RESOURCE MANAGEMENT AGENCY
PLANNING DEPARTMENT

Norman L. Allinder, AICP *NA*
Director

2037 W. Cleveland Avenue
Madera, CA 93637
(559) 675-7821
FAX (559) 675-6573
TDD (559) 675-8970
mc_planning@madera-county.com

PLANNING COMMISSION DATE: **August 7, 2012**

AGENDA ITEM: **#3**

CUP	**#2011-005**	**Request to amend CUP #99-34 to increase herd size.**
APN	**#025-190-002, -001, -007; #025-130-004,-005, et al**	**Applicant: Jim Kopshever** **Owner: Fred Fegundes**
CEQA	**MND #2012-11**	**Mitigated Negative Declaration**

REQUEST:

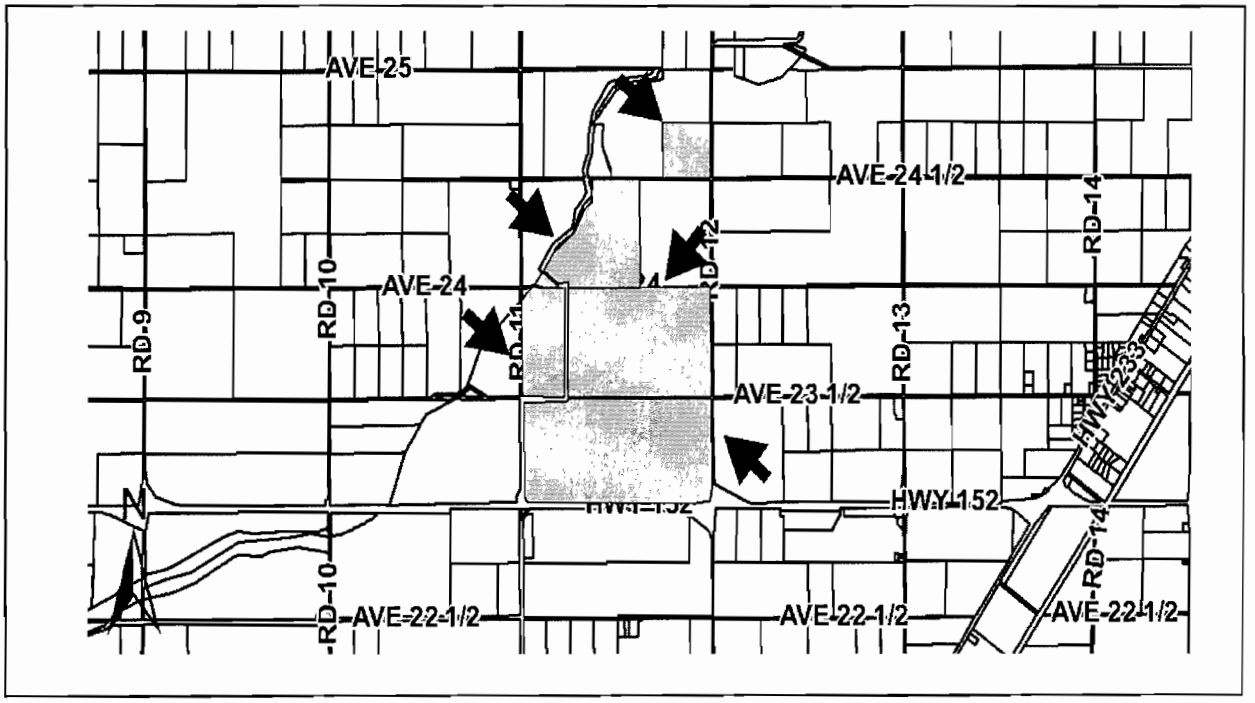
The applicant is requesting to amend Conditional Use Permit #99-54 to allow for an increase in herd size on an existing dairy facility from 5,075 to 7,450 head.

LOCATION:

The main facility of the property is located on the southwest corner of Avenue 24 and Road 12, (23508 Road 12), Chowchilla. Support acreage lays between Avenue 23 ½ and Avenue 24 ½, with one parcel on the north side of Avenue 24 ½. Additional APN's provided on the Nutrient Management Plan and Waste Management Plan.

ENVIRONMENTAL ASSESSMENT:

A Mitigated Negative Declaration (MND #2012-11) (Exhibit O) has been prepared and is subject to approval by the Planning Commission.



RECOMMENDATION: Approval with Conditions

STAFF REPORT
CUP #2012-008

August 7, 2012

GENERAL PLAN DESIGNATION (Exhibit A):

SITE: AE (Agricultural Exclusive) Designation

SURROUNDING: AE (Agricultural Exclusive) Designation

ZONING (Exhibit B):

SITE: ARE-40 (Agricultural Rural Exclusive – 40 acre) District

SURROUNDING: ARE-20 (Agricultural Rural Exclusive – 20 acre) District; ARE-40 (Agricultural Rural Exclusive – 40 acre) District

LAND USE:

SITE: Fagundes Dairy Facility and supporting land

SURROUNDING: Agricultural

SIZE OF PROPERTY: 244.14 acres

ACCESS (Exhibit A): Access to the site is via Road 12

BACKGROUND AND PRIOR ACTIONS:

On February 1, 2000, the Planning Commission approved CUP #99-34, allowing for an expansion of herd size from 1,500 to 2,500 head, bringing the total herd size to 5,075 head.

In February of 1979, Zoning Variance #79-11 was approved to allow for a manufactured home limited to occupancy to a relative or employee. The dwelling represented the third dwelling on the property.

Additional entitlements have been approved for adjacent parcels which make up the entire dairy operation. In May of 1981, Zoning Variance #81-42 was approved for Assessor's Parcel Number 025-190-007 to allow for a manufactured home which was limited in occupancy to a blood relative or an employee of the property owner. This permit represented the fourth residence on the property.

PROJECT DESCRIPTION:

The applicant is requesting to amend Conditional Use Permit #99-14 toa llow for an increase in herd size on an existing dairy facility from 5,075 to 7,450 head.

ORDINANCES/POLICIES:

Section 18.58.010 of the Madera County Zoning Ordinance outlines the permitted uses within the ARE-40 (Agricultural, Rural, Exclusive – 40 Acre) zone.

Section 18.56.010 of the Madera County Zoning Ordinance outlines the permitted uses within the ARE-20 (Agricultural, Rural, Exclusive – 20 Acre) zone.

Chapter 18.92 of the Madera County Zoning Ordinance outlines the procedures for the processing and approval of conditional use permits.

Policy 6.28.040.A of the Madera County Code defines agricultural activities.

Policy 6.28.050.A of the Madera County Code states that no agricultural activity, operation, or facility shall be or become a nuisance, private or public, due to any changed condition in or about the facility.

Policy 5.A.1 of the Madera County General Plan supports the maintenance of agricultural designated land as agriculturally designated land.

Policy 5.A.16 of the Madera County General Plan supports economic development of agriculturally related activities within the county.

Madera County Dairy Standards outlines facility operations pursuant to new and expanding dairies.

ANALYSIS:

The parcel involved with this project is located in a predominately rural portion of Western Madera County. Surrounding parcels average in size from 94 to over 600 acres and are in agriculturally related use with some residential structures. While the dairy has several parcels associated with it, those parcels are largely support acreage providing feed for the herd, as well as areas for manure spreading.

On February 1, 2000, the Planning Commission approved CUP #99-34, allowing for an expansion of herd size from 1,500 to 2,500 head. Prior to CUP #99-34, the facility had 1,500 milk cows with 2,300 support stock. With the increase approved by CUP #99-34, the facility had 2,500 milk cows and 2,575 support stock. The applicant is asking to increase the total combined herd count to 7,450 head. The following chart outlines the changes between the two Conditional Use Permits

Differences between 1999 CUP and 2012 CUP

Animal Type	CUP #99-34	CUP #2012-008	Difference
Milk Cows	2,500	4,750	2,250
Dry Cows	500	800	300
Bred Heifers	525	950	425
Heifers	1,550	950	(600)
Total	5,075	7,450	2,375

Old Animal Units County

Animal Type	Head	Multiplier	EH
Milk	2500	1	2500
Dry	500	0.8	400
Heifer	525	0.8	420
Calves	1500	0.35	525

New Animal Units County

Animal Type	Head	Multiplier	EH
Milk	4750	1	4750
Dry	800	0.8	540
Heifer	950	0.8	760
Calves	950	0.35	332.5

The parcel (APN #025-190-002) is where the main facility of the dairy is located, all other parcels associated with this dairy are considered support acreage for feed production and waste management per the Certified Nutrient Management Plan and Waste Management Plan. The site includes an approximate 394,000 square feet corral and 12,000 square foot cattle shade. The site also has three wastewater ponds which were expanded to have 3,043,872 cubic feet of capacity.

An analysis, based on the Waste Management Plan and Nutrient Management Plan (Exhibit P and Q), shows 108,569 gallons of water per day will be used, of which 91,210 will be utilized for non-herd purposes, and the balance for herd purposes. Manure generation will be approximately 90,385 gallons per day based on the new herd counts.

Dairy wastewater contains several contaminates including elevated levels of salt and nitrogen. Because of the chemical and environmental characteristics of nitrogen, it is used as a chemical marker of assessing the safety and effectiveness of a dairy wastewater management system. For regulatory purposes, if all the nitrogen generated by a dairy is safely and effectively managed, the other lesser wastewater components would also be controlled.

Existing small or medium Confined Animal Feeding Operations (CAFCs) are regulated by the Regional Water Quality Control Board (RWQCB). The facility, like all other dairies within the County, is routinely inspected by the California Regional Water Quality Control Board to ensure compliance with their regulations. The County has received copies of prior reports and actions from the dairy.

The County began regulating dairies through the conditional use permit process in 1993. The amendment to the Madera County Zoning Ordinance required dairies to have a conditional use permit issued before they could either be established or expanded (expansion being defined as relating to the dairy operations and facilities related specifically to the operations themselves).

The Madera County Dairy Standards were adopted in October of 2008 covering new and expanding dairies. While this project is an existing dairy, the Standards are applicable to

the amended Conditional Use Permit. The Standards cover all aspects of dairy operations, from traffic to vector and odor control. Conditions as noted under the Planning Department, Environmental Health and Roads Department incorporate conditions found in the Standards.

The generation and storage of manure, manure-water, animal feed and other organic materials at dairies present the possibility of increased vector activities. Mosquito and fly infestations can be observed at dairies, particularly at manure separation pits and lagoons that have not been properly maintained, and poorly managed feed areas.

The project is located in a sparsely populated area of the County. While odors are commonly generated by dairies, particularly from concentrated wet animal waste, the use of a waste control system in which manure is either allowed to dry prior to removal, or flushed into lagoons will minimize odors associated with standing manure. Odor impacts will be limited overall due to the sparse populations in the area, as well as the adherence to the Dairy Standards and other control measures.

The site does not contain wetland or riparian habitats, and while Ash Slough is in close proximity to the project site, no streams or natural drainages are located within the project area. The project will not significantly interfere with the movement of any native wildlife species or wildlife corridors.

Request for comments were also sent to Caltrans, California Highway Patrol, the Agricultural Commissioner and Department of Fish and Game, amongst others. The San Joaquin Valley Air Pollution Control District and City of Chowchilla commented on this project.

FINDINGS OF FACT:

The following findings of fact must be made by the Planning Commission to make a finding of denial of this conditional use permit application. Staff recommends that the Planning Commission concur with the following in light of the proposed conditions of approval.

1. *The proposed project does not violate the spirit or intent of the zoning ordinance* in that the ARE-40 (Agricultural Rural Exclusive – 40 Acre District) allows for dairies to operate with a Conditional Use Permit. The project structures will comply with setback, parking and use regulations.

2. *The proposed project is not contrary to the public health, safety, or general welfare* in that the request is consistent with the agricultural area in which it is located, and any potential impacts from the operation can be mitigated by applying the conditions of approval and mitigation measures from the attached CEQA determination as well as the Dairy Standards. The facility is also regulated by the Regional Water Quality Control Board and San Joaquin valley Air Pollution Control District.

3. *The proposed project is not hazardous, harmful, noxious, offensive, or a nuisance because of noise, dust, smoke, odor, glare, or similar, factors* in that the applicant must operate according to the conditions set forth by a series of state and local agencies including Madera County Environmental Health Department, the California Regional Water Control Board, and state and county level agencies which specifically monitor agricultural activities including dairies. Additionally, the

operation will be held to comply with the Madera County Dairy Standards and Element.

4. *The proposed project will not, for any reason, cause a substantial, adverse effect upon the property values and general* desirability based upon similar existing land uses within the general vicinity of the portion of this portion of the County, the lack of public opposition expressed in regards to this application, and conditions established for the project that will mitigate potential impacts to adjacent properties from project operations.

WILLIAMSON ACT:

The subject parcel is within the Williamson Act. The increase in herd size will not affect the contract.

GENERAL PLAN CONSISTENCY:

The general plan designates the site as AE (Agricultural Exclusive) which allows for dairies and similar uses. The property is zoned ARE-40 (Agricultural Rural Exclusive – 40 Acre). The proposed project is consistent with both the County's General Plan and Zoning Ordinance.

RECOMMENDATION:

The analysis provided in this report supports approval of CUP #2012-008 and Mitigated Negative Declaration MND #2012-11 as presented.

CONDITIONS:

Engineering Department (Exhibit H)

1. Prior to start of any construction projects, the applicant shall secure a Building Permit from the Engineering Department. All construction shall meet the standards of all applicable Codes. All plans must be prepared by a licensed or registered civil engineer.

Environmental Health Department (Exhibit I)

1. The project will be required to adhere to all requirements of the Madera County Dairy Standards.

2. Alls urface water runoff shall be diverted away from any water well(s) and sewage disposal areas.

3. The owners/operators of the facility must complete and submit a Business Activities Declaration Form with the CUPA Program within this department before onset of construction activities. Other related permit(s) may be required due to the possible storage/handling of reportable quantities of hazardous materials onsite and/or the storage of any amount of hazardous waste onsite at any time prior to facility operation. Contact a CUPA program specialist within the department at 559-675-7821.

4. If any proposed building(s) and/or operations on site that require plumbing to provide drinking water and/or waste water storage/disposal and/or wastewater disposal, then

water well permit(s) and/or sewage disposal system(s) permits must be obtained from the department prior to any construction activities and shall be installed to meet all applicable laws, codes, and/or regulations. Contact a Drinking Water program and/or a Liquid Waste Water Program specialist within this department at 559-675-7823.

5. A Vector, Pest (fly) and Odor Management Plans must be developed by an appropriate professional and submitted to this department prior to onset of onsite facility operations.

6. A Dead Animal Management Plan (DAMP) is required for all animal operations that addresses animal mortality procedures and mitigation. As well as procedures how the owner/operator will handle possible above average volume mortality rate due to special or natural occurrences such as heat wave.

7. A Manure Processing and/or Composting Management Plan(s) must be developed and stored on site to ensure that manure is stored and processed on site to effectively reduce off site: odors, vectors, and/or other possible nuisances, to within acceptable levels as determined by this department.

8. Noise must be kept to below acceptable levels as identified in State law, applicable County Codes, and the County General Plan as determined by this department.

9. Lighting shall be kept to within acceptable levels as to not create a nuisance to surrounding land uses as determined by the RMA.

10. All Madera County required permits must be obtained and all setbacks shall be maintained prior to grading.

11. The owner/operator must obtain all necessary Environmental Health Department permits to any construction activities on site.

Fire Department (Exhibit J)

1. At the time of application for a Building Permit, a more in-depth plan review of the proposed project's compliance with all current fire and life safety codes will be conducted by the Madera County Fire Marshal. (CFC Section 105.2).

Planning Department

1. The project shall operate in accordance with the operational statement and site plan submitted with the application except as modified by the mitigation measures and other conditions of approval required for the project.

2. Operations will continue to adhere to conditions of approval and mitigation measures associated with the Conditional Use Permit #99-34.

3. Application of herbicides, pesticides and related materials shall be in accordance with the laws and regulations set forth by federal, state and local agencies.

4. All lighting associated with this facility is to be hooded and directed away from neighboring parcels and potential species habitats.

5. No development or operation(s) of the dairy facility shall occur within 100 feet of Ash Slough or any tributary.

6. Applicant shall not construct, repair or otherwise alter any levee in the area of the project site so as to create increased flooding upstream.

7. Prior to release of Conditional Use Permit, applicant must provide fees in the amount of $2,151.50 to Madera County to cover the Notice of Determination filing. In lieu of the Department of Fish and Game fees, the applicant may apply for a Fee Waiver directly with the Department of Fish and Game. Should the waiver be granted, the applicant will need to provide a copy of the waiver plus a check for $50 to Madera County to cover the filing of the Notice of Determination. The Clerk fee and the Department of Fish and Game fee (or waiver) must be filed at the Planning Department within five (5) calendar days of approval of the project by the Planning Commission.

8. Prior to release of this Conditional Use Permit, a recent Certified Nutrient Management Plan and Comprehensive Waste Management Plan reflecting the increase in herd size shall be submitted and accepted by the Planning Department.

9. The dairy shall operate in compliance with the Madera County Dairy Standards in their entirety.

Road Department (Exhibit K)

1. Any construction in the County road right-of-way will require an Encroachment Permit through the Road Department.

City of Chowchilla (Exhibit L)

1. None.

San Joaquin Valley Air Pollution Control District (Exhibit M)

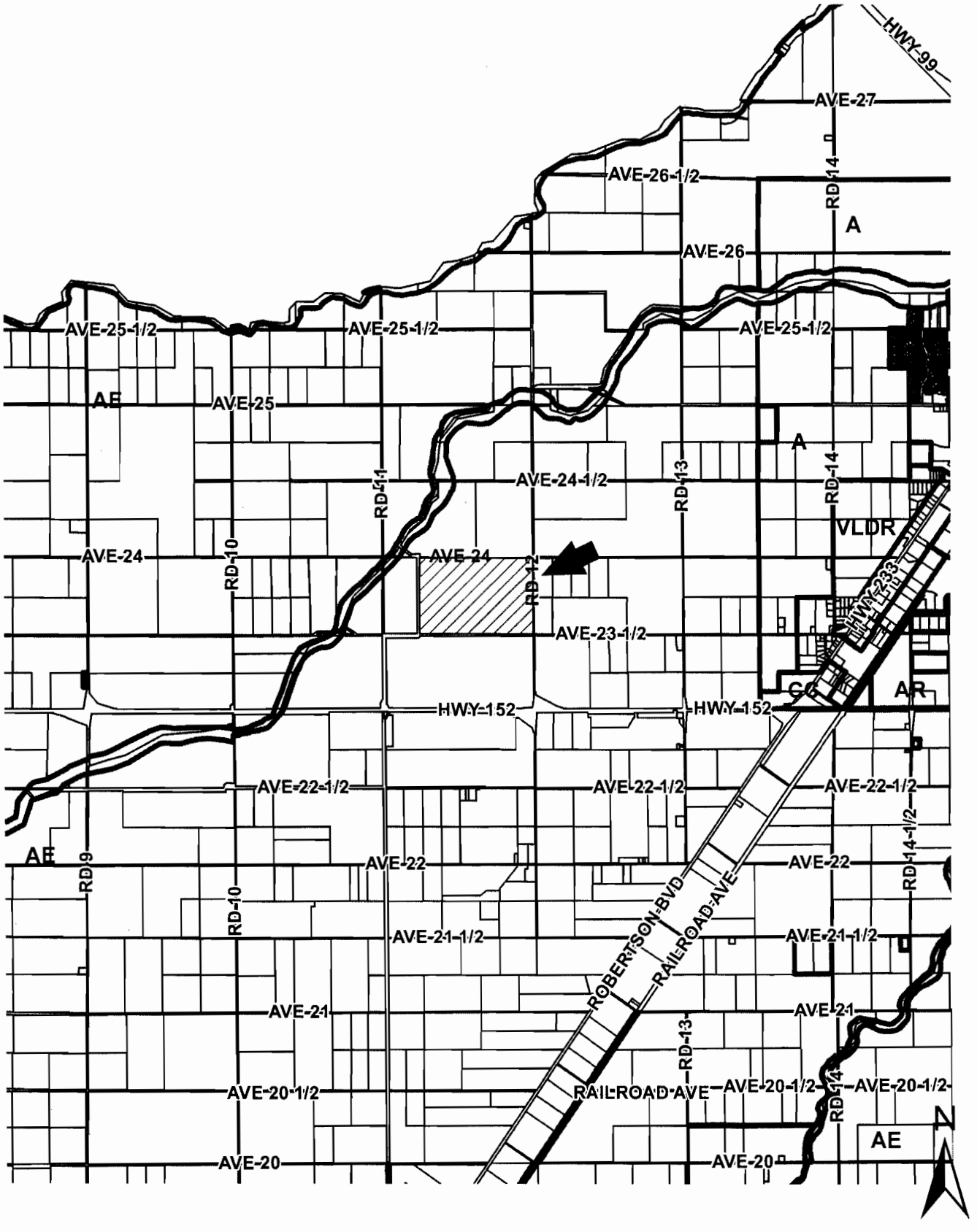
1. The applicant will adhere to conditions of approval from the Air District.

