Montana Department of Environmental Quality

WATER PROTECTION BUREAU

Agency Use
Permit No.:
Date Rec'd
Amount Rec'd
Check No.
Rec'd By

FORM **NOI-NMP CAFO**

Notice of Intent (NOI) and Nutrient Management Plan (NMP) Concentrated Animal Feeding Operation General Permit MTG010000

This application form is comprised of the **NOI (Sections 1 – 5)** and the **NMP (Sections 6 – 10)**. Before completing the NOI-NMP form, Concentrated Animal Feeding Operation (CAFO) operators must read the CAFO General Permit. CAFO operators are also advised to read the attached NOI-NMP instructions before completing this form. You must print or type legibly; forms that are not legible, not complete, or unsigned will be rejected. You must maintain a copy of the completed NOI-NMP form for your records.

CAFO Status and Fee

Permit Authorization Number: M T G 0 1 0 2 0 6

Select Appropriate Fee:

- ☐ New Application: $1200
- ☐ Renewal Application: $600
- ☐ Permit Modification: $600

Sections 1 through 5 consist of the NOI. The application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO).

Section 1 – Facility/Site Information

Facility Name: 21 MILE CATTLE CO

Location (Physical address or Directions): 15251 US HWY 87

Nearest City or Town: SHEPHERD

Zip Code, County: 59079, YELLOWSTONE

Facility Latitude, Longitude: N 46 DEGREES 04.442', W 108 DEGREES 27.498'

Date facility began operation: FEBRUARY 1992

Status of Applicant: ☐ Federal ☐ State ☐ No ☒ Private ☐ Other _____

Located on Tribal Lands? ☒ No ☐ Yes *(If yes, obtain the permit through EPA, not DEQ)*

Continue to Page 2

Section 2 – Representatives

2.1 Applicant (Owner/Operator)

The owner/operator assumes all liability for site discharges and compliance with the terms and conditions of the permit. The signatory/responsible official must meet certification requirements listed in the Certification Section at this end of this form.

Owner/Operator Formal Name: 21 MILE CATTLE CO

Mailing Address: 15251 US HWY 87 N #3

City, State, Zip Code: SHEPHERD, MT 59079

Signatory/Responsible Official: Name ALVIN A ELLIS III Title PRESIDENT

Contact Information: Phone 406.425.3248 Email COWBOYUP1886@GMAIL.COM

2.2 Authorized Representative

For future reports (including NetDMR) to be signed by anyone other than the signatory/responsible official, a duly authorized individual(s) or position must be identified. If one is not designated, than all reports must be signed by the signatory until such designation is made in writing [ARM 17.30.1232(2)].

Select Appropriate Box:

☐ No authorized representative for this permit is designated at this time (continue to Section 3)

☐ I designate the following duly authorized representative for this permit (provide the information below):

Authorized Representative Information:

Authorized Representative: Name ALVIN A ELLIS III Title PRESIDENT

Company Name: 21 MILE CATTLE CO

Mailing Address: 15251 US HWY 87 N #3

City, State, Zip Code: SHEPHERD, MT 59079

Contact Information: Phone 406.425.3248 Email COWBOYUP1886@GMAIL.COM

Section 3 – Business Description

3.1 SIC Codes and NAICS Codes

Provide at least one Standard Industrial Classification (SIC) code and one North American Industry Classification System (NAICS) code which best reflects the products or services provided by the CAFO.

SIC Code		Description
(1)	211	BEEF CATTLE FEEDLOTS
(2)		
(3)		
(4)		

NAICS Code		Description
(1)	112112	CATTLE FEEDLOTS
(2)		
(3)		
(4)		

SIC Code Examples:

211 Beef Cattle Feedlots
212 Beef Cattle, Except Feedlots
213 Hogs
214 Sheep and Goats
241 Dairy Farms
251 Broiler, Fryer and Roaster Chickens
252 Chicken Eggs
253 Turkeys and Turkey Eggs
254 Poultry Hatcheries
259 Poultry and Eggs, not elsewhere classified (Ducks)
272 Horses and other Equines

NAICS Code Examples:

112112 Cattle Feedlots
112111 Beef Cattle Ranching and Farming
11221 Hog and Pig Farming
11240 Sheep Farming
11212 Dairy Cattle and Milk Production
11232 Broilers and other Meat-Type Chickens
11234 Chicken Egg Production
11233 Turkey Production
11234 Poultry Hatcheries
112390 Other Poultry Production
112920 Horses and other Equine Production

3.2 Facility or Operation Description

Provide a brief description of the nature of the facility (feedlot, stockyard, sale barn, etc.)

FEEDLOT PRIMARILY BACK GROUNDING AND WINTERING FACILITY

3.3 Existing or Pending Permits, Certification, or Approvals

☐ None

☐ MPDES_____

☐ PSD (Air Emissions)_____

☐ 404 Permit (Dredge and Fill)_____

☐ RCRA_____

☐ Other_____

☐ Other_____

Section 4 – Outfalls

4.1 Receiving Water

For each outfall, provide the latitude and longitude (to the nearest decimal degree) and the name of the receiving water. If the receiving water/drainage is unnamed, indicate the closest named drainage it flows into (i.e., "unnamed tributary to Clear Creek"). Attach additional sheets if necessary for more outfalls. This section must not be left blank, and "N/A" is not acceptable.

Outfall	Latitude	Longitude	Name of Receiving Water
West Pens 001	N46.0687220	W108.454583	unnamed tributary to Twenty-nine Mile Creek N Fork Crooked Creek
Droplot (002)	N46.0699400	W108.459830	unnamed tributary to Twenty-nine Mile Creek to N Fork Crooked Creek
South 4 (003)	N46.0747300	W108.462880	unnamed tributary to Twenty-nine Mile Creek to N Fork Crooked Creek
East 2 (004)	N46.0708700	W108.446100	unnamed tributary to Razor Creek

Section 5 – Characteristics

5.1 Impaired Waters 303(d)

Identify whether the receiving water is impaired for nutrients. Check the Clean Water Act Information Center database at https://deq.mt.gov/water/resources to determine if the receiving water is impaired for nutrients (total nitrogen and/or total phosphorus).

☐ The receiving water is impaired for nutrients

☒ The receiving water is NOT impaired for nutrients

Continue to Page 4

5.2 Animal Confinement

Report the maximum number of each type of animal confined at any one time in open confinement and/or housed under a roof.

