AGENCY USE ONLY				
PERMIT NO.: MTG010279	Date Rec'd.: 10-15-15	Amount Rec'd. $1,200.00	Check No.: 4908	Rec'd By: SPM/015

Montana Department of
ENVIRONMENTAL QUALITY

WATER PROTECTION BUREAU

FORM
NOI

Notice of Intent (NOI) for Montana Pollution Discharge Elimination System Application for New and Existing Concentrated Animal Feeding Operations

The Application form is to be completed by the owner or operator of a Concentrated Animal Feeding Operation (CAFO) or Aquatic Animal Production Facility. Please read the attached instructions before completing this form. You must print or type legibly; forms that are not legible or are not complete will be returned. You must maintain a copy of the completed application form for your records.

Section A - Application Status *(Check one)*:

- [x] New — No prior application submitted for this site.
- [ ] Resubmitted — Permit Number: MTG _ _ _ _ _ _
- [ ] Renewal — Permit Number: MTG _ _ _ _ _ _
- [ ] Modification — Permit Number: MTG _ _ _ _ _ _

Section B - Facility or Site Information (*See instruction sheet.*):

Site Name: Diamond J Cattle North Lot

Site Location: Sugar Foot Lane

Nearest City or Town: Kinsey County: Custer

Latitude: 105* 37' 40.76" W Longitude: 46* 35' 55.15" N

Date Facility began operation? September 2013

Is this facility or site located on Indian Lands? [ ] Yes [x] No

Section C - Applicant (Owner/Operator) Information:

Owner or Operator Name: John or Tara Peila

Mailing Address: PO Box 520

City, State, and Zip Code: Miles City, Montana 59301

Phone Number: 406-234-1504

Is the person listed above the owner? [x] Yes [ ] No

Status of Applicant *(Check one)* [ ] Federal [ ] State [x] Private [ ] Public [ ] Other (specify) _____

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Section D - Existing or Pendin ermits, Certifications, or Approvals: None

☐ MPDES _____ ☐ RCRA _____

☐ PSD (Air Emissions) _____ ☐ Other _____

☐ 404 Permit (dredge & fill) _____ ☐ Other _____

Section E – Standard Industrial Classification (SIC) Codes:

Provide at least one SIC code which best reflects the activity of project described in Section H.

Code	A. Primary	Code	B. Second
1	211- Beef Cattle Feedlot	2	
Code	**C. Third**	**Code**	**D. Fourth**
3		3	

Section F - Facility or Site Contact Person/Position:

Name and Title, or Position Title John Peila

Mailing Address PO Box 520

City, State, and Zip Code Miles City, Montana 59301

Phone Number 406-234-1504

Section G – Receiving Surface Waters(s):

Outfall/Discharge Locations: For each outfall, List latitude and longitude to the nearest second and the name of the receiving waters

Outfall Number	Latitude	Longitude	Receiving Surface Waters
001	46* 35' 3" N	105*38'14"W	Kinsey Irrigation Canal
002	46*33'39" N	105*37"56"W	Yellowstone River
003			
004			
005			

Map: Attach a topographic map extending one mile beyond the property boundaries or the site activity identified in Section B depicting the facility or activity boundaries, major drainage patterns, and the receiving surface waters, stated above. Also identify the specific location of the production area, and land application area(s).

Is the receiving water on the 303(d) list for nutrients (nitrogen and/or phosphorus) ☐ Yes ☑ No

Section H – Concentration Animal Feeding Operation Characteristics

Waste Production, Storage and Disposal

Animal type	Number in Open Confinement	Number Housed Under Roof
☐ Mature Dairy Cows		
☐ Dairy Heifers		
☐ Veal Calves		
☑ Cattle (not dairy or veal)	5000	0
☐ Swine (55 lbs or over)		
☐ Swine (55 lbs or under)		
☐ Horses		
☐ Sheep or Lambs		
☐ Turkeys		
☐ Chickens (broilers)		
☐ Chickens (layers)		
☐ Ducks		
☐ Other (Specify:_____)		
☐ Other (Specify:_____)		
☐ Other (Specify:_____)		

Manure, Litter and/or Wastewater Production and Use.

How much manure, litter, and process wastewater is generated annually by the facility?

Solid (tons): 4,732 Liquid/Slurry (gallons): 0

If land applied, how many acres of land under control of the permit applicant are available to apply the manure, litter, or process wastewater generated from the facility? (Note: Do not include setback distances in available acreage

1500 Acres

How much manure, litter, and process wastewater is transferred to other persons per year? (estimated) Solid (tons): 0 Liquid/Slurry (gallons): 0

Were the containment structures built after February 2006?

- ☑ Do the waste containment structures have 10 feet of separation between the pond bottom and any bedrock formations?
- ☑ Do the waste containment structures have 4 feet of separation from the pond bottom and any ground water?
- ☐ Were any of the waste containment structures built within 500 feet of any existing well?

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Type of Containmer torage	Total Capacity	Units (ga is or tons)	Days of Storage
☐ Anaerobic Lagoon			
☑ Storage Pond #1	2,244,000	gallons	
☑ Storage Pond #2	107,712	gallons	
☑ Storage Pond #3	137,445	gallons	
☐ Storage Pond #4			
☐ Storage Pond #5			
☐ Above Ground Storage Tank			
☐ Below Ground Storage Tank #1			
☐ Below Ground Storage Tank #2			
☐ Underfloor Pits			
☐ Roofed Storage Shed			
☐ Concrete Pad			
☐ Impervious Soil Pad			
☐ Other (Specify:_____)			
☐ Other (Specify:_____)			

Physical Data for CAFO

Nutrient Management Plan

All Concentrated Animal Feeding Operations seeking permit coverage after July 31, 2007 are required to complete and implement a Nutrient Management (NMP). The NMP must be submitted to the Department using the form provided by the Department (Form NMP). Check the box below that applies and provide the required information. The NMP must be developed in accordance with ARM 17.30.1334 and implemented upon the effective date of permit coverage. (Check One)

☑ Does the facility have an NMP?

Date NMP was developed: October 2015

Date NMP was last modified:_____

☐ NMP has not been prepared; provide detailed explanation below

Section I – Supplemental Information

Section J - CERTIFICATION

Permittee Information:

This Form NMP 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]

A. Name (Type or Print) John Peila	
B. Title (Type or Print) Owner / Member	**C. Phone No.** 406-234-1504
D. Signature	**E. Date Signed** 10-12-15

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form (NOI) and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

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DEQ
Planning Division

Form NOI – Applicat. .n for New and Existing Conc. .trated Animal Feeding Operations and Aquatic Animal Production Facilities

Important: Do not use this form to transfer permit coverage to a new owner or operator, you must use Form PTN. You must provide the information requested for this application to be complete. Responses must be self-explanatory and must not refer exclusively to attached maps, plans or documents. The appropriate fees must accompany this Form NOI. Mail this to the DEQ address stated on the form. You must maintain a copy of the completed form for your records. CAFO General Permit and the Fish Farm General Permit documents and related forms are available at (406) 444-3080 or on the DEQ website at: http://www.deq.mt.gov.

Please type or print legibly; applications that are not legible or are not complete will be rejected.

SPECIFIC ITEM INSTRUCTIONS

Section A – Application Status

Check the box that applies and provide the requested information. If Form NOI has not been previously submitted for this site, check the first box (New). DEQ will assign a permit number when the form is submitted. The permit number is a 9-digit code beginning with MTG010. If you submitted a Form NOI and DEQ deemed the application deficient or incomplete, check the second box (Resubmitted); If you were notified by DEQ that the permit coverage expired or will expire and you are now submitting an NOI to continue coverage check the third box (Renewal); if there is a change in the facility information (Section H or Section I), check the last box (Modification). If a NOI has been submitted and deemed deficient then the permit number will appear in the deficiency letter. If the site is covered under the *General Permit for Concentrated Animal Feeding Operations* or the *General Permit for Fish farms,* the number is given on the Authorization letter sent to you by DEQ. The permit number must be included on any correspondence with DEQ regarding this site.

Section B – Facility Information:

Identify the legal name of the facility that is subject to permit coverage. The facility is the land or property where the facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity. Give the address or location of this facility and the geographical information. The location may be the physical mailing address or description of how the facility may be accessed. (PO Boxes are not acceptable.) Latitude and longitude must be accurate to the nearest second. Sources include GPS, a USGS topographic map, and/or "Topofinder" from http://nris.mt.gov/interactive.asp.

Section C – Applicant (Owner/Operator) Information:

Give the name, as it is legally referred to, of the person, business, public organization, or other entity that owns, operates, controls or supervises the facility described in Section B of this Form. The operator is the legal entity which controls the facility operation. The permit will be issued to the entity identified in this section (Section C). The owner or operator assumes all liability for discharges of the facility and compliance with the permit. If the owner or operator is other than a person or government entity it must be registered with the Montana Secretary of State's office.

Section D – Existing or Pending Permits, Certification, or Approvals:

List, in descending order of significance, the four digit standard industrial codes that best describe the activities at this facility. Also, provide a brief description in the space provided. A complete list of SIC Codes (and conversion form the newer North American Industry Classification System (NAICS)) can be obtained from the Internet at http://www.census.gov/epcd/www/naics.html or in paper from the document entitled "Standard Industrial Classification Manual", Office Management and Budget, 1987. SIC Code listings may also be found at http://www.osha.gov/pls/imis/sicsearch.html. At least on SIC code must be provided. See attached table for common SIC codes.

Section F – Facility Contact Person/Position:

Give the name, title, and work phone number of a person who is thoroughly familiar with the operation of the facility and the facts reported in this form, and who can be contacted by DEQ for additional information. Those facilities with periodic changes in the contact person may provide the contact person's position instead of a person's name.

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PERMIT NO.: MTG010279	Date Rec'd.: 10-15-15	Amount Rec'd.: $1,200.00	Check No.: 4908	Rec'd By: SDM/LFS

Montana Department of
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WATER PROTECTION BUREAU

FORM
NMP

Nutrient Management Plan

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For filling out Form NMP," found at the back of this form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your NOI-CAFO. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. The 2013 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp

Section A – NMP Status:

- [x] New — No prior NMP submitted for this site.
- [ ] Resubmitted — Previous NMP found incomplete.
- [ ] Modification — Change or update to existing NMP.
- [ ] New 2013 — New 2013 version of NMP.

Section B – Facility Information:

3345

Facility Name: Diamond J Cattle North Lot

Facility Location: Sugar Foot Lane

Nearest City of Town: Kinsey County: Custer

Section C – Applicant (Owner/Operator Information):

Owner or Operator Name: John & Tara Peila

Mailing Address: PO Box 520

City, State, and Zip code: Miles City, Montana 59301

Facility Phone Number: 406-234-1504

Email: taraleapeila@hotmail.com

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Section D – NMP Minimum Elements:

1. Livestock Statistics		
Animal Type and number of animals	**# of Days on Site (per year)**	**Annual Manure Production (tons, cu. yds. or gal**
1. Beef Cattle 5000 head	180	4732 ton
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Method used for estimating annual manure production:
Manure Management Planner v0.35, Purdue University

2. Manure Handling

a. Describe Manure handling at the facility:
Manure is left in empty feedlot over summer. Collected and Spread in September and October each year

b. Frequency of Manure Removal from confinement areas:
Annually

c. Is this manure temporarily stored in any location other than the confinement area? ☐ Yes ☑ No
If so then how and where?

d. Is manure stored on impervious surface? ☐ Yes ☑ No
If yes, describe type and characteristics of this surface:

3. Waste Control Structures					
Waste Control Structures (name/type)	Length (ft.)	Width (ft.)	Depth (ft.)	Volume (cubic ft. or gallons)	Number of days of storage
1. Lagoon 1	250	100	12	2,244,000g	
2. Lagoon 2	80	30	6	107,712g	
3. Lagoon 3	75	35	7	137,445g	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

What is the 24 hr. 25 yr. storm event at this facility 28 tenths

Production area: 26 **acres. Type of lot (dirt or paved):** Dirt

Area contributing drainage form outside CAFO that enters confinement areas and waste storage, conveyance, or treatment structures: 2 **acres.**

What is the annual precipitation during the critical storage period 10 inches

How much freeboard do the pond(s) have 3 feet

4. Disposal of Dead Animals.

Describe how dead animals are disposed of at this facility:
Dead animals are collected and buried off site

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5. Clean Water Diversion Practices

Describe how clean water is diverted from production area:
Earthen diversions and natural topography

6. Prohibiting Animals and Wastes from Contact with State Waters

Describe how animals and wastes are prohibited from direct contact with state waters:
There are three lagoons that collect all runoff from the production area. Ponds are left to evaporate and the solids are collected and spread onto fields. Also have the ability to pump ponds into tanks and spread on fields if necessary.

Describe how Chemicals and other contaminants are handled on-site:
No other chemical or contaminants are kept on site.

7. Best Management Practice (BMPS)

Describe in detail all temporary, permanent and structural BMPS which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. If BMPS are not installed include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces,, and waterways above and open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area: decreasing open lot surface area; repairing of adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.

Production Area BMP's

Ditches and Diversion Dikes are used to divert clean water around facility.
Diversion Dikes are used to control dirty water flow into storage lagoons.
All waterers have float controls and are checked daily.
No water is used for cooling.

Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's land production area. Indicate the location of these practices. If not already in use, include a schedule for implementation of each of these measures. Attached details and specifications may be used to supplement this description. Examples of BMP measures could include but are not limited to: maintaining setbacks from surface waters for manure applications; managing irrigation practices to prevent ponding of wastewater on land application sites;

never spray irrigating waste on to frozen ground: consulting with the Department prior to applying any liquid waste to frozen or snow-covered ground; applying wastes at agronomic rates.