ATTACHMENTS:

1. Exhibit A, General Plan Map
2. Exhibit B, Zoning Map
3. Exhibit C, Assessor's Map
4. Exhibit D, Site Plan Map
5. Exhibit E, Aerial Map
6. Exhibit F, Topographical Map
7. Exhibit G, Operational Statement
8. Exhibit H, Environmental Health Department Comments
9. Exhibit I, Engineering and General Services Department Comments
10. Exhibit J, Fire Department Comments
11. Exhibit K, Road Department Comments
12. Exhibit L, City of Chowchilla Comments
13. Exhibit M, San Joaquin Valley Air Pollution Control Comments
14. Exhibit N, CEQA Initial Study
15. Exhibit O, Mitigated Negative Declaration (MND #2012-11)
16. Exhibit P, Waste Management Plan

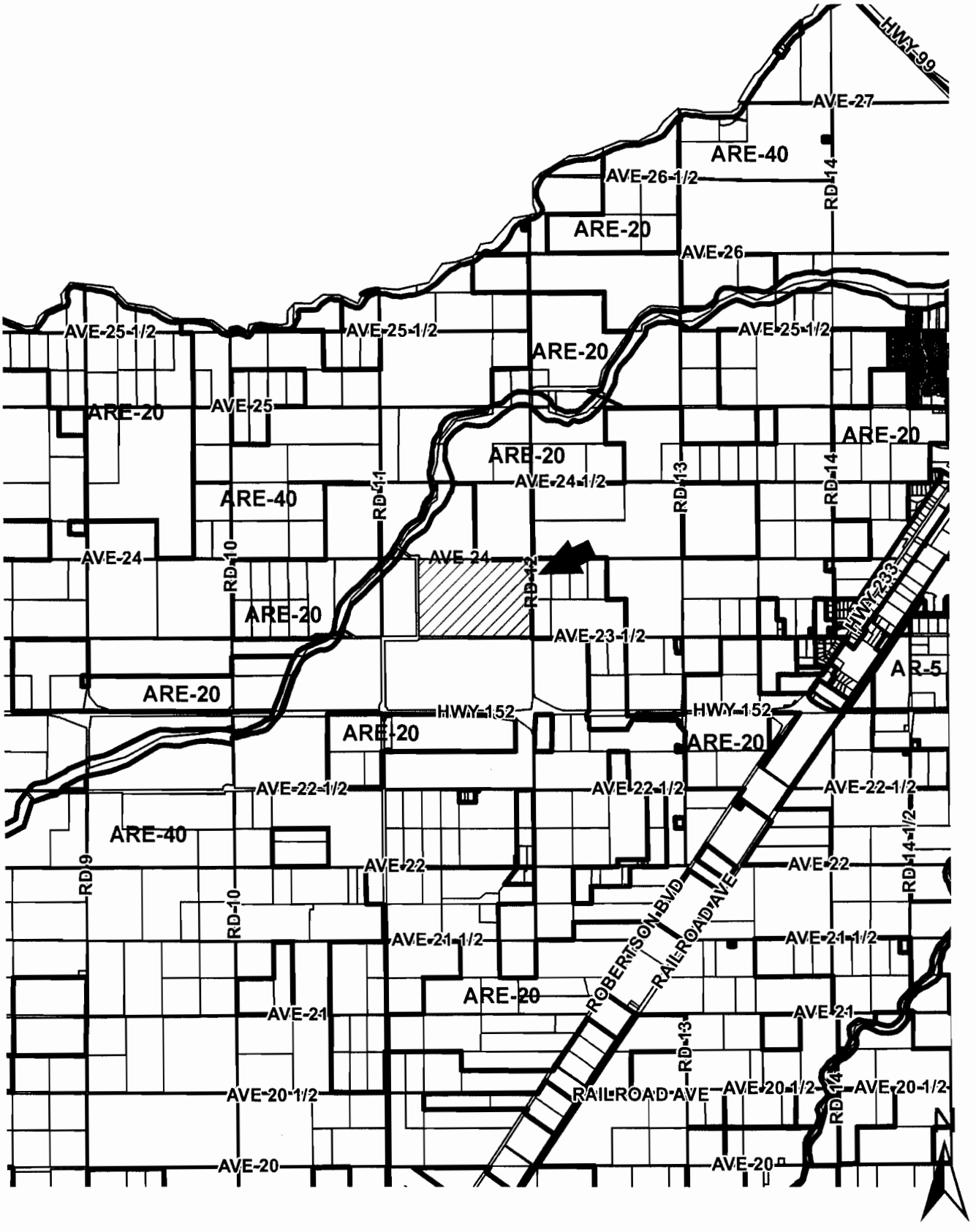
17. Exhibit Q, Nutrient Management Plan

EXHIBIT A



GENERAL PLAN MAP

EXHIBIT B



ZONING MAP

ASSESSOR'S MAP

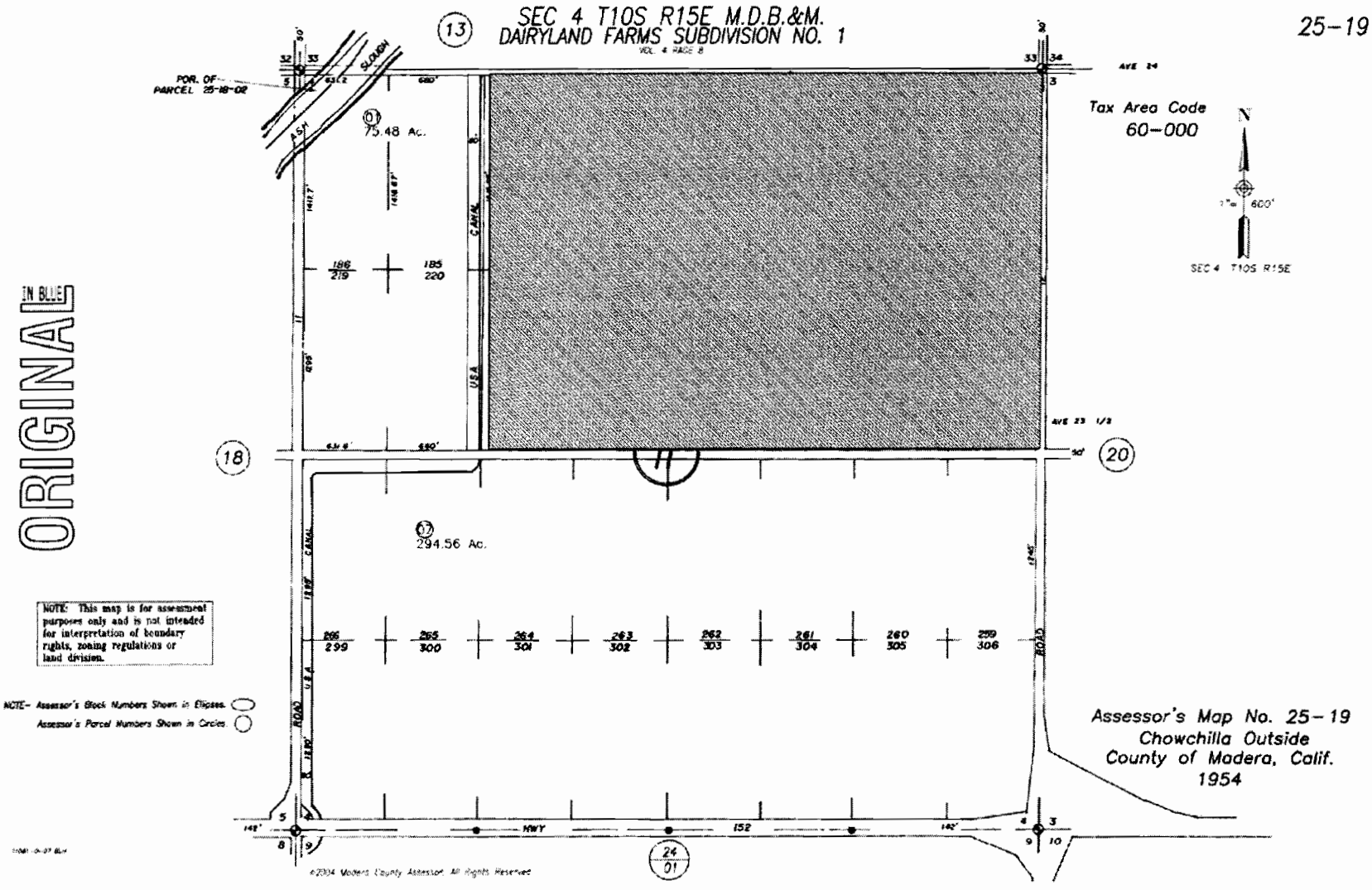
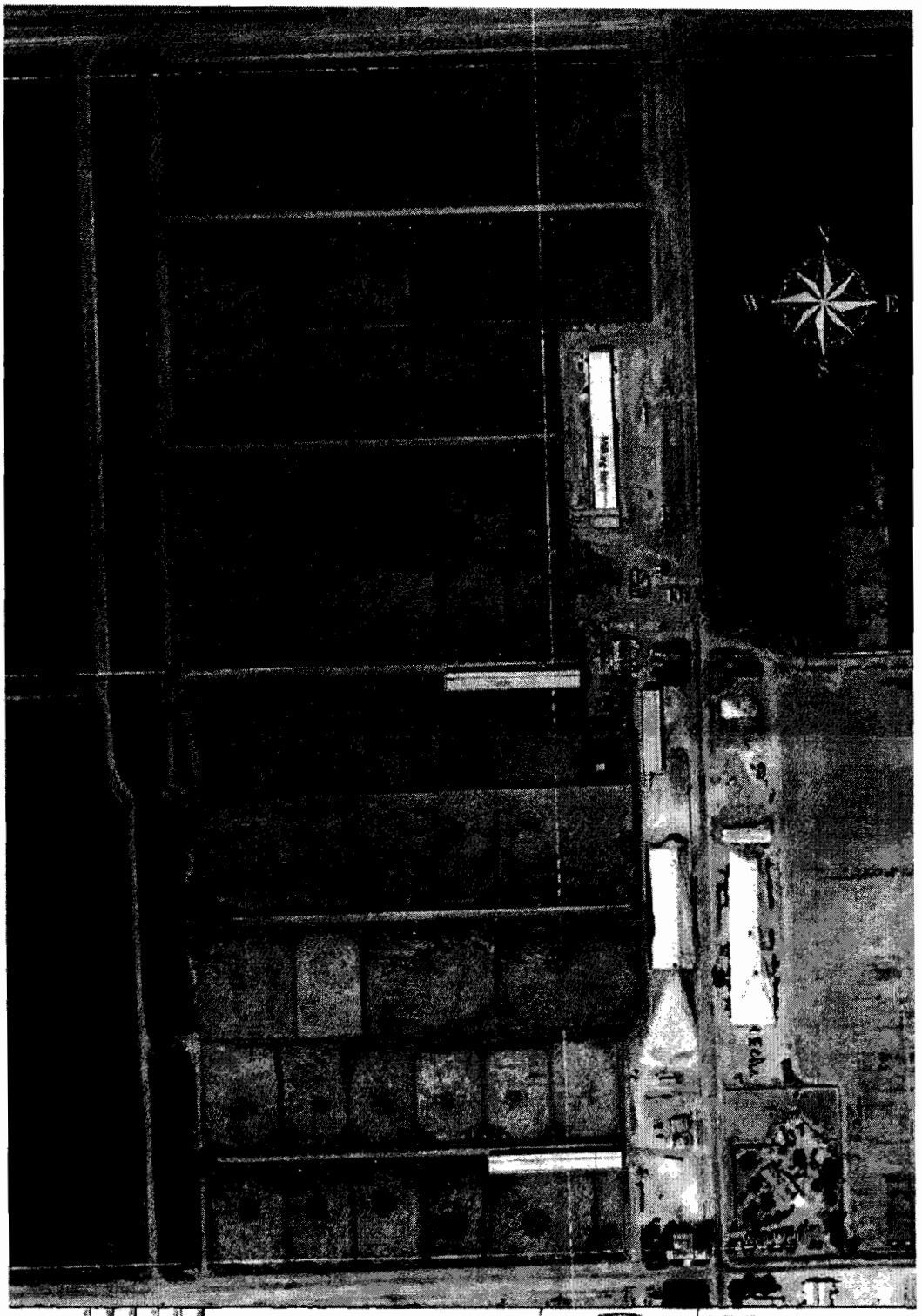


EXHIBIT C

EXHIBIT D



P

Fagundes Dairy
23732 Road 12
Madera County, Chowchilla, CA 93610

Production Area

JP
09J-1136
June 30, 2010
1" = 200'
Production Area

REGISTERED PROFESSIONAL ENGINEER
JOHN ROBERT PETERSON
No. 39840
EXP. 12-31-11
CIVIL
STATE OF CALIFORNIA

J.R. PETERSON & ASSOCIATES
2115 San Miguel Drive
Walnut Creek, CA 94596

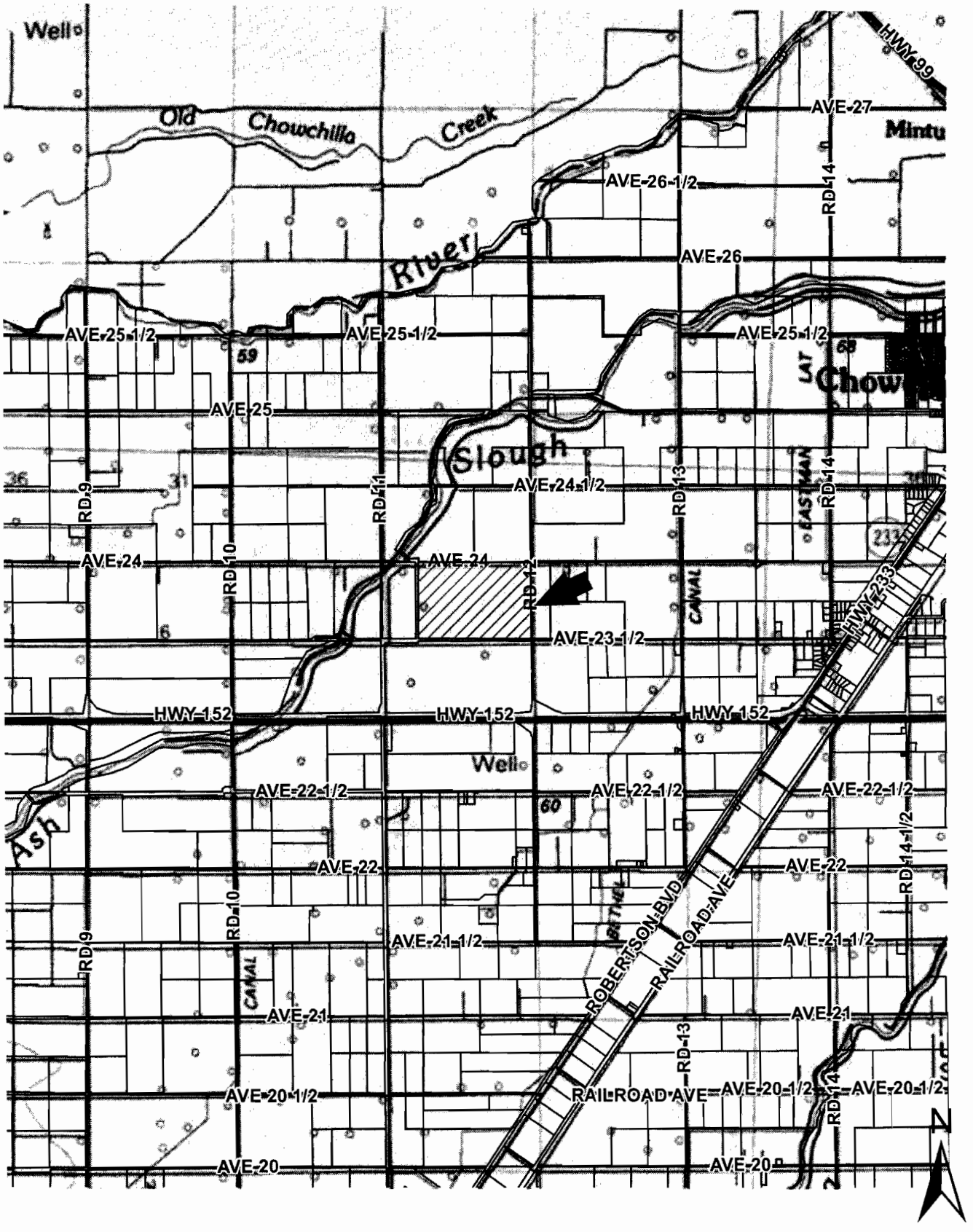
Phone (925) 943-7643
Fax (925) 945-8592
Mobile (925) 324-0800
Email: jrpetersonassoc@gmail.com

SITE PLAN

EXHIBIT E

AERIAL MAP

EXHIBIT F



TOPOGRAPHICAL MAP

EXHIBIT G

Madera County Planning Department
2037 W. Cleveland Avenue MS-G, Madera CA 93637

OPERATIONAL/ENVIRONMENTAL STATEMENT CHECKLIST

It is important that the operational/environmental statement provides for a complete understanding of your project proposal. Please be as detailed as possible.