Animal type	Number in Open Confinement	Number Housed Under Roof
Mature Dairy Cows		
Veal Calves		
Cattle including dairy Heifers	XXX 5,240	
Swine 55 lbs. or over		
Swine 55 lbs. or under		
Horses		
Sheep or Lambs		
Turkeys		
Chicken broilers –includes juveniles		
Chicken layers –includes juveniles		
Ducks		
Other Specify:		
Other Specify:		

5.3 Rain Gage Location

Identify the nearest gage station or onsite rain gage. Provide either the Station ID of the gage or a latitude and longitude.

Station ID RANCH GUAGE OR

Latitude, Longitude N46 DEGREES 04.422, W108 DEGREES 27.498

5.4 Containment Structures

Were the containment structures built after February 2006?

☐ Yes. Skip the following 3 questions and continue to the table below.

☒ No. Complete the questions and table below.

Do the livestock waste control facilities have 10 feet of separation between the pond bottom and any bedrock formations?

☒ Yes ☐ No

Do the waste containment structures have 4 feet of separation from the pond bottom to any ground water?

☒ Yes ☐ No

Do the livestock waste control facilities comply with the applicable well setbacks?

☒ Yes ☐ No

Continue to Page 5

Identify the type of containment/storage, the total capacity with units, and the number of days of storage in each:

Type of Containment/Storage	Total Capacity	Units (gallons or tons)	Days of Storage
Anaerobic Lagoon			
Storage Pond #1 E2	504507 CUFT		365
Storage Pond #2 W4	119588 CUFT		365
Storage Pond #3 DL	146782 CUFT		365
Storage Pond #4 S4	309586 CUFT		365
Storage Pond #5			
Above Ground Storage Tank #1			
Above Ground Storage Tank #2			
Above Ground Storage Tank #3			
Underfloor Pits			
Below Ground Storage Tank			
Roofed Storage Shed			
Concrete Pad			
Impervious Soil Pad			
Other Specify: Dry Manure	Stored in pens until spread		
Other Specify:			

5.5 Sage Grouse Habitat

Visit the Montana Sage Grouse Habitat Conservation Program (Program) website at https://sagegrouse.mt.gov/ to determine if the proposed operation is located in designated sage grouse core, general, or connectivity habitat.

☐ Yes. Submit an application to the Program and **attach the required consultation letter.**
☒ No. No additional information is required.

5.6 New Source/Operation

Is this a new source and/or operation? New sources must obtain analyses from the Montana Natural Heritage Program (MTNHP) and Montana State Historic Preservation Office (SHPO) demonstrating possible impacts to wildlife and cultural resources, respectively.

☐ Yes. Attach project review analyses from MTNHP and SHPO.
☒ No. No additional information is required

Continue to Page 6

21 Mile Cattle Company

Sections 6 through 10 consist of the Nutrient Management Plan (NMP). These sections are intended to help CAFO operators develop a site-specific NMP required by the CAFO General Permit. Your NMP must be kept at the operation. Attach additional pages as necessary, indicating the corresponding section number on this NMP form.

Section 6 – NMP Minimum Elements

Facility Photos and Maps

Facilities must attach photos and maps depicting the following:

- The production area that shows the locations of all animal confinement structures described in the **Animal Type, Storage Location, and Generation Rates Table.**
- The flow direction of storm water and wastewater for all animal confinement structures described in the **Animal Type, Storage Location, and Generation Rates Table.**
- Manure and wastewater handling and storage areas
- Raw material handling and storage areas
- Storage and disposal areas of chemicals or other contaminants handled on site
- All land application areas (include topography and soil types)
- Environmentally sensitive areas (sinkholes, wells, drinking water sources, tile drain outlets, etc.) for the production area
- Illustrate the facility/activity boundaries, receiving water, and major drainage patterns
- Identify the specific location of the production area and the land application area(s)

☒ I have attached photos and maps (aerial and topographic) that meet the above requirements. PHOTOS & MAPS ON FILE

6.1 Ensure Adequate Storage Capacity

Complete the table below: Be sure to identify each type of animal confined at this facility. This could include animals of a given species, weight class, or housed for a specific purpose.

Livestock Statistics and Manure, Litter, and Process Wastewater Generation Rates

Animal Type	Waste Storage Location	Maximum Number of Animals at Any Time	Number of Days/Year on Site	Annual manure, litter, and process wastewater production	
				Dry (tons/yr)	Liquid (gallons/yr)
1. BEEF CATTLE (E1)	N46.0687220 W108.454583	1800	240	2473	**
2. BEEF CATTLE (W4)	N46.0699400 W108.459830	800	240	1100	**
3. BEEF CATTLE (DL)	N46.0747300 W108.462880	240	240	330	**
4. BEEF CATTLE (S4)	N46.0708700 W108.446100	2400	240	3297	**
5.					
6.					
7.	** NO LIQUID MANURE. URINE IS ABSORBED IN DRY MANURE.				
8.	NO PROCESSED WASTE WATER.				
9.					
10.					
11.					

Methods for estimating animal manure, litter, and process wastewater production

Describe the methods used for estimating animal manure, litter, and process wastewater production: Include all formulas, factors, references to tables, and other resources used to calculate manure, litter, and wastewater production. Be sure to account for soiled bedding materials.

DEQ CIRCULAR 9

Manure handling:

Identify manure, litter, and process wastewater handling at the CAFO. Mark all that apply:

- ☒ Stored in pens
- ☐ Stored on stacking pad
- ☐ Composting on site
- ☐ Other _____
- ☐ Direct pipe to liquid impoundment
- ☐ Stored under floor pit
- ☐ Separator

Frequency of manure removal from confinement areas:

- ☐ Bi-annually
- ☐ Annually
- ☒ As needed
- ☐ Other _____

Is the manure, litter, or process wastewater temporarily stored in any location other than the production area?

- ☒ No.
- ☐ Yes. Explain how and where _____

Is dry manure and/or litter stored on an impervious surface?

- ☒ No.
- ☐ Yes. Describe the type and characteristics of this surface _____

Waste control structures:

Provide the 24-hr-25-yr storm event at your facility location. Refer to the map provided in the instructions. 2.7 in/hr

Provide the annual precipitation during critical winter storage period (180 days from mid-October to mid-April) 4.72 in

Provide the area within clean water diversions. This is the area that is inside the BMPs used for clean water diversions and is used to calculate volume required to hold the 24-hr-25-yr storm event and the volume of your critical storage period. 131 acres LESS THAN 10 acres

Check all the surface types within the clean water diversion area and provide the coverage in acres or ft^2. Be sure to circle the correct units.