Land Application BMP's

Thirty foot wide setbacks left along edges of fields that adjoin any type of water body.
Manure spread only on unfrozen ground.
Sprinkler irrigation on some fields.
Irrigation Water Management Plans implemented on all fields.
Soil Tests done annually on all fields and nutrients applied accordingly.

Buffers	☑ Yes ☐ No	**Conservation Tillage**	☑ Yes ☐ No
Constructed Wetlands	☐ Yes ☑ No	**Grass Filter**	☐ Yes ☐ No
Infiltration Field	☐ Yes ☑ No	**Residue Management**	☑ Yes ☐ No
Set backs	☑ Yes ☐ No	**Terrace**	☐ Yes ☑ No

Other examples

8. Implementation, Operation, Maintenance and Record Keeping – Guidance

The permittee is required to develop guidance addressing implementation of NMP, proper operation and maintenance of the facility, and record keeping as described in Part 2 of the permit.

Has a guidance document been developed for the facility? ☑ Yes ☐ No

Certify the document address the following requirements:

Implementation of the NMP:	☑ Yes ☐ No
Facility operation and maintenance:	☑ Yes ☐ No
Record keeping and reporting	☑ Yes ☐ No
Sample collection and analysis:	☑ Yes ☐ No
Manure transfer	☑ Yes ☐ No

Provide name, date and location of most recent documentation:
Manure Management Planner.
Plan developed with assistance from local NRCS office September 2015.
Document can reviewed at Diamond J Cattle LLC, 2804 Valley Drive East, Miles City, Mt. 59301

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

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Section E – Land Application

Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?

☑ Yes If yes, then the information requested in Section E must be provided.

☐ No If no, then provide an explanation of how animal waste at this facility are managed.

Photos and/or Maps

Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"X 17" piece of paper, and must clearly identify the following items:

- Individual field boundaries for all planned land application areas
- A name, number, letter or other means of identifying each individual land application field
- The location of any downgradient surface waters.
- The location of any downgradient open tile line intake structures
- The location of any downgradient sinkholes
- The location of any downgradient agricultural well heads
- The location of all conduits to surface waters
- The specific manure/waste handling or nutrient management restrictions associated with each land application field
- The soil type(s) present and their locations within the individual land application field(s)
- The location of buffers and setbacks around state surface waters, well heads, etc.

Land Application Equipment Calibration

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

Manure Spreader is calibrated according Mt DEQ Circular 9

Manure Sampling and Analysis Procedures

A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining rates for manure, litter, and process wastewater.

Manure Sample collection will occur according to ARM 17.30.1334

Other (describe)

Soil Sampling and Analysis Procedures

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

Soil samples collection will occur according the methods in ARM 17.30.1334

Other (describe)

Phosphorus Risk Assessment

The permittee shall access 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. 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 on-site 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.

Method Used

Indicate which method will be used to determine phosphorus application:

Method A – Representative Soil Sample
Method B – Phosphorus Index

Method A – Representative Soil Sample

a. Obtain one or more representative soil sample(s) from the field per 17.30.1334
b. 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)
c. Using the results of the Olsen P test, determine application basis according to the Table below.

Soil Test

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

Method B – Phosphorus Index

a. Complete a phosphorus Index according to the crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections in Appendix A, please refer to the method as described in Natural Resource Conservation Service (NRCS), Agronomy Technical Note MT-77 (rev3), January 2006.
b. Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus

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

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c. 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

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

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 permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum application rate (pounds/acre/year of nitrogen and phosphorus) from manure, litter, and process wastewater.
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. [If a state does not have an N transport risk assessment, 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.
- The crops to be planted or any other uses of a field such as pasture or fallow fields.
- The realistic annual yield goal for each crop or use identified for each field.
- The nitrogen and phosphorus recommendations from in ARM 17.30.1334 (technical standard) for each crop or use identified for each field.
- Credits for all residual nitrogen in each field that will be plant-available.
- 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.
- 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).
- The form and source of manure, litter, and process wastewater to be land-applied.
- The timing and method of land application. The NMP also must include storage capacities needed to ensure adequate storage that accommodates the timing indicated.
- The methodology that will be used to account for the amount of nitrogen and phosphorus in the manure, litter, and wastewater to be applied.
- Any other factors necessary to determine the maximum application rate identified in accordance with this Linear Approach.

2. **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. CAFOs selecting the narrative rate approach to address rates of application must include in the NMP submitted to the permitting authority the following information for each crop, field, and year covered by the NMP, which will be used by the permitting authority to establish site-specific permit terms:

- The maximum amounts of nitrogen and phosphorus that will be derived from all sources of nutrients (pounds/acre for each crop and field).
- The outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field. The CAFO must specify any conservation practices used in calculating the risk rating.
- 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.
- The realistic annual yield goal for each crop or use identified for each field for each year, including any alternative crops identified.
- The nitrogen and phosphorus recommendations from ***[the permitting authority to specify acceptable sources]*** for each crop or use identified for each field, including any alternative crops identified.
- 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 required by Parts II.A.4.b and III.A.3.g of this

permit, (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.
- Any other factors necessary to determine the amounts of nitrogen and phosphorus to be applied in accordance with the Narrative Rate Approach.
- 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:

i. Planned crop rotations for each field for the period of permit coverage.
ii. Projected amount of manure, litter, or process wastewater to be applied.
iii. Projected credits for all nitrogen in the field that will be plant-available.
iv. Consideration of multi-year phosphorus application.
v. Accounting for other additions of plant-available nitrogen and phosphorus to the field.
vi. The predicted form, source, and method of application of manure, litter, and process wastewater for each crop

- If the receiving water is on the 303(d) list for nutrients then the narrative rate approach must be used.

a. For the Linear Approach the permittee will complete the Nutrient Budget Worksheet, below, for the next 5 years to which manure or process waste water 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.

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Nutrient Budget Worksheet

Field identification: N3-East Year: 2016 Crop: Corn Silage					
Expected Crop Yield: 32 tons per acre					
Phosphorus index results or Phosphorus application from soil test: 6ppm Olsen					
Method of Application: Spreader					
When will application occur: September 2015					
Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	288	58	Mt Ext Bul 0161
2	(-)	Credits from previous legume crops, lbs/ac	0	0	
3	(-)	Residuals from past manure production lbs/acre	0	0	
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	280	48	
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0	0	
6		**= Additional Nutrients Needed, lbs/acre**	280	48	
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	0.8	1.0	
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	1	1	
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	0.8	1	
10		Additional Nutrients needed, lbs/acre (calculated above)	8	10	
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	.8	1	
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**	10	10	

Comments:

Nutrient Budget Worksheet

Field identification: L8 Year: 2016 Crop: Grass					
Expected Crop Yield: 4 tons per acre (irrigated pasture)					
Phosphorus index results or Phosphorus application from soil test: 10ppm Olsen					
Method of Application: Spreader					
When will application occur: September 2015					
Nutrient Budget			Nitrogen-based Application	Phosphorus-based Application	Source of information
1		Crop Nutrient Needs, lbs/acre	100	25	Mt Ext Bul 0161
2	(-)	Credits from previous legume crops, lbs/ac	0	0	
3	(-)	Residuals from past manure production lbs/acre	0	0	
4	(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	92	15	
5	(-)	Nutrients supplied in irrigation water, lbs/acre	0	0	
6		**= Additional Nutrients Needed, lbs/acre**	8	10	
7		Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1000 gal (from manure test)	0.8	1.0	
8	(x)	Nutrient Availability factor, for Phosphorus based application use 1.0	1	1	
9		**= Available Nutrients in Manure, lbs/ton or lbs/1000 gal**	0.8	1	
10		Additional Nutrients needed, lbs/acre (calculated above)	8	10	
11	(/)	Available Nutrients in Manure, lbs/ton or lbs/1000 gal (calculated above)	.8	1	
12		**= Manure Application Rate, tons/acre or 1000 gal/acre**	10	10	

Comments:

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Section F - CERTIFICATION

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]

A. Name (Type or Print) John Peila	
B. Title (Type or Print) Owner / Member	**C. Phone No.** 406-234-15.
D. Signature	**E. Date Signed** 10-12-15

The Department will not process this form until all of the requested information is supplied, and the appropriate fees are paid. Return this form and the applicable fee to:

Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620-0901
(406) 444-3080

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INSTRUCTION FOR Form NMP – Nutrient Management Plan Associated With Concentrated Animal Feeding Operations

You may need the following items in order to complete this form: A copy of your most recently submitted NOI-CAFO: United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), No. 80.1 Nutrient Management, Agronomy Technical Note MT-11 (revision 3), January 2006; Montana State University Extension Service Publication 161, Fertilizer Guidelines for Montana Crops; United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), Sampling Soils for Nutrient Management – Manure Resource, MT 04/07; Montana State University, Mont Guide, Interpretation of Soil Test Reports for Agriculture, MT200702AG, July, 2007; United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), Conservation Practice Standard, Code 590 (November 2006) and Waste Utilization, Code 633 (August 2000).

Please type or print legibly; forms that are not legible will be considered incomplete.

SPECIFIC ITEM INSTRUCTIONS

Section A – NMP Status:

Check the box that applies and provide the requested information. If the Form NMP has not been previously submitted for this site, check the first box (New). If you submitted a FORM NMP and the department found it to be incomplete, check the second box (Resubmitted);

If you were notified by the Department that the permit coverage expired and you are now submitting and updated Form NMP, check the third Box (Modification). If you have received a deficiency letter in regard to your NMP application the facilities assigned designation will be noted in the RE: line starting with MTG######. If the site is covered under *the General Permit for Concentrated Animal Feeding Operation*, the number is given on the Authorization letter sent to you by the Department. The permit number must be included on any correspondence with the Department regarding this site.

Section B – Facility Information:

The information must be stated exactly the same way as it was stated on the most recently submitted version of your form NOI-CAFO.

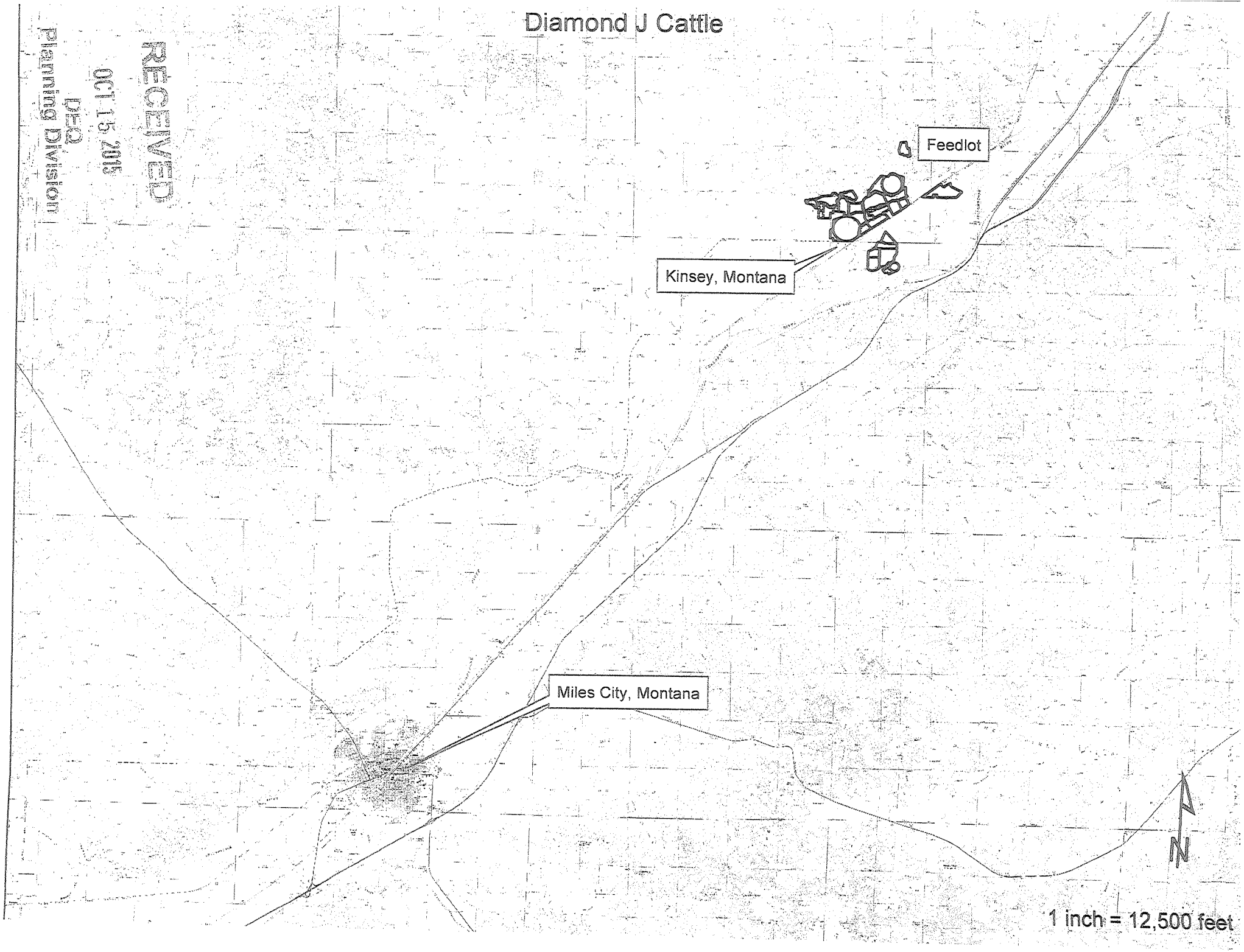
Section C – Applicant (Owner/Operator) Information:

The information must be stated exactly the same way as it was stated on the most recently submitted version of your form NOI-CAFO.

