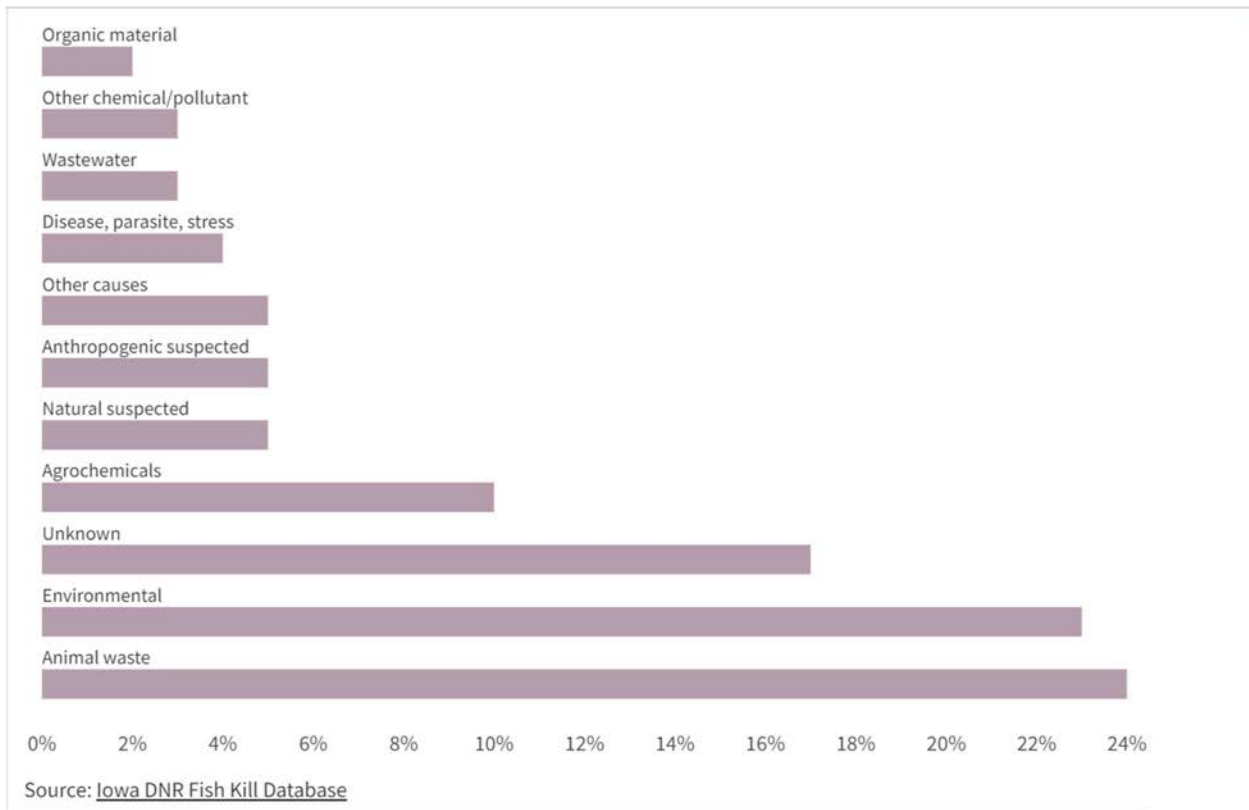
What causes the fish kills in Iowa waterbodies?

Over four decades, animal wastes and fertilizers have been responsible for 34% of fish kill events.

²⁷ **Animal waste and agrochemicals are leading cause of fish kills in Iowa waterways**

Agriculture is the lifeblood of Iowa, but it also contributes to mass die-offs of fish in the state’s waterways.

<https://investigatamidwest.org/2023/06/01/animal-waste-and-agrochemicals-are-leading-cause-of-fish-kills-in-iowa-waterways/>



Becker County has experienced similar increases in frequency and severity of storms dropping 3-6 or more inches of rain in a single event so it is predictable that manure pit overflows and potential fish kills will occur in our area. It is reasonable to predict that these risks will continue to increase if the number of CAFOs is allowed to grow given our changing climate in Becker or any other state or county.

CAFOs DEMAND LARGE QUANTITIES OF GROUND WATER

Industrial scale animal agriculture concentrates livestock in small areas and must extract all the water these animals need from just one or two wells. Large groundwater extraction from aquifers that are either small or are slow to recharge can cause supply problems for neighbors who rely on the same aquifer.

Some compare the water demands of CAFOs to that of small cities. One cow (one animal unit) consumes as much water as four adult humans. Therefore, a 10,000 cow CAFO requires as

much water as a city of 40,000 people. Becker County's population was 35,183 (2020 census), so just one industrial size CAFO would demand more water than all the people in the county.