- ☒ Dirt 130 acres or ft^2 (circle correct unit)
- ☐ Concrete _____ acres or ft^2 (circle correct unit)
- ☐ Paved _____ acres
- ☐ Under roof _____ acres or ft^2 (circle correct unit) – check if runoff is not part of clean water BMPs
- ☒ Gravel <1 acres or ft^2 (circle correct unit)
- ☐ Pasture _____ acres or ft^2 (circle correct unit)
- ☐ Other _____ _____acres or ft^2 (circle one)

Use the Table below to identify and describe all production area waste control structures for the production area of each animal type identified in the table "Livestock Statistics and Manure, Litter, and Process Wastewater Generation Rates" above (Section 6.1). Waste control structures may include but are not limited to: manure lagoons, manure ponds, evaporation ponds, wastewater retention ponds, contaminated runoff retention ponds, settling basins, underground storage tanks, underfloor pits, manure solids stacking pads, vegetative treatment strips, composting facilities, and dry stack facilities. Berms, dikes, concrete curbs, ditches, and waste transfer pipelines are also waste control structures and must be listed, though some of the requested measurements may not apply.

Production Area Waste Control Structures Description				
Production area Waste Control Structure (For Corresponding Animal Type Identified in Table Above)	Volume (gal if liquid) (ft^3 if dry)	Number of days of storage	Winter storage depth (ft)	The 24hr-25 yr storm event depth (ft)
1. EAST 2 EVAP POND	504507CUFT	365	ALMOST ALWAYS DRY	
2. W4 EVAP POND	119588CUFT	365	ALMOST ALWAYS DRY	
3. DROP LOT	146782CUFT	365	ALMOST ALWAYS DRY	
4. SOUTH 4	309586CUFT	365	ALMOST ALWAYS DRY	
5.				
6.				
7.				
8.				
9.				
10.				
11.				

6.2 Mortality Management

Check the box that describes how mortalities are disposed of at this CAFO.

- ☒ Burial
- ☐ Composted
- ☐ Incineration
- ☐ Landfill
- ☐ Contractor removal
- ☐ Other_____

Provide the location where mortalities are disposed of, if part of the production area:

N46 DEGREES 04.418

6.3 Clean Water Diversion Practices

Check all that apply for how clean water is diverted from the production area.

- ☒ Ditches
- ☒ Earthen berms
- ☐ Culverts
- ☐ Site grading
- ☐ Gutters and spouts
- ☐ Other _____

6.4 Prohibiting Animals and Wastes from Direct Contact with State Waters

Check all that apply for how animals and wastes are prohibited from direct contact with sate waters.

- [XX] Fencing
- [ ] Inside building
- [ ] Wall
- [ ] Other _____

6.5 Chemicals and Contaminants

List all major chemicals or other contaminants handled on site as part of your CAFO operation, including, but not limited to: pesticides, herbicides, animal dips, disinfectants, etc. Specify the method of disposal and location stored for each contaminant. Ensure a corresponding map has been attached, as required in Section 6, Facility Photos and Maps.

CHEMICALS ARE PURCHASED AND USED AS NEEDED. USED CONTAINERS ARE DISPOSED OF AS LABELED.

6.6 Conservation Practices

Check all temporary, permanent, and structural BMPs which will be used to control runnoff of pollutants from the facility's **production area**. Be sure to include them on the map described above in Section 6. If BMPs are not installed, include a schedule for implementation of each of the following measures. Provide details and specifications to suplement the BMP descriptions. Attach additional sheets if necessary.

- [XX] Ditches
- [ ] Site grading
- [XX] Earthen berms
- [ ] Gutters and spouts
- [ ] Culverts and pipes
- [ ] Covered Pens
- [ ] Buffers
- [ ] Other _____

6.7 Sampling and Analysis Procedures for Manure, Litter, Process Wastewater, and Soil

Representative samples of manure, litter, and process wastewater must be analyzed a minimum of once per year for total nitrogen and total phosphorus. Results should be reported in lbs/ton for solids and lbs/1000 gal for liquids. Results will be used to determine rates for manure, litter, and process wastewater. Indicate your method for samping. Be sure to provide a description if you select "other."

- [XX] Sample collection will occur according to CAFO General Permit Section II.D.
- [ ] Other _____

Continue to Page 10

Section 7 – NMP Land Application

Identify whether manure will be land applied to land that is owned, rented, or leased by the owner or operator of the facility.

☐ No. Explain how animal waste will be managed by the operation, including protocol for transfers of manure, litter, and process wastewater. Skip to Section 10.

_____

_____

☒ Yes. Continue below.

7.1 Land Application Photos and Maps

Facilities that land apply must attach photos/maps clearly identify the following items. If an item is not applicable, check the box "None."

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The soil type(s) present and their locations within the individual land application field(s)
- The location of any downgradient surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field i.e. setbacks
- Buffers and setbacks around state surface waters, well heads, etc.
- Any downgradient open tile line intake structures
  - ☐ None. Not included on map
- Any downgradient sinkholes
  - ☒ None. Not included on map
- Any downgradient agricultural well heads
  - ☒ None. Not included on map
- All conduits to surface waters
- All temporary, permanent, and structural BMPs used to control runoff of pollutants from the land application area

☒ I have attached photos and maps of the site where manure is to be applied. ON FILE

7.2 Protocols to Land Apply Manure, Litter, or Process Wastewater

Check all temporary, permanent, and structural BMPs which will be used to control runoff of pollutants from the CAFO's **land application area.** If not already in use, include a schedule for implementation of each of these measures. You may supplement this description by attaching details and specifications.

☐ Buffers	☐ Conservation tillage
☐ Constructed wetlands	☒ Grass Filter
☐ Infiltration field	☐ Residue Management
☒ Setbacks	☐ Terrance
☐ Other _____	

7.3 Soil Phosphorus Sampling and Analysis

Representative **soil** (composite) samples from the top 6 inches layer of soil for each field where manure will be applied must be analyzed for phosphorus content at least once every three years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.

☒ Sample collection will occur according to Part II.D of the CAFO General Permit.

☐ Other (describe)_____

7.4 Soil Nitrogen Sampling and Analysis

Representative composite soil samples for total nitrogen and nitrate must be collected for each field where manure will be applied. Composite samples for total nitrogen must be collected from a soil depth of 0 to 6 inches and must be analyzed at least once every 3 years. Composite samples for nitrate must be collected from a soil depth of 6 to 24 inches and must be analyzed at least once every 3 years. All samples must be analyzed according to method code 4H2al-3 in NRCS Soil Survey Laboratory Methods Manual, Soil Survey Investigation Report No. 42. Results must be reported as mg/kg total nitrogen and pounds per acre will be used in determining application rates for manure, litter, and process wastewater.