Section D – Waste Management Minimum Elements:

1. ***Livestock Statistics:*** Identify each type of animal confined at this facility. The definition of "type" could include animals of a given species, animals of a given weight class (e.g. piglets, sows), or animals housed for a specific purpose (e.g. dry cows, milking cows).

Diamond J Cattle



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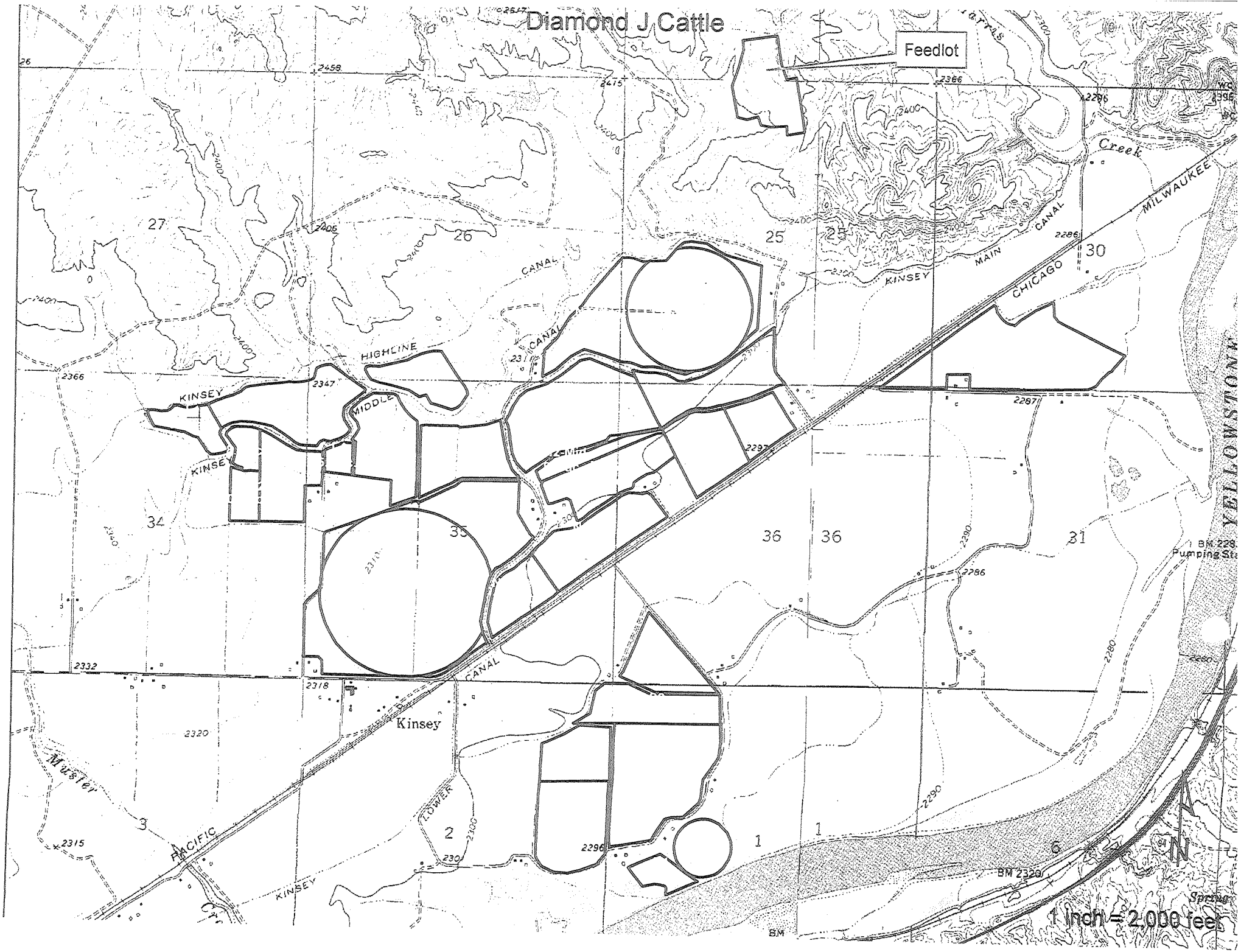
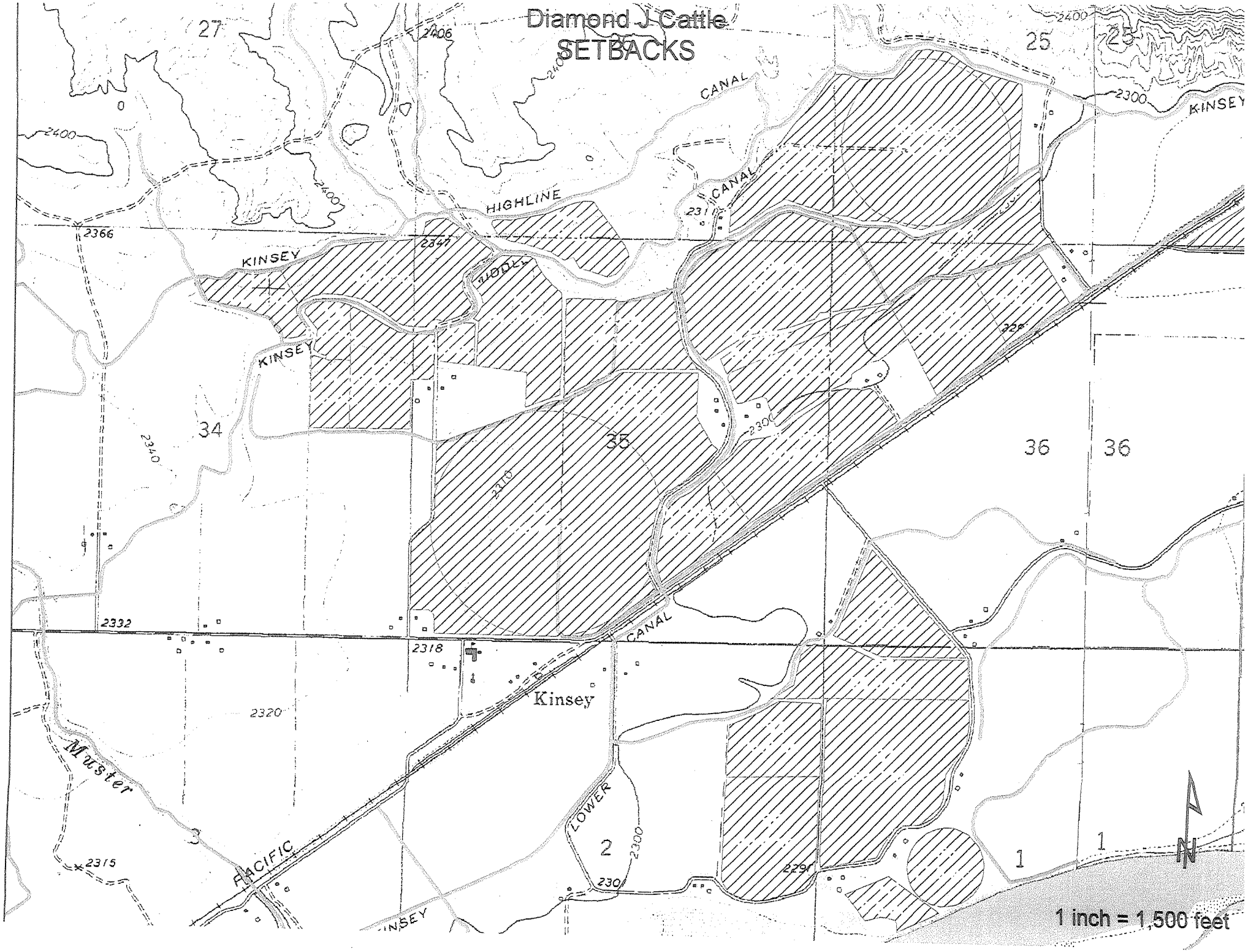
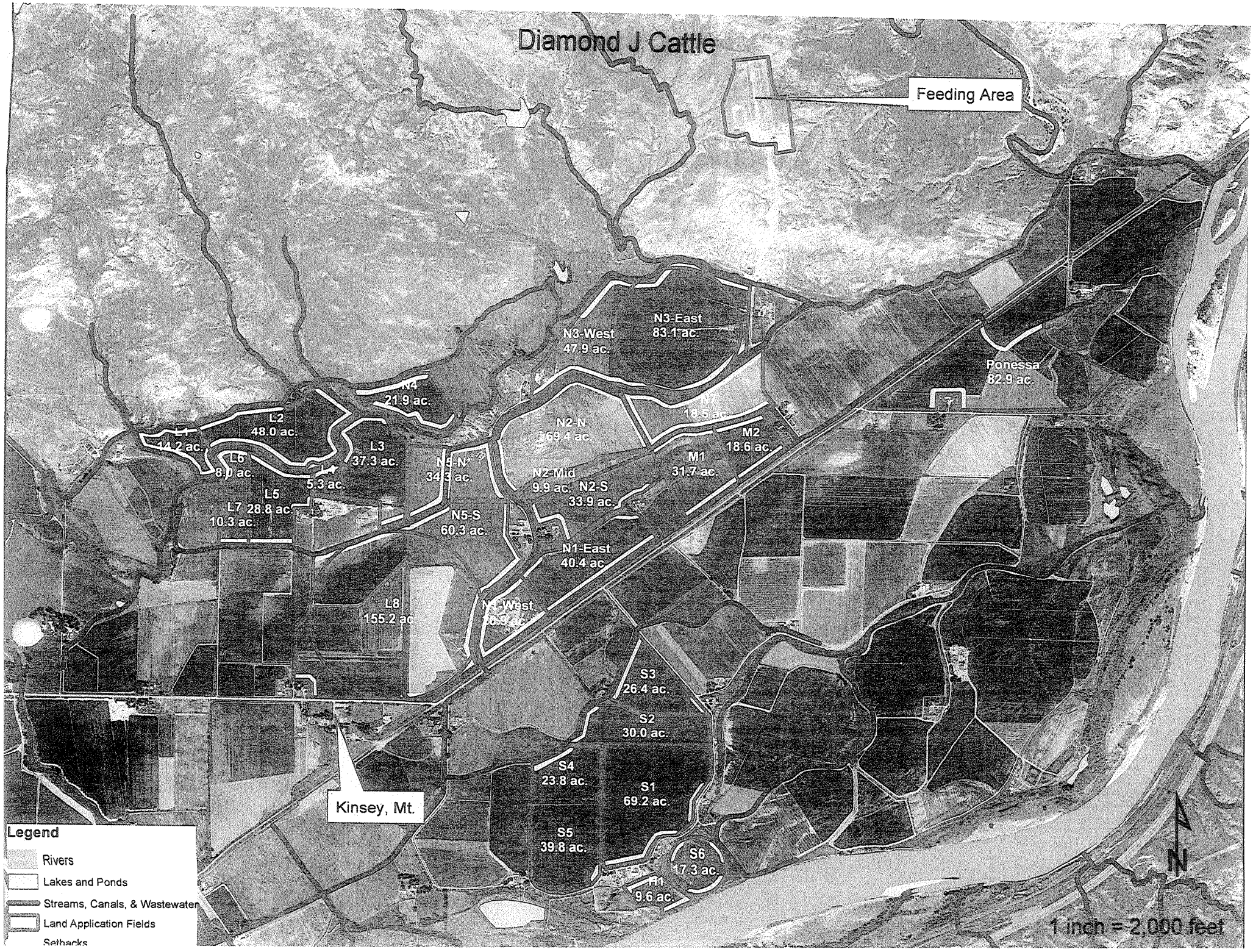

Diamond J Cattle
Feedlot
Creek
MILWAUKEE
CHICAGO
MAIN
CANAL
KINSEY
HIGHLINE
CANAL
MIDDLE
KINSEY
KINSEY
CANAL
Kinsey
LOWER
KINSEY
PACIFIC
Muster
YELLOWSTONE
BM 2320
BM
Pumping Sta
N
1 inch = 2,000 feet