State rules for protecting aquifers from over-extraction are fragmented and have been shown to be ineffective at protecting individual well-owners whose wells go dry or suffer reduced yield. One of the earliest systematic reviews of the CAFO impacts was found in a 2019 paper entitled: *WATER USE IN CONFINED ANIMAL FEEDING OPERATIONS (CAFOS) IN MINNESOTA: WHO'S KEEPING TRACK?* by Dara Meredith Fedrow. In his graduate thesis, prepared for Minnesota's Land Stewardship Project, Fedrow analyzed how effective Minnesota's water appropriation permit system was in overseeing water usage by large CAFOs. This research, conducted to inform the work of Land Stewardship Project (LSP), which is an advocacy nonprofit based in Minnesota, was published to inform state government agencies, water researchers, and local citizens. The entire paper can be read at the link in the footnote²⁸ below. Fedrow cites research by others that warned that:

“Groundwater is unequally distributed throughout Minnesota which can pose issues as agricultural groundwater use increases. Groundwater pumping is unsustainable in some parts of Minnesota and could deprive ecosystems and humans of water needed to survive.”

One of the recommendations Fedrow offers that is useful for the Becker comprehensive planning effort, is inserted here below.

“New areas of CAFO development should be watched closely to ensure CAFOs are obtaining the proper permits and for their impacts to the surrounding communities and watersheds. Hog CAFOs are reporting increasingly more water use in the south eastern part of Minnesota. This is particularly apparent in Mower and Steele Counties, corresponding to the Cannon River, Cedar River, and Upper Iowa River. Dairy CAFOs

²⁸ *WATER USE IN CONFINED ANIMAL FEEDING OPERATIONS (CAFOS) IN MINNESOTA: WHO'S KEEPING TRACK?* by Dara Meredith Fedrow accessed on line at <https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=12430&context=etd>

appear to be opening in Norman and Kandiyohi counties. Norman county corresponds to a large percent increase in use of the Wild Rice River.”

Fedrow’s paper is recommended reading for those who seek to know more about CAFOs’ demand for water, and the regulatory and societal problems foreseen for the ever-increasing demands on Minnesota’s limited “clean” water supplies by industrial animal agriculture.

Becker County could use its Comprehensive Plan to alert well-owners to potential groundwater drawdown in the vicinity of proposed CAFO sitings and assist rural home-owners in monitoring their wells for signs of draw-down that may be caused by the facility. Well water levels could be added to a nitrate and fecal coliform county-wide well-monitoring program similar to the Midwest Assistance Program in Iowa. This program obtained grant funds to initiate and maintain the Iowa private well monitoring. The IWLA Chapter is willing to assist Becker County in designing a similar program and seeking the necessary grant funds to implement and maintain it.

Meanwhile, Becker County should request that MDNR monitor stream flows to establish the background and trend levels necessary to detect changes in critical low stream flows attributable to large groundwater appropriation by CAFOs. Low stream flows can impact Becker County’s recreation and tourism economies including river-tubing, kayaking, canoeing, wildlife watching and stream fishing.

Ordinary Small Farmers Can Get Financially Trapped and Even Punished by the Industry

Conventional scale (small) farmers are not at fault or in any way to be blamed for being attracted to the offers from the industry representatives. With persistently narrow profit margins it makes a lot of sense to scale up and grow overall profits even though margins remain slim. But once “in the contract system” farmers all too often discover they are on a financial treadmill that is extremely difficult to escape. Some who try unsuccessfully to escape have suffered retribution from the industry. Some farmers who once were “contract farmers” are speaking out to alert

others of the risks and their efforts to transition back out. Modern Farmer’s on-line magazine published one farmer’s story.

When Paula and Dale Boles took over Dale’s father’s farmland in North Carolina, they thought that poultry farming would be a good way to work the land until they were ready to pass it on to their children. They obtained a contract with Case Farms, eventually switching over to Tyson, and built two poultry barns to company specifications, going \$300,000 in debt to do so. It seemed like a good situation, though—as long as they could make their annual mortgage payment of \$40,000, they’d be able to pay it off within 10 years.

But soon, other expenses started getting tacked on. Tyson required a new computer system to control the temperature in the barns. This was another \$70,000. Their propane bill averaged around \$25,000 per year. Not making the updates wasn’t really an option—no matter how much time and money you invested to be a farmer for the company, they could cut your contract at any time.

And the income wasn’t quite what they expected. Companies like Tyson pay their farmers in what’s called a tournament system. There’s a base pay, but whoever raises the best flock and has the best “feed conversion”—the biggest birds for the least feed—makes the most money, and payment decreases the further you go down the ladder. This essentially pits all the regional farmers against each other.