1. **Please provide the following information**
   Assessor's Parcel Number: 025-190-002
   Applicant's Name: JIM KOPSHEVER
   Address: 11158 AVE 24, CHOWCHILLA, CA 93610
   Phone Number: 559 260-6318

2. **Describe the nature of your proposal/operation.**
   INCREASE HERD COUNT TO A COMBINED MILK + HEFER AMOUNT TO 7450

3. **What is the existing use of the property?**
   DAIRY

4. **What products will be produced by the operation? Will they be produced onsite or at some other location? Are these products to be sold onsite?** MILK

5. **What are the proposed operational time limits?**
   Months (if seasonal):
   Days per week: 7
   Hours (from___to___):
   Total Hours per day: 24

7. **How many customers or visitors are expected?**
   Average number per day: 8
   Maximum number per day:
   What hours will customers/visitors be there?

8. **How many employees will there be?**
   Current: 8
   Future: 12
   Hours they work: 10 PER DAY - 40 HOUR WEEKS
   Do any live onsite? If so, in what capacity (i.e. caretaker)?
   YES - 2 FAMILIES - TOTAL 6 PEOPLE
   CARETAKERS

9. What equipment, materials, or supplies will be used and how will they be stored? If appropriate, provied pictures or brochures. COWS, FEED

10. Will there be any service and delivery vehicles?
    Number: FEED TRUCKS, MILK TRUCKS
    Type: TRUCKS
    Frequency: 4-6 PER DAY

11. Number of parking spaces for employees, customers, and service/delivery vehicles. Type of surfacing on parking area. GRAVEL SURFACE
    20 STALLS

12. How will access be provided to the property/project? (street name)
    RD 12

13. Estimate the number and type (i.e. cars or trucks) of vehicular trips per day that will be generated by the proposed development. NO INCREASE FROM CURRENT

14. Describe any proposed advertising inlcuding size, appearance, and placement.
    N/A

15. Will existing buildings be used or will new buildings be constructed? Indicate which building(s) or portion(s) of will be utilized and describe the type of construction materials, height, color, etc. Provide floor plan and elevations, if applicable. NO CONSTRUCTION
    PHYSICAL FACILITY WILL NOT CHANGE

16. Is there any landscaping or fencing proposed? Describe type and location.
    N/A

17. What are the surrounding land uses to the north, south, east and west property boundaries?
    AG, FARMS, DAIRY

18. Will this operation or equipment used, generate noise above other existing parcels in the area?
    N/A

19. On a daily or annual basis, estimate how much water will be used by the proposed development, and how is water to be supplied to the proposed development (please be specific). 41000 GALLON - WELL

20. On a daily or weekly basis, how much wastewater will be generated by the proposed project and how will it be disposed of? 67270 GALLONS - LAGOON

21. On a daily or weekly basis, how much solid waste (garbage) will be generated by the proposed project and how will it be disposed of? 1/2 CU YARD

22. Will there be any grading? Tree removal? (please state the purpose, i.e. for building pads, roads, drainage, etc.) N/A

23. Are there any archeological or historically significant sits located on this property? If so, describe and show location on site plan. N/A

24. Locate and show all bodies of water on application plot plan or attached map. ✓

25. Show any ravines, gullies, and natural drainage courses on the property on the plot plan. ✓

26. Will hazardous materials or waste be produced as part of this project? If so, how will they be shipped or disposed of? N/A

27. Will your proposal require use of any public services or facilities? (i.e. schools, parks, fire and police protection or special districts?) N/A

28. How do you see this development impacting the surrounding area?
NO INCREASE IN IMPACT

29. How do you see this development impacting schools, parks, fire and police protection or special districts?
N/A

30. If your proposal is for commercial or industrial development, please complete the following;

Proposed Use(s):

Square feet of building area(s):

Total number of employees:

Building Heights:

31. **If your proposal is for a land division(s), show any slopes over 10% on the map or on an attached map.**

End

EXHIBIT H

Engineering and General Services

2037 West Cleveland Avenue
Madera, CA 93637
(559) 661-6333
(559) 675-7639
FAX
(559) 675-8970
TDD

Bass Lake Office
40601 Road 274
Bass Lake, CA 93604
(559) 642-3203
(559) 658-6959
FAX

engineering@madera-county.com

MEMORANDUM

TO: Robert Mansfield

FROM: Madera County

DATE: June 4, 2012

RE: Kopshever, Jim - Conditional Use Permit - Chowchilla (025-190-002-000)

Comments

MEMORANDUM

DATEr May 29, 2012

TO Scott Harmstead, Planning Department

FROM Dario Dominguez, Assistant Engineer - DEGS

SUBJECTr CUP 2012-008 Kopshever(APN 025-190-002)

1) Parcel is not within a FEMA Flood Zone.

2) The subject property is not located within a Maintenance District.

3. Prior to the start of any construction projects, the applicant shall secure a Building Permit from the Engineering Department. All construction shall meet the standards of all applicable Codes. All plans must be prepared by a licensed architect or registered civil engineer.

If you have any questions please contact Dario Dominguez at 559-675-7817 ext 3322.

EXHIBIT I

RESOURCE MANAGEMENT AGENCY

Environmental Health Department

· 2037 West Cleveland Avenue
· Madera, CA 93637
· (559) 675-7823

Jill Yaeger, Director

MEMORANDUM

TO: Robert Mansfield

FROM: Madera County

DATE: June 4, 2012

RE: Kopshever, Jim - Conditional Use Permit - Chowchilla (025-190-002-000)

Conditions

TO: Planning Department
FROM: Phil Hudecek, Supervising REHS
DATE: June 4, 2012
RE: CUP #2012-008 Kopshever, Jim, APN 025-190-002

The Environmental Health Department has reviewed the Conditional Use Permit (CUP)# CUP #2012-008 Kopshever, Jim, located on APN: 025-190-002, within the Chowchilla area and has determined the following:

This project will be required to adhere to all requirements of the Madera County Dairy Standards.

All surface water runoff shall be diverted away from any water well(s) and sewage disposal areas.

The owners/operators of this facility must complete and submit a Business Activities Declaration Form with the CUPA Program within this department before onset of construction activities. Other related permit(s) may be required due to the possible storage/handling of reportable quantities of hazardous materials onsite and/or for the storage of any amount of hazardous waste onsite at any time prior to facility operation. Contact a CUPA program specialist within this Dept. at (559) 675-7823 for any

If any proposed building(s)and/or operations on site that require plumbing to provide drinking water and/or waste water storage/disposal and/or wastewater disposal, then water well permit(s) and/or sewage disposal system(s) permits must be obtained from this department prior to any construction activities and shall be installed to meet all applicable laws, codes and/or regulations. Contact a Drinking a Water Program and/or a Liquid waste Water Program Specialist within this department at (559) 675-7823 for specific questions that you may have regarding any of these process(s) or for copies of all program specific Permit Application forms.

A Vector, Pest (fly) and Odor Management Plans must be developed by an appropriate professional and submitted to this department prior to onset of onsite facility operations.

A Dead Animal Management Plan (DAMP) is required for all animal operations that address animal/mortality procedures and mitigation. As well as procedures how the owner/operator will handle possible above average volume mortality rate due to special or natural occurrences, such as a heat wave.

A Manure Processing and/or Composting Management Plan(s) must be developed and stored on site to ensure that manure is stored and processed on site to effectively reduce off site: odors, vectors, and/or

other possible nuisances, to within acceptable levels as determined by this department.

Noise must be kept to below acceptable levels as identified in State law, applicable County Codes and the County General Plan and as determined by this department.

Lighting shall be kept to within acceptable levels as to not create a nuisance(s) to surrounding land uses as determined by the RMA.

All Madera County required permits must be obtained and all setbacks shall be maintained prior to grading.

The owner/operator must obtain all the necessary Environmental Health Dept. permits prior to any construction activities on site.

If there are any questions or comments regarding these conditions/requirements or for copies of any Environmental Health Permit Application forms and/or other required Environmental Health form please, feel free to contact the appropriate program specialist as indicated in the above comments or contact me within this department at (559) 675-7823, M-F, 8:00 AM to 5:00 PM.

MADERA COUNTY FIRE DEPARTMENT

IN COOPERATION WITH
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

EXHIBIT J

2037 W. CLEVELAND
MADERA, CALIFORNIA 93637
(559) 661-6333
(559) 675-6973 FAX

DEBORAH KEENAN
MADERA COUNTY FIRE MARCHAL

MEMORANDUM

TO: Robert Mansfield

FROM: Madera County

DATE: May 29, 2012

RE: Kopshever, Jim - Conditional Use Permit - Chowchilla (025-190-002-000)

Conditions

At the time of application for a Building Permit, a more in-depth plan review of the proposed project's compliance with all current fire and life safety codes will be conducted by the Madera County Fire Marshal. (CFC, Section 105.2)

ROAD DEPARTMENT
COUNTY OF
MADERA
2037 WEST CLEVELAND AVENUE/MADERA, CALIFORNIA 93637
(559) 675-7811 / FAX (559)675-7631

JOHANNES HOEVERTSZ
Road Commissioner

EXHIBIT K

MEMORANDUM

TO: Robert Mansfield

FROM: Road Department

DATE: May 31, 2012

RE: Kopshever, Jim - Conditional Use Permit - Chowchilla (025-190-002-000)

COMMENTS -
The department does not have any further conditions regarding this proposal by the Fagundes Dairy with the increase in herd size. The previous application acquired the additional right of way necessary for County Road 12 along with a mitigation fee for future improvements to the roadway. Any construction within the County road right-of-way will require an Encroachment Permit with the Road Department. The public road right-of-way along Avenue 24 between Road 12 and Ash Slough has been abandoned.

EXHIBIT L

City of Chowchilla

130 S Second Street
Civic Center Plaza
Chowchilla, CA 93610
(559) 665-8615 ~ (559) 665-7418 fax
www.ci.chowchilla.ca.us

June 5, 2012

Robert Mansfield, Planning Department
Resource Management Agency
2037 West Cleveland Avenue
Madera, California 93637

RE: CUP #2012-008

Dear Mr. Mansfield:

The City of Chowchilla has reviewed the submitted Project Review Request for Conditional Use Permit Application #2012-008 and has no comment at this time. The subject site is located in close proximity to our sphere of influence, which presents a planning horizon of 2040, pursuant to our General Plan. The subject property is also a considerable distance from any existing City boundary and we do not anticipate growth extending toward the subject property for a significant period of time.

Please do not hesitate to contact me at 559-665-8615, extension 400, should you have any questions or need additional information.

Sincerely,

Kevin Fabino, Director
Community and Economic Development Department

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

EXHIBIT M

MAY 31 2012

MADERA COUNTY
PLANNING DEPARTMENT

May 29, 2012

Robert Mansfield
Madera County
Planning Department
2037 W. Cleveland Avenue
Madera, CA 93637

Project: Conditional Use Permit Application No. 2012-008 – Jim Kopshever
District CEQA Reference Number: 20120288

Dear Mr. Mansfield:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Conditional Use Permit for the project referenced above located at 11152 Avenue 24, in Chowchilla, CA. The proposed project consists of increasing the existing dairy herd count to 7,450. The District offers the following comments:

Emissions Analysis

1) The District is currently designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM10 and CO, and nonattainment for PM2.5 for the federal air quality standards. At the state level, the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 air quality standards.

2) The CEQA referral submitted to the District does not provide sufficient information to allow the District to assess the project's potential impact on air quality. The District recommends that the County provide a more detailed assessment.

3) The District recommends that the assessment include the following impacts:

   a) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separate from operational emissions. The District recommends preparation of an Environmental Impact Report (EIR) if annual construction emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

b) Operational Emissions: Permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. The District recommends preparation of an Environmental Impact Report (EIR) if the sum of annual permitted and non-permitted emissions cannot be reduced or mitigated to below the following levels of significance: 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), or 15 tons per year particulate matter of 10 microns or less in size (PM10).

c) Nuisance Odors: The project should be evaluated to determine the likelihood that the project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

d) Health Impacts: Project related health impacts should be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. TACs are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust fumes that are emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

   Prior to conducting an HRA, an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 1.0 or more, the project has the potential to exceed the District's significance threshold for health impacts of 10 in a million and an HRA should be performed. Information on conducting a prioritization can be obtained from the District by can be obtained by e-mailing the District at hramodeler@valleyair.org.

   If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. If the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 10 in a million, preparation of an EIR is recommended. More information on TACs and HRAs can be obtained by:

   - E-mailing inquiries to: hramodeler@valleyair.org; or
   - Visiting the District's website at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

4) If preliminary review indicates that an EIR should be prepared, the District recommends that the EIR include the following elements, in addition to the effects identified above:

a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the project's impact on air quality.

b) A discussion of the components and phases of the project and the associated emission projections, including ongoing emissions from each previous phase.

c) A discussion of project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the project.

d) A discussion of dairy operations including the following:

   i) Breakdown of herd composition by the following categories:

      - Milk Cows
      - Dry Cows
      - Heifers 15-24 months
      - Heifers 7-14 months
      - Heifers 4-6 months
      - Calves under 3 months

   ii) Description of manure process flow (from housing to lagoon(s)).

   iii) Identify if manure will be composted onsite.

   iv) Identify the type of housing (flush, scrape, etc) and exact method of manure handling for each type of cow.

e) District's attainment status: The document should include a discussion of whether the project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. Information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

District Rules and Regulations

5) The proposed project may be subject to the following District rules: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The following rules are specific to confined animal operations:

   - Rule 4102 (Nuisance) – This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the project creates a public nuisance, it could be in violation and be subject to District enforcement action.
   - Rule 4550 (Conservation Management Practices) – The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. These sites include areas of crop production, animal feeding operations and unpaved roads/equipment

areas. The District's CMP handbook can be found online at the District's website at: http://www.valleyair.org/farmpermits/updates/cmp_handbook.pdf.

- Rule 4570 (Confined Animal Facilities) – District Rule 4570 was adopted by the District's Governing Board on June 15, 2006. Dairies with greater than or equal to 1,000 milk cows are subject to the requirements of District Rule 4570. Therefore, a Rule 4570 application shall also be submitted to the District.

The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

District staff is available to meet with you and/or the applicant to discuss the regulatory requirements that are associated with this project. If you have any questions or require further information, please call David McDonough at (559) 230-5920 and provide the reference number at the top of the letter.

Sincerely,

David Warner
Director of Permit Services

For, Arnaud Marjollet
Permit Services Manager

DW:dm

cc: file

Environmental Checklist Form

EXHIBIT N

Title of Proposal: CUP #2012-008 – Fagundes Dairy

Date Checklist Submitted: June 20, 2012

Agency Requiring Checklist: Madera County

Agency Contact: Robert Mansfield, AICP, REA, Planner III **Phone:** (559) 675-7821

Description of Project:

The project is to amend CUP #99-34 to allow for an increase in herd size from current levels to a combined level of 7,450 milk and heifer.

The Initial Study is a public document used by the decision-making lead agency to determine whether a project may have significant effects on the environment. In the case of the proposed project, the Madera County Planning Department, acting as lead agency, will use the initial study to determine whether the project has a significant effect on the environment. In accordance with CEQA, Guidelines (Section 15063[a]), an environmental impact report (EIR) must be prepared if there is substantial evidence (such as results of the Initial Study) that a project may have significant effect on the environment. This is true regardless of whether the overall effect of the project would be adverse or beneficial. A negative declaration (ND) or mitigated negative declaration (MND) may be prepared if the lead agency determines that the project would have no potentially significant impacts or that revisions to the project, or measures agreed to by the applicant, mitigate the potentially significant impacts to a less-than-significant level.

The initial study considers and evaluates all aspects of the project which are necessary to support the proposal. The complete project description includes the site plan, operational statement, and other supporting materials which are available in the project file at the office of the Madera County Planning Department.

Project Location:

The subject property is located on the southwest corner of Avenue 24 and Road 12, (23508 Road 12) Chowchilla. The supporting acreage is in the vicinity.

Applicant Name and Address:

Fagundes Brothers
11158 Avenue 24
Chowchilla CA 93610

General Plan Designation:

AE (Agricultural Exclusive)

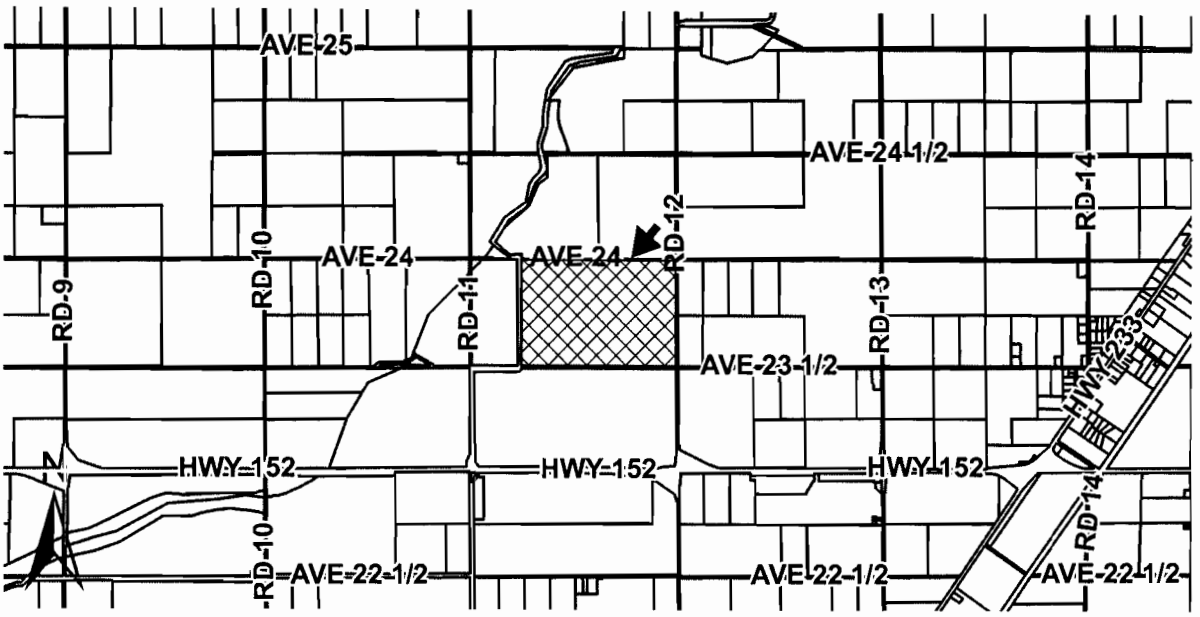
Zoning Designation:

ARE-40 (Agricultural Rural Exclusive – 40 Acre District)

Surrounding Land Uses and Setting:

Agricultural

Other Public Agencies whose approval is required: None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HWY-233
HWY-152
HWY-152
HWY-152
RD-14
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AVE-22-1/2
AVE-22-1/2
AVE-22-1/2

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☑ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

6-20-12
Date

I. AESTHETICS -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Discussion:

(a - b) *No Impact.* No impacts have been identified for this project. No scenic vistas exist in the vicinity. The overall project will not change the areas' view.

(c - d) *Less than Significant Impact.* The applicant is proposing to increase the total herd on site to 7,450, up from approximately 5,000 head.

The area is predominately agricultural in nature, therefore the increase will be of a minimal impact. No new structures are being proposed as a result of this project.