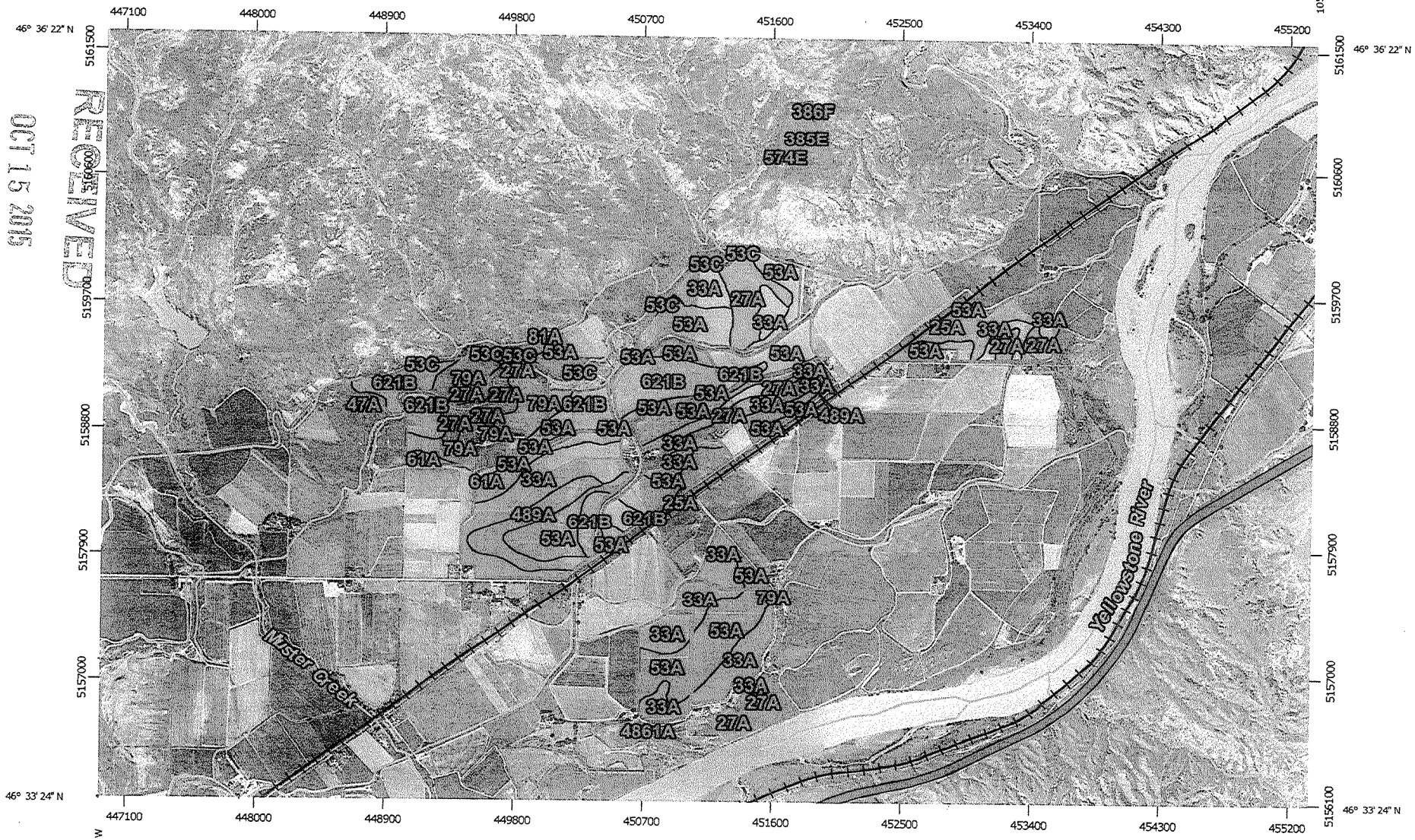
Diamond J Cattle
SETBACKS




Diamond J Cattle
Feeding Area
N3-West
47.9 ac.
N3-East
83.1 ac.
Ponessa
82.9 ac.
N4
21.9 ac.
L2
48.0 ac.
L3
37.3 ac.
L6
8.0 ac.
5.3 ac.
L5
L7 28.8 ac
10.3 ac.
N5-N
34.3 ac.
N5-S
60.3 ac.
N2-N
69.4 ac.
N2-Mid
9.9 ac.
N2-S
33.9 ac.
M2
18.6 ac.
M1
31.7 ac.
N1-East
40.4 ac
L8
155.2 ac
S3
26.4 ac.
S2
30.0 ac.
S4
23.8 ac.
S1
69.2 ac.
Kinsey, Mt.
S5
39.8 ac.
S6
17.3 ac.
9.6 ac.
Legend
Rivers
Lakes and Ponds
Streams, Canals, & Wastewater
Land Application Fields
Setbacks
N
1 inch = 2,000 feet

Land unit acres		Land unit number	Land use	buffer ac.	spreadable ac	setback length (ft)
9.6		H1	Pasture	0.5	9.1	712
14.2		L1	Crop	2.1	12.1	3060
48		L2	Crop	3.8	44.2	5456
37.3		L3	Crop	1.3	36.0	1868
5.3		L4	Crop	0.2	5.1	342
28.8		L5	Crop	1.6	27.2	2265
8		L6	Crop	0.6	7.4	899
10.3		L7	Crop	0.3	10.0	488
155.2		L8	Pasture	1.2	154.0	1775
31.7		M1	Crop	1.5	30.2	2111
18.6		M2	Crop	1.2	17.4	1712
40.4		N1-East	Crop	1.5	38.9	2246
20.9		N1-West	Pasture	0.9	20.0	1320
9.9		N2-Mid	Pasture	0.0	9.9	0
69.4		N2-N	Pasture	3.1	66.3	4510
33.9		N2-S	Pasture	0.2	33.7	319
83.1		N3-East	Crop	1.1	82.0	1662
47.9		N3-West	Pasture	1.7	46.2	2503
21.9		N4	Crop	2.9	19.0	4200
34.3		N5-N	Pasture	2.7	31.6	3976
60.3		N5-S	Pasture	2.4	57.9	3522
18.5		N7	Crop	3.9	14.6	5725
82.9		Ponessa	Crop	1.6	81.3	2300
69.2		S1	Crop	0.2	69.0	282
30		S2	Crop	0.6	29.4	810
26.4		S3	Crop	0.8	25.6	1144
23.8		S4	Crop	0.5	23.3	679
39.8		S5	Crop	0.1	39.7	203
17.3		S6	Crop	0.4	16.9	605
1096.9				39.0	1057.9	56694.0

Map Unit Name—Custer County Area, Montana
(Diamond J Cattle)



Map Scale: 1:38,500 if printed on A landscape (11" x 8.5") sheet.

N

0 500 1000 2000 3000 Meters

0 1500 3000 6000 9000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

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MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

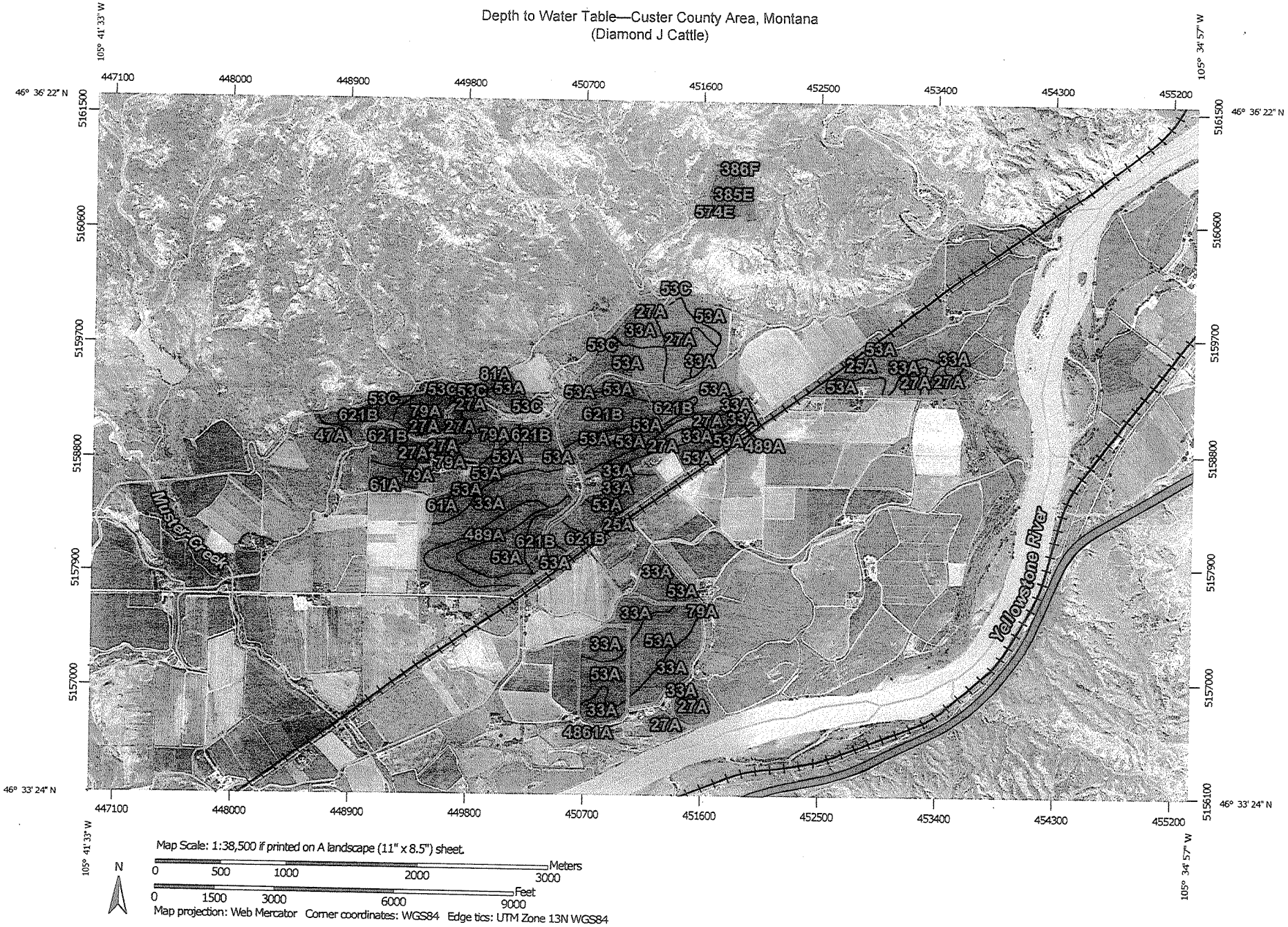
Soil Survey Area: Custer County Area, Montana
Survey Area Data: Version 13, Sep 25, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 16, 2011—Jul 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table—Custer County Area, Montana
(Diamond J Cattle)



Map Scale: 1:38,500 if printed on A landscape (11" x 8.5") sheet.

N

0 500 1000 2000 3000 Meters

0 1500 3000 6000 9000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/8/2015
Page 1 of 4

Depth to Water Table

Depth to Water Table— Summary by Map Unit — Custer County Area, Montana (MT017)				
Map unit symbol	**Map unit name**	**Rating (centimeters)**	**Acres in AOI**	**Percent of AOI**
25A	Marias clay, 0 to 2 percent slopes	>200	36.1	3.1%
27A	Busby fine sandy loam, 0 to 2 percent slopes	>200	127.8	11.1%
33A	Chanta loam, 0 to 2 percent slopes	>200	286.3	24.9%
47A	Harlake silty clay, 0 to 2 percent slopes, rarely flooded	>200	2.8	0.2%
53A	Kobase silty clay loam, 0 to 2 percent slopes	>200	359.2	31.3%
53C	Kobase silty clay loam, 2 to 8 percent slopes	>200	7.9	0.7%
61A	Marias silty clay, 0 to 2 percent slopes	>200	7.3	0.6%
79A	Yamacall loam, 0 to 2 percent slopes	>200	77.7	6.8%
81A	Creed loam, 0 to 2 percent slopes	>200	8.1	0.7%
385E	Delpoint-Yamacall-Cabbart loams, 8 to 25 percent slopes	>200	29.9	2.6%
386F	Cabbart-Rock outcrop-Delpoint complex, 15 to 50 percent slopes	>200	0.5	0.0%
489A	Spinekop silty clay loam, 0 to 2 percent slopes	>200	46.2	4.0%
574E	Lonna-Cambeth-Cabbart silt loams, 12 to 25 percent slopes	>200	0.0	0.0%
621B	Marvan-Vanda silty clays, 0 to 4 percent slopes	>200	159.4	13.9%
4861A	Glendive-Havre silty clay loams, 0 to 2 percent slopes, nonflooded	>200	0.0	0.0%
Totals for Area of Interest			**1,149.2**	**100.0%**

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7033 HIGHWAY 312
BILLINGS MT 59105 5027

NAME : DIAMOND J CATTLE DATE RECEIVED: 02/17/2015 DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268517	S 2		0-6	7.8				H	1.40	2.4	9.0	16		6			
1268518	S 2		6-24								5.1	28					
1268519	S 3		0-6	8.0				H	1.72	2.2	5.0	9		22			
1268520	S 3		6-24								6.3	34					
1268521	S 6		0-6	7.8				H	1.82	2.0	37.2	67		10			
1268522	S 6		6-24								16.1	87					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268517	23	188	3260	514	70	1.1	13.1	1.3	1.0		21.4	100	0	77	20	2	1
1268518	29																
1268519	69	220	3010	586	155	1.3	8.0	7.5	1.0		21.2	100	0	71	23	3	3
1268520	108																
1268521	32	137	2790	501	110	0.9	37.5	1.9	1.5		19.0	100	0	73	22	2	3
1268522	57																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268517																
1268518																
1268519																
1268520																
1268521																
1268522																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268517	S 2														
1268519	S 3														
1268521	S 6														

Analysis By: American Agricultural Lab Recommendations By:American Agricultural Lab

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NAME : DIAMOND J CATTLE

DATE RECEIVED: 02/17/2015

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SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268513	PONESSA	WEST	0-6	7.8				H	1.52	2.8	16.3	29		8			
1268514	PONESSA	WEST	6-24								3.7	20					
1268515	LEASED	WEST	0-6	8.1				H	1.34	1.8	9.5	17		9			
1268516	LEASED	WEST	6-24								5.4	29					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268513	10	264	4290	799	75	0.7	15.6	1.8	1.6		29.1	100	0	74	23	2	1
1268514	15																
1268515	37	189	2730	494	84	1.3	7.5	2.0	0.8		18.6	100	0	73	22	3	2
1268516	98																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268513																
1268514																
1268515																
1268516																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268513	PONESSA	WEST													
1268515	LEASED	WEST													

Analysis By: American Agricultural Lab Recommendations By:American Agricultural Lab

American Agricultural Laboratory, Inc.