“While contract farming, or “factory farming,” has been exposed in the media for being exploitative of animals, the farmers who sign contracts with companies like Tyson, Perdue or other big players in animal agriculture also find themselves backed into a financial corner. But, over the last several years, there has been a wave of efforts to find ways to support farmers transitioning out of factory farming.

“The way that the current structure of factory farming is designed is that the steps that carry with it the most risk and the most debt and the most liability are transitioned to the farmers,” he says. “And so what you have is you have farmers building these extremely expensive facilities at the very specific direction [and] design of the company that they’re working for. But they don’t own the animals.”²⁹

Antibiotic Resistance Linked to Feedlots

Becker County may not have the authority to address or curb the contribution of large animal feeding operations to antibiotic resistance, but the Comprehensive Plan could provide or suggest

²⁹**They Once Worked in Factory Farming. Not Anymore.** Modern Farmer, May 07, 2024 at: <https://modernfarmer.com/2024/05/they-once-worked-in-factory-farming-not-anymore/>

tools to educate the public about the problem. This in turn could influence policy-makers at the appropriate level of authority to take remedial steps.

*A **report** in 2020 by the Natural Resources Defense Council (NRDC), reveals that US cattle producers use more than 40% of all medically important antibiotics—those that are also used in human medicine—sold for use in US livestock, and use them three to six times more intensively than many of their European counterparts.*

NRDC says this overuse of antibiotics is a strategy used by the beef industry to offset heightened disease risks in feedlots, where cattle are routinely fed antibiotics to prevent disease whether or not they are ill, a practice that the World Health Organization discourages and that the European Union will no longer allow starting in 2022.

The reports also argues that there is little transparency or accountability in the beef industry regarding its use of medically important antibiotics, and little urgency to rectify the problem.

“Many infectious disease and antibiotic resistance experts believe such use is improper and helps contribute to reservoirs of drug-resistant bacteria on farms that can spread easily to humans through consumption of meat, exposure to soil or water contaminated with manure containing antibiotic-resistant pathogens, or contact with animals. They also worry that it reduces the effectiveness of antibiotics that are needed to fight infections in people.”³⁰

This concludes our report. There are several other issues relating to large feedlot pollution problems that time did not allow Chapter researchers to investigate fully enough for inclusion here. While we make general references to the health impacts of nitrates that exceed regulatory standards, there is growing evidence that the standards are not seen as being fully protective of human health and linking nitrates to certain cancer risks.

³⁰ <https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics>

Also, there could be a chapter in the plan that informs citizens about the risks to public health when storms cause overflows of these storage facilities. A derecho or other storm or series of storms like those that occurred in S.E. Minnesota recently, could have similar impacts here in Becker County.

This concludes this report.

The IWLA Chapter, at the invitation of the planning consultants is preparing a narrative based on this and the Wake Boat Report for inclusion in or attachment to the draft Becker County Comprehensive Land Use Plan. Additional sources of information compiled by the League are shown below.

SOURCES OF OTHER USEFUL INFORMATION AND PUBLIC EDUCATION TOOLS ON CAFOs.

The IWLA Chapter members compiled other authoritative reference materials, including video interviews with groundwater experts, lawyers, and citizens from Minnesota and neighboring states, that provide testimonials on their knowledge and experience with AFOs and CAFOs. Some of the content includes discussion of local economic impacts and describes how other local units of government are working to adopt plans and ordinances to address industrial scale feedlots. Interactive MPCA maps of feedlot locations in Minnesota are also provided.

Izaak Walton League Chapter Produced Videos with CAFO experts and Citizen Testimonials at: <https://drive.google.com/file/d/17fEX-Wfztuq39zN4T4uXgnFkLOzasGNf/view>

Freshwater Futures' Webinar - Great Lakes HABs & CAFO Manure Conference Series |
May 2, 2024 Freshwater Future
https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

Explosion of CAFOs in Iowa and its Impact on Water Quality and Public health at:
<https://roadactivist.org/wp-content/uploads/2018/01/Explosion-of-CAFOs-in-Iowa-and-Its-Impact-on-Water-Quality-and-Public-Health.pdf>

Economic Realities of CAFOs – Dr. John Ikerd - University of Missouri-Columbia at:
<https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos>

Antibiotic Use in Animal Medicine and Antibiotic Resistance.