☒ Sample collection will occur according to Part II.D of the CAFO General Permit.

☐ Other _____

Continue to Page 12

Section 8. NMP Application Rates

The applicant has 2 ways in which to report how manure or process wastewater application rates can be reported to DEQ. Select one:

☐ **Linear Approach**. Expresses rates of application as pounds of nitrogen and phosphorus. Complete Section 8.1, then continue to Section 9. See page 8 of the NOI-NMP Instructions for guidance on the Linear Approach.

☒ **Narrative Rate Approach**. Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. Complete Section 8.2, then continue to section 9. See page 9 of the NOI-NMP Instructions for guidance on the Narrative Rate Approach.

8.1 Linear Approach

Expresses rates of application as pounds of nitrogen and phosphorus. CAFOs selecting the linear approach to address rates of application must include in the NMP submitted to the Department the following information for each crop, field, and year covered by the NMP:

1. The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.

2. The outcome of the field-specific assessment of the potential for phosphorus transport from each field. The Department does not have an N transport risk assessment, therefore the NMP must document any basis for assuming that nitrogen will be fully used by crops. The CAFO must specify any conservation practices used in calculating the risk rating.

3. The crops to be planted or any other uses of a field such as pasture or fallow fields.

4. The realistic annual yield goal for each crop or use identified for each field.

5. The nitrogen and phosphorus recommendations from Department acceptable sources for each crop or use identified for each field.

6. Credits for all residual nitrogen in each field that will be plant available.

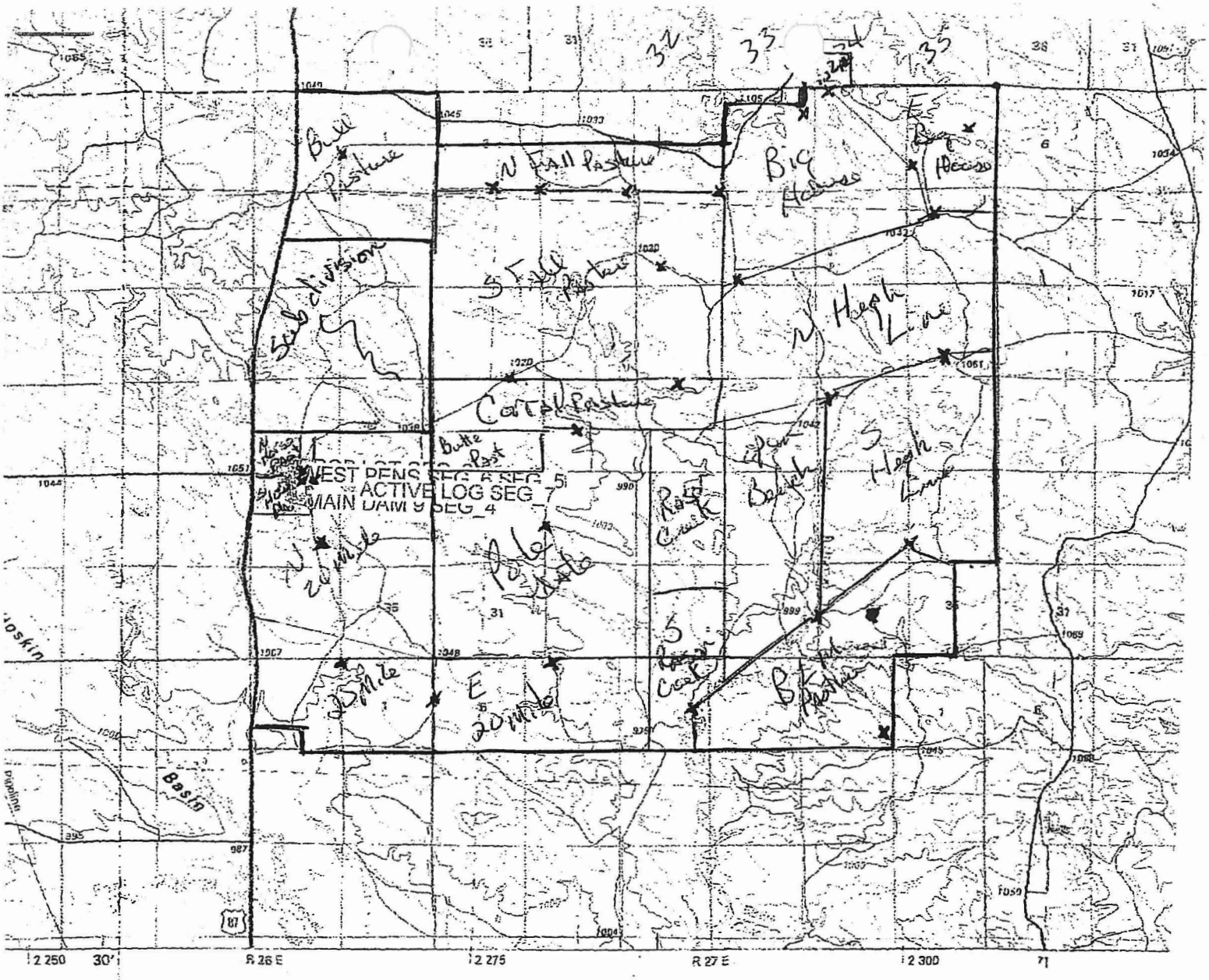
7. Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.