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BILLINGS MT 59105 5027

NAME : DIAMOND J CATTLE DATE RECEIVED: 02/17/2015 DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268502	N6		0-6	8.0				H	7.56	3.3	19.0	34		17			
1268503	N6		6-24								1.7	9					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268502	425	238	3410	996	1184	1.2	15.2	1.7	1.6								
1268503	1003																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268502																
1268503																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268502	N6														

Analysis By: American Agricultural Lab Recommendations By:American Agricultural Lab

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SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268496	N1	EAST	0-6	7.9				H	1.80	1.8	13.5	24		5			
1268497	N1	EAST	6-24								3.9	21					
1268498	N3	EAST	0-6	8.1				H	1.90	1.8	10.8	19		6			
1268499	N3	EAST	6-24								4.9	26					
1268500	N4		0-6	8.2				H	1.16	1.9	12.1	22		8			
1268501	N4		6-24								5.4	29					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268496	39	191	3430	653	118	1.2	19.8	2.2	1.8		23.6	100	0	73	23	2	2
1268497	30																
1268498	61	134	2750	434	142	1.3	8.8	1.5	0.7		18.3	100	0	75	20	2	3
1268499	115																
1268500	15	165	3130	727	73	0.6	6.3	1.8	0.9		22.4	100	0	70	27	2	1
1268501	43																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268496																
1268497																
1268498																
1268499																
1268500																
1268501																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268496	N1	EAST													
1268498	N3	EAST													
1268500	N4														

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BILLINGS MT 59105 5027

NAME : DIAMOND J CATTLE DATE RECEIVED: 02/17/2015 DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268492	L5		0-6	8.0				H	2.48	2.3	16.8	30		12			
1268493	L5		6-24								9.5	51					
1268494	L8		0-6	8.2				H	1.68	2.7	7.1	13		10			
1268495	L8		6-24								2.5	14					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268492	104	133	3140	653	244	1.3	17.5	2.1	1.3		22.5	100	0	69	24	2	5
1268493	275																
1268494	54	141	3530	771	289	0.7	18.3	1.3	1.6		25.7	100	0	69	25	1	5
1268495	275																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268492																
1268493																
1268494																
1268495																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268492	L5														
1268494	L8														

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NAME : DIAMOND J CATTLE DATE RECEIVED: 02/17/2015 DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268486	L1		0-6	7.8				H	1.04	1.9	7.5	14		3			
1268487	L1		6-24								2.0	11					
1268488	L2		0-6	8.1				H	1.80	2.3	22.3	40		3			
1268489	L2		6-24								3.7	20					
1268490	L3		0-6	8.1				H	2.14	2.0	25.9	47		9			
1268491	L3		6-24								10.3	56					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268486	7	118	2980	510	71	0.5	10.4	1.2	0.9		19.8	100	0	75	21	2	2
1268487	12																
1268488	44	86	2590	462	86	1.1	8.0	1.1	0.8		17.4	100	0	75	22	1	2
1268489	81																
1268490	77	111	2740	544	168	1.0	21.7	2.9	1.1		19.2	100	0	71	24	1	4
1268491	163																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268486																
1268487																
1268488																
1268489																
1268490																
1268491																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268486	L1														
1268488	L2														
1268490	L3														

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NAME : DIAMOND J CATTLE DATE RECEIVED: 02/17/2015 DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268469	CAP ROCK RANCH	WEST N TILLED	0-6	8.2				H	0.80	1.8	13.2	24		2			
1268470	CAP ROCK RANCH	WEST N TILLED	6-24								4.7	25					
1268471	CAP ROCK RANCH	WEST S TILLED	0-6	8.0				H	0.80	1.7	17.0	31		2			
1268472	CAP ROCK RANCH	WEST S TILLED	6-24								3.3	18					
1268473	CAP ROCK RANCH	WEST HAY	0-6	7.8				H	0.74	2.2	2.3	4		1			
1268474	CAP ROCK RANCH	WEST HAY	6-24								0.7	4					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268469	7	268	2480	369	28	0.3	3.0	1.4	0.6		16.3	100	0	76	19	4	1
1268470	63																
1268471	4	300	2430	342	15	0.2	2.5	1.7	0.5		15.8	100	0	77	18	5	0
1268472	14																
1268473	3	165	2370	238	8	0.5	4.7	1.3	0.6		14.3	100	0	83	14	3	0
1268474	3																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268469																
1268470																
1268471																
1268472																
1268473																
1268474																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268469	CAP ROCK RANCH	WEST N TILLED													
1268471	CAP ROCK RANCH	WEST S TILLED													
1268473	CAP ROCK RANCH	WEST HAY													

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NAME : DIAMOND J CATTLE

DATE RECEIVED: 02/17/2015

DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268465	CAP ROCK RANCH	MID TILLED	0-6	7.8				H	1.00	1.5	13.5	24		2			
1268466	CAP ROCK RANCH	MID TILLED	6-24								4.5	24					
1268467	CAP ROCK RANCH	MID HAY	0-6	7.8				H	0.90	3.3	1.2	2		2			
1268468	CAP ROCK RANCH	MID HAY	6-24								0.5	3					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268465	3	258	2740	399	7	0.2	3.6	2.7	0.4		17.7	100	0	77	19	4	0
1268466	11																
1268467	4	320	2640	348	21	0.4	5.2	1.2	0.6		17.0	100	0	77	17	5	1
1268468	184																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268465																
1268466																
1268467																
1268468																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268465	CAP ROCK RANCH	MID TILLED													
1268467	CAP ROCK RANCH	MID HAY													

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NAME : DIAMOND J CATTLE

DATE RECEIVED: 02/17/2015

DATE REPORTED: 02/19/2015

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH 1 : 1 Soil	pH Buffer Woodruff	LIME REC T/A 60% ECCE Legume	LIME REC T/A 60% ECCE Non Legume	EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA) ppm	NITRATE-N (FIA) lbs/A	PHOSPHORUS P1 ppm	PHOSPHORUS Bicarb ppm	PHOSPHORUS P2 ppm	PHOSPHORUS M2 ppm	PHOSPHORUS M3 ppm
1268459	CAP ROCK RANCH	EAST HAY	0-6	7.9				H	1.06	2.5	1.8	3		1			
1268460	CAP ROCK RANCH	EAST HAY	6-24								1.1	6					
1268461	CAP ROCK RANCH	EAST TILLED	0-6	7.9				H	1.08	2.0	21.6	39		3			
1268462	CAP ROCK RANCH	EAST TILLED	6-24								7.9	43					
1268463	CAP ROCK RANCH	EAST WEEDY	0-6	8.9				H	1.14	1.0	0.9	2		1			
1268464	CAP ROCK RANCH	EAST WEEDY	6-24								5.6	30					

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable) K ppm	NH4OAc (Exchangeable) Ca ppm	NH4OAc (Exchangeable) Mg ppm	NH4OAc (Exchangeable) Na ppm	DTPA Zn ppm	DTPA Fe ppm	DTPA Mn ppm	DTPA Cu ppm	BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION BASE	% SATURATION H	% SATURATION Ca	% SATURATION Mg	% SATURATION K	% SATURATION Na
1268459	18	226	2560	371	45	0.7	10.3	1.7	1.0		16.7	100	0	77	19	3	1
1268460	19																
1268461	5	285	2640	410	15	0.3	4.8	1.9	0.7		17.4	100	0	76	20	4	0
1268462	17																
1268463	30	150	1940	687	242	0.1	3.9	0.6	0.6		16.9	100	0	58	34	2	6
1268464	5																

LAB NUMBER	SOLUBLE (SAT. EXT.) Ca me/L	SOLUBLE (SAT. EXT.) Mg me/L	SOLUBLE (SAT. EXT.) Na me/L	SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS SAND %	PARTICLE SIZE ANALYSIS SILT %	PARTICLE SIZE ANALYSIS CLAY %	PARTICLE SIZE ANALYSIS SOIL TEXTURE	CHLORIDE ppm	CHLORIDE lbs/A	EXCH. NH4-N ppm	EXCH. NH4-N lbs/A	ALUMINUM ppm	TOTAL N %
1268459																
1268460																
1268461																
1268462																
1268463																
1268464																

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N lbs/A	P2O5 lbs/A	K2O lbs/A	S lbs/A	Zn lbs/A	MgO lbs/A	Fe lbs/A	Mn lbs/A	Cu lbs/A	B lbs/A	Cl lbs/A
1268459	CAP ROCK RANCH	EAST HAY													
1268461	CAP ROCK RANCH	EAST TILLED													
1268463	CAP ROCK RANCH	EAST WEEDY													

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Lab No.: 5779

LABORATORY ANALYSIS REPORT

Report Date: 09/29/2015 05:23 pm

Send To: 33225 **Bill To:** 33226	FARMERS ELEVATOR 3RD & ATLANTIC PO BOX 1440 MILES CITY, MT 59301	Hans Burken Agronomist
Results For:	DIAMOND J	**Received:** 09/25/2015
Sample ID:	LOT	**Invoice No:** 963855

		Analysis (as rec'd)	Total content, lbs per ton (as rec'd)	Estimated available first year*, lbs per ton (as rec'd)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	2.224	44.5	19.4
Organic Nitrogen	%	2.20	44.0	18.9
Ammonium Nitrogen	%	0.012	0.2	0.2
Nitrate Nitrogen	%	0.014	0.3	0.3
Major and Secondary Nutrients				
Phosphorus	%	0.541		
Phosphorus as P2O5	%	1.243	24.9	22.4
Potassium	%	1.802		
Potassium as K2O	%	2.158	43.2	43.2
Sulfur	%	0.313	6.3	2.7
Calcium	%	2.245	44.9	44.9
Magnesium	%	0.961		
Magnesium as MgO	%	1.599	32.0	32.0
Sodium	%	0.313	6.3	6.3
Micronutrients				
Zinc	mg/kg	276	0.6	0.3
Iron	mg/kg	8969	17.9	9.0
Manganese	mg/kg	384	0.8	0.4
Copper	mg/kg	57	0.1	0.1
Boron	mg/kg	32	<0.1	<0.1
OTHER PROPERTIES				
Moisture	%	6.40		
Solids	%	93.6	1872	
Organic Matter	%	43.4	868	
Ash	%	50.2	1004	
C:N Ratio	ratio	11.3		
Electrical Conductivity	mmho/cm	3.24		
pH	units	8.13		

* Assumes 43% of organic nitrogen available during first crop year after application. Assumes 100% of ammonium and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

The sample was received and analyzed outside the regulatory holding time for this analyte.

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www.servitechlabs.com

Phone: 402.463.3522
800.557.7509
Fax: 402.463.8132

Lab No.: 5779

LABORATORY ANALYSIS REPORT

Report Date: 09/29/2015 05:23 pm

Send To: 33225
Bill To: 33226

FARMERS ELEVATOR
3RD & ATLANTIC
PO BOX 1440
MILES CITY, MT 59301

Hans Burken
Agronomist

Results For: DIAMOND J
Sample ID: LOT

Received: 09/25/2015
Invoice No: 963855

Nitrogen Based Application Rate*

Material applied during: **Warm, Wet Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
4 days later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.8	10.4	12.9	600	1,200	1,700	2,300	2,900

Material applied during: **Warm, Dry Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.2	7.8	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.2	7.8	10.4	12.9	600	1,200	1,700	2,300	2,900
4 days later	2.6	5.2	7.8	10.4	13.0	600	1,200	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.8	10.4	13.0	600	1,200	1,700	2,300	2,900

Material applied during: **Cool, Wet Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.1	7.7	10.3	12.8	600	1,100	1,700	2,300	2,900
4 days later	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900

Select the table with weather conditions closest to those at waste application time. Select the application method and the desired plant available nitrogen rate. Find the waste application rate as either "tons solid waste per acre" or "gallons liquid waste per acre". Assumes density of 9 pounds per gallon.

A portion of the ammonia-nitrogen found in waste materials may be lost by volatilization during and after application. Volatilization losses increase with time, higher temperature, wind, and low humidity. Losses increase with longer delays between surface application (broadcast) and soil incorporation. First-year nitrogen availability based on C:N ratio. Reference: Agricultural Waste Management Field Handbook, Part 651, USDA-Soil Conservation Service, Chap. 11: "Waste Utilization", 1992 and Vigil & Kissel, Soil Sci. Soc. Amer. Proc. 55:757-761, 1991.

* Assumes 43% of organic nitrogen available during first crop year after application. Assumes 100% of ammonia and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

Servi-Tech Laboratories

1602 Park West Dr. • PO Box 169 • Hastings, NE 68902
www.servitechlabs.com

Phone: 402.463.3522
800.557.7509
Fax: 402.463.8132

Lab No.: 5779

LABORATORY ANALYSIS REPORT

Report Date: 09/29/2015 05:23 pm

Send To: 33225
Bill To: 33226

FARMERS ELEVATOR
3RD & ATLANTIC
PO BOX 1440
MILES CITY, MT 59301

Hans Burken
Agronomist

Results For: DIAMOND J
Sample ID: LOT

Received: 09/25/2015
Invoice No: 963855

Phosphorus Based Application Rate

Target phosphorus rate, based on est. available P as pounds P_2O_5 per acre	Recomended application rate		Other available nutrients applied at this application rate*						
	tons/acre	gal/acre	K_2O	S	Zn	Fe	Mn	Cu	B
			pounds per acre						
10	0.4	100	19	1	0.1	4.0	0.2	0.0	
20	0.9	200	39	2	0.2	8.0	0.3	0.1	
30	1.3	300	58	4	0.4	12.1	0.5	0.1	
40	1.8	400	77	5	0.5	16.1	0.7	0.1	
50	2.2	500	97	6	0.6	20.1	0.9	0.1	
60	2.7	600	116	7	0.7	24.1	1.0	0.2	
70	3.1	700	135	8	0.9	28.1	1.2	0.2	
80	3.6	800	155	10	1.0	32.2	1.4	0.2	
90	4.0	900	174	11	1.1	36.2	1.5	0.2	
100	4.5	1,000	194	12	1.2	40.2	1.7	0.3	

* The amount of plant available nitrogen depends on the application method and the weather conditions during application. To determine the amount of plant available nitrogen, select the target phosphorus rate and identify the recommended waste application rate. Choose the proper weather condition table on the "Nitrogen Based Application" page and the proper line for application method. Identify the closest waste application rate on this line. The plant available nitrogen rate will be found directly above.