A nighttime sky in which stars are readily visible is often considered a valuable scenic/visual resource. In urban areas, views of the nighttime sky are being diminished by "light pollution." Light pollution, as defined by the International dark-Sky Association, is any adverse effect of artificial light, including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste. Two elements of light pollution may affect city residents: sky glow and light trespass. Sky glow is a result of light fixtures that emit a portion of their light directly upward into the sky where light scatters, creating an orange-yellow glow above a city or town. This light can interfere with views of the nighttime sky and can diminish the number of stars that are visible. Light trespass occurs when poorly shielded or poorly aimed fixtures cast light into unwanted areas, such as neighboring property and homes.

Light pollution is a problem most typically associated with urban areas. Lighting is necessary for nighttime viewing and for security purposes. However, excessive lighting or inappropriately designed lighting fixtures can disturb nearby sensitive land uses through indirect illumination. Land uses which are considered "sensitive" to this unwanted light include residences, hospitals, and care homes.

Daytime sources of glare include reflections off of light-colored surfaces, windows, and metal details on cars traveling on nearby roadways. The amount of glare depends on the intensity and direction of sunlight, which is more acute at sunrise and subset because the angle of the sun is lower during these times.

III. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resource Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526) or timberland zoned Timberland Protection (as defined by Government Code section 51104(g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest land?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

Discussion:

(a - e) *No Impact.* This is an existing dairy operation. The only change occurring is an expansion in herd size, therefore will not be changing any characteristic of the operation or its' surroundings.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☑	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☑	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☑	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☑	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☑	☐	☐

Discussion:

(a - b) *Less than Significant Impact with Mitigation Incorporation.* Impacts in air quality are addressed by the San Joaquin Unified Air Pollution Control District.

The entire San Joaquin Valley Air Basin is designated non-attainment for ozone and particulate matter (PM-10 and PM-2.5). This project could contribute to the overall decline in air quality due to operational emissions; however, by itself, would not generate significant air emissions. However, the increase in emissions from the project, and others like it, cumulatively reduce the air quality in the San Joaquin Valley.

Particulate matter can be divided up into two size categories, PM -10 and PM-2.5 PM-10 refers to particulate matter that is 10 microns or less (1 micron is one-millionth of a meter) in diameter and is sometimes referred to as inhalable or coarse-particulate matter. PM-2.5 refers to particulate matter that is 2.5 microns or less in diameter and is referred to as fine-particulate matter. The size of the particulate matter is directly linked to their potential for causing health problems. Small particles pose the greatest health problems, because they can get deep in the lungs, and some may even get into the bloodstream. Both PM-10 and PM-2.5 are small enough to bypass the body's defense mechanisms and become lodged in the lungs. In fact, PM-2.5 s small enough to reach the alveoli, the portion of the lung where the oxygen/carbon dioxide exchanges occurs. Exposure to such particulates can affect both the lungs and the heart. Large particulates are less of a concern, although they can irritate one's eyes, nose and throat.

Construction Emissions

No construction is associated with this project.

Operational Emissions

Operational emissions can be classified as stationary sourced and mobile sourced emissions. The SJVAPCD does not permit mobile sources (cars, etc.), while they do permit stationary sources.

Non-permitted (mobile) Sources

Non-permitted sources (mobile sources) of emissions from dairies include those of vehicles, trucks, and similar sources.

Dairy operations have the potential to generate air pollutant emissions, including reactive organic gases (ROG), nitrogen oxides (NOx), particulate matter (PM-10), ammonium, hydrogen sulfide, carbon monoxide and methane. The generation of PM-10 at dairies is created by the movement of cattle, and through the harvesting

and tilling of agricultural operations. Ongoing operations of the project will only be minimally increased from current levels.

In 2005, paved and unpaved road dust particulate matter (within the range of PM-10) contributed to approximately 33% if the total PM-10 for the entire Madera County region. The San Joaquin Valley PM-10 Attainment Demonstration Plan (ADP) acknowledges that agricultural activities may represent a significant source of fugitive dust and supports continued research to characterize emissions from these activities.

Emissions of CO (Carbon Monoxide) are the primarily mobile-source criteria pollutant of local concern. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed and delay. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions.

As can be seen in the graph below, the emissions expected for this facility from mobile sources are significantly less than the reportable quantities identified by the air district. As such, no aggressive mitigations will be required.

Permitted (stationary) Sources

Emission sources at any dairy include, but are not limited to: milking parlors, enteric emissions, silage piles, bunker feed, separation systems/processing pit, lagoon(s)/storage pond(s), land application, flush lanes, freestalls, open corrals, manure piles, emissions from manure disturbance, composting, and separated solids.

Through calculations using factors to determine levels of Reactive Organic Gases (ROG) do exceed the San Joaquin Valley Air Pollution Control Board's criteria of significance by 10 tons. The total figure comes to 274.79 tons, but takes into account cattle and decomposing manure. There is no way to tell at this point which source is the burden in emissions.

Analysis of PM-10 would indicate a significant impact over the threshold of significance from the Air Board, at 198.72 tons, mostly from dairy cattle, manure decomposition and agricultural crop management

Dust and exhaust generation will result of several activities associated with dairy operations, including cattle movement and continued agriculturally related activities.

Emissions of ROG associated with this dairy's operations are generated by decomposition of animal manure and from tailpipe emissions from the operation of farm equipment and on-road vehicles. Policies included as part of the County's Dairy Element addresses this impact. Mitigations are proposed as a part of the Dairy Element Environmental Impact Report, but acknowledges that even with incorporation may not reduce ROG and NOx emissions sufficiently enough.

Calculations

Operation Activity	ROG	NOx	PM10	PM2.5	Ammonium	Methane
Dairy Cattle in pens and manure decomposition	40.16	0.00	20.18	1.47	131.72	451.14
Agricultural Crop management in support of dairy operations (field preparation, tilling and harvesting)	0.78	4.76	9.41	2.30	na	na
Delivery Trucks and employee vehicels on public roads	0.02	1.11	0.04	0.03	na	na
Totals in tons	40.96	5.87	29.62	3.80	131.72	451.14

Some of these figures are in excess of what the San Joaquin Valley Air Pollution Control District considers to be a trigger for more in depth CEQA. However, with mitigation incorporation to reduce these figures, the dairy will be able to reduce the overall impact.

(c) *Less than Significant Impact with Mitigation Incorporation.* The increase in herd size will increase the amount of criteria pollutants at a local level. This taken into account with the other dairies in the vicinity, will add a cumulative impact to the region.

Dust generation, carbon monoxide, ozone, nitrogen dioxide, hydrogen sulfide, and lead and sulfur dioxide are within the realm of criteria pollutants. Each of these pollutants is generated by one form or another of dairy operations. While taken on its' own, this project will not have a significant impact in contributing this material, however it will be cumulative in the whole.

Emissions of ROG associated with this dairy's operations are generated by decomposition of animal manure and from tailpipe emissions from the operation of farm equipment and on-road vehicles. Policies included as part of the County's Dairy Element addresses this impact. Mitigations are proposed as a part of the Dairy Element Environmental Impact Report, but acknowledges that even with incorporation may not reduce ROG and NOx emissions sufficiently enough.

(d) *Less than Significant Impact with Mitigation Incorporation.* Sensitive receptors are facilities that "house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors." (GAMAQI 2002).

The project site is located in a sparsely populated area of the county and not near hospitals or schools where large concentrations of sensitive receptors. The established Madera County Dairy Overlay Zone, as a part of the County's Dairy Standards, establishes a one-half mile buffer zone around sensitive receptors as they relate to dairies. According to County aerials and records, the average distance to any other residence exceeds that one-half mile distance, thus is not an impact.

The proposal would not expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people.

A review of available records indicates that there have been no odor complaints from the subject project site. There are other dairies and agricultural related operations in the area that would make pinpointing an exact source of significant odors near impossible. The San Joaquin Valley Air Pollution Control District indicated during the preparation of the Dairy Element Environmental Impact Report that very few odor complaints associated with dairies occur.

Health Impacts

Toxic Air Contaminants are of a concern to the San Joaquin Valley Air Pollution Control District only if the project site is located in the vicinity of residential/sensitive receptors. TAC's are non-criteria air pollutants that are capable of causing short term (acute) and/or long term (chronic or carcinogenic) adverse human effects. TAC's can be emitted from the most common of sources: gasoline stations, automobiles, dry cleaners, industrial operations and painting operations.

Common TAC's that may be found at a dairy operation include diesel particulates and ammonia. Diesel particulates are typically resultant of truck engines and diesel operated generators. Ammonia is generated during anaerobic decomposition of manure. Ammonia is considered a precursor to PM-2.5. Because of the uncertainty of emission rates for ammonia and the lack of a scientific method of calculating PM-2.5 conversion from ammonia emissions, any calculation of secondary PM-2.5 would be speculative.

No health effects have been found in humans exposed to typical environmental (moderate) concentrations of ammonia. In high concentrations, it can severely irritate the eyes, nose, ears and throat. Lung damage and death may occur after exposure to very high concentrations of ammonia. Individuals with asthma may be more sensitive to breathing ammonia than others.

(e) *Less than Significant Impact with Mitigation Incorporation.* During Staff visits to the vicinity of the facility operations, no appreciable odors were noted. This does not mean that odor generation can occur, especially during warmer climatic events with little or no air movement. With mitigation incorporation, this impact will be lessened to Less than Significant.

Nuisance Odors

New or expanding dairies would include the management of cattle manure generated on site. Although odors from raising livestock are exempt from direct regulation by the local air quality jurisdiction under California state law (CHSC 41705[a]), odor can still be considered a perceived nuisance and an environmental impact. Factors that affect odor impacts include the design of dairies and exposure duration. Manure generated at freestall barns would generally be collected in drive lanes and flushed with process water into on-storage ponds. Manure generated at unpaved corrals of a new or expanded dairy could be managed using a flushed system, or could be used.

Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or national air quality regulations, the SJVAPCD has no rules or standards related to odor emissions, other than its nuisance rule. Any actions related to odors are based on citizen complaints to local government agencies including the SJVAPCD. The SJVAPCD uses screening distances to determine the potential for odor impacts from various land uses. The SJVAPCD screening distance for dairy odors is given as one mile.

Odors from raising livestock are exempt from direct regulation by the local air quality jurisdiction under California state law [California Health and Safety Code §41705(a)]. Odor formation and transport from dairy operations -- corrals, lagoons, and freestalls -- is a complex process. Prevailing winds is toward the southeast based on Fresno Yosemite International Airport rose records.

Manure placed in the storage ponds, and potentially the stockpiles, would naturally undergo anaerobic decomposition. As a result, odorous compounds, such as ammonia and hydrogen sulfide, could be released into the environment.

A review of available records indicates that there have been no odor complaints from the subject project site. There are other dairies and agricultural related operations in the area that would make pinpointing an exact source of significant odors near impossible. The San Joaquin Valley Air Pollution Control District indicated during the preparation of the Dairy Element Environmental Impact Report that very few odor complaints associated with dairies occur. .

In response to a request for comments, the San Joaquin Valley Air Pollution Control District indicated that nuisance odors are subjective, and as such the district has not established thresholds of significance for these types of odors.

Vector Generation

The generation and storage of manure, manure-water, animal feed and other organic materials at dairies present the possibility of increased vector activities. Mosquito and fly infestations can be observed at dairies, particularly at manure separation pits and lagoons that have not been properly maintained, and poorly managed feed areas.

The determination of whether there are cumulatively significant vector impacts is made by an analysis of the existing impacts in the area and whether or not the incremental contribution of vectors from the proposed project will result in a cumulatively significant impact. The commonly held belief is that nuisance flies will disperse from point of origin to approximately one-half mile. University of California Extension Specialists believe that a one-half mile separation between dairies and residences is sufficient to avoid a fly problem. It is acknowledged that flies do not disperse in a predictable pattern, and their dispersal destination locations are contingent on conditions being desirable for them. It is presumed that these locations are "stumbled upon" by chance, as varying factors are always in play (wind direction and speed, location desirability, etc.). Therefore it is with no certainty that flies found in one location can be traced back to a specific property, farm, or dairy operation.

Control of flies has been demonstrated to result in increased milk production at dairies; the greater the number of flies on a dairy cow, the less the production amount of milk – up to 30% less has been documented.

The use of pesticides to control fly populations as a primary means has proven less successful than a tiered approach that first employs cultural controls (i.e. good housekeeping controls), than biological (i.e. use of parasitic wasp population) and then careful application of pesticides only as necessary. The use of the parasitic wasps allows for the wasps to lay eggs in the pupa of the flies, and then when the wasp hatches, it feeds off the dead fly.

Global Climate Change

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in temperature, wind patterns, precipitation, and storms. Global climate is the change in the climate of the earth as a whole. It can occur naturally, as in the case of an ice age, or occur as a result of anthropogenic activities. The extent to which anthropogenic activities influence climate change has been the subject of extensive scientific inquiry in the past several decades. The Intergovernmental Panel on Climate Change (IPCC), recognized as the leading research body on the subject, issued its Fourth Assessment Report in February 2007, which asserted that there is "very high confidence" (by IPCC definition a 9 in 10 chance of being correct) that human activities have resulted in a net warming of the planet since 1750.

CEQA requires an agency to engage in forecasting "to the extent that an activity could reasonably be expected under the circumstances. An agency cannot be expected to predict the future course of governmental regulation or exactly what information scientific advances may ultimately reveal" (CEQA Guidelines Section 15144, Office of Planning and Research commentary, citing the California Supreme Court decision in Laurel Heights Improvement Association v. Regents of the University of California [1988] 47 Cal. 3d 376).

Recent concerns over global warming have created a greater interest in greenhouse gases (GHG) and their contribution to global climate change (GCC). However at this time there are no generally accepted thresholds of significance for determining the impact of GHG emissions from an individual project on GCC. Thus, permitting agencies are in the position of developing policy and guidance to ascertain and mitigate to the extent feasible the effects of GHG, for CEQA purposes, without the normal degree of accepted guidance by case law.

Greenhouse Gas (GHG) Emissions

The potential effect of greenhouse gas emission on global climate change is an emerging issue that warrants discussion under CEQA. Unlike the pollutants discussed previously that may have regional and local effects, greenhouse gases have the potential to cause global changes in the environment. In addition, greenhouse gas emissions do not directly produce a localized impact, but may cause an indirect impact if the local climate is adversely changed by its cumulative contribution to a change in global climate. Individual development projects contribute relatively small amounts of greenhouse gases that when added to other greenhouse gas producing activities around the world would result in an increase in these emissions that have led many to conclude is changing the global climate. However, no threshold has been established for what would constitute a cumulatively considerable increase in greenhouse gases for individual development projects. The State of California has taken several actions that help to address potential global climate change impacts.

California Assembly Bill (AB) 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent by 2020 and by 27 percent in 2030 (CARB 2004a).

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S3-05, the following GHG emission targets: by 2010 reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions by 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

IV. BIOLOGICAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☑	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☑	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Discussion:

(a) *Less than Significant Impact.* While the table below indicates special status species in the quadrangle where the dairy exists, there is no likelihood that special status plant or animal species, or unique habitat is known to exist on the project site or surrounding area, and no impacts to biological resources would occur as a result of this project. No locally designated resources exist in this portion of the county and resources such as wetland habitat or migration corridors are not present. The project would not conflict with any local policies or ordinances protecting biological resources, and the project would not conflict with the provision of any conservation plans.

There is no new construction related to this specific project.

Special Status Species include:

- Plants and animals that are legally protected or proposed for protection under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA);
- Plants and animals defined as endangered or rare under the California Environmental Quality Act (CEQA) §15380;
- Animals designated as species of special concern by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG);
- Animals listed as "fully protected" in the Fish and Game Code of California (§3511, §4700, §5050 and §5515); and

- Plants listed in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California.

A review of both the County's and Department of Fish and Game's databases for special status species have identified the following species:

Species	Federal Listing	State Listing	Dept. of Fish and Game Listing	CNPS Listing
Hoary Bat	None	None	None	None
Hoover's cryptantha	None	None	None	1A
Heartscale	None	None	None	1B.2
Lesser Saltscale	None	None	None	1B.2
Subtle orache	None	None	None	1B.2
Recurved larkspur	None	None	None	1B.2

Chowchilla Quadrangles

List 1A: Plants presumed extinct

List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.

List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

List 3 Plants which more information is needed – a review list

List 4: Plants of Limited Distributed - a watch list

Ranking

0.1 – Seriously threatened in California (high degree/immediacy of threat)

0.2 – Fairly threatened in California (moderate degree/immediacy of threat)

0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)

The Valley elderberry longhorn beetle was listed as a threatened species in 1980. Use of the elderberry bush by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the elderberry's use by the beetle is an exit hole created by the larva just prior to the pupal stage. According to the USFWWS, the Valley Elderberry Longhorn Beetle habitat is primarily in communities of clustered Elderberry plants located within riparian habitat. The USFWS stated that VELB habitat does not include every Elderberry plant in the Central Valley, such as isolated, individual plants, plants with stems that are less than one inch in basal diameter or plants located in upland habitat.

The Madera County Dairy Element has indicated that conversion of agricultural lands into dairy facilities would have a less of an effect on potential special status species in that due to the aggressive use of such lands would tend to not have habitat potentials for such species.

No comments were received from the Department of Fish and Game in relation to this project.

(b) *Less than Significant Impact with Mitigation Incorporation.* Ash Slough runs adjacent to or partially through parcels that are associated with this project. During a vicinity visit of the area, it was noted that there were no barricades or other means by which to keep livestock from the banks of these waterways.

Development and/or operations associated with this project will have a potential impact to those riparian corridors.

(c) *Less than Significant Impact with Mitigation Incorporation.* Ash Slough exists on or in close proximity to the project site. The potential of vernal pools and other related wetlands exist. Mitigations will be incorporated so as to not have any impacts as a result of this project.

Wetlands are defined under Title 33 §328.3 of the California Code of Regulations as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." 33 CFR §328.3(b).

(d) *Less than Significant Impact.* The dairy has been in operation for several years, and as such should not be an appreciable impact to existing species migration paths.

(e - f) *No Impact.* No impacts have been identified as a result of this project.

General Information

Effective January 1, 2007, Senate Bill 1535 took effect that has changed de minimis findings procedures. The Senate Bill takes the de minimis findings capabilities out of the Lead Agency hands and puts the process into the hands of the Department of Fish and Game. The same Senate Bill also increases the associated fees for the Fish and Game; the current fees associated with a Mitigated Negative Declaration are $2101.50, and the County Clerk filing fee is $50.

In short, the applicant must either contact the California Department of Fish and Game and get them to issue a de minimis finding and fee exemption waiver, submit that with the County $50 filing fee, **OR** submit a total of $2,151.50 (on top of associated County Fees) to the County.

V. CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☑
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☑

Discussion:

Public Resource Code 5021.1(b) defines a historic resource as "any object building, structure, site, area or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." These resources are of such import, that it is codified in CEQA (PRC Section 21000) which prohibits actions that "disrupt, or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social groups; or a paleontological site except as part of a scientific study."

Pursuant to CEQA Guidelines §15064 archaeological importance is generally, although not exclusively, a measure of the archaeological research value of a site which meets one or more of the following criteria:

- Is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory.

- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions.

- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.

- Is at least 100 years old and possesses substantial stratigraphic integrity (i.e. it is essentially undisturbed and intact).

- Involves important research questions that historic research has shown can be answered only with archaeological methods.

(a & b) *No Impact.* No impacts have been identified. This facility has been in operation for some time, so any archaeological evidence would have been found at this point given the intensity of ground disturbance.

No sites of archaeological or historical significance are known to exist on or in the vicinity of the subject property. Though the majority of the project site has been disturbed by previous agricultural activities, grading and excavating of the areas in question could result in disturbance of unknown cultural resources. Policy 4.D.3 of the Madera County General Plan provides for that "[T]he County shall require that discretionary development projects identify and protect from damage, destruction and abuse, important historical, archaeological, paleontological and cultural sites and their contributing environment." Impacts on previously undiscovered cultural resources are potentially significant, but can be mitigated to a level that is less than significant through incorporation of the mitigation measure(s) stipulated in the Negative Declaration.

No known unique geological features in the vicinity of the project site exist. There are no known fossil bearing sediments on the project site. No impact has been identified.

Most of the archaeological survey work in the County has taken place in the foothills and mountains. This does not mean, however, that no sites exist in the western part of the County, but rather that this area has not been as thoroughly studied. There are slightly more than 2,000 recorded archaeological sites in the County, most of which are located in the foothills and mountains. Recorded prehistoric artifacts include village sites, camp sites, bedrock milling stations, pictographs, petroglyphs, rock rings, sacred sites, and resource gathering areas. Madera County also contains a significant number of potentially historic sites, including homesteads and ranches, mining and logging sites and associated features (such as small camps, railroad beds, logging chutes, and trash dumps.

(c) *Less than Significant Impact.* To date, the only paleontological finds in Madera County have been in the general vicinity of the Fairmead Landfill. The landfill is some distance away from this project, and given that this project has been in existence for some time, the chances of finding paleontological evidence at this point is minimal. However, there is always the potential of new discoveries.

(d) *No Impact.* No impacts have been identified as a result of this project.

VI. GEOLOGY AND SOILS -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑

Discussion:

(a I - iii) *Less than Significant Impact.* Madera County is divided into two major physiographic and geologic provinces: the Sierra Nevada Range and the Central Valley. The Sierra Nevada physiographic province in the northeastern portion of the county is underlain by metamorphic and igneous rock. It consists mainly of homogenous types of granitic rocks, with several islands of older metamorphic rock. The central and western parts of the county are part of the Central Valley province, underlain by marine and non-marine sedimentary rocks.

The foothill area of the county is essentially a transition zone, containing old alluvial soils that have been dissected by the west-flowing rivers and streams which carry runoff from the Sierra Nevada's.

Seismicity varies greatly between the two major geologic provinces represented in Madera County. The Central valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevada's, partly within Madera County, are the result of movement of tectonic plates which resulted in the creation of the mountain range. The Coast Ranges on the west side of the Central Valley are also a result of these forces, and continued movement of the Pacific and North American tectonic plates continues to elevate the ranges. Most of the seismic hazards in Madera County result from movement along faults associated with the creation of these ranges.

There are no active or potentially active faults of major historic significance within Madera County. The County does not lie within any Alquist Priolo Special Studies Zone for surface faulting or fault creep.

However, there are two significant faults within the larger region that have been and will continue to be, the principle sources of potential seismic activity within Madera County.

San Andreas Fault: The San Andreas Fault lies approximately 45 miles west of the county line. The fault has a long history of activity and is thus a concern in determining activity in the area.

Owens Valley Fault Group: The Owens Valley Fault Group is a complex system containing both active and potentially active faults on the eastern base of the Sierra Nevada Range. This group is located approximately 80 miles east of the County line in Inyo County. This system has historically been the source of seismic activity within the County.

The *Draft Environmental Impact Report* for the state prison project near Fairmead identified faults within a 100 mile radius of the project site. Since Fairmead is centrally located along Highway 99 within the county, this information provides a good indicator of the potential seismic activity which might be felt within the County. Fifteen active faults (including the San Andreas and Owens Valley Fault Group) were identified in the *Preliminary Geotechnical Investigation.* Four of the faults lie along the eastern portion of the Sierra Nevada Range, approximately 75 miles to the northeast of Fairmead. These are the Parker Lake, Hartley Springs, Hilton Creek and Mono Valley Faults. The remaining faults are in the western portion of the San Joaquin Valley, as well as within the Coast Range, approximately 47 miles west of Fairmead. Most of the remaining 11 faults are associated with the San Andreas, Calaveras, Hayward and Rinconada Fault Systems which collectively form the tectonic plate boundary of the Central Valley.

In addition, the Clovis Fault, although not having any historic evidence of activity, is considered to be active within quaternary time (within the past two million years), is considered potentially active. This fault line lies approximately six miles south of the Madera County line in Fresno County. Activity along this fault could potentially generate more seismic activity in Madera County than the San Andreas or Owens Valley fault systems. However, because of the lack of historic activity along the Clovis Fault, there is inadequate evidence for assessing maximum earthquake impacts.

Seismic ground shaking, however, is the primary seismic hazard in Madera County because of the County's seismic setting and its record of historical activity (General Plan Background Element and Program EIR). The project represents no specific threat or hazard from seismic ground shaking, and all new construction will comply with current local and state building codes. Other geologic hazards, such as landslides, lateral spreading, subsidence, and liquefaction have not been known to occur within Madera County.

According to the Madera County General Plan Background Report, groundshaking is the primary seismic hazard in Madera County. The valley portion of Madera County is located on alluvium deposits, which tend to experience greater groundshaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from groundshaking than those located in the foothill and mountain areas.

Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged ground shaking. According to the Madera County General Plan Background Report, although there are areas of Madera County where the water table is at 30 feet or less below the surface, soil types in the area are not conducive to liquefaction because they are either too coarse in texture or too high in clay content; the soil types mitigate against the potential for liquefaction.

(a - iv) *No Impact.* The topography of the main facility and support parcels is relatively flat and not conducive to landslides. No impacts have been identified as a result of this project.

(b) *Less than Significant Impact.* The area in which this project is located has a topography that is reasonably flat. While there is still the potential for sheet flows during flood events eroding the soil to some degree, the chances of significant erosion is not as much of a concern.

(c) *No Impact.* The project operations have been at its' location for quite a number of years, The new project will not significantly change the overall operations. Therefore, no impacts have been identified as a result of this project.

(d - e) *No Impact.* No impacts have been identified as a result of this project.

VII. GREENHOUSE GAS EMISSIONS - Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☑	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☑	☐	☐

Discussion:

(a - b) *Less than Significant Impact with Mitigation Incorporation.* Methane would be the primary greenhouse gas associated with this project. The digestion of cellulose by bacteria in cattle stomachs as well as the decomposition of animal manure generates methane during dairy operations. Factors that influence methane production are similar to those that affect milk and ROG production, which include general herd health , feed rates and quality, and cattle species variations.

Implementation of Dairy Standards policies as they relate to ROG reduction will be implemented so as to reduce the amount of greenhouse gases from this project.

Global Climate Change

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in temperature, wind patterns, precipitation, and storms. Global climate is the change in the climate of the earth as a whole. It can occur naturally, as in the case of an ice age, or occur as a result of anthropogenic activities. The extent to which anthropogenic activities influence climate change has been the subject of extensive scientific inquiry in the past several decades. The Intergovernmental Panel on Climate Change (IPCC), recognized as the leading research body on the subject, issued its Fourth Assessment Report in February 2007, which asserted that there is "very high confidence" (by IPCC definition a 9 in 10 chance of being correct) that human activities have resulted in a net warming of the planet since 1750.

CEQA requires an agency to engage in forecasting "to the extent that an activity could reasonably be expected under the circumstances. An agency cannot be expected to predict the future course of governmental regulation or exactly what information scientific advances may ultimately reveal" (CEQA Guidelines Section 15144, Office of Planning and Research commentary, citing the California Supreme Court decision in Laurel Heights Improvement Association v. Regents of the University of California [1988] 47 Cal. 3d 376).

Recent concerns over global warming have created a greater interest in greenhouse gases (GHG) and their contribution to global climate change (GCC). However at this time there are no generally accepted thresholds of significance for determining the impact of GHG emissions from an individual project on GCC. Thus, permitting agencies are in the position of developing policy and guidance to ascertain and mitigate to the extent feasible the effects of GHG, for CEQA purposes, without the normal degree of accepted guidance by case law.

Greenhouse Gas (GHG) Emissions: The potential effect of greenhouse gas emission on global climate change is an emerging issue that warrants discussion under CEQA. Unlike the pollutants discussed previously that may have regional and local effects, greenhouse gases have the potential to cause global changes in the environment. In addition, greenhouse gas emissions do not directly produce a localized impact, but may cause an indirect impact if the local climate is adversely changed by its cumulative contribution to a change in global climate. Individual development projects contribute relatively small amounts of greenhouse gases that when added to other greenhouse gas producing activities around the world would result in an increase in these emissions that have led many to conclude is changing the global climate. However, no threshold has been established for what would constitute a cumulatively considerable increase in greenhouse gases for individual development projects. The State of California has taken several actions that help to address potential global climate change impacts.

California Assembly Bill (AB) 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent by 2020 and by 27 percent in 2030 (CARB 2004a).

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S3-05, the following GHG emission targets: by 2010 reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions by 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Methane (described in the Dairy Standards Environmental Impact Report "non-criteria pollutants generated by dairies section) would be the primary greenhouse gas associated with the dairy. The digestion of cellulose by bacteria in cattle stomachs as well as the decomposition of animal manure generates methane during dairy operation. Factors that influence methane production are similar to those that affect milk and ROG production, which include general herd health, feed rates and quality, and cattle species variations.

Taken as a whole, the cumulative impact of all the dairies in Madera County is insignificant in its' totality. However, mitigation measures incorporated into the Dairy Element to address this issue will be incorporated into the mitigations for this project.

VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☑	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑	☐

Discussion:

The western part of Madera County has historically experienced several concerns related to hazardous materials. The use and management of chemicals, including hazardous materials, within the agricultural areas of the County are dominated by the application of fertilizer and pesticides for crop production.

Hazardous materials management in agricultural areas also includes storage and use of hydrocarbon fuels. Diesel fuel is used to power mobile farm equipment (trucks, tractors, combines) and stationary equipment such as irrigation pumps and groundwater well pumps.

Other hazardous materials used at dairies can include chlorine and other disinfectants, oils and lubricants, and antifreeze.

(a) *Less than Significant Impact with Mitigation Incorporation.* Hazardous materials will be used as part of the normal operation of the dairy facility. The use of fuel stored in aboveground tanks, lubricants, and cleaning solutions would be required for the operation and maintenance of equipment during and after construction of the proposed structure. Fuels and lubricants will continue to be used as a result of ongoing operations on site. There will also be the use of dairy/agricultural facility related soaps and chemicals used in cleaning of equipment. The use of herbicides and pesticides will be applied to the crops associated with this project facility. In addition, medications for the dairy cattle will be used and/or stored on site.

The use of pesticides to control fly populations as a primary means has proven less successful than a tiered approach that first employs cultural controls (i.e. good housekeeping controls), than biological (i.e. use of parasitic wasp population) and then careful application of pesticides only as necessary. The use of the parasitic wasps allows for the wasps to lay eggs in the pupa of the flies, and then when the wasp hatches, it feeds off the dead fly.

The Regional Water Quality Control Board requires that a Comprehensive Nutrient Management Plan (CNMP) and a Waste Management Plan (WMP) be prepared for dairies in compliance with the provisions of the Waste Discharge Requirements General Oder for Existing Milk Cow Dairies. The WMP is required to include provisions for the safe storage, use and disposal of hazardous materials. This dairy has prepared a WMP and has submitted it to the Planning Department as a requirement of the Conditional Use Permit application packet.

The WMP details the operational impacts of the dairy and quantifies the amounts of discharges potentially as a result of this project. It also includes an Operation and Maintenance Plan. As a mitigation for this project, the applicant will be required to adhere to that Operation and Maintenance Plan.

(b) *Less than Significant Impact with Mitigation Incorporation.* The fact that hazardous materials are on site and being used as part of the normal day-to-day operations of this facility, there is always the potential for accidental release. Proper handling through use, and storage of, these materials will minimize their impacts of potential release.

(c) *Less than Significant Impact with Mitigation Incorporation.* Alview School is located on the east side of Road 4, just south of its' intersection with Avenue 21, and while not surrounded by the dairy facility, is in proximity to a couple parcels used in conjunction with the actual dairy facility itself. Application of pesticides and herbicides to these parcels could potentially have an impact to the students at that school. With mitigations, this can be reduced to a less than significant impact.

The Dairy Standards do not specifically discuss situations surrounding schools. The only discussion contained within the goals and policies of the Dairy Element is that pertaining to buffer zones of residential developments (not associated with the dairy itself).

(d) *No Impact.* This site is not listed on any known lists of hazardous materials sites, past or present.

(e - f) *Less than Significant Impact.* The project site is within proximity of two Airport/Airspace Overlay (AAO) Districts as defined by the Madera County Zoning Ordinance. An agricultural airstrip is within the vicinity of the site as well as the Chowchilla Airport. Even though not directly in the Overlay Districts, there will be mitigations suggested to adhere to due to the proximity.

As the airport is of limited use due to its' agricultural use, and that it is not listed for general aviation purposes, the risk to the dairy operation is limited.

(g) *No Impact.* No impacts have been identified as a result of this project.

(h) *Less than Significant Impact.* The facility is not located in an area of the County considered to be wildland. However, given the crops and related agricultural land in the area, the potential for wildland-like fires in the area is present. There are limited structures on the facility.

The greatest wildland fire hazards exist in areas with quickly ignitable, dense understory vegetation, such as grasses, adjacent to slower and hotter burning fuels such as trees. These conditions exist in varying degrees over approximately two-thirds of Madera County, to the north and east of the Madera Canal. A majority of the known dairies are located to the west of the Madera Canal and is not within an area considered to be of high wildfire risk.

IX. HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☑	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☑	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☑	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☑	☐	☐
f) Otherwise substantially degrade water quality?	☐	☑	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

Groundwater flow is generally towards the southwest, except in the southern portion of the county where the flow is to the northwest, away from recharge along the San Joaquin River.

(a) *Less than Significant Impact with Mitigation Incorporation.* There have been no significant problems with respect to surface water quality in the area. However, since the surface water is primarily used for agriculture, the standards applied to the water are not as strict as those for drinking water. Surface water typically requires treatment before it can be used for drinking water supply. Surface water and groundwater quality in the County is monitored by a number of agencies, mainly for the purposes of ensuring safe drinking water.

The USEPA has determined that shallow groundwater can become contaminated with manure pollutants from water movement through the soil based on empirical studies that include examination of several thousand groundwater samples completed by the USEPA and the USGS to analyze the long-term changes in nitrate in

the San Joaquin Valley.

The operation of the dairy could cause environmental degradation of groundwater quality, especially if the area has shallow groundwater, unless the manure generated at dairies is collected, stored and used in an environmentally sound manner. If not properly managed, components of animal manure such as nitrogen, phosphorous, pathogens, and salt could become persistent groundwater pollutants.

All dairies within the County are governed by the California Regional Water Quality Control Board and their discharge permitting program. All dairies are required to undergo regular inspections and reporting guidelines. County records for all the known dairies include inspection and notice of violation reports submitted by the California Regional Water Quality Control Board. The file for the Vlot Dairy operation does not contain any notices of violations for the parcel. Records for the Vlot Dairy date back to late 1999.

Ash Slough is adjacent to a portion of the support parcels for this project.

While not in the immediate area of this project, Nitrate levels have been detected at the Red Top Café (Road 4 and Highway 152) at significant levels according to the Madera County Environmental Health Department. Additionally, levels below the reporting levels have been detected at the school (approximately 8 to 19 milligrams per liter). Filtration is the typical means of removal of the nitrates.

Incorporation of the Dairy Element standards for water quality will be implemented into the mitigations for the project.

Construction of facilities has the potential of contributing erodible materials into waterways for the duration of building operations. This includes silt and dirt into the waterways of the area. This will be a temporary issue for the duration of construction. However, with proper mitigation, this can be lessened to a level of less than significant.

(b) *Less than Significant Impact with Mitigation Incorporation.* The operation is served by wells. The original operational statement indicates that the milk barn will utilized approximately 50,000 gallons of water per day, while the cattle will consume approximately 270,000 gallons of water daily. While this is a significant amount of water usage, previous reviews have indicated that this amount is consistent with water use for irrigated agricultural properties and should not constitute a substantial reduction in the amount of groundwater available for public water supplies, or supplies to surrounding agricultural uses.

The main concern being that there are other dairy operations in the vicinity that would draw similar amounts depending on their sizes.

(c) *No Impact.* No streams or rivers are impacted as a direct result of this project. There is a condition that will be applied to this project, however, that will prohibit the applicant from developing within one hundred feet of any rivers, sloughs or tributaries that pass through or near his property.

(d) *Less than Significant Impact with Mitigation Incorporation.* Ash Slough and the Eastside Bypass either are adjacent to or pass through portions of this project. There is a condition that will be applied to this project that will prohibit the applicant from developing within one hundred feet of any rivers, sloughs or tributaries that pass through or near his property. The addition of a freestall barn will increase rainfall runoff from the roof onto surrounding areas of the structure. This has the potential of slightly increasing the stormwater runoff, therefore potentially increasing the potential of erosion in areas once not as impacted.

The freestall barn will not impact the slough or bypass, however there is the potential that some aspect of the project will impact them. As mentioned in the above paragraph, the dairy operator will have a mitigation to avoid these waterways.

(e - f) *Less than Significant Impact with Mitigation Incorporation.* The USEPA has determined that shallow groundwater can become contaminated with manure pollutants from water movement through the soil based on empirical studies that include examination of several thousand groundwater samples compiled by the USEPA and the USGS.

The operation could cause environmental degradation of groundwater quality, especially in areas of shallow groundwater, unless the manure generated is collected, stored and used in an environmentally sound manner. If not properly managed, the components of animal manure such as nitrogen, phosphorus, pathogens, and salt

could become persistent groundwater pollutants.

Specific soil characteristics are a key concern for evaluating whether surface water would infiltrate through the shallow soils to the groundwater. Policies and monitoring required by local, state and federal agencies will assist in mitigating this issue.

There have been no significant problems with respect to surface water quality in the area. However, since the surface water is primarily used for agriculture, the standards applied to the water are not as strict as those for drinking water. Surface water typically requires treatment before it can be used for drinking water supply.

Surface water and groundwater quality in the County is monitored by a number of agencies, mostly for the purposes of ensuring safe drinking water.

Dairy operations produce a considerable amount of manure and wastewater, which contains nutrients, organic matter, salts, microorganisms, pathogens and fecal bacteria. Of the constituents of manure are not properly managed, they can pollute surface water quality by contributing excess nutrients, oxygen-demanding materials, and bacterial pathogens. Release of water that has come into contact with dead animals, feed, or manure may transport nutrients and other pollutants to surface waters.

This operation could cause environmental degradation of groundwater quality, especially in areas of shallow groundwater, unless manure is collected, stored and used in an environmental sound manner.