8. All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).

9. The form and source of manure, litter, and process wastewater to be land-applied.

10. The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.

11. The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.

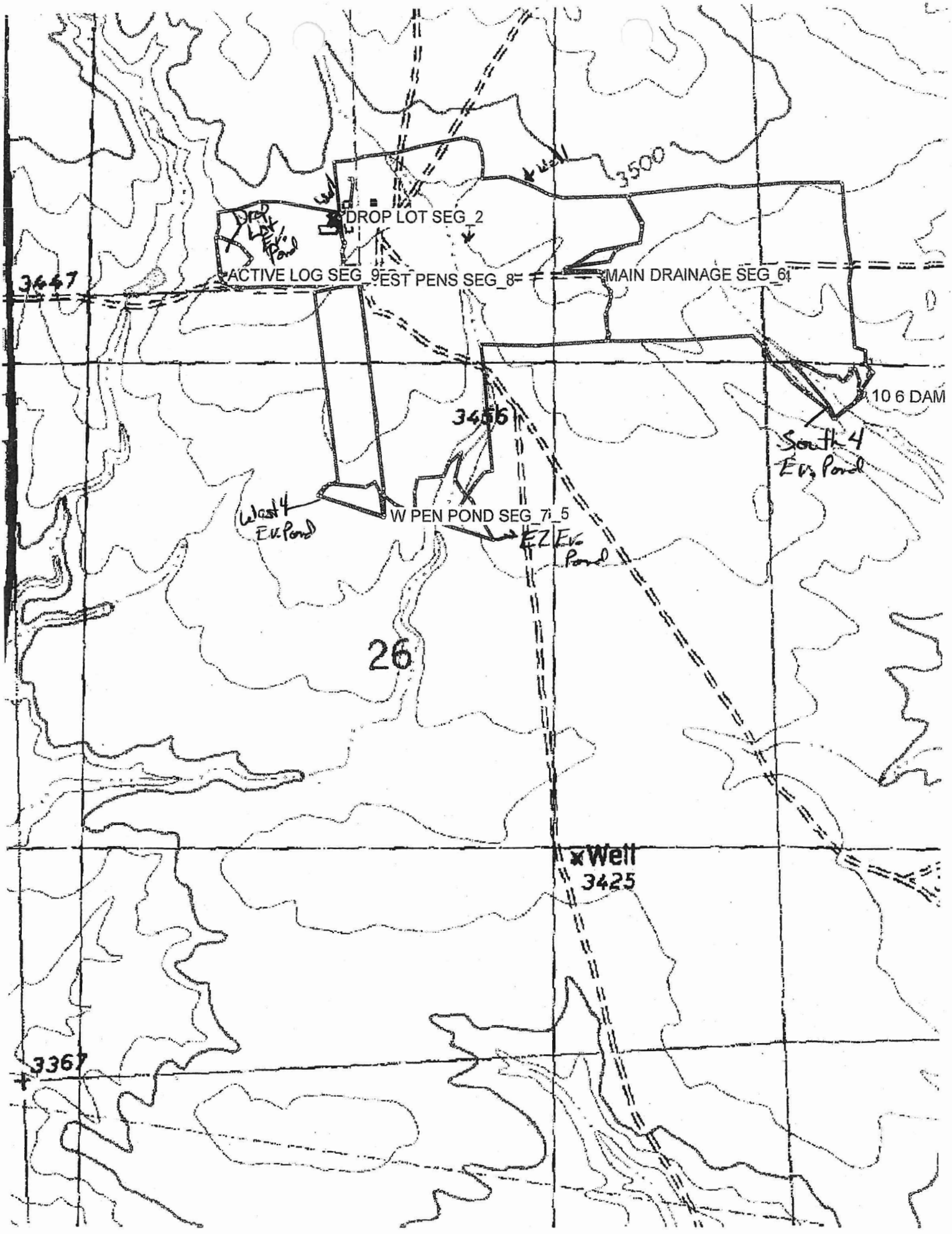


SCALE 1:100 000
MAP REPRESENTS 1 KILOMETER ON THE GROUND
OUR INTERVAL 20 METERS

0 1000 5000 10 000
0 5000 10 000 15 000 20 000 25 000 30 000 35 000 40 000 45 000

This Boundary was drawn off an aerial photo onto this topo.

X Marks Well


DROP LOT SEG_2
ACTIVE LOG SEG_9
EST PENS SEG_8
MAIN DRAINAGE SEG_6
W PEN POND SEG_7
3500
3447
3456
3425
3367
26
Well
Well
Drop Lot Ev. Pond
West Ev. Pond
EZ Ev. Pond
South Ev. Pond
10 6 DAM

Soil types 1-4 and 10

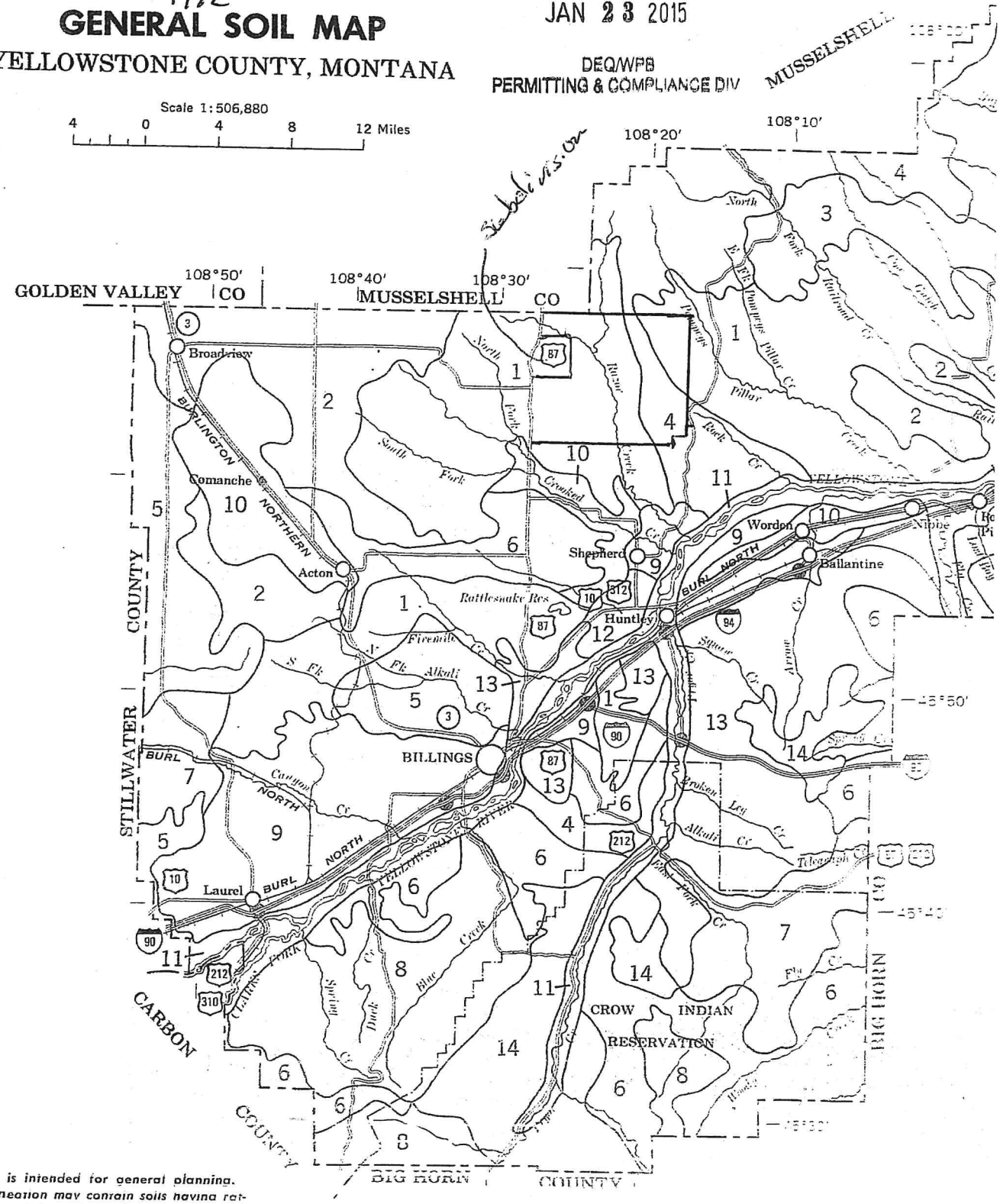
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MONTANA AGRICULTURAL EXPERIMENT STATION