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Lab No.: 5779

LABORATORY ANALYSIS REPORT

Report Date: 09/29/2015 05:23 pm

Send To: 33225 **Bill To:** 33226	FARMERS ELEVATOR 3RD & ATLANTIC PO BOX 1440 MILES CITY, MT 59301	Hans Burken Agronomist
Results For: **Sample ID:**	DIAMOND J LOT	**Received:** 09/25/2015 **Invoice No:** 963855

Salinity Based Application Rate

Precipitation plus irrigation, inches per year	Soil texture: Fine	Medium	Coarse	Fine	Medium	Coarse
	Maximum recomenmended annual application rate: tons solid waste per acre			gallons liquid waste per acre		
14	2.8	3.2	4.3	600	700	900
16	3.2	3.6	4.9	700	800	1,100
18	3.5	4.1	5.5	800	900	1,200
20	3.9	4.5	6.1	900	1,000	1,400
22	4.3	5.0	6.7	1,000	1,100	1,500
24	4.7	5.4	7.3	1,100	1,200	1,600
26	5.1	5.9	7.9	1,100	1,300	1,800
28	5.5	6.3	8.5	1,200	1,400	1,900
30	5.9	6.8	9.2	1,300	1,500	2,000
32	6.3	7.2	9.8	1,400	1,600	2,200
34	6.7	7.7	10.4	1,500	1,700	2,300
36	7.1	8.1	11.0	1,600	1,800	2,400
38	7.5	8.6	11.6	1,700	1,900	2,600
40	7.9	9.0	12.2	1,800	2,000	2,700

The maximum rates are recommended to prevent buildup of the dissolved salts in soils and keep the soil ECe at or below 4 mmho/cm. Determine the average annual precipitation plus irrigation in inches. Identify the soil texture of the field receiving manure. Determine the maximum annual manure application rate in "tons per acre" or "gallons per acre".

Reference: Guidelines for Applying Beef Feedlot Manure to Fields, Pub. C-502, Kansas State Univ., 1974.

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LABORATORY ANALYSIS REPORT

Report Date: 09/29/2015 05:23 pm

Send To: 33225 Bill To: 33226	FARMERS ELEVATOR 3RD & ATLANTIC PO BOX 1440 MILES CITY, MT 59301	Hans Burken Agronomist
Results For: Sample ID:	DIAMOND J LOT	Received: 09/25/2015 Invoice No: 963855

		Analysis (as rec'd)	Total content, lbs per ton (as rec'd)	Estimated available first year*, lbs per ton (as rec'd)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	2.224	44.5	19.4
Organic Nitrogen	%	2.20	44.0	18.9
Ammonium Nitrogen	%	0.012	0.2	0.2
Nitrate Nitrogen	%	0.014	0.3	0.3
Major and Secondary Nutrients				
Phosphorus	%	0.541		
Phosphorus as P2O5	%	1.243	24.9	22.4
Potassium	%	1.802		
Potassium as K2O	%	2.158	43.2	43.2
Sulfur	%	0.313	6.3	2.7
Calcium	%	2.245	44.9	44.9
Magnesium	%	0.961		
Magnesium as MgO	%	1.599	32.0	32.0
Sodium	%	0.313	6.3	6.3
Micronutrients				
Zinc	mg/kg	276	0.6	0.3
Iron	mg/kg	8969	17.9	9.0
Manganese	mg/kg	384	0.8	0.4
Copper	mg/kg	57	0.1	0.1
Boron	mg/kg	32	<0.1	<0.1
OTHER PROPERTIES				
Moisture	%	6.40		
Solids	%	93.6	1872	
Organic Matter	%	43.4	868	
Ash	%	50.2	1004	
C:N Ratio	ratio	11.3		
Electrical Conductivity	mmho/cm	3.24		
pH	units	8.13		

* Assumes 43% of organic nitrogen available during first crop year after application. Assumes 100% of ammonium and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

The sample was received and analyzed outside the regulatory holding time for this analyte.

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PO BOX 1440
MILES CITY, MT 59301

Hans Burken
Agronomist

Results For: DIAMOND J
Sample ID: LOT

Received: 09/25/2015
Invoice No: 963855

Nitrogen Based Application Rate*

Material applied during: **Warm, Wet Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
4 days later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.8	10.4	12.9	600	1,200	1,700	2,300	2,900

Material applied during: **Warm, Dry Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.2	7.8	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.2	7.8	10.4	12.9	600	1,200	1,700	2,300	2,900
4 days later	2.6	5.2	7.8	10.4	13.0	600	1,200	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.8	10.4	13.0	600	1,200	1,700	2,300	2,900

Material applied during: **Cool, Wet Weather**	Desired plant available nitrogen rate (first year after application) as pounds N per acre									
	50	100	150	200	250	50	100	150	200	250
Application Method:	tons solid waste per acre					gallons liquid waste per acre				
Injected	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Sprinkled	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
Broadcast and incorporated										
1 day later	2.6	5.1	7.7	10.3	12.8	600	1,100	1,700	2,300	2,900
4 days later	2.6	5.1	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900
7 or more days later	2.6	5.2	7.7	10.3	12.9	600	1,100	1,700	2,300	2,900

Select the table with weather conditions closest to those at waste application time. Select the application method and the desired plant available nitrogen rate. Find the waste application rate as either "tons solid waste per acre" or "gallons liquid waste per acre". Assumes density of 9 pounds per gallon.

A portion of the ammonia-nitrogen found in waste materials may be lost by volatilization during and after application. Volatilization losses increase with time, higher temperature, wind, and low humidity. Losses increase with longer delays between surface application (broadcast) and soil incorporation. First-year nitrogen availability based on C:N ratio. Reference: Agricultural Waste Management Field Handbook, Part 651, USDA-Soil Conservation Service, Chap. 11: "Waste Utilization", 1992 and Vigil & Kissel, Soil Sci. Soc. Amer. Proc. 55:757-761, 1991.

* Assumes 43% of organic nitrogen available during first crop year after application. Assumes 100% of ammonia and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

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FARMERS ELEVATOR
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PO BOX 1440
MILES CITY, MT 59301

Hans Burken
Agronomist

Results For: DIAMOND J
Sample ID: LOT

Received: 09/25/2015
Invoice No: 963855

Phosphorus Based Application Rate

Target phosphorus rate, based on est. available P as pounds P_2O_5 per acre	Recomended application rate		Other available nutrients applied at this application rate*						
	tons/acre	gal/acre	K_2O	S	Zn	Fe	Mn	Cu	B
			pounds per acre						
10	0.4	100	19	1	0.1	4.0	0.2	0.0	
20	0.9	200	39	2	0.2	8.0	0.3	0.1	
30	1.3	300	58	4	0.4	12.1	0.5	0.1	
40	1.8	400	77	5	0.5	16.1	0.7	0.1	
50	2.2	500	97	6	0.6	20.1	0.9	0.1	
60	2.7	600	116	7	0.7	24.1	1.0	0.2	
70	3.1	700	135	8	0.9	28.1	1.2	0.2	
80	3.6	800	155	10	1.0	32.2	1.4	0.2	
90	4.0	900	174	11	1.1	36.2	1.5	0.2	
100	4.5	1,000	194	12	1.2	40.2	1.7	0.3	

* The amount of plant available nitrogen depends on the application method and the weather conditions during application. To determine the amount of plant available nitrogen, select the target phosphorus rate and identify the recommended waste application rate. Choose the proper weather condition table on the "Nitrogen Based Application" page and the proper line for application method. Identify the closest waste application rate on this line. The plant available nitrogen rate will be found directly above.

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PO BOX 1440
MILES CITY, MT 59301

Hans Burken
Agronomist

Results For: DIAMOND J
Sample ID: LOT

Received: 09/25/2015
Invoice No: 963855

Salinity Based Application Rate

Precipitation plus irrigation, inches per year	Soil texture: Fine	Medium	Coarse	Fine	Medium	Coarse
	Maximum recomenmended annual application rate: tons solid waste per acre			gallons liquid waste per acre		
14	2.8	3.2	4.3	600	700	900
16	3.2	3.6	4.9	700	800	1,100
18	3.5	4.1	5.5	800	900	1,200
20	3.9	4.5	6.1	900	1,000	1,400
22	4.3	5.0	6.7	1,000	1,100	1,500
24	4.7	5.4	7.3	1,100	1,200	1,600
26	5.1	5.9	7.9	1,100	1,300	1,800
28	5.5	6.3	8.5	1,200	1,400	1,900
30	5.9	6.8	9.2	1,300	1,500	2,000
32	6.3	7.2	9.8	1,400	1,600	2,200
34	6.7	7.7	10.4	1,500	1,700	2,300
36	7.1	8.1	11.0	1,600	1,800	2,400
38	7.5	8.6	11.6	1,700	1,900	2,600
40	7.9	9.0	12.2	1,800	2,000	2,700

The maximum rates are recommended to prevent buildup of the dissolved salts in soils and keep the soil ECe at or below 4 mmho/cm. Determine the average annual precipitation plus irrigation in inches. Identify the soil texture of the field receiving manure. Determine the maximum annual manure application rate in "tons per acre" or "gallons per acre".

Reference: Guidelines for Applying Beef Feedlot Manure to Fields, Pub. C-502, Kansas State Univ., 1974.

Manure Management Plan Data

Operation: Diamond J Cattle
Plan File: Peila.mmp
Plan Folder: C:\Home\Rusty.Irion\Diamond J Cattle Feedlot

County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
Soils File Rev: 3/26/2015

GENERAL

Operation	Diamond J Cattle				
Address	PO Box 520				
Town	Miles City	**State**	MT	**Zip Code**	59301
Contact	John or Tara Peila				
Office Phone	406-234-1504	**Home Phone**			
E-Mail Address	taraleapeila@hotmail.com				
Notes					
County	Custer				
Starting Year	2015	**Starting Month**	April	**Years In Plan**	5
Setbacks	NRCS Standard				

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Manure Management Plan Data

Operation: Diamond J Cattle
Plan File: Peila.mmp
Plan Folder: C:\Home\Rusty.Irion\Diamond J Cattle Feedlot

County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
Soils File Rev: 3/26/2015

FIELDS

Field ID	Subfield ID	Total Size (Acres)	Spread-able Size (Acres)	Storage Distance (Miles)	County (If Different From Operation's County)	Predominant Soil Type (Name, Texture, Survey Area ID, Map Symbol, Slope Range)	Slope % (If Not Ave.)	Irri-gated With Water	Is Not Owned	Farm ID	FSA Farm	FSA Tract	FSA Field	Notes
H1		9.6	9.1	2.5	Custer	Busby FSL (017 27A 0-2%)		X						
L1		14.2	12.1	3.5	Custer	Marvan SIC (017 621B 0-4%)		X						
L2		48	44.2	3.5	Custer	Yamacall L (017 79A 0-2%)		X						
L3		37.3	36	3.5	Custer	Yamacall L (017 79A 0-2%)		X						
L4		5.3	5.1	3.5	Custer	Busby FSL (017 27A 0-2%)		X						
L5		28.8	27.2	3.5	Custer	Yamacall L (017 79A 0-2%)		X						
L6		8	7.4	3.5	Custer	Marvan SIC (017 621B 0-4%)		X						
L7		10.3	10	3.5	Custer	Yamacall L (017 79A 0-2%)		X						
L8		155.2	154	3	Custer	Kobase SICL (017 53A 0-2%)		X						
M1		31.7	30.2	1.25	Custer	Chanta L (017 33A 0-2%)		X						
M2		18.6	17.4	1.25	Custer	Chanta L (017 33A 0-2%)		X						
N1-EAST		40.4	38.9	1.75	Custer	Kobase SICL (017 53A 0-2%)		X						
N1-WEST		20.9	20	1.75	Custer	Marvan SIC (017 621B 0-4%)		X						
N2-MID		9.9	9.9	1.75	Custer	Kobase SICL (017 53A 0-2%)		X						
N2-NORTH		69.4	66.3	2	Custer	Marvan SIC (017 621B 0-4%)		X						

Manure Management Plan Data

Operation: Diamond J Cattle
Plan File: Peila.mmp
Plan Folder: C:\Home\Rusty.Irion\Diamond J Cattle Feedlot

County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
Soils File Rev: 3/26/2015