Several existing regional and state regulations, including the California Code of Regulations, Central Valley Regional Water Quality Control Board Waste Discharge Requirements General Order, the RWQCB Basin Plan and numerous policies of the Madera County Dairy Element are designed to minimize impacts to surface waters. Incorporation of these regulations into the mitigated negative declaration and conditions of approval will bring the impacts to a level of less than significant.

There are dairies within the vicinity that singularly may not pose a significant impact to the quality of water, however cumulatively there is a greater chance of impacts.

Do to the nature of most dairies, large open areas of generally pervious surfaces exist. This typically will allow rainwater to be absorbed without problem. Construction of new facilities on existing dairies such as being proposed here will create more impervious surfaces, thereby preventing precipitation from infiltrating and causing it to pond and/or runoff. Therefore, the new facilities would increase runoff, potentially causing flooding onsite and/or contributing to offsite flooding in down gradient locations.

(g - h) *No Impact.* This property has not been identified as being in the 100-year flood plane, no new residential structures are proposed as a result of this project. The applicant will still have to adhere to conditions stipulated to in the variances for the residences on site to keep them elevated in accordance to this flood plane.

(i) *No Impact.* The property has been identified as not being within the 100-year flood plane, and is adjacent to the Ash Slough. These channels have the potential of flooding, especially during heavy rain events. There is little chance of the potential loss of life if flood events are anticipated. There are mitigations and conditions of approval that will be put into place to minimize the risk of flooding.

(j) *No Impact.* The area is well inland from any major water source that could pose a seiche, tsunami or mudflow issue. The terrain is relatively flat.

A seiche is an occasional and sudden oscillation of the water of a lake, bay or estuary producing fluctuations in the water level and caused by wind, earthquakes or changes in barometric pressure. A tsunami is an unusually large sea wave produced by seaquake or undersea volcanic eruption (from the Japanese language, roughly translated as "harbor wave"). According to the California Division of Mines and Geology, there are no active or potentially active faults of major historic significance within Madera County. As this property is not located near any bodies of water, no impacts are identified.

X. LAND USE AND PLANNING – Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

Discussion:

(a - c) *No Impact.* No impacts have been identified as a result of this project.

XI. MINERAL RESOURCES – Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Discussion:

(a - b) *No Impact.* No impacts have been identified as a result of this project.

XII. NOISE – Would the project result in:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d) A substantial temporary or periodic increase in ambient levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐

Discussion:

General Discussion

The Noise Element of the Madera County General Plan (Policy 7.A.5) provides that noise which will be created by new non-transportation noise sources shall be mitigated so as not to exceed the Noise Element noise level standards on lands designated for noise-sensitive uses. However, this policy does not apply to noise levels associated with agricultural operations. All the surrounding properties, while include some residential units, are designated and zoned for agricultural uses. This impact is therefore considered less than significant.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g. demolition/land clearing, grading and excavation, erection). The United States Environmental Protection Agency has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA Leq, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods.

Short Term Noise

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given the noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g. trees, buildings, fences), outdoor receptors within approximately 400 feet of construction site could experience maximum noise levels of greater than 70 dBA when onsite construction-related noise levels exceed approximately 89 dBA at the project site boundary. Construction activities that occur during the more noise-sensitive eighteen hours could result in increased levels of annoyance and sleep disruption for occupants of nearby existing residential dwellings. As a result, noise-generating construction activities would be considered to have a potentially significant short-term impact. However with implementation of mitigation measures, this impact would be considered less than significant.

Long Term Noise

Mechanical building equipment (e.g. heating, ventilation and air conditioning systems, and boilers), associated with the proposed structures, could generate noise levels of approximately 90 dBA at 3 feet from the source. However, such mechanical equipment systems are typically shielded from direct public exposure and usually housed on rooftops, within equipment rooms, or within exterior enclosures.

Landscape maintenance equipment, such as leaf blowers and gasoline powered mowers, associated with the proposed operations could result in intermittent noise levels that range from approximately 80 to 100 dBA at 3 feet, respectively. Based on an equipment noise level of 100 dBA, landscape maintenance equipment (assuming a noise attenuation rate of 6 dBA per doubling of distance from the source) may result in exterior noise levels of approximately 75 dBA at 50 feet.

Excessive groundborne vibration or noise levels are not anticipated during either construction or operations.

(a) *Less than Significant Impact.* There may be a slight increase in noise generation during any construction associated with this project. However the duration and the limited residential density of the area would preclude any appreciable increase of noise.

The relevant policy in Madera County Code includes the following:

Policy 6.28.040 A: Agricultural activity, operation or facility, or appurtenances thereof includes, but is not limited to, the cultivation and tillage of the soil, dairying...the raising of livestock...or any practices performed...in conjunction with such...operations including preparation for market, delivery to storage or to market, or to carriers for transportation to market.

Policy 6.28.050 A: No agricultural activity, operation or facility...shall be or become a nuisance, private or public, due any changed condition in or about the locality...

(b) *Less than Significant Impact.* There may be some groundborne vibration during construction phases of this project, however they will not be of any significant value to surrounding properties. There are no anticipated increases in vibrations as a result of this project.

(c - d) *Less than Significant Impact.* It is not anticipated that there will be any significant increases in vehicular traffic as a direct or indirect impact of this project.

(e - f) *Less than Significant Impact.* The project site is in relative close proximity to a private airstrip, thus requiring the Airport/Airspace Overlay designation. However, this airstrip is not a general aviation airstrip, and the planes that utilize it are typically those found in agricultural uses.

XIII. POPULATION AND HOUSING -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Discussion:

(a) *No Impact.* The project as mitigated would not result in population growth, and would not displace existing housing or people.

(b - c) *No Impact.* No impacts have been identified as a result of this project.

XIV. PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☑	☐
ii) Police protection?	☐	☐	☑	☐
iii) Schools?	☐	☐	☐	☑
iv) Parks?	☐	☐	☐	☑
v) Other public facilities?	☐	☐	☐	☑

Discussion:

(a-i) *Less than Significant Impact.* The proposed project site is within the jurisdiction of the Madera County Fire Department.

Madera County Fire Department provides fire protection services to all unincorporated areas of Madera County, which has an estimated 2000 population of 74,734 persons. MCFD is a full service fire department and is comprised of 15 fire stations, a fleet of approximately 50 fire apparatus and support vehicles, 19 full-time career fire suppression personnel and 185 paid on-call firefighters, and 11 support personnel. The career fire suppression personnel and department administration are provided through a contract with the California Department of Forestry and Fire Protection (CDF). Fire prevention, clerical, and automotive support personnel are County employees. Based on the estimated 2006 population the unincorporated portion of Madera County has a current fire protection personnel ratio of 2.52:1000 to the populations (2.52 full-time career and paid on-call personnel to 1000 residents).

The topography is predominantly agricultural in nature, so has the potential of burning similar to wildland fires, but given the relative great distances between residential structures, the chances of risk of loss of life as a result of any fires is minimal.

(a-ii) *Less than Significant Impact.* The dairy facility is within the jurisdiction of the Madera County Sherriff's department. The operations itself do not require any increase in law enforcement protection. However, an incidental need is present in the event of vandalism and theft of equipment and/or materials from the site.

The Federal Bureau of Investigations suggests a law enforcement officer to population ratio of 1.7 – 2.2 per thousand in rural counties.

(a-iii) *No Impact.* No impacts identified as a result of this project.

(a iv – v) *No Impact.* No impacts have been identified as a result, directly or indirectly, of this project.

XV. RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

Discussion:

(a - b) *No Impact.* No impacts have been identified.

The project would have no discernable impacts to existing parks or require the provision of new or additional facilities.

The Madera County General Plan allocates three acres of park available land per 1,000 residents' population.

XVI. TRANSPORTATION/TRAFFIC -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures or other standards, established by the county congestion management agency for designated roads or highways?	☐	☑	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☑	☐
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☑

Discussion:

(a) *No Impact.* No impacts have been identified as a result of this project.

(b) *Less than Significant Impact with Mitigation Incorporation.* The area in which this dairy is in a rural, sparsely populated area of the County.

All local roadways in the rural areas within the County that are designated for future dairies, or in the vicinity of existing dairies, are straight, two-lane roads along relatively flat terrain. Overall visibility and sight distances are considered good and most of the roadways are currently in use for agricultural purposes. Therefore, the dairy's potential increase of traffic as a result of this project is not expected to create or exacerbate traffic safety hazards.

Madera County currently uses Level Of Service "D" as the threshold of significance level for roadway and intersection operations. The following charts show the significance of those levels.

Level of Service	Description	Average Control Delay (sec./car)
A	Little or no delay	0 – 10
B	Short traffic delay	>10 – 15
C	Medium traffic delay	> 15 – 25
D	Long traffic delay	> 25 – 35
E	Very long traffic delay	> 35 – 50
F	Excessive traffic delay	> 50

Unsignalized intersections.

Level of Service	Description	Average Control Delay (sec./car)
A	Uncongested operations, all queues clear in single cycle	< 10
B	Very light congestion, an occasional phase is fully utilized	>10 – 20
C	Light congestion; occasional queues on approach	> 20 – 35
D	Significant congestion on critical approaches, but intersection is functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues formed.	> 35 – 55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queues may block nearby intersection(s) upstream of critical approach(es)	> 55-80
F	Total breakdown, significant queuing	> 80

Signalized intersections.

Pursuant to the Dairy Standards, the location of dairies within the County are dispersed geographically such that their individual access points will not be in conflict with each other. The increase in milking herd for this project would have an impact however in the potential number of service vehicles to and from the site (including but not limited to milk retrieval trucks, feed deliveries, site operation support vehicles, etc.).

As a singular project, the Vlot Dairy would not significantly contribute to congestion problems within the County. However, taken cumulatively, there is the potential for increased problems. Projected (to 2030) increases in County traffic are expected to result in level of service deficiencies for a number of State and County roadway segments. Given the projected increases, traffic from dairies along with other projected growth could contribute to these projected level of service deficiencies Even with implementation of mitigation, this impact would still be significant.

The Madera office of the California Highway Patrol (CHP) commented that they felt that there would be a minimal increase in traffic in the vicinity of the project site over current levels. The CHP feels that since there will be such a small increase, that their duties will not be affected.

The Madera County Roads Department designates Road 4 as a collector road requiring a minimum of 80 feet in road right-of-way. The majority of the right-of-way is 70 feet in width throughout the area, with a minimum of 35 feet. In areas of need, a minimum 5 feet of road right-of-way will be required of the applicant.

(c) *No Impact.* The operations of this project will not have any issues related to air traffic. There are no general aviation airports in the immediate vicinity of the project site. There is an agriculturally related (crop duster) air strip to the north-east of the site, but operations from that airstrip will not be affected by the dairy's operation.

(d) *No Impact.* There are no plans to change the roadway or access to the roadways in the area that would result in curves or intersections. Therefore, no impacts are anticipated.

(e) *Less than Significant Impact.* All dairies have their own access to the local roadway. Even with multiple dairies within the area, their access points typically are spread out so that access and egress from each would not be a major consideration.

However, each dairy will have its' own traffic patterns taking into consideration employee trips and truck traffic in support of daily operations. These daily operations include milk trucks, facility maintenance, and related truck traffic.

The majority of the facility and support parcels are along Road 4 between Highway 152 to the north and Avenue 18 ½ to the south and Road 1 to the east. During site visits to the area by Department Staff, the roads were noted to be in reasonable shape and well traveled by several agriculturally related vehicles.

Per the original CUP Operational Statement, the operations anticipate a minimum of 3 service vehicles (milk trucks, cattle trucks, etc.), as well as up to 16 light duty trucks and/of cars, and two semi-trailers per day to access the facility. This works to roughly 40 round trips (one in and one out per vehicle) per day to the facility. Singularly, this would be less than significant, but cumulatively taken into account with the other operations within the area, this could be a potential significant impact.

(f) *No Impact.* There are no modes or facilities in the vicinity that can be utilized for alternate modes of transportation within the area. The roadways are not designed for anything other than motorized vehicular traffic. The nature of the operations themselves would be conducive towards the need for motorized traffic. And given the remoteness of the operations and surrounding land uses to areas where alternate means of transportation could be utilized, there would be no impacts as a result.

XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☑	☐	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☑	☐

Discussion:

(a - b) *No Impact.* The dairy operation is not connected to any wastewater system, therefore no impacts identified as a result of this project. While the operation anticipates approximately 50,000 gallons of wastewater generation daily, this will be stored in on-site ponds for crop irrigation and fertilizers.

(c) *No Impact.* There will not be a significant increase of impervious surfaces as a result of this project, so no new stormwater drainages will need to be constructed.

(d) *Less than Significant Impact with Mitigation Incorporation.* The operation is served by wells. The original operational statement indicates that the water usage for the entire site is expected to be 132,500 gallons a day, with the milk barn utilizing approximately 50,000 gallons of water per day, while the cattle will consume approximately 270,000 gallons of water daily.

While this is a significant amount of water usage, previous reviews have indicated that this amount is consistent with water use for irrigated agricultural properties. This has the potential of decreasing the availability of groundwater in the region.

(e) *No Impact.* No impacts identified as a result of this project.

(f - g) *Less than Significant Impact.* The operation anticipates, per the operational statement associated with CUP #99-06, to generate in the neighborhood of approximately 400 pounds of trash on a weekly basis, utilizing a commercial dumpster. The applicant will need to utilize waste diversion practices (i.e. recycling) to reduce any impacts from their activities.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

Discussion:

CEQA defines three types of impacts or effects:

- Direct impacts are caused by a project and occur at the same time and place (CEQA §15358(a)(1).
- Indirect or secondary impacts are reasonably foreseeable and are caused by a project but occur at a different time or place. They may include growth inducing effects and other effects related to changes in the pattern of land use, population density or growth rate and related effects on air, water and other natural systems, including ecosystems (CEQA §15358(a)(2).
- Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts (CEQA §15355(b)). Impacts from individual projects may be considered minor, but considered retroactively with other projects over a period of time, those impacts could be significant, especially where listed or sensitive species are involved.

(a) *Less than Significant Impact with Mitigation Incorporation.* There are aspects of this project that have the potential of impacting the environment, or potentially impacting the environment. There is the potential of, but no direct evidence of current or future, impacts on Ash Slough and Eastside Bypass.,

(b) *Less than Significant Impact.* The project in and of itself will have an incremental impact overall, but with mitigations are not considerable.

(c) *No Impact.* No impacts identified as a result of this project.

Documents/Organizations/Individuals Consulted
In Preparation of this
Initial Study

California Department of Finance

California Department of Fish and Game "California Natural Diversity Database" http://www.dfg.ca.gov/biogeodata/cnddb/

California Environmental Quality Act Guidelines

California Integrated Waste Management Board

Caltrans website http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

Comprehensive Nutrient Management Plan for the Fagundes Dairy

Madera County Dairy Standards

Madera County Dairy Standards Environmental Impact Report

Madera County Roads Department

Madera County Fire Marshall's Office

Madera County General Plan.

United States Environmental Protection Agency

Waste Management Plan for the Fagundes Dairy

MITIGATED NEGATIVE DECLARATION MND

RE: CUP #2011-005, Vlot Dairy

LOCATION AND DESCRIPTION OF PROJECT:

The main dairy facility portion of the project is located on the northwest corner of Avenue 21 and Road 4 (20330 Road 4), Chowchilla. The supporting acreage is in the vicinity.

The project is to amend CUP #99-34 to allow for an increase in herd size to 7,450 head.

ENVIRONMENTAL IMPACT:

No adverse environmental impact is anticipated from this project. The following mitigation measures are included to avoid any potential impacts.

BASIS FOR NEGATIVE DECLARATION:

1. The project shall operate in accordance with the operational statement and site plan submitted with the application except as modified by the mitigation measures and other conditions of approval required for the project.

2. Operations will continue to adhere to conditions of approval and mitigation measures associated with the Conditional Use Permit #99-34. The dairy operations shall also continue to adhere to the approved variances for residential structures on the related parcels of this project.

3. Application of herbicides, pesticides and related materials shall be in accordance with the laws and regulations set forth by federal, state and local agencies.

4. All lighting associated with this facility is to be hooded and directed away from neighboring parcels and potential species habitats.

5. No development (construction of facilities, etc.) or operation(s) (milking, grazing, etc.) of the dairy facility shall occur within 100' (one hundred feet) of Ash Slough or any of its' tributaries.

6. Applicant shall not construct, repair or otherwise alter any levee in the area of the project site so as to create increased flooding upstream of the project site.

7. In no case shall enhanced levees constrain sheet flows upstream of the operations.

8. While it is acknowledged that the site is an existing dairy operations, the following shall apply should any ground disturbing activities occur on site, or an associated site:

    a. If, in the course of excavation and clearing activities, any archaeological or historical resources are uncovered, or otherwise detected or observed, activities within 50 feet of the find area shall cease. A qualified archaeologist shall be contacted and advise the County of the sites significance. If the

findings are deemed significant by the Madera County Planning Director, appropriate mitigation measures shall be required prior to any resumption of work in the affected area of the project. Such mitigation measures shall include resources avoidance or preservation of artifacts.

b. If, in the course of project construction or operation, any skeletal remains are uncovered, discovered or otherwise detected or observed, activities in the affected area shall cease. A qualified archaeologist, the Madera County Planning Director, the Madera County Coroner and local Native American organizations shall be consulted, and appropriate measures shall be required that may include avoidance of the burial site or reburial of the remains.

9. Prior to issuance of the Conditional Use Permit, the applicant shall submit documentation to the Madera County Environmental Health Department demonstrating that appropriate permits have been obtained for the storage, handling, transport and disposal of hazardous materials exists of site.

10. Applicant shall implement/maintain appropriate vector control measures consistent with industry practices and Madera County Dairy Standards.

11. Provide a detailed Pest Management Plan (for vectors or primarily flies). This Pest Management Plan must be developed by an appropriate professional with experience within this related field and subject matter. This Pest Management Plan must go into detail of how each vector will be identified, tracked and eliminated or significantly reduced in numbers and how this on-going program will be operated. This Pest Management Plan must be provided for review and approval by the Environmental Health Department **prior** to release of this CUP to ensure that vectors are handled on site to effectively prevent them or at a minimum significantly reduce them from becoming an off-site nuisance as determined by the Environmental Health Department.

12. Applicant shall implement/maintain appropriate odor control procedures consistent with industry practices and Madera County Dairy Standards.

13. Provide Odor and Dust Management Plans. These two known dairy nuisances' plans must be developed by the appropriate professionals with experience within each related field and subject matters. These two Management Plans must go into enough details in each nuisance to identify these completely, show how each will be tracked and also prevented, eliminated and/or at the very least significantly reduced and how these on-going programs will be routinely operated. These Odor and Dust Management Plans must be provided for review and approval by the Environmental Health Department **prior** to release of this CUP to ensure that each known dairy nuisances are handled on site to effectively prevent them or at a minimum, significantly reduce them from becoming an off-site nuisance as determined by the Environmental Health Department.

14. Applicant shall adhere to Dairy Element DDS-2.7 Odor Management practices.

15. Applicant shall implement water quality control measures consistent with Regional Water Quality Control measures for the industry.