1972

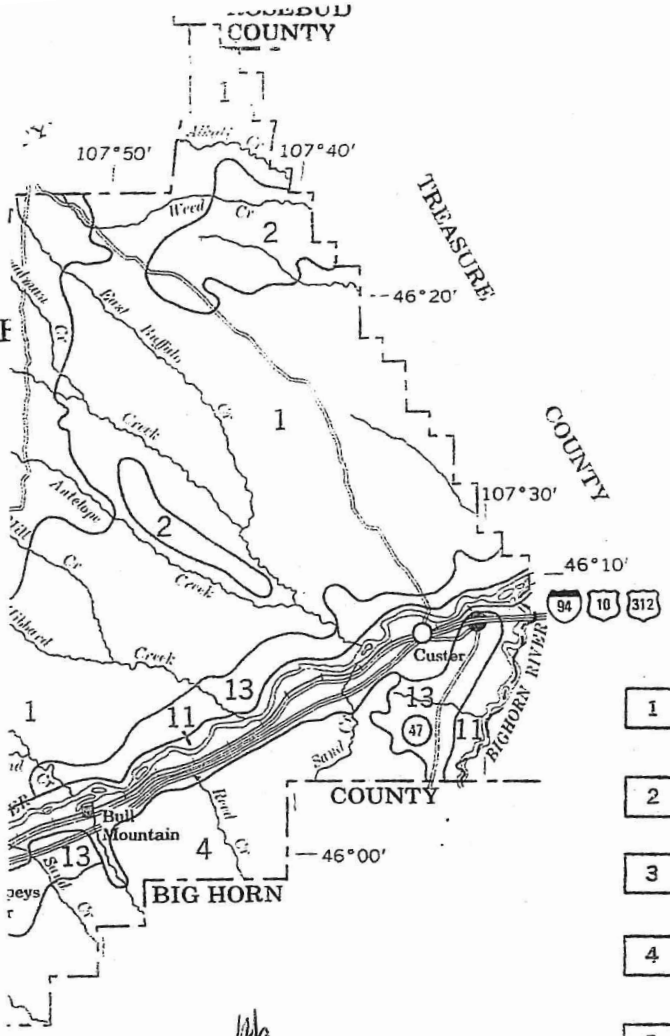
GENERAL SOIL MAP

YELLOWSTONE COUNTY, MONTANA

Scale 1:506,880
4 0 4 8 12 Miles



NOTE—
This map is intended for general planning. Each delineation may contain soils having ratings different from those shown on the map. Use detailed soil maps for operational planning.



SOIL ASSOCIATIONS

SOILS OF THE SHALE AND SANDSTONE UPLANDS

1 — Bainville-Elso-McRae association: Gently undulating to steep, moderately deep and shallow soils that have a dominantly loam to silty clay loam subsoil and deep soils that have a clay subsoil; on shale and sandstone uplands

2 — Cushman-Bainville association: Gently undulating to steep, moderately deep soils that have a dominantly loam to silty clay loam subsoil and shallow soils that have a dominantly loam subsoil; on sandstone and shale uplands

3 — Worland-Bainville-Elso association: Gently undulating to steep, moderately deep and shallow soils that have a dominantly loam subsoil; on sandstone and shale uplands

4 — Bainville-Travessilla-Rock land association: Gently undulating and steep, moderately deep and shallow soils that have a dominantly loam subsoil; on sandstone and shale uplands

5 — Worm ser-Lohmiller-Razor association: Gently undulating to steep, moderately deep and shallow soils that have a dominantly clay subsoil; on sandstone and shale uplands

6 — Pierre-Lohmiller-Kyle association: Gently undulating to steep, shallow to deep silty clays and clay loams that have a dominantly clay; on clay shale uplands

7 — Midway-Heldt association: Gently undulating to moderately steep, moderately deep and deep soils that are dominantly silty clay loam throughout; on uplands and

8 — Maginnis-Absarokee association: Undulating to steep, shallow and moderately deep soils that have a dominantly loam subsoil; on uplands

SOILS OF THE RIVER TERRACES, LOW ALLUVIAL PLAINS AND FLOOD PLAINS

9 — McRae-Lohmiller-Keiser association: Gently sloping to steep, deep loams to silty clays underlain by clay to fine sand on high terraces and fans

10 — Vananda-McKenzie-Arvada association: Level to gently sloping, deep clays to loams over clay; on terraces and fans and lake basins

11 — Haverson association: Level to gently sloping, deep soils are underlain by loam and silt loam; on flood plains and

SOILS OF THE HIGH TERRACES AND BENCHES

12 — Bew-Allentine association: Level to sloping, deep soils have a clay subsoil; on terraces and fans

13 — Wanetta-Keiser association: Level to steep, deep soils have a clay loam to silty clay subsoil; on high terraces

14 — Danvers association: Gently undulating to rolling, deep soils that have a silty clay and clay loam subsoil; on high benches and terraces

December 1970

(1) Bainville-Elso-McRae Ass. Undulating to Hilly, moderately deep + shallow loams + clay loams underlain by silt loam to silty clay loam and deep soils that are loam throughout on shale + sandstone uplands

(4) Bainville-Travessilla-Rock land ass: Mod steep and steep moderately deep + shallow loams and fine sandy loams underlain by clay loam to fine sandy loam, + sandstone and shale rock land

(10) Vananda-McKenzie-Arvada Ass. Level to gently sloping, deep clay to loam over clay on terraces and fans and in dry Lake Basins

NOTE
This
Eac
ing
Use

12. The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.

13. The outcome of the field-specific assessment of the potential for phosphorus transport from each field. The Department does not have an N transport risk assessment, therefore the NMP must document any basis for assuming that nitrogen will be fully used by crops. The CAFO must specify any conservation practices used in calculating the risk rating.