Field ID	Subfield ID	Total Size (Acres)	Spread-able Size (Acres)	Storage Distance (Miles)	County (If Different From Operation's County)	Predominant Soil Type (Name, Texture, Survey Area ID, Map Symbol, Slope Range)	Slope % (If Not Ave.)	Irri-gated With Water	Is Not Owned	Farm ID	FSA Farm	FSA Tract	FSA Field	Notes
N2-SOUTH		33.9	33.7	1.75	Custer	Kobase SICL (017 53A 0-2%)		X						
N3-EAST		83.1	82	0.75	Custer	Busby FSL (017 27A 0-2%)		X						
N3-WEST		47.9	46.2	0.75	Custer	Kobase SICL (017 53A 0-2%)		X						
N4		21.9	19	3.5	Custer	Kobase SICL (017 53A 0-2%)		X						
N5-NORTH		34.3	31.6	3.5	Custer	Marvan SIC (017 621B 0-4%)		X						
N5-SOUTH		60.3	57.9	3.5	Custer	Chanta L (017 33A 0-2%)		X						
N7		18.5	14.6	0.75	Custer	Chanta L (017 33A 0-2%)		X						
PONESSA		82.9	81.3	1.25	Custer	Marias C (017 25A 0-2%)		X						
S1		69.2	69	3	Custer	Kobase SICL (017 53A 0-2%)		X						
S2		30	29.4	3	Custer	Kobase SICL (017 53A 0-2%)		X						
S3		26.4	25.6	3	Custer	Chanta L (017 33A 0-2%)		X						
S4		23.8	23.3	3	Custer	Chanta L (017 33A 0-2%)		X						
S5		39.8	39.7	3	Custer	Kobase SICL (017 53A 0-2%)		X						
S6		17.3	16.9	3	Custer	Busby FSL (017 27A 0-2%)		X						

Manure Management Plan Data

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County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
Soils File Rev: 3/26/2015

ASSESSMENT, All States

Field ID	Subfield ID	Distance To Water (Feet)	Type Of Water	Slope Length (Feet)	Runoff Reduction Practice	Buffer Width (Feet)	Type Of Artificial Drainage	Manure Applied Annually	Will Not Receive Manure	Water Erosion (T/A/Yr)	Wind Erosion (T/A/Yr)	Irrigation Erosion (T/A/Yr)	Gully Erosion (T/A/Yr)	Ephem. Erosion (T/A/Yr)	P Index Or Risk Index	Notes
H1		100	Perennial stream		☐	30		X	☐							
L1		30	Irrigation delivery ditch		☐	30		X	☐							
L2		30	Irrigation delivery ditch		☐	30		X	☐							
L3		30	Irrigation delivery ditch		☐	30		X	☐							
L4		30	Irrigation delivery ditch		☐	30		X	☐							
L5		30	Irrigation delivery ditch		☐	30		X	☐							
L6		30	Irrigation delivery ditch		☐	30		X	☐							
L7		30	Irrigation delivery ditch		☐	30		X	☐							
L8		30	Irrigation delivery ditch		☐	30		X	☐							
M1		30	Irrigation delivery ditch		☐	30		X	☐							
M2		30	Irrigation delivery ditch		☐	30		X	☐							
N1-EAST		30	Irrigation delivery ditch		☐	30		X	☐							
N1-WEST		30	Irrigation delivery ditch		☐	30		X	☐							
N2-MID		250	Irrigation delivery ditch		☐			X	☐							
N2-NORTH		30	Irrigation delivery ditch		☐	30		X	☐							

Manure Management Plan Data

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County: Custer
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Field ID	Subfield ID	Distance To Water (Feet)	Type Of Water	Slope Length (Feet)	Runoff Reduct-ion Practice	Buffer Width (Feet)	Type Of Artificial Drainage	Manure Applied Annual-ly	Will Not Receive Manure	Water Erosion (T/A/Yr)	Wind Erosion (T/A/Yr)	Irrigation Erosion (T/A/Yr)	Gully Erosion (T/A/Yr)	Ephem. Erosion (T/A/Yr)	P Index Or Risk Index	Notes
N2-SOUTH		30	Irrigation delivery ditch		☐	30		X	☐							
N3-EAST		30	Irrigation delivery ditch		☐	30		X	☐							
N3-WEST		30	Irrigation delivery ditch		☐	30		X	☐							
N4		30	Irrigation delivery ditch		☐	30		X	☐							
N5-NORTH		30	Irrigation delivery ditch		☐	30		X	☐							
N5-SOUTH		30	Irrigation delivery ditch		☐	30		X	☐							
N7		30	Irrigation delivery ditch		☐	30		X	☐							
PONESSA		30	Irrigation delivery ditch		☐	30		X	☐							
S1		600	Perennial stream		☐	30		X	☐							
S2		30	Irrigation delivery ditch		☐	30		X	☐							
S3		30	Irrigation delivery ditch		☐	30		X	☐							
S4		30	Irrigation delivery ditch		☐	30		X	☐							
S5		650	Perennial stream		☐	30		X	☐							
S6		100	Perennial stream		☐	30		X	☐							

ASSESSMENT, State-Specific

Field ID	Subfield ID	Sprinkler Irrigation Spray Type	Furrow Irr. Rate (gal/min/ furrow)	Furrow Irr. Tailwater Recovery	Grassed Waterways in Conc. Flow
H1					
L1					
L2					
L3					
L4					
L5					
L6					
L7					
L8		Low spray			
M1					
M2					
N1-EAST					
N1-WEST					
N2-MID					
N2-NORTH					

Manure Management Plan Data

Operation: Diamond J Cattle
Plan File: Peila.mmp
Plan Folder: C:\Home\Rusty.Irion\Diamond J Cattle Feedlot

County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
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Field ID	Subfield ID	Sprinkler Irrigation Spray Type	Furrow Irr. Rate (gal/min/ furrow)	Furrow Irr. Tailwater Recovery	Grassed Waterways in Conc. Flow
N2-SOUTH					
N3-EAST		Low spray			
N3-WEST					
N4					
N5-NORTH					
N5-SOUTH					
N7					
PONESSA					
S1					
S2					
S3					
S4					
S5					
S6		Low spray			

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SOIL TESTS

Field ID	Subfield ID	Test Year	OM (%)	P	P Test Used	K	Mg	Ca	Na	Al	Levels Are In Lb/A	Soil pH	Buffer pH	Esti-mated CEC	CEC	NO_3-N (ppm)	EC (mmhos /cm)	SO_4-S (ppm)	Notes
H1											☐								
L1		2015	1.9	3	Olsen	118	510	2,980	71		☐	7.8			19.8	9.5			
L2		2015	2.3	3	Olsen	86	462	2,590	86		☐	8.1			17.4	26			
L3		2015	2	9	Olsen	111	544	2,740	168		☐	8.1			19.2	36.2			
L4											☐								
L5		2015	2.3	12	Olsen	133	653	3,140	244		☐	8			22.5	26.3			
L6											☐								
L7											☐								
L8		2015	2.7	10	Olsen	141	771	3,530	289		☐	8.2			25.7	9.6			
M1		2015	1.8	9	Olsen	189	494	2,730	84		☐	8.1			18.6	14.9			
M2											☐								
N1-EAST		2015	1.8	5	Olsen	191	653	3,430	118		☐	7.9			23.6	17.4			
N1-WEST											☐								
N2-MID											☐								
N2-NORTH											☐								

Manure Management Plan Data

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Field ID	Subfield ID	Test Year	OM (%)	P	P Test Used	K	Mg	Ca	Na	Al	Levels Are In Lb/A	Soil pH	Buffer pH	Esti-mated CEC	CEC	NO_3-N (ppm)	EC (mmhos /cm)	SO_4-S (ppm)	Notes
N2-SOUTH											☐								
N3-EAST		2015	1.8	6	Olsen	134	434	2,750	142		☐	8.1			18.3	15.7			
N3-WEST											☐								
N4		2015	1.9	8	Olsen	165	727	3,130	73		☐	8.2			22.4	17.5			
N5-NORTH											☐								
N5-SOUTH											☐								
N7											☐								
PONESSA		2015	2.8	8	Olsen	264	799	4,290	75		☐	7.8			29.1	20			
S1											☐								
S2		2015	2.4	6	Olsen	188	514	3,260	70		☐	7.8			21.4	14.1			
S3		2015	2.2	22	Olsen	220	586	3,010	155		☐	8			21.2	11.3			
S4											☐								
S5											☐								
S6		2015	2	10	Olsen	137	501	2,790	110		☐	7.8			19	53.3			

Manure Management Plan Data

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State: Montana

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CROPS

Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
H1		2015	Grass	2	Ton								
H1		2016	Grass	2	Ton								
H1		2017	Grass	2	Ton								
H1		2018	Grass	2	Ton								
H1		2019	Grass	2	Ton								
L1		2015	Corn, grain	200	Bu		165	85	95	275	120	100	Fehringer
L1		2016	Corn, grain	200	Bu		165	85	95				
L1		2017	Corn, grain	200	Bu		165	85	95				
L1		2018	Corn, grain	200	Bu		165	85	95				
L1		2019	Corn, grain	200	Bu		165	85	95				
L2		2015	Corn, grain	200	Bu		30	85	105	275	120	100	Fehringer
L2		2016	Corn, grain	200	Bu		30	85	105				
L2		2017	Corn, grain	200	Bu		30	85	105				
L2		2018	Corn, grain	200	Bu		30	85	105				
L2		2019	Corn, grain	200	Bu		30	85	105				

Manure Management Plan Data

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
L3		2015	Corn, grain	200	Bu		0	55	95	230	100	100	Fehringer
L3		2016	Corn, grain	200	Bu		0	55	95				
L3		2017	Corn, grain	200	Bu		0	55	95				
L3		2018	Corn, grain	200	Bu		0	55	95				
L3		2019	Corn, grain	200	Bu		0	55	95				
L4		2015	Alfalfa	6	Ton		0			20	40	100	Fehringer
L4		2016	Alfalfa	6	Ton		0						
L4		2017	Alfalfa	6	Ton		0						
L4		2018	Alfalfa	6	Ton		0						
L4		2019	Alfalfa	6	Ton		0						
L5		2015	Corn, grain	200	Bu		30	40	85	230	100	100	Fehringer
L5		2016	Corn, grain	200	Bu		30	40	85				
L5		2017	Corn, grain	200	Bu		30	40	85				
L5		2018	Corn, grain	200	Bu		30	40	85				
L5		2019	Corn, grain	200	Bu		30	40	85				

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
L6		2015	Alfalfa	6	Ton		0			20	40	100	Fehringer
L6		2016	Alfalfa	6	Ton		0						
L6		2017	Alfalfa	6	Ton		0						
L6		2018	Alfalfa	6	Ton		0						
L6		2019	Alfalfa	6	Ton		0						
L7		2015	Alfalfa/grass	4	Ton					20	40	100	Fehringer
L7		2016	Grass	4	Ton								
L7		2017	Grass	4	Ton								
L7		2018	Grass	4	Ton								
L7		2019	Grass	4	Ton								
L8		2015	Alfalfa	5	Ton		0	60	145	20	40	100	Fehringer
L8		2016	Grass	4	Ton		0	25	50				
L8		2017	Grass	4	Ton		25	25	50				
L8		2018	Grass	4	Ton		25	25	50				
L8		2019	Grass	4	Ton		25	25	50				

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
M1		2015	Corn, silage	32	Ton		170	45	65	245	120	100	Fehringer
M1		2016	Corn, silage	32	Ton		170	45	65				
M1		2017	Corn, silage	32	Ton		170	45	65				
M1		2018	Corn, silage	32	Ton		170	45	65				
M1		2019	Corn, silage	32	Ton		170	45	65				
M2		2015	Corn, silage	32	Ton					245	120	100	Fehringer
M2		2016	Corn, silage	32	Ton								
M2		2017	Corn, silage	32	Ton								
M2		2018	Corn, silage	32	Ton								
M2		2019	Corn, silage	32	Ton								
N1-EAST		2015	Corn, silage	32	Ton		150	60	65	245	120	100	Fehringer
N1-EAST		2016	Corn, silage	32	Ton		150	60	65				
N1-EAST		2017	Corn, silage	32	Ton		150	60	65				
N1-EAST		2018	Corn, silage	32	Ton		150	60	65				
N1-EAST		2019	Corn, silage	32	Ton		150	60	65				

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
N1-WEST		2015	Barley, hay	2	Ton					0	0	0	Fehringer
N1-WEST		2016	Grass	2	Ton								
N1-WEST		2017	Grass	2	Ton								
N1-WEST		2018	Grass	2	Ton								
N1-WEST		2019	Grass	2	Ton								
N2-MID		2015	Grass	2	Ton								
N2-MID		2016	Grass	2	Ton								
N2-MID		2017	Grass	2	Ton								
N2-MID		2018	Grass	2	Ton								
N2-MID		2019	Grass	2	Ton								
N2-NORTH		2015	Grass	2	Ton								
N2-NORTH		2016	Grass	2	Ton								
N2-NORTH		2017	Grass	2	Ton								
N2-NORTH		2018	Grass	2	Ton								
N2-NORTH		2019	Grass	2	Ton								

Manure Management Plan Data

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
N2-SOUTH		2015	Alfalfa	6	Ton		0			20	40	100	Fehringer
N2-SOUTH		2016	Alfalfa	6	Ton		0						
N2-SOUTH		2017	Alfalfa	6	Ton		0						
N2-SOUTH		2018	Alfalfa	6	Ton		0						
N2-SOUTH		2019	Alfalfa	6	Ton		0						
N3-EAST		2015	Corn, silage	32	Ton		160	60	95	245	120	100	Fehringer
N3-EAST		2016	Corn, silage	32	Ton		160	60	95				
N3-EAST		2017	Corn, silage	32	Ton		160	60	95				
N3-EAST		2018	Corn, silage	32	Ton		160	60	95				
N3-EAST		2019	Corn, silage	32	Ton		160	60	95				
N3-WEST		2015	Grass	3	Ton					100	50	40	Fehringer
N3-WEST		2016	Grass	3	Ton								
N3-WEST		2017	Grass	3	Ton								
N3-WEST		2018	Grass	3	Ton								
N3-WEST		2019	Grass	3	Ton								