<https://www.cidrap.umn.edu/antimicrobial-stewardship/study-predicts-global-increase-antimicrobial-use-food-producing-animals>

<https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics>



North Dakota
Livestock Alliance

701.712.1488
amber@ndlivestock.org
ndlivestock.org

ND Livestock Alliance
PO Box 369
Bismarck, ND 58502

ND Department of Environmental Quality
Attn: Water Quality Division
918 East Divide Ave.
Bismarck, ND 58501-1947

Date: September 23, 2024

Submitted to the NDDEQ Division of Water Quality,

The North Dakota Livestock Alliance (NDLA) is writing this letter in support of the Abercrombie Dairy permit application NDAFO0906, contingent upon their compliance with the Animal Feeding Operations rules of the ND Department of Environmental Quality (NDDEQ) and the State Water Quality Standards. We also commend Abercrombie Dairy for their dialogue with neighbors and local community leaders including the Abercrombie Township and Richland County leaders.

NDLA is confident that the NDDEQ review process successfully protects the environment and natural resources of our great state. The engineer-designed manure storage systems, paired with a nutrient management plan, gives today's farmers the extremely beneficial use of manure while ensuring the land, water and communities are sustained for generations to come. The natural nutrients contained in manure are valuable fertilizer for crops and the organic matter is crucial to improving soil health.

There is another important reason NDLA supports this application. The addition of dairy cattle will dramatically increase North Dakota's ability to attract new milk processing capacity into our rapidly shrinking infrastructure, in turn, supporting existing ND dairy farm families and their future generations.

The NDLA Governing Board of Directors includes the ND Pork Council, ND Corn Utilization Council, ND Farmers Union, Midwest Dairy – ND Division, Agtegra Cooperative, ND Corn Growers Association and the ND Ethanol Council. NDLA also has an extensive membership of groups and individual farmer members, including the Milk Producers Association of ND, Northern Canola Growers Association and the ND Soybean Growers Association. This group was formed to unite all of agriculture to support, enhance and promote animal agriculture across North Dakota.

Respectfully Submitted,

Amber Wood

Amber Wood
Executive Director

NDLA is a non-profit organization with the vision to strengthen North Dakota's rural communities, farm and ranch families, businesses and natural resources through animal agriculture.

Haroldson, Marty R.

From: Amber Wood <amber@ndlivestock.org>
Sent: Monday, September 23, 2024 2:40 PM
To: Haroldson, Marty R.
Cc: Rockeman, Karl H.
Subject: Public Comment - NDAFO-0906
Attachments: Abercrombie Public Comment 9-2024.pdf

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Dear NDDEQ - Water Quality Division,
Please see the attached public comment for Abercrombie Dairy's application number NDAFO-0906.
Thanks

Amber Wood
Executive Director

(701) 712-1488
PO Box 369
Bismarck, ND 58502
amber@ndlivestock.org
www.ndlivestock.org





RECEIVED

OCT 09 2024

DIV OF WQ

October 4, 2024

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy St., 3rd Floor
Bismarck, ND 58503-1324

To Whom It May Concern:

The North Dakota Corn Growers Association (NDCGA), a statewide, farmer-led, membership organization, is the voice of the more than 13,000 corn producers in North Dakota. One of the top priorities for the NDCGA is the growth of animal agriculture in the state. Therefore, the NDCGA is in support of animal agriculture development, like that proposed by Riverview's Abercrombie Dairy in permit application NDAF00906.

Our corn producers have some of the worst basis in the country, for a number of reasons. In exporting about 40 percent of our corn, we are not able to use inland waterways like most of the other corn producing states in the country. Rather, North Dakota corn growers rely almost entirely on more costly rail transportation to the ports in the Pacific Northwest where our unprocessed commodity product is exported to foreign buyers, and subject to global demand and affected by geopolitical developments and events.

Another major factor in the price we get for our corn is the local supply and demand. Approximately one-half of the state's corn is used in ethanol production. And about 10 percent of our corn is used in livestock production. Ethanol and livestock development are value-added agriculture, when the corn is made into something else adding more value to it, and generating a larger demand and therefore better pricing for the North Dakota farmer.

We do not have a strong animal agriculture culture in the state, in large part because there is very little. While our neighboring surrounding states generate between 40 to 50 percent of farm gate receipts from livestock, North Dakota's is only about 15 percent. This has a ripple effect throughout our state, rural communities and farms. One repercussion is that our state's ethanol plants, must also transport out of state, (again via rail) 90 to 100 percent of their high-protein and valuable dried distiller's grains (DDGs), a major co-product from the production of ethanol from grain, for livestock consumption elsewhere. If DDGs could instead be absorbed by the local and regional animal ag instead, these plants would not have the additional costs of that transportation, and those resources could instead be put back into North Dakota plants and stay in our communities to be turned over many times. Those dollars create economic opportunity and local jobs.