14. The crops to be planted or any other uses of a field such as pasture or fallow fields.

15. The realistic annual yield goal for each crop or use identified for each field.

16. The nitrogen and phosphorus recommendations from Department acceptable sources for each crop or use identified for each field.

17. Credits for all residual nitrogen in each field that will be plant available.

18. Consideration of multi-year phosphorus application. For any field where nutrients are applied at a rate based on the crop phosphorus requirement, the NMP must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement.

19. All other additions of plant available nitrogen and phosphorus (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen).

20. The form and source of manure, litter, and process wastewater to be land-applied.

21. The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.

22. The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.

23. Any other factors necessary to determine the maximum application rate identified in accordance with this Linear Approach.

24. Complete the Nutrient Budget Worksheet, below, for the crop grown on each field for each year to which manure or process wastewater is, or may be, applied. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient Budget Worksheet

Field identification: Year: Crop:					
Expected Crop Yield:					
Phosphorus index results or Phosphorus application from soil test:					
Method of Land Application:					
When will application occur:					
Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre			
2	(-)	Credits from previous legume crops, or soil test lbs/acre			
3	(-)	Residuals from past manure production lbs/acre-only if no new soil test			
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre			
5	(-)	Nutrients supplied in irrigation water, lbs/acre			
6		**= Additional Nutrients Needed, lbs/acre**			
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)			
8	(×)	Nutrient Availability factor, for Phosphorus based application use 1.0			
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**			
10		Additional Nutrients needed, lbs/acre (calculated above)			
11	(÷)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)			
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**			

End of Linear Approach. Continue to Section 9

8.2 Narrative Approach

Expresses a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the Department the following information for each crop, field, and year covered by the NMP:

1. The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field).

   CALCULATED BASED ON N AND P IN MANURE & SOIL SAMPLES — 150 lb N/acre and 45 lb P2O5/acre

2. The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The Department does not have an N transport risk assessment, therefore the NMP must document any basis for assuming that nitrogen will be fully used by crops. The CAFO must specify any conservation practices used in calculating the risk rating.

   BASED ON SOIL SAMPLE. IN ALL SAMPLES RAN AT THIS TIME, MY ONLY LIMITING FACTOR IS NITROGEN USAGE.

3. The crops to be planted in each field or any other uses of a field such as pasture or fallow fields, including alternative crops if applicable. Any alternative crops included in the NMP must be listed by field, in addition to the crops identified in the planned crop rotation for that field.

   NATIVE AND IMPROVED RANGE

4. The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.

   1 TO 1.5 TON PER ACRE

5. The nitrogen and phosphorus recommendations from Department acceptable sources for each crop or use identified for each field, including any alternative crops identified.

   YOUR CHARTS — Tommy Bass, MSU Extention: gen recommendation 100 lb N/acre and 35 - 45 lb P2O2/acre

6. The methodology (including formulas, sources of data, protocols for making determination, etc.) and actual data that will be used to account for: (1) the results of soil tests, (2) credits for all nitrogen in the field that will be plant-available, (3) the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied, (4) consideration of multi-year phosphorus application (for any field where nutrients are applied at a rate based on the crop phosphorus requirement, the methodology must account for single-year nutrient applications that supply more than the crop's annual phosphorus requirement), (5) all other additions of plant available nitrogen and phosphorus to the field (i.e., from sources other than manure, litter, or process wastewater or credits for residual nitrogen), (6) timing and method of land application, and (7) volatilization of nitrogen and mineralization of organic nitrogen.

   NEAL FEHRINDER CERTIFIED PROFESSIONAL AGRONOMIST CCA DOES THE FERTILIZATION RECOMMENDATIONS FOR ENERGY LABS, WHERE THE MANURE AND SOIL SAMPLES ARE RUN. Also see Tommy Bass recommendations 9/4/2024.

7. Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach. THE RANCH IS NOT FARMED. THE MANURE IS APPLIED TO NATIVE & IMPROVED RANGE. THE FARMING WAS ALL PRIOR TO 1935, SO IMPROVED RANGE IS BROME AND CRESTED WHEAT GRASS SEEDED BY HOMESTEADERS.

8. NMPs using the Narrative Rate Approach must also include the following projections, which will not be used by the permitting authority in establishing site-specific permit terms:
   - Planned crop rotations for each field for the period of permit coverage. N/A Total of 11,000 acres
   - Projected amount of manure, litter, or process wastewater to be applied. 15 - 30 TON APPLIED ONCE A PERMIT
   - Projected credits for all nitrogen in the field that will be plant available. BASED ON SOIL SAMPLE
   - Consideration of multi-year phosphorus application. HAVE NOT BEEN LIMITED BY P
   - Accounting for other additions of plant available nitrogen and phosphorus to the field. BASED ON SOIL SAMPLE
   - The predicted form, source, and method of application of manure, litter, and process wastewater for each crop.

Section 9 – NMP Phosphorus

Phosphorus Risk Assessment: The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using Method A or Method B (below) to complete the assessment, unless the receiving water is impaired for nutrients, then you must use method B below for phosphorus risk assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained onsite at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

Indicate which method will be used to determine phosphorus application:

☒ **Method A** – Representative Soil Sample. Complete Section 9.1, then continue to Section 10.

☐ **Method B** – Phosphorus Index. Complete Section 9.2, then continue to Section 10.

9.1 Method A – Representative Soil Sample

Obtain one or more representative soil sample(s) from the field per ARM 17.30.1334
Have the sample analyzed for phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm). Using the results of the Olsen P test, determine application basis according to the Table below.

Olsen P Soil Test Results (ppm)	Application Basis
<25.0	Nitrogen Needs of Crop
25.1 - 100.0	Phosphorus Needs of Crop
100.0 – 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application allowed

Olsen P Test Result: 4.5 ppm LATEST SAMPLES RAN

End of Method A. Continue to Section 10

9.2 Method B – Phosphorus Index

Complete a phosphorus Index according to the crop grown on each field. Complete the Phosphorus Index Worksheet below to calculate phosphorus index. For information on filling out specific sections of this table, please refer to the method as described in NRCS Agronomy Technical Note MT-77.