16. Applicant shall implement water quality monitoring programs consistent with Madera County and Regional Water Quality Control Board standards and industry practices.

17. Applicant shall implement air quality control measures consistent with San Joaquin Valley Unified Air Pollution Control, Madera County Dairy Standards and industry standards.

18. Applicant shall implement all Dairy Element policies related to air quality impacts.

19. Applicant shall adhere to Dairy Element DDS-2.5 for ROG Reduction Measures and DDS-2.6 NOx Reduction Measures.

20. Applicant shall continue to adhere to all current permits issued by all federal, state and local agencies pursuant to the operation of this facility and its' related parcels.

21. Any signage associated with the dairy shall be approved through the Planning Department.

22. Prior to release of Conditional Use Permit, applicant must provide fees in the amount of $2,151.50 to Madera County to cover the Notice of Determination filing. In lieu of the Department of Fish and Game fees, the applicant may apply for a Fee Waiver directly with the Department of Fish and Game. Should the waiver be granted, the applicant will need to provide a copy of the waiver plus a check for $50 to Madera County to cover the filing of the Notice of Determination. The Clerk fee and the Department of Fish and Game fee (or waiver) must be filed at the Planning Department within five (5) calendar days of approval of the project by the Planning Commission.

23. Operator shall maintain facility per current Madera County Dairy Standards.

24. All sampling, analyzing and monitoring as outlined in the Nutrient Management Report are to be adhered to unless otherwise amended by local, state or federal regulatory agencies.

25. Adhere to operations and maintenance schedule and actions as outlined in the Waste Management Plan unless otherwise amended by local, state or federal regulatory agencies.

26. Dairy operations to maintain all current local, state and federal permits of operation relevant to dairies to include, but limited to, sampling, monitoring and reporting as required.

27. All Regional Water Quality Control Board (RWQCB) monitoring and reporting requirements pursuant to their permitting program shall be adhered to as required by the RWQCB. All submittals shall be forwarded to the County's Environmental Health Department and Planning Department at the same time they are sent to the RWQCB.

28. All parking and circulation areas within the project area shall be surfaced with gravel, crushed rock, or other surface as approved by the Planning Department and

maintained to control dust.

29. The dairy operations are located outside of two Airport/Airspace Overlay (AAO) Districts due to proximity of known airstrips. As s result, the facility must adhere to the following:

    a. 18.78.010(A)(1)(a) no uses creating electrical or electronic interference with communication or guidance devices used by aircraft or ground control is permitted to be built or used.

    b. 18.78.010(A)(1)(b) no uses that would create glare, smoke, dust or similar factors interfering with aircraft operation to and from runways and taxiways of the airport are permitted as a part of the dairy facility operations.

30. Operations will comply with applicable Air District regulations and permits as required. This includes, but is not limited to, actual facility operations, feed operations, grading, construction, vehicular operation and maintenance and related activities.

31. The collection, treatment, storage or disposal of wastes at the dairy shall not result in a discharge of waste constituents in a manner that could cause (a) degradation of surface water or groundwater; (b) contamination or pollution of surface water or groundwater; or (c) a condition of nuisance as defined by the California Water Code Section 13050.

32. Any hazardous materials or waste stored, used, or generated on site shall be handled in a manner consistent and in compliance with any and all Madera County Environmental Health Department and local, state and federal regulations and requirements.

33. This project will be required to adhere to all requirements of the Madera County Dairy Standards.

34. All surface water runoff shall be diverted away from any water well(s), the slough and/or sewage disposal systems.

35. On-site Public Water Well(s) must be at a minimum of 150 feet from any type of animal enclosures and septic tanks, or seepage pits; and at a minimum of 200 feet away from any unlined ponds, water basin's or any unlined waste water basins. Greater distances are recommended.

36. The owners/operators of this facility **must** complete and submit a Business Activities Declaration Form with the CUPA Program within this department before onset of construction activities. Other related permit(s) may be required due to the possible storage/handling of reportable quantities of hazardous materials onsite **and/or** for the storage of **any** amount of hazardous waste onsite at any time prior to facility operation. Contact a CUPA program specialist within this department at (559) 675-7823 for any questions that you may have regarding this process or for a copy of the Business Activities Declaration Form.

37. This project may require the creation of a public water system, including the application to the Madera County Environmental Health Department (MCEHD) Drinking Water Program and preparation of a TMF (Technical, Managerial and Financial) report. In addition, the construction/specifications of the well must comply with Public Well Standards and the creation of a Public Water System is required. Contact a Water Program Specialist within this department at (559) 675-7823 for further details.

38. An Engineered Septic Disposal System must be designed for maximum occupancy/use, and for maximum discharge for this project, by a licensed Registered Environmental Health Specialist, by a licensed Engineer, or by a licensed Geologist that is approved by this department. The proposed daily water demand/use and the indicated number of fixture units for each occupied building will prescribe the sewage disposal by this department.

39. The liquid waste water treatment systems for this facility must comply with all State of California Regional Water Quality Control Board (RWQCB) requirements and also this department's requirements. A Report of Waste Discharge (ROWD) permit application is required for this increase and must be submitted to the RWQCB for approval and issuances of a Waste Discharge Report (WDR). A WDR from the RWQCB must be obtained for this sites operations that generate waste water and a copy of this WDR must be submitted to this department upon issuances from the State RWQCB.

40. A Dead Animal Management Plan (DAMP) is required for all animal operations that must address animal mortality procedures and mitigation practices. A basic DAMP must identify the normal procedures of how the animal operations owner/operator will handle every day, normal mortality rates on site of the facility during all seasons and different times of the year. A well detailed and well written DAMP is one that explains how dead animals will be handled through-out the year when there is an increase of above normal animal mortality rates due to special manmade disasters, accidents or natural disasters, misfortunate occurrences, such as a heat wave.

41. Noise must be kept to below acceptable levels as determined by this department. Noise and lighting shall be kept to within acceptable levels as to not create a nuisance(s) to surrounding land use as identified in State law, applicable County Codes and determined by this department.

42. All Madera County Required permits must be obtained and all setbacks shall be maintained prior to grading.

43. Prior to the start of any new construction or remodeling, the applicant shall secure a Building Permit at Madera County Department of Engineering and General Services. All construction shall meet the applicable standards and specifications of the California Uniform Building Codes, including, but not limited to, the Uniform Building Code, National Electrical Code, Fire Code, Uniform Plumbing, Uniform Mechanical Code, Disabled Accessibility, and with the California Amendments of these codes. The applicant's architect or engineer shall identify the occupancy and type of construction proposed. All plans must be prepared by a registered civil engineer or licensed architect.

44. If any grading is to occur, the applicant shall submit a grading, drainage and erosion control plan to the Engineering Department. This plan shall identify onsite retention for any increase in storm water runoff generated by this project. The basis for all designs shall be the provision of capacity for the runoff from a 100 year, 10 day storm event. The grading, drainage, and erosion control plan shall be prepared by a registered civil engineer and shall meet all applicable standards of the Uniform Building Code and the Madera County Code.

45. The applicant is required to retain on site, or make other provisions, to mitigate to pre-project flow conditions, any increase in storm water runoff generated by this project. The applicant shall submit a storm water management plan prepared by a registered civil engineer addressing no net change to storm water quantities as a result of this project.

46. The proposed project may be subject to the following District rules: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). in the event an existing building will be renovated, partially demolished, or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The following rules are specific to confined animal operations:

    a. Rule 4102 (Nuisance) – This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the project creates a public nuisance, it could be in violation and be subject to District enforcement action.

    b. Rule 4550 (Conservation Management Practices) – The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. These sites include areas of crop production, animal feeding operations and unpaved roads/equipment areas. The District's CMP handbook can be found online at the District's website at:

        http://www.valleyair.org/farmpermits/updates/cmp_handbook.pdf

    c. Rule 4570 (Confined Animal Facilities) - District Rule 4570 was adopted by the District's Governing Board on June 15, 2006. Dairies with greater than or equal to 1,000 milk cows are subject to the requirements of District Rule 4570. Therefore, a Rule 4570 application shall also be submitted to the District.

Madera County Environmental Committee

A copy of the negative declaration and all supporting documentation is available for review at the Madera County Planning Department, 2037 West Cleveland Avenue, Madera, California.

DATED: 6-20-12
FILED:
PROJECT APPROVED:

EXHIBIT P

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Fagundes Dairy

Physical address of dairy:

23732 Road 12	Chowchilla	Madera	93610
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

10S	15E	4	Mt. Diablo	37° 5' 45.00" N	120° 19' 47.00" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1951

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0024-0080-0012-0000	0024-0080-0027-0000	0025-0018-0007-0000	0025-0130-0005-0000	0025-0130-0006-0000
0025-0140-0008-0000	0025-0150-0020-0000	0025-0150-0021-0000	0025-0190-0002-0000	0025-0200-0001-0000
0025-0200-0003-0000	0025-0200-0005-0000	0025-0200-0008-0000	0025-0200-0012-0000	0025-0210-0003-0000
0025-0210-0011-0000	0026-0170-0035-0000	0026-0231-0001-0000	0026-0231-0002-0000	0026-0231-0013-0000
0026-0231-0014-0000				

B. OPERATOR NAME: Fagundes, Bros Dairy Telephone no.: (559) 665-7314 (Landline) (Cellular)

24476 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

OPERATOR NAME: Fagundes, Fredrick Telephone no.: (559) 665-7435 (Landline) (559) 260-5333 (Cellular)

24475 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

OPERATOR NAME: Fagundes, Lloyd John Telephone no.: (559) 665-4465 (Landline) (209) 761-3282 (Cellular)

11158 Ave 24	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [ ] Yes [X] No

C. LEGAL OWNER NAME: Fagundes, Fredrick Telephone no.: (559) 665-7435 (Landline) (559) 260-5333 (Cellular)

24475 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

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LEGAL OWNER NAME: Fagundes, Lloyd John — Telephone no.: (559) 665-4465 (Landline) (209) 761-3282 (Cellular)

11158 Ave 24 (Mailing Address Number and Street) | Chowchilla (City) | CA (State) | 93610 (Zip Code)

Owner should receive Regional Board correspondence (check): [ ] Yes [X] No

LEGAL OWNER NAME: Fagundes, Ralph Michael — Telephone no.: (209) 563-6035 (Landline) (209) 761-9909 (Cellular)

14141 Highway 59 (Mailing Address Number and Street) | Merced (City) | CA (State) | 95348 (Zip Code)

Owner should receive Regional Board correspondence (check): [ ] Yes [X] No

D. CONTACT NAME: Kopshever, Jim — Telephone no.: (Landline) (559) 260-6318 (Cellular)

Title: Land Management

23732 Road 12 (Mailing Address Number and Street) | Chowchilla (City) | CA (State) | 93610 (Zip Code)

CONTACT NAME: Peterson, John Robert — Telephone no.: (925) 943-5709 (Landline) (925) 324-0800 (Cellular)

Title: Engineer

2115 San Miguel DR (Mailing Address Number and Street) | Walnut Creek (City) | CA (State) | 94596 (Zip Code)

Waste Management Plan Report
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HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

3,600 milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)

4,140 milk and dry cows combined + 15% (pre-expansion limit)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	2,600	4,750	0	1,400
Dry Cows	800	800	0	1,400
Bred Heifers (15-24 mo.)	500	500	0	1,100
Heifers (7-14 mo.)	500	500	0	700
Calves (4-6 mo.)	0	0	0	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Holstein

Average milk production: 60 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 150 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 2.0 per day

Number of hours spent milking each day: 20.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 1.0 run cycles/wash

Bulk tank wash vat volume: 140 gallons/cycle

Bulk tank wash wastewater: 280.0 gallons/day

Pipeline wash and sanitizing: 2.0 run cycles/wash

Pipeline wash vat volume: 400 gallons/cycle

Pipeline wash wastewater: 1,600.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 10,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 39,000 gallons/day

Vacuum pumps / air compressors / chillers type: None

Vacuum pumps / air compressors / chillers volume: 0 gallons/day

Milkbarn and equipment wastewater volume generated daily: 108,569 gallons/day

Waste Management Plan Report
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C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0	0	0	0	0	0
	of 2,600	*of 800*	*of 500*	*of 500*	*of 0*	*of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 120 sprinklers

Duration of each sprinkler cycle: 4.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 3.0 gallons/minute

Total sprinkler pen wastewater volume: 91,210 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

Description	Source	Throughput (gallons per day)	Discharge Destination
ice machine	Fresh Water	2,000	Returned for reuse
misters	Fresh Water	5,479	Sent to pond

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 41,000 gallons/day

Recycled water reused: 101,210 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 0 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 13,028,280 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	0	40.0	50%	0
			Total:	0

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B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 100 %

Description of all solids separation equipment used in flushed lane manure management systems:

Loader/scraper

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	12,082.72	1,449,927	90,385.05	10,846,206
Manure generated by the herd sent to pond(s):	0.00	0	0.00	0
Manure generated by the herd sent to dry lot(s):	12,082.72	1,449,927	90,385.05	10,846,206
Manure solids (herd) removed by separation:	0.00	0	0.00	0
Liquid component in separated solids not send to pond(s):	0.00	0	0.00	0
Imported and facility generated bedding sent to pond(s):	0.00	0	0.00	0
Total manure and bedding sent to pond(s):	0.00	0	0.00	0
Residual manure solids and bedding sent to pond(s) w/factor:	0.00	0	0.00	0
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:		0		0

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Madera

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.25 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 7.38 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
Asphalt	90,090	1	0.95	0.80	Drains into pond(s).
Concrete	274,404	1	0.95	0.80	Drains into pond(s).

Surface area that does not run off into pond(s):	0 sq. ft.
Surface area that runs off into pond(s):	364,494 sq. ft.
Total surface area:	364,494 sq. ft.
Runoff from normal storage period rainfall:	1,341,489 gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	2,012,234 gallons/storage period
25 year/24 hour storm event runoff:	485,676 gallons/storage period
Total surface area runoff:	1,827,166 gallons/storage period
Total surface area runoff with 1.5 factor:	2,497,911 gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
Total Roof	50,534	1	Wastewater pond

Surface area that does not run off into pond(s):	0 sq. ft.
Surface area that runs off into pond(s):	50,534 sq. ft.
Total surface area:	50,534 sq. ft.
Runoff from normal storage period rainfall:	232,483 gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	348,724 gallons/storage period
25 year/24 hour storm event runoff:	70,879 gallons/storage period
Total surface area runoff:	303,362 gallons/storage period
Total surface area runoff with 1.5 factor:	419,603 gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
Dirt	476,605	1	0.85	0.70	Drains into pond(s).
Pens	2,537,252	1	0.60	0.40	Drains into pond(s).

Surface area that does not run off into pond(s):	0 sq. ft.
Surface area that runs off into pond(s):	3,013,857 sq. ft.
Total surface area:	3,013,857 sq. ft.
Runoff from normal storage period rainfall:	6,203,912 gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	9,305,868 gallons/storage period
25 year/24 hour storm event runoff:	2,703,458 gallons/storage period
Total surface area runoff:	8,907,370 gallons/storage period
Total surface area runoff with 1.5 factor:	12,009,326 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

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LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: Chowchilla Lagoon

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions

Earthen Length (EL):	2,680 ft.	Earthen Depth (ED):	18 ft.
Earthen Width (EW):	101 ft.	Side Slope (S):	1.0 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	1.0 ft.

Calculations

Liquid Length (LL):	2,678 ft.	Storage Volume Adjusted for Dead Storage Loss:	3,536,501 cu. ft.
Liquid Width (LW):	99 ft.		
Pond Surface Area:	270,680 sq. ft.	Pond Marker Elevation:	15.1 ft.
Storage Volume:	3,711,072 cu. ft.	Evaporation Volume:	1,150,071 gals/period
		Adjusted Surface Area:	260,029 sq. ft.

Potential storage losses (due to dead storage):	174,571.0 cubic feet - or -	1,305,881.8 gallons
Liquid storage surface area:	265,122 sq. ft.	
Rainfall onto retention pond(s):	1,245,269 gallons/storage period	
Rainfall runoff into retention pond(s):	7,777,884 gallons/storage period	
Normal rainfall onto retention pond(s) with 1.5 factor:	1,867,903 gallons/storage period	
Normal rainfall runoff into retention pond(s) with 1.5 factor:	11,666,826 gallons/storage period	
Storage period evaporation (default):	9.46 inches/storage period	
Storage period evaporation (user-override):	inches/storage period	
Storage period evaporation volume:	1,150,071 gallons/storage period	
Manure and bedding sent to pond(s):	0 gallons/storage period	
Milkbarn water sent to pond(s):	13,028,280 gallons/storage period	
Fresh flush water for storage period:	0 gallons/storage period	

Waste Management Plan Report
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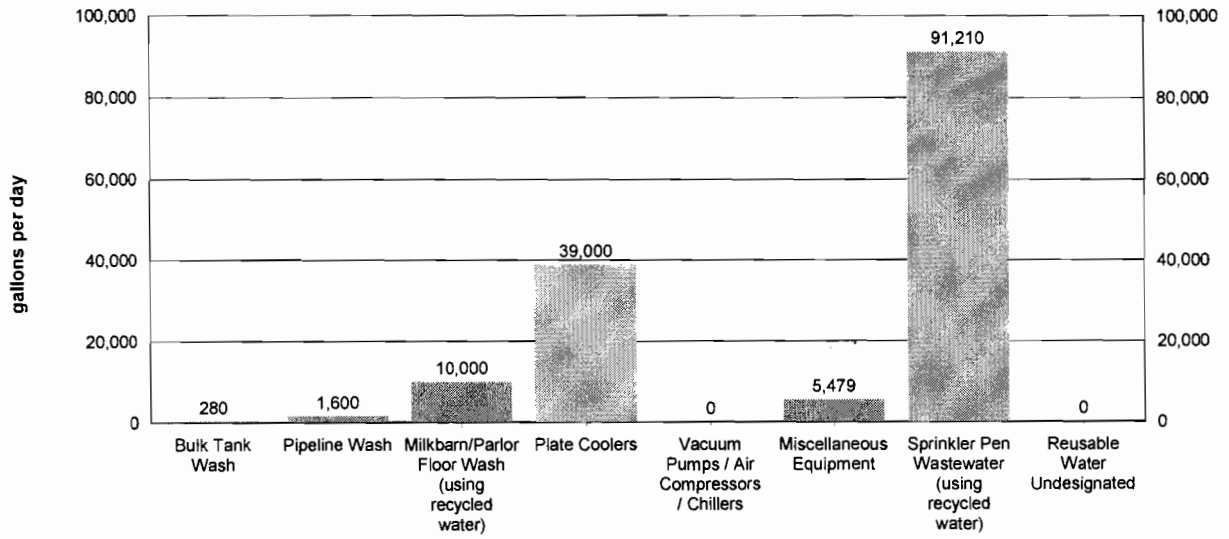
July 1, 2010 deadline

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)



Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 108,569 gallons/day

Total milkbarn wastewater generated per period: 13,028,280 gallons/storage period