-- continued --

4870 ROCKING HORSE CIRCLE S., FARGO, ND 58104
WWW.NDCORNGROWERS.ORG



Additionally, animal agriculture supports the continuance and expansion of family farms for additional generations. When there's not enough crop producing land to support multiple children of retiring farmers, animal agriculture can be that silver bullet so that more of the state's farm youth stay in North Dakota, and these emerging farmers can make a living in agriculture not otherwise possible. The number of farmers continues to decline. Additional animal agriculture in our state will not only diversify and strengthen our farms, but help us to retain more youth.

Many project opponents and anti-farm activists in the case of this proposed dairy prefer to generate fear by suggesting worst-case scenarios regarding water supply source, manure, odor management, and other issues instead of exhibiting a good faith effort to work with project proposers, who are working on practical, sustainable solutions. We are also confident that North Dakota's laws and regulatory structure does and will continue to address these matters. Our state's manure application oversight, for example, is stronger than that of Minnesota's, where Riverview already operates other dairies.

On the contrary, the natural fertilizer produced at large operations like this, is an extremely valuable input resource for other ag producers who will benefit from the additional supply when traditional sources have sometimes been scarce, and prices have spiked in recent years by double digits. Furthermore, manure is better for soil health.

Please give projects like the Abercrombie Dairy a chance to succeed, which will pay dividends to rural communities and our state.

Sincerely,

A handwritten signature in blue ink that reads "Brenda K. Elmer". The signature is fluid and cursive.

Brenda Elmer
Executive Director
North Dakota Corn Growers Association

From: [Strommen, Rachel A.](#)
To: [Gilley, Cameron](#)
Subject: FW: Proposed Dairy Operation Near Abercrombie, ND
Date: Tuesday, October 8, 2024 8:47:42 AM
Attachments: [dairy operation.docx](#)

From: jennyw@arvig.net <jennyw@arvig.net>
Sent: Friday, October 4, 2024 4:26 PM
To: Strommen, Rachel A. <rstrommen@nd.gov>
Subject: Proposed Dairy Operation Near Abercrombie, ND

You don't often get email from jennyw@arvig.net. [Learn why this is important](#)

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October 4, 2024

Hi,

Attached is a letter with some of our concerns with the proposed dairy operation near Abercrombie.

Jenny Wulfekuhle

October 4, 2024

RE: Proposed Dairy Operation Near Abercrombie, ND

To whom it may concern,

As landowners near the proposed dairy operation, we are deeply disappointed that we weren't ever contacted by mail, email, phone, or in person by the state, county, township, or the owners of the proposed project to address any concerns that we may or may not have. All the information we have received has been second-hand, which is very disappointing to us.

Although, we don't live near the location at this time, Abercrombie is a community that will always be home for us, and we are concerned for and about the current citizens that live not only in the rural areas surrounding the proposed dairy operation but in the town of Abercrombie as well.

We are concerned with the water, not only what it will do to the current levels but also any contamination that may come from this operation to the nearby rivers and ditches.

We are concerned about the smell that will be emitted from the operation. No matter how good of an operation it is, there will always be a horrendous smell for miles from the proposed operation. We have been by many large dairy operations in the south and the smell is not anything most people would want to live by if they had a choice. It is one thing if you move to an area where a dairy operation is established but it is a totally different situation for those that have lived there for most of their lives and an operation comes in. Also, if anyone would want to build on our current land, that would be a deal breaker for sure.

These are just a few of our concerns that we wanted you to know about. Whether this operation goes through or not, remember communication is key to any project that has an effect on people, so please keep everyone in the surrounding area of the proposed operation informed.

Thank you for your time!

Jenny & Tony Wulfekuhle

36391 Segar Road, Battle Lake, MN 56515

jennyw@arvig.net

Haroldson, Marty R.

From: Skjod, Jennifer L.
Sent: Tuesday, October 8, 2024 8:45 AM
To: Haroldson, Marty R.
Subject: FW: Environmental Concerns for Abercrombie, ND Township of the proposed Abercrombie Dairy
Attachments: Abercrombie Hydrogeologist Report.pdf

From: Erik O <erik.olson21@gmail.com>
Sent: Friday, October 4, 2024 11:03 PM
To: DEQ, DEQ <deq@nd.gov>
Subject: Environmental Concerns for Abercrombie, ND Township of the proposed Abercrombie Dairy

You don't often get email from erik.olson21@gmail.com. [Learn why this is important](#)

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To whom it may concern,

As a responsible citizen of Abercrombie, ND Township and a member of Dakota Resource Council, I am reaching out to you about the proposed Riverview Dairy (Abercrombie Dairy). Public Notice Number: ND-2024-012 (Application Number: NDAFO0906).