Appendix A: Phosphorus Index Worksheet (Complete for each field and crop)

Field: **Crop:** **Year:**

Field Category Factor	None (0)	Low (1)	Medium (2)	High (4)	Very High (8)	Risk Value (0,1,2,4,8)	Weight Factor	Weight Risk
Soil Erosion	NA	<5 tons/as/yr	5-10 ton/ac/yr	10-15 tons/ac/yr	QA> 10 for erodible soils		X 1.5	
Furrow Irrigation Erosion	N/A	Tail water recovery, QS>6 very erodible soils, or QS>10 other soils	QS> for erosion resistant soil	QS> for erodible soils	QA>6 for very erodible soils		X 1.5	
Sprinkler Irrigation Erosion	All fields 0-3% slope, all sandy fields or field evaluation indicates little or no runoff large spray on silts 3-8%	Medium spray on silty soils 3-15% slopes, large spray on silty soils 8-15% slope, low spray on silt soils 3-8% large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3-8% slope, low spray on silty soils >15% slopes	Low spray on clay soils >8% slopes		X 1.5	
Runoff Class	Negligible	Very Low or Low	Medium	High	Very High		X 0.5	
Olson Soil Test P	--------	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm		X 0.5	
Commercial P Fertilizer Application Method	None Applied	Placed with Planter or injection deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges	Surface applied to pasture or >3 months before crop emerges		X 1.0	
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205		X 1.0	
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied to pasture or >3 months before crop emerges		X 1.0	
Organic P Source Application Rate	None Applied	<30 lbs/ac P205	31-90 lbs/ac P205	91-150 lbs/ac P205	>150 lbs/ac P205		X 1.0	
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1,000 feet, or functioning grass waterways in concentrated surface water	100-200 feet	<100 feet	0 feet or application are directly into concentrated surface water flow areas.		X 1.0	
Total Phosphorus Index Value:								

Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

Phosphorus Index Value: _____

Section 10 – NMP Guidance

Land Application Equipment Calibration

Describe the type of equipment used to land apply wastes and the calibration procedures:

LEON SPREADER TONS DIVIDED BY ACRES = TONS PER ACRE ADJUSTED TO ACCOMPLISH DESIRED TONAGE

Implementation, Operation, Maintenance and Recordkeeping

The permittee is required to develop protocols for implementation of the NMP, proper operation and maintenance of the livestock waste control facilities, and recordkeeping as described in Part 2 of the permit.

Have protocols been developed for the operation? ☒ Yes ☐ No

The documents below are maintained:

Implementation of the NMP:	☒ Yes	☐ No
Facility operation and maintenance:	☒ Yes	☐ No
Recordkeeping and reporting	☒ Yes	☐ No
Sample collection and analysis	☒ Yes	☐ No
Manure transfer	☐ Yes	☒ No

If your answer to any of the above question is no, provide explanation:

NO MANURE IS TRANSFERRED OFF SITE

Provide date and location of most recent documentation:

Date: 05.16.2017

Location: NORTH 20 MILE

NOI-NMP Certification

The NOI Form certification must be completed by the applicant (owner/operator) responsible for the authorization as identified in Section C. Certification of this NOI is certification that the applicant will comply with the applicable terms of the CAFO General Permit.

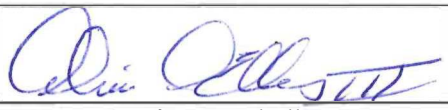
Permittee Information: This form must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Permittees Must Complete the Following Certification:

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 my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, 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. [75-5-633, MCA].

Certification of this form indicates conformance with the CAFO General Permit.

Name (Type or Print) ALVIN A ELLIS III	
Title (Type or Print) PRESIDENT	Phone Number 406.425.3248
Signature 	Date Signed 01.25.2024

DEQ will not process this form until all the requested information is supplied, and the appropriate fees are paid.

Return this NOI-NMP-CAFO Form and the applicable fee payment to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-5546

MONTANA STATE UNIVERSITY EXTENSION

Department of Animal and Range Sciences

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September 04, 2024

Alvin Ellis
21 Mile Cattle Company
18 Ellis Lane
Red Lodge, MT 59068

RE: Response to DEQ on behalf of Alvin Ellis, 21 Mile Cattle Company

Dear Rusty,

I have recently reviewed the NOI, historic data, and recent analyses related to the NMP for 21 Mile Cattle Company. While NPDES/MPDES permits are the responsibility of the owner/operator, I have served as permit coach and NMP writer for 25 years. Below, I address concerns from Section 8.2 (pg 15) in the current NOI as communicated to you in the letter From DEQ (C. A. Weaver) dated July 18, 2024.

Section 8.2 (pg 15)

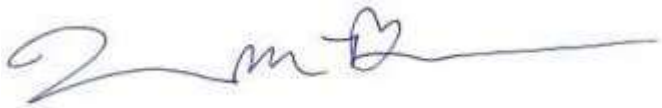
1. The maximum amount of N indicated per year for this system would 150 lbs of N/acre; this would require sufficient soil moisture to be effective. The maximum P_2O_5 equivalent indicated per year would be 45lbs P_2O_5/acre. With low soil test phosphorus prevalent across the property, multi-year application of P is possible and recommended in many cases.

5. I have reviewed several sources of information to extrapolate a conservative estimate of nutrient need for native and improved range made up of bromegrass and crested wheatgrass. My calculated general recommendation for total N is 100 lbs N/acre (though not the max). The range of economic return is 80-150 lbs N/acre, with positive response in bromegrass up to more than 200lbs N/acre (K-State Agronomy eUpdate, v.788, 2020); a second source estimates 90-120lbs N per acre for bromegrass (Missouri Extension, G-4672). Phosphorus recommendations range from 35 to 45 lbs P_2O_5/acre for grass/mixed grass systems when soil test P is low. Agronomic data on crested wheat grass is not very specific, though it does respond to nutrient applications.

6. Application is recommended in fall, as labor allows. This application can help improve root mass prior to senescence/winter dormancy. Otherwise, spring application when soil will support equipment is fine. I recommend maximizing N in year one, with phosphorus carrying over for 2-3 years. No re-application of manure would be recommended until the phosphorus is consumed; in other words, allow 2+ years of manure-fallow before returning to field. The method is surface broadcast unincorporated and the loss coefficient between total N and year one PAN is 50%.

8. Available acreage for land application, after subtracting setbacks, environmentally sensitive areas, and harsh terrain is 11,008 acres. This acreage is divided into 9 fields or management units with an average size of 1,200 acres. In general, analysis of fresh manure would indicate application rates between 12 and 15 tons per acre, while older and partially composted manure would indicate application rates between 20 and 30 tons per acre.

With sincerest regards,



Thomas “Tommy” Bass