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
N4		2015	Corn, silage	32	Ton		150	50	80	230	100	100	Fehringer
N4		2016	Corn, silage	32	Ton		150	50	80				
N4		2017	Corn, silage	32	Ton		150	50	80				
N4		2018	Corn, silage	32	Ton		150	50	80				
N4		2019	Corn, silage	32	Ton		150	50	80				
N5-NORTH		2015	Grass	2	Ton					0	0	0	Fehringer
N5-NORTH		2016	Grass	2	Ton								
N5-NORTH		2017	Grass	2	Ton								
N5-NORTH		2018	Grass	2	Ton								
N5-NORTH		2019	Grass	2	Ton								
N5-SOUTH		2015	Grass	4	Ton					100	50	40	Fehringer
N5-SOUTH		2016	Grass	2	Ton								
N5-SOUTH		2017	Grass	2	Ton								
N5-SOUTH		2018	Grass	2	Ton								
N5-SOUTH		2019	Grass	2	Ton								

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
N7		2015	Alfalfa/grass	2	Ton					0	0	0	Fehringer
N7		2016	Barley, hay	4	Ton								
N7		2017	Corn, silage	32	Ton								
N7		2018	Corn, silage	32	Ton								
N7		2019	Corn, silage	32	Ton								
PONESSA		2015	Alfalfa	6	Ton		0	75	30	20	80	80	Fehringer
PONESSA		2016	Alfalfa	6	Ton		0	75	30				
PONESSA		2017	Alfalfa	6	Ton		0	75	30				
PONESSA		2018	Alfalfa	6	Ton		0	75	30				
PONESSA		2019	Alfalfa	6	Ton		0	75	30				
S1		2015	Corn, silage	32	Ton					230	100	100	Fehringer
S1		2016	Corn, silage	32	Ton								
S1		2017	Corn, silage	32	Ton								
S1		2018	Corn, silage	32	Ton								
S1		2019	Corn, silage	32	Ton								

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
S2		2015	Corn, silage	32	Ton		175	60	65	230	100	100	Fehringer
S2		2016	Corn, silage	32	Ton		175	60	65				
S2		2017	Corn, silage	32	Ton		175	60	65				
S2		2018	Corn, silage	32	Ton		175	60	65				
S2		2019	Corn, silage	32	Ton		175	60	65				
S3		2015	Corn, silage	32	Ton		200	25	50	230	100	100	Fehringer
S3		2016	Corn, silage	32	Ton		200	25	50				
S3		2017	Corn, silage	32	Ton		200	25	50				
S3		2018	Corn, silage	32	Ton		200	25	50				
S3		2019	Corn, silage	32	Ton		200	25	50				
S4		2015	Alfalfa	6	Ton		0			20	80	80	Fehringer
S4		2016	Alfalfa	6	Ton		0						
S4		2017	Alfalfa	6	Ton		0						
S4		2018	Alfalfa	6	Ton		0						
S4		2019	Alfalfa	6	Ton		0						

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Field ID	Subfield ID	Crop Year	Planned Crop	Yield Goal (/Acre)	Yield Units	Legume % Stand	Default N Rec (Lb/A)	Default P_2O_5 Rec (Lb/A)	Default K_2O Rec (Lb/A)	Custom N Rec (Lb/A)	Custom P_2O_5 Rec (Lb/A)	Custom K_2O Rec (Lb/A)	Source Of Custom Fertilizer Recommendations
S5		2015	Alfalfa	6	Ton		0			20	80	80	Fehringer
S5		2016	Alfalfa	6	Ton		0						
S5		2017	Alfalfa	6	Ton		0						
S5		2018	Alfalfa	6	Ton		0						
S5		2019	Alfalfa	6	Ton		0						
S6		2015	Corn, silage	32	Ton		0	45	90	175	100	100	Fehringer
S6		2016	Corn, silage	32	Ton		0	45	90				
S6		2017	Corn, silage	32	Ton		0	45	90				
S6		2018	Corn, silage	32	Ton		0	45	90				
S6		2019	Corn, silage	32	Ton		0	45	90				

Manure Management Plan Data

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RUSLE2

Field ID	Subfield ID	Rock Cover (%)	Contouring	Strips/Barriers	Diversion/Terrace	Residue Burial	Managements
H1							
L1							
L2							
L3							
L4							
L5							
L6							
L7							
L8							
M1							
M2							
N1-EAST							
N1-WEST							
N2-MID							

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State: Montana

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Field ID	Subfield ID	Rock Cover (%)	Contouring	Strips/Barriers	Diversion/Terrace	Residue Burial	Managements
N2-NORTH							
N2-SOUTH							
N3-EAST							
N3-WEST							
N4							
N5-NORTH							
N5-SOUTH							
N7							
PONESSA							
S1							
S2							
S3							
S4							
S5							
S6							

Manure Management Plan Data

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STORAGE

Storage ID	Storage Type	Units	Pumpable Or Spreadable Capacity	Manure On Hand At Start Of Plan	Notes
Lot	Open feedlot/feedlot stack	Ton	100,000	1,000	

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ANIMALS

Animal ID	Animal Type And Production Phase	Animal Weight (Lb)	Number Of Animals	Animals Present From	Animals Present Through	Manure Collected (%)	Extra Water (Gal/Animal/Day)	Bedding (Lb/Animal/Day)	Where Will Manure Be Stored?	Notes
Calves	Weaned calf (beef)	700	5,000	Oct Late	May Late	90			Lot	

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ESTIMATED ANALYSIS

Storage ID	Estimated Total N	Est. NH_4-N	Est. Total P_2O_5	Est. Total K_2O	Est. Max. Avail. N	Est. Avail. P_2O_5	Est. Avail. K_2O	Analysis Units	Estimated Manure Production	Production Units
Lot	41.8	14.2	28.9	50.1	23.9	23.1	45.1	Lb/Ton	4,732	Ton/Year

MEASURED ANALYSIS

Storage ID	Measured Total N	Meas. NH_4-N	Meas. Total P_2O_5	Meas. Total K_2O	Meas. Max. Avail. N	Meas. Avail. P_2O_5	Meas. Avail. K_2O	Analysis Units	Meas. % Dry Matter	Measured Manure Production	Production Units	Source And Date Of Manure Analysis
Lot	2.2	0.0	1.2	2.2	0.8	1.0	2.0	Lb/Ton	93.6	4,732	Ton/Year	Cattle 09/29/2015

Manure Management Plan Data

Operation: Diamond J Cattle
Plan File: Peila.mmp
Plan Folder: C:\Home\Rusty.Irion\Diamond J Cattle Feedlot

County: Custer
State: Montana

Plan Saved: 10/8/2015
Init. File Rev: 12/10/2013
Soils File Rev: 3/26/2015

EQUIPMENT

Equipment ID	Spreader Or Applicator Type	Spreader Or Pump Capacity	Capacity Units	Minimum Application Rate	Rate Units	Application Width Or Area	Rate Units	Notes
Spreader	Solid spreader	10	Ton	5	Ton/A	40	Feet	

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MANURE APPLICATIONS, Part 1

Application Date	Field Where Manure Will Be Applied	Source Of Manure	Application Equipment	Days To Incorp.	Rate (/Acre)	Rate Basis	Loads	Amount Applied	Area Covered (Acres)	Apply At Or For	Units
Sep 2015	L8	Lot	Spreader	1	10	Custom rate	154	1,540	154	1,090	Feet/ Load
Sep 2015	N3-EAST	Lot	Spreader	1	10	Custom rate	72	720	72	1,090	Feet/ Load
Sep 2016	M1	Lot	Spreader	1	20	Custom rate	61	610	30.5	540	Feet/ Load
Sep 2016	M2	Lot	Spreader	1	20	Custom rate	35	350	17.5	540	Feet/ Load
Sep 2016	N1-EAST	Lot	Spreader	1	20	Custom rate	77	770	38.5	540	Feet/ Load
Sep 2016	N3-WEST	Lot	Spreader	1	20	Custom rate	92	920	46	540	Feet/ Load
Sep 2016	N4	Lot	Spreader	1	20	Custom rate	30	300	15	540	Feet/ Load
Sep 2016	N5-NORTH	Lot	Spreader	1	20	Custom rate	63	630	31.5	540	Feet/ Load
Sep 2016	N5-SOUTH	Lot	Spreader	1	20	Custom rate	115	1,150	57.5	540	Feet/ Load
Sep 2017	L7	Lot	Spreader	1	20	Custom rate	20	200	10	540	Feet/ Load
Sep 2017	N1-WEST	Lot	Spreader	1	20	Custom rate	40	400	20	540	Feet/ Load
Sep 2017	N2-MID	Lot	Spreader	1	20	Custom rate	20	200	10	540	Feet/ Load
Sep 2017	N2-NORTH	Lot	Spreader	1	20	Custom rate	132	1,320	66	540	Feet/ Load
Sep 2017	N2-SOUTH	Lot	Spreader	1	20	Custom rate	67	670	33.5	540	Feet/ Load
Sep 2017	N3-EAST	Lot	Spreader	1	20	Custom rate	164	1,640	82	540	Feet/ Load

Manure Management Plan Data

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Application Date	Field Where Manure Will Be Applied	Source Of Manure	Application Equipment	Days To Incorp.	Rate (/Acre)	Rate Basis	Loads	Amount Applied	Area Covered (Acres)	Apply At Or For	Units
Sep 2017	S6	Lot	Spreader	1	20	Custom rate	30	300	15	540	Feet/ Load
Sep 2018	L1	Lot	Spreader	1	20	Custom rate	24	240	12	540	Feet/ Load
Sep 2018	L3	Lot	Spreader	1	20	Custom rate	72	720	36	540	Feet/ Load
Sep 2018	L4	Lot	Spreader	1	10	Custom rate	5	50	5	1,090	Feet/ Load
Sep 2018	S1	Lot	Spreader	1	20	Custom rate	137	1,370	68.5	540	Feet/ Load
Sep 2018	S2	Lot	Spreader	1	20	Custom rate	59	590	29.5	540	Feet/ Load
Sep 2018	S3	Lot	Spreader	1	20	Custom rate	51	510	25.5	540	Feet/ Load
Sep 2018	S4	Lot	Spreader	1	20	Custom rate	47	470	23.5	540	Feet/ Load
Sep 2018	S5	Lot	Spreader	1	20	Custom rate	79	790	39.5	540	Feet/ Load
Sep 2019	L2	Lot	Spreader	1	20	Custom rate	88	880	44	540	Feet/ Load
Sep 2019	L5	Lot	Spreader	1	20	Custom rate	54	540	27	540	Feet/ Load
Sep 2019	L6	Lot	Spreader	1	20	Custom rate	15	150	7.5	540	Feet/ Load
Sep 2019	L8	Lot	Spreader	1	20	Custom rate	308	3,080	154	540	Feet/ Load
Sep 2019	S6	Lot	Spreader	1	10	Custom rate	8	80	8	1,090	Feet/ Load

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MANURE APPLICATIONS, Part 2

Application Date	Field Where Manure Will Be Applied	Avail. N (Lb/A)	N Balance (Lb/A)	Avail. P_2O_5 (Lb/A)	P_2O_5 Balance (Lb/A)	Avail. K_2O (Lb/A)	K_2O Balance (Lb/A)	Notes
Sep 2015	L8	5	5	10	-15	20	-30	
Sep 2015	N3-EAST	5	-155	10	-50	20	-75	
Sep 2016	M1	10	-160	19	-26	40	-25	
Sep 2016	M2	10		19		40		
Sep 2016	N1-EAST	10	-140	19	-41	40	-25	
Sep 2016	N3-WEST	10		19		40		
Sep 2016	N4	10	-140	19	-31	40	-40	
Sep 2016	N5-NORTH	10		19		40		
Sep 2016	N5-SOUTH	10		19		40		
Sep 2017	L7	10		19		40		
Sep 2017	N1-WEST	10		19		40		
Sep 2017	N2-MID	10		19		40		
Sep 2017	N2-NORTH	10		19		40		
Sep 2017	N2-SOUTH	10	0	19		40		
Sep 2017	N3-EAST	10	-150	19	-41	40	-55	

Manure Management Plan Data

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State: Montana

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Application Date	Field Where Manure Will Be Applied	Avail. N (Lb/A)	N Balance (Lb/A)	Avail. P_2O_5 (Lb/A)	P_2O_5 Balance (Lb/A)	Avail. K_2O (Lb/A)	K_2O Balance (Lb/A)	Notes
Sep 2017	S6	10	10	19	-26	40	-50	
Sep 2018	L1	10	-155	19	-66	40	-55	
Sep 2018	L3	10	10	19	-36	40	-55	
Sep 2018	L4	5	0	10		20		
Sep 2018	S1	10		19		40		
Sep 2018	S2	10	-165	19	-41	40	-25	
Sep 2018	S3	10	-190	19	-6	40	-10	
Sep 2018	S4	10	0	19		40		
Sep 2018	S5	10	0	19		40		
Sep 2019	L2	10	-265	19	-101	40	-60	
Sep 2019	L5	10	-220	19	-81	40	-60	
Sep 2019	L6	10	-10	19	-21	40	-60	
Sep 2019	L8	10	-10	19	-21	40	-60	
Sep 2019	S6	5	-170	10	-90	20	-80	