I have significant concerns pertaining to the water quality being affected negatively from several different aspects of this dairy operation. When it comes to the environment and water quality, many different factors can go into play with 2 major rivers just over a mile away to the east and west, spring flooding, overland flooding, waste management, etc.

I personally live within 2 miles of the proposed site and know that the quality of water in my domestic well would be affected negatively and potentially be a health hazard to the entire surrounding areas. There is significant research and findings that show that our water will be contaminated by the waste management of the facility. It is not a question of "if" it's going to contaminate, it's a clear question of "when" it is going to contaminate our water. With the findings from Dave Erickson, which I've attached to this email, it shows that the bottom of the lagoon will be approximately 18 feet to groundwater. The groundwater will be contaminated within a matter of months. Not only will this affect the surrounding areas, but this will also dramatically affect the surrounding areas and larger cities. The groundwater flows in this Red River Valley exponentially all over the area using rivers and streams. There was recently a ditch put in that has a Point Pollution to the Wild Rice River from the proposed dairy site.

Directly quoting from the Public Notice the North Dakota DEQ. "The DEQ groundwater program does not recommend monitoring currently. This is due to both the installation of clay liners under storage areas along with concrete splash pads and considerations of the soil complex makeup on-site is sufficient to greatly reduce any

risk to groundwater.” Based on the report from Dave Erickson Hydrogeologist, multiple studies have found and proven that clay liners are not sufficient in reducing risk to groundwater sources. Large areas of contamination with definitive results, directly impacting area residents. These reports and findings prove to us that the clay liners are not sufficient and will not protect us from contamination. At a minimum, these lagoons must have synthetic liners that are regulated and monitored. There will still be seepage, but at rates that significantly reduce the harmful contaminants.

The process for application of manure into fields can also be very dangerous if it’s not monitored properly. The Nutrition Application Agreements for the proposed fields cover multiple drainage systems, natural waterways, ditches, and rivers. The fact that North Dakota doesn’t require any monitoring of this process is a threat to our community. The application process should be closely monitored by an agronomist. The knifing process that is discussed also has many setbacks to it. The odor is reduced but the knifing process puts the product below the root system, which in turn will have more of a direct path to a water source.

This proposed location is an absolutely terrible location that could be chosen for North Dakota. We are at the bottom of the Red River Valley and flooding is something we deal with every single spring thaw. Flooding will only spread the contamination from the manure applications, manure piles, lagoons, etc. even faster to the river sources. This proposed site could negatively affect thousands of people from a very important health standpoint. The other issue that our entire community has is that fact of the 25 year, 24 hour storm event is extremely low and basically obsolete. Other Environmentally impactful operations follow a 1000 year disaster management plan for mitigation. For example, the diversion even follows a 100 year future plan, and that is only for diverting water. This dairy involves waste management specifically and will impact the environment not only in regard to water but in contamination.

Several community members have expressed a lot of concern over the effects of this operation to all surrounding areas. There are way too many risks to people’s lives and the environment. The state of North Dakota needs to remember that we care about our neighbors and the people that call North Dakota Home.

Thank you for your time,

Sincerely,

Erik Olson & Cassie Olson

6825 County Road 81

Wahpeton, ND 58075

701-640-3443

Application Date: 3/8/2024

Application Number: NDAFO0906

Applicant Name: Abercrombie Dairy

Mailing Address: 26406 470th Ave, Morris, MN 56267

Telephone Number: 320.392.5609

Proposed Permit Expiration Date: 10/31/2029

To the North Dakota Department of Environmental Quality,

Below is a handwritten letter from Citizens in the Area that will also support the following comments:

1. *The addition of 106 million gallons of wastewater containing high nutrient content will affect the local air quality, ground and surface water quality in the township of Abercrombie if this facility is built. None of these safeguards will 100% prevent contamination and it will be the DEQ's job to adequately monitor the area in order to ensure that private wells do not get contaminated. Riverview Dairy should also clarify if they will or will not be using any trucking to transport manure.*
2. *DEQ should confirm that the current set back laws state that all animal agriculture non hog facilities over 5000 animal units have a setback of one mile. However, in light of the Ag Task Force meetings, if the proposed setback laws are enacted the facility would need a minimum of 1 and ¼ mile of setback. Language changes in the North Dakota Century Code may also include language that states "setbacks distance may be reduced or extended based on results of odor footprint tool." The DEQ is required by law to enforce the law as it is written, but given the nature that they are the advisors recommending these changes to the law, they should permit and require standards that they themselves are proposing during this time of transition.*
3. *This project will impact long running and historic family farms in the area environmentally and also have an impact on the way long standing community members live their lives and consume their water.*

From: [Madeline Luke](#)
To: [Gilley, Cameron](#)
Subject: Abercrombie Dairy Comments
Date: Friday, October 4, 2024 11:51:31 AM
Attachments: [Abercrombie air.docx](#)

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Hi Camto seron,
Making the deadline with a little time to spare.
Have a great weekend- looks gorgeous out!
Madeline

From: [Madeline Luke](#)
To: [Gilley, Cameron](#)
Subject: Re: Abercrombie Dairy Comments
Date: Friday, October 4, 2024 12:02:17 PM

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Cameron,
Sorry about misspelled name on last email! Bad depth perception makes typing difficult.
Madeline

On Friday, October 4, 2024, 11:50:33 AM CDT, Madeline Luke <mzInd@yahoo.com> wrote:

Hi Camto seron,
Making the deadline with a little time to spare.
Have a great weekend- looks gorgeous out!
Madeline

To the ND Department of Environmental Quality

Re: Abercrombie Dairy Permit

Thank you for the opportunity to submit these comments. I am concerned for the quality of life for all North Dakotans who live in rural areas instead of cities because we like clean air, blue skies and clear water.

Madeline Luke

Valley City

Oct 4, 2024

N.D. Admin. Code 33.1-16-03.1-07

*3. Permit conditions. The department **may** impose any conditions upon a state animal feeding operation permit to ensure proper operation of the facility to protect water and **air quality**, including:*

a. Sampling, testing, and monitoring at or adjacent to the facility or of manure, process wastewater, ground water, or runoff.

*b. Steps to prevent the facility from causing exceedances of water quality standards or air quality standards and **to minimize odors during land application of manure.***

The DEQ should exercise its power to protect the community of Abercrombie from deleterious air pollution. Many of them live there because of long term ties to the land and the ability to be in a clean, quiet environment. I contend that being able to relax on your porch at the end of a long workday, go to school or church without gagging has monetary value, just as selling milk to an out of state corporation. Studies have shown the CAFO's have been linked with lower mental health and community wealth.

[Environ Health Perspect.](#) 2007 Feb; 115(2): 317–320.

Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations

[Kelley J. Donham](#),¹ [Steven Wing](#),² [David Osterberg](#),¹ [Jan L. Flora](#),³ [Carol Hodne](#),¹ [Kendall M. Thu](#),⁴ and [Peter S. Thorne](#)¹

The proposed dairy is either just under or just a mile from 2 residences. As of this date, the legislature- mandated siting committee is in the process of advising a setback of 1 and ¼ mile for CAFO's over 10,000 AU. This suggests that even the siting committee knows that odor will be a problem with the 1 mile setback. I understand that the approval for these siting rules are still in process, but practically speaking, if the Abercrombie Dairy is built at its present site and with the present permit, Riverview Farms ND and the neighbors will be in constant conflict over odor and health effects.

The DEQ does not have the authority to address the setback distance but as per : [N.D. Admin. Code 33.1-16-03.1-07](#), the DEQ should provide air quality protection for those working in and living near CAFO's.

1. PM 2.5: the EPA has revised **“the level of the primary (health-based) annual PM 2.5 standard from 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 9.0 $\mu\text{g}/\text{m}^3$, based on scientific evidence that shows the current standard does not protect public health with an adequate margin of safety, as required by the Clean Air Act (CAA).**

I would recommend ongoing monitoring of pm 2.5 at both the dairy and at its closest neighbors, penalties and corrective actions. This will lower the incidence of avoidable respiratory and cardiovascular events as well as airborne bacterial and viral infections. The off gassing of ammonium from the lagoons and manure will contribute greatly to the secondary PM 2.5 particle formation. The ND standard must adopt the more stringent national EPA standard.

The sites should be monitored for PM 10 as well.

2. Methane: This should be monitored and regulated to the EPA occupational standard

3. Hydrogen sulfide: This should be monitored and regulated to the ND standard which appears to be more stringent than the OSHA standard

4. VOC: These are a likely major component of the odor issue and would be regulated under Ch 23.1-06-15. Currently, a complaint must be filed and 2 exceedances must occur before any action is taken. I would recommend that monitoring at the dairy be done on an ongoing basis and corrective action be required on a timely basis. At manure application fields where there is likely to be a nuisance, again measurements should be done in conjunction with the spreading and corrective actions taken at the time of the offense. I believe that there are fields immediately adjacent to a church and a public school. These were in place BEFORE the proposed project; I contend that activities by Riverview Farms ND to cause harm to students, teachers and congregants is unfair and is illegal.

Century code 42-01-01

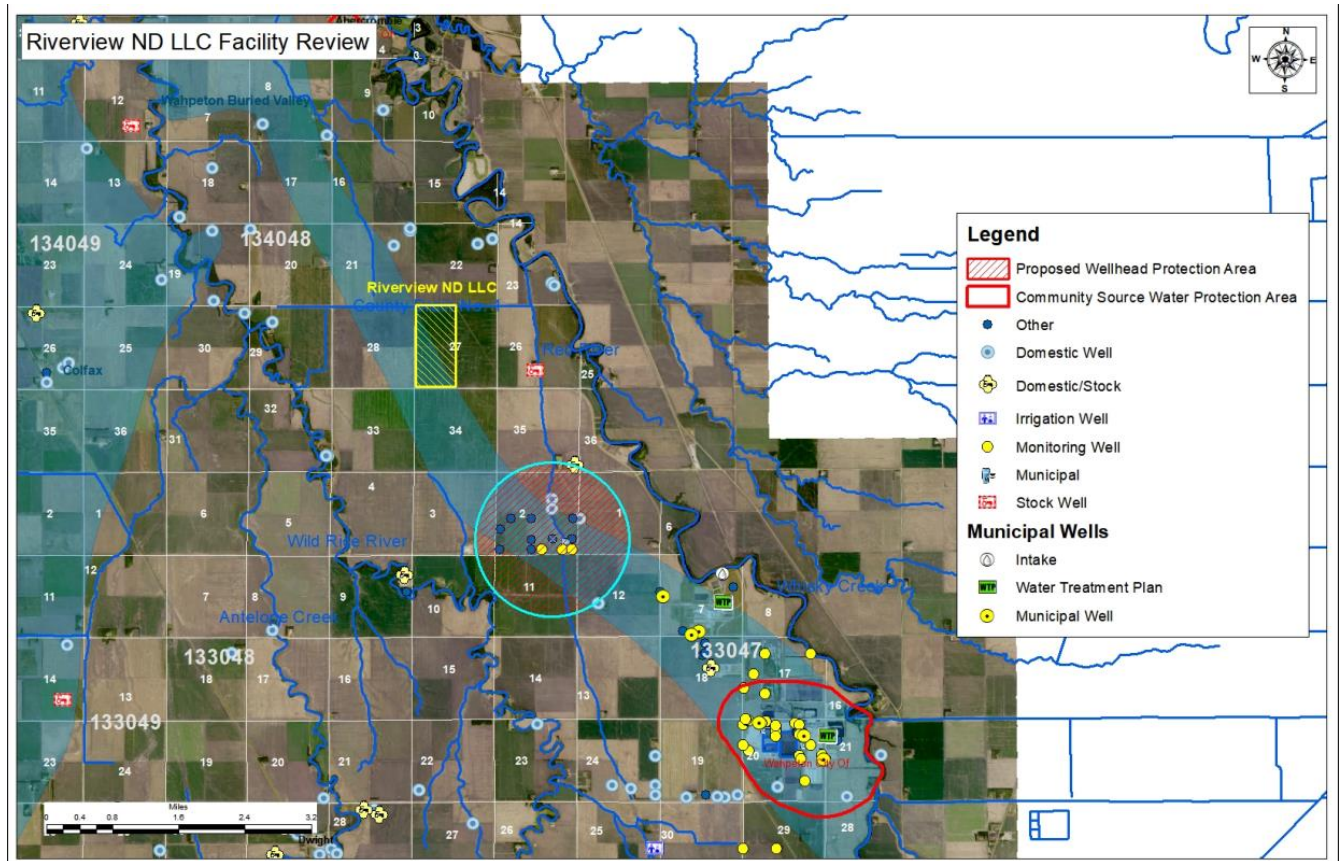
A nuisance consists in unlawfully doing an act or omitting to perform a duty, which act or omission:

- 1. Annoys, injures, or endangers the comfort, repose, health, or safety of others;*
- 2. Offends decency;*
- 3. Unlawfully interferes with, obstructs or tends to obstruct, or renders dangerous for passage, any lake, navigable river, bay, stream, canal, basin, public park, square, street, or highway; or*
- 4. In any way renders other persons insecure in life or in the use of property.*

Appendix A – Ground Water Memorandum

Appendix A – Ground Water

Updated Ground Water review for Abercrombie Dairy.



The "Buried Sand and Gravel Aquifers of the Breckenridge/Wahpeton Area, Minnesota and North Dakota"; August 2012; James A. Berg, Minnesota Department of Natural Resources Ecological and Water Resources Division and David P. Ripley, North Dakota State Water Commission, Retired.

Webpage:

https://files.dnr.state.mn.us/publications/waters/breckenridge_wahpeton_aquifer_report.pdf

Appendix B – Studies/Articles-Bibliography

Studies/Articles - Bibliography

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