Waste Management Plan Report
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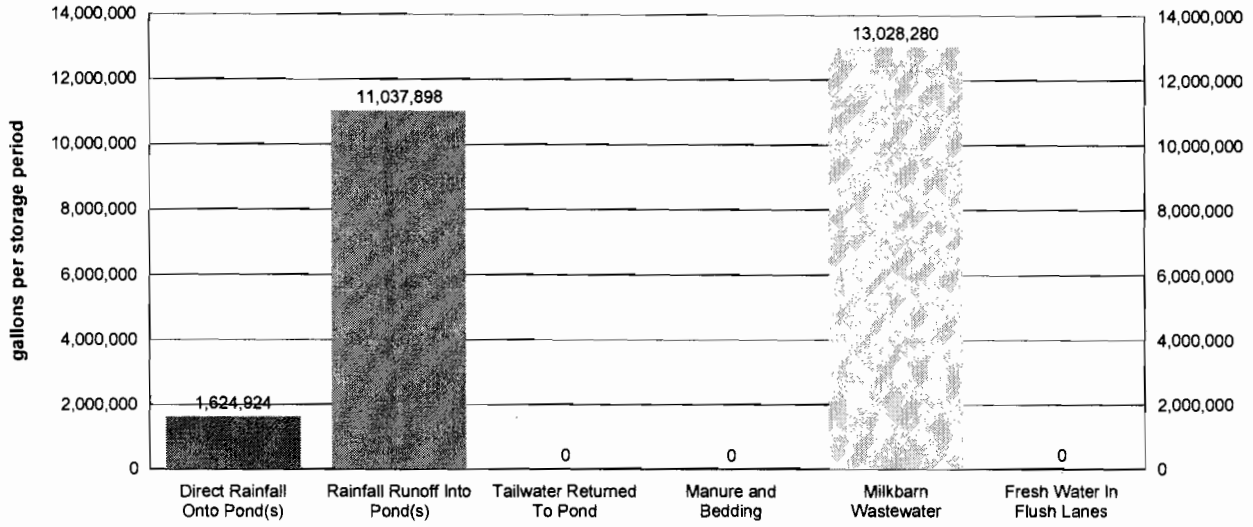
B. PROCESS WASTEWATER (NORMAL PRECIPITATION)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	214,093	gallons/day
Total process wastewater generated per period:	25,691,101	gallons/storage period
Total process wastewater removed due to evaporation:	1,150,071	gallons/storage period
Total storage capacity required:	24,541,030	gallons
	3,280,659	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	26,454,865	gallons
	3,536,501	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

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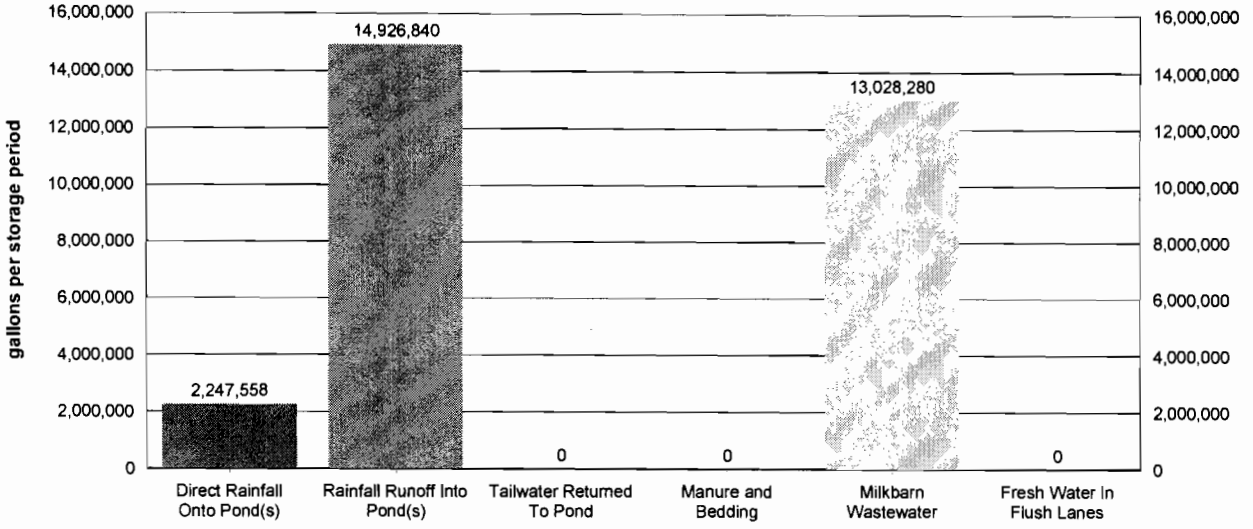
C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	251,689	gallons/day
Total process wastewater generated per period:	30,202,678	gallons/storage period
Total process wastewater removed due to evaporation:	1,150,071	gallons/storage period
Total storage capacity required:	29,052,607	gallons
	3,883,769	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	26,454,865	gallons
	3,536,501	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [ ] Yes [X] No

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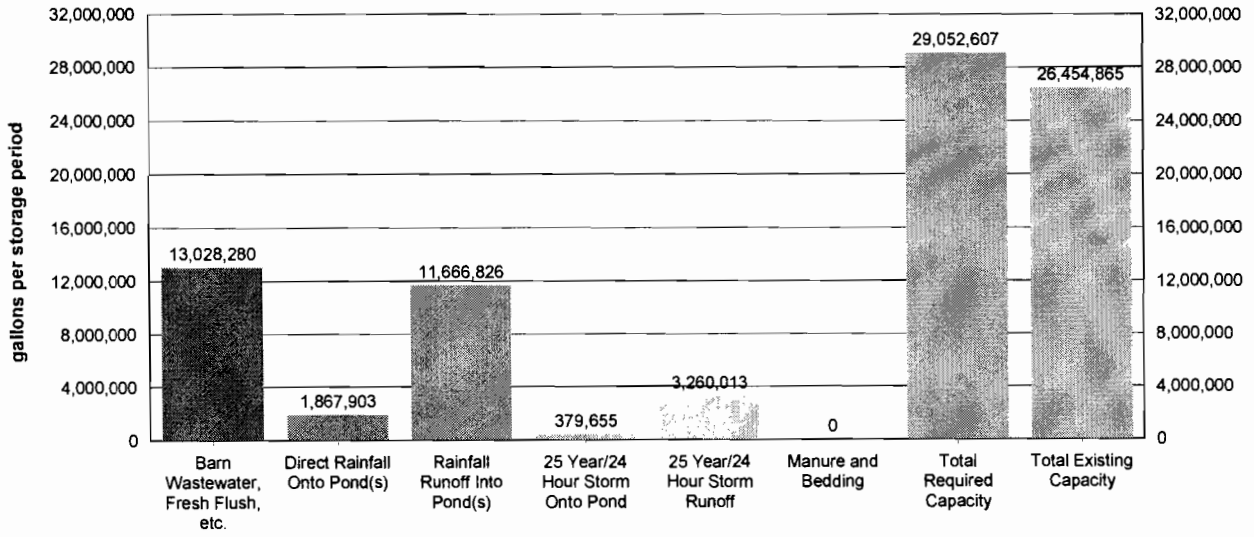
D. STORAGE VOLUME ASSESSMENT (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Barn wastewater, fresh flush water, and tailwater:	13,028,280	gallons/storage period
Manure and bedding sent to pond:	0	gallons/storage period
Precipitation onto pond:	1,867,903	gallons/storage period
Precipitation runoff:	11,666,826	gallons/storage period
25 year/24 hour storm onto pond:	379,655	gallons/storage period
25 year/24 hour storm runoff:	3,260,013	gallons/storage period
Residual solids after liquids have been removed (liquid equivalent):	0	gallons/storage period
Total process wastewater removed due to evaporation:	1,150,071	gallons/storage period
Total required capacity:	29,052,607	gallons/storage period
Total existing capacity:	26,454,865	gallons/storage period
Existing capacity meets estimated storage needs:	[ ] Yes [X] No	

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OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy 's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

No waste management pond(s) selected.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

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Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
Total Roof	1	50,534

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 1st of October

Assessment for other rainfall collections systems will occur on or before: 1st of October

Description of how rainfall collection systems will be assessed:

Visual

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 1st of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 1st of October

Conditions requiring manure removal and/or regrading:

corrals scaped and manure removed. corrals regraded for run off into pond

Solid manure removal and/or regrading will occur on or before: 1st of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 1st of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 1st of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 1st of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 1st of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 1st of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 1st of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 1st of October

Animal housing drainage system maintenance will occur on or before: 1st of October

Animal housing area drainage system assessment and maintenance methods:

Visual

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Dairyman's Hide, Inc

Rendering company or landfill telephone number: (323) 266-4942

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Semiannually

J. CHEMICAL MANAGEMENT

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i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
n/a	0	pounds	year	n/a	n/a			

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REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: P

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: A1, A2, A3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: N/A

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: W1, W2, W3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: V

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: PS

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: AS

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: PS

E. FLOOD PROTECTION / INUNDATION REPORT

Provide a published flood zone map that shows the facility is outside the relevant flood zones.

Flood zone map and/or document reference number: F

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: Backflow

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CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Fagundes Dairy

Physical address of dairy:

23732 Road 12	Chowchilla	Madera	93610
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☐ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)

CIVIL ENGINEER'S WET STAMP

SIGNATURE OF CIVIL ENGINEER DATE

John Robert Peterson
PRINT OR TYPE NAME

2115 San Miguel DR; Walnut Creek, CA 94596
MAILING ADDRESS

(925) 943-5709
PHONE NUMBER

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C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Fredrick Fagundes	Lloyd John Fagundes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
DATE	DATE

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DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Fagundes Dairy

Physical address of dairy:

23732 Road 12	Chowchilla	Madera	93610
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Date facility was originally placed in operation: 01/01/1951

Regional Water Quality Control Board Basin Plan designation: San Joaquin River Basin

County Assessor Parcel Number(s) for dairy facility:

0024-0080-0012-0000	0024-0080-0027-0000	0025-0018-0007-0000	0025-0130-0005-0000	0025-0130-0006-0000
0025-0140-0008-0000	0025-0150-0020-0000	0025-0150-0021-0000	0025-0190-0002-0000	0025-0200-0001-0000
0025-0200-0003-0000	0025-0200-0005-0000	0025-0200-0008-0000	0025-0200-0012-0000	0025-0210-0003-0000
0025-0210-0011-0000	0026-0170-0035-0000	0026-0231-0001-0000	0026-0231-0002-0000	0026-0231-0013-0000
0026-0231-0014-0000				

B. OPERATOR NAME: Fagundes, Bros Dairy Telephone no.: (559) 665-7314 (Landline) (Cellular)

24476 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

OPERATOR NAME: Fagundes, Fredrick Telephone no.: (559) 665-7435 (Landline) (559) 260-5333 (Cellular)

24475 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

OPERATOR NAME: Fagundes, Lloyd John Telephone no.: (559) 665-4465 (Landline) (209) 761-3282 (Cellular)

11158 Ave 24	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [ ] Yes [X] No

C. LEGAL OWNER NAME: Fagundes, Fredrick Telephone no.: (559) 665-7435 (Landline) (559) 260-5333 (Cellular)

24475 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

LEGAL OWNER NAME: Fagundes, Lloyd John Telephone no.: (559) 665-4465 (Landline) (209) 761-3282 (Cellular)

11158 Ave 24	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [ ] Yes [X] No

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LEGAL OWNER NAME: Fagundes, Ralph Michael | Telephone no.: (209) 563-6035 Landline | (209) 761-9909 Cellular

14141 Highway 59	Merced	CA	95348
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [ ] Yes [X] No

D. CONTACT NAME: Schmidt, Jon | Telephone no.: Landline | (209) 386-3695 Cellular

Title: Agronomist

1490 N Buhach	Atwater	CA	95301
Mailing Address Number and Street	City	State	Zip Code

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AVAILABLE NUTRIENTS

A. HERD INFORMATION

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

3,600 *milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)*

4,140 *milk and dry cows combined + 15% (pre-expansion limit)*

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Heifers (7-14 mo. to breeding)	Calves (4-6 mo.)	Calves (0-3 mo.)
Present count	2,600	800	500	500	0	0
Maximum count	4,750	800	500	500	0	0
Avg live weight (lbs)	1,400	1,400	1,100	700		
Daily hours on flush	0	0	0	0	0	0

Predominant milk cow breed: Holstein

Average milk production: 60 *pounds per cow per day*

B. IRRIGATION SOURCES

Irrigation Source Name	Type	Nitrogen (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Discharge Rate
10-WA	Groundwater (well)	5.50	0.00	0.00	1,000 *gpm*
11-WA	Groundwater (well)	9.80	0.00	0.00	1,200 *gpm*
14-WA	Groundwater (well)	4.50	0.00	0.00	1,300 *gpm*
15-WA	Groundwater (well)	6.10	0.00	0.00	800 *gpm*
17-WA	Groundwater (well)	9.80	0.00	0.00	700 *gpm*
19-WA	Groundwater (well)	9.90	0.00	0.00	700 *gpm*
2-WA	Groundwater (well)	1.40	0.00	0.00	1,100 *gpm*
22-WA	Groundwater (well)	3.30	0.00	0.00	1,000 *gpm*
3-WA	Groundwater (well)	6.30	0.00	0.00	1,100 *gpm*
31-WA1	Groundwater (well)	13.30	0.00	0.00	1,000 *gpm*
31-WA2	Groundwater (well)	5.00	0.00	0.00	700 *gpm*
33-WA	Groundwater (well)	3.10	0.00	0.00	800 *gpm*
39-WA	Groundwater (well)	6.10	0.00	0.00	600 *gpm*
4-WA1	Groundwater (well)	16.40			500 *gpm*
4-WA2	Groundwater (well)	6.70	0.00	0.00	700 *gpm*
42-WA	Groundwater (well)	9.30	0.00	0.00	600 *gpm*
5-WA	Groundwater (well)	7.30	0.00	0.00	800 *gpm*
7-WA	Groundwater (well)	2.80	0.00	0.00	1,000 *gpm*

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Irrigation Source Name	Type	Nitrogen (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Discharge Rate
8-WA	Groundwater (well)	2.30	0.00	0.00	800 *gpm*

C. NUTRIENT IMPORTS

No nutrient imports entered.

D. NUTRIENT EXPORTS

No nutrient exports entered.

E. STORAGE PERIOD

Storage period is the maximum period of time anticipated between land application of process wastewater (from storage ponds/lagoons) to croplands. A qualified agronomist and civil engineer should collaborate and collectively consider predominant soil types, soil infiltration rates, maximum depth, available water, field capacity, permanent wilting point, allowable depletion, crop water use, evapotranspiration, precipitation, irrigation system capacity, water delivery constraints, crop nutrient requirements, soil nutrient adsorbtion/desorption, rooting depth, nutrient accumulation/availability for current and future crop needs, facility wide process wastewater storage capacity and other factors as deemed necessary across all croplands where process wastewater is applied in selecting a storage period. In many cases conflicts will arise between crop water demands, crop nutrient demands and insufficient process wastewater storage capacity. Process wastewater may not be the best choice as a source of either water and/or nutrients to meet crop demands throughout the year. Groundwater and surface water vulnerability has been considered.

The storage period selected in this Nutrient Management Plan is consistent with the storage period selected in the Waste Management Plan.

Storage period: 120 *days*

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APPLICATION AREA

A. ASSESSOR PARCEL NUMBER: 0020-0022-0008-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0024-0080-0010-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0024-0080-0012-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0024-0080-0026-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0024-0080-0027-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0130-0004-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0130-0005-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0130-0006-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0140-0003-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0140-0005-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0140-0008-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0150-0008-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0150-0019-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0150-0020-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0150-0021-0000

ASSESSOR PARCEL NUMBER (CONTINUED): 0025-0150-0021-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0150-0022-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0180-0003-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0190-0001-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0190-0002-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0200-0001-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0200-0003-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0200-0005-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0200-0008-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0200-0012-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0210-0001-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0210-0003-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0025-0210-0011-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0026-0170-0015-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0026-0170-0035-0000
Legal owner of parcel: Owned by Dairy

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ASSESSOR PARCEL NUMBER: 0026-0231-0001-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0026-0231-0013-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0026-0231-0014-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0026-0272-0011-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0075-0120-0015-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0075-0120-0046-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0075-0120-0051-0000
Legal owner of parcel: Owned by Dairy

ASSESSOR PARCEL NUMBER: 0075-0120-0053-0000
Legal owner of parcel: Owned by Dairy

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B. FIELD NAME: 10-F1

Cropable acres: 100

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	80
Corn, silage	Middle May	Middle August	80

FIELD NAME: 10-F2

Cropable acres: 42

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	42
Corn, silage	Middle May	Middle September	42

FIELD NAME: 15-F1

Cropable acres: 29

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	29
Corn, silage	Middle May	Middle September	29

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FIELD NAME: 16-F1

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	39
Corn, silage	Middle May	Middle September	39

FIELD NAME: 17-F1

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	38
Corn, silage	Middle May	Middle September	38

FIELD NAME: 19-F1

Cropable acres: 35

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	35
Corn, silage	Middle May	Middle September	35

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FIELD NAME: 19-F2

Cropable acres: 40

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	40
Corn, silage	Middle May	Middle September	40

FIELD NAME: 1-F1

Cropable acres: 52

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Early April	52

FIELD NAME: 20-F1

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	39
Corn, silage	Middle May	Middle September	39

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FIELD NAME: 21-F1

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	39
Corn, silage	Middle May	Middle September	39

FIELD NAME: 22-F1

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	38
Corn, silage	Middle May	Middle September	38

FIELD NAME: 2-F1

Cropable acres: 75

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Early April	75

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FIELD NAME: 31-F1

Cropable acres: 77

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	77
Corn, silage	Middle May	Middle September	77

FIELD NAME: 34-F1

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	38
Corn, silage	Middle May	Middle September	38

FIELD NAME: 3-F1

Cropable acres: 97

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Early April	97

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FIELD NAME: 3-F2

Cropable acres: 20

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Middle October	Middle April	20
Corn, silage	Middle May	Middle September	20

FIELD NAME: 42-F1

Cropable acres: 84

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	84
Corn, silage	Middle May	Middle September	84

FIELD NAME: 44-F1

Cropable acres: 97

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	97
Corn, silage	Middle May	Middle September	97

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FIELD NAME: 4-F1

Cropable acres: 160

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Corn, silage	Middle May	Middle April	160
Barley silage, soft dough	Middle October	Middle April	160

FIELD NAME: 4-F2

Cropable acres: 43

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early April	Early October	43

FIELD NAME: 4-F3

Cropable acres: 41

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	41
Corn, silage	Middle May	Middle September	41

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FIELD NAME: 5-F1

Cropable acres: 116

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [X] Yes [ ] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	116
Corn, silage	Middle May	Middle August	116

FIELD NAME: 8-F1

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: None

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Barley silage, soft dough	Middle October	Middle April	39
Corn, silage	Middle May	Middle September	39

FIELD NAME: Hair

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Early November	Early April	39
Corn, silage	Middle May	Middle August	39

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FIELD NAME: Looney1

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Early November	Early April	38
Corn, silage	Middle May	Middle August	38

FIELD NAME: Looney2

Cropable acres: 40

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	40

FIELD NAME: Looney4

Cropable acres: 97

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	97

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FIELD NAME: MEDERIOS1

Cropable acres: 36

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	36

FIELD NAME: MEDERIOS2

Cropable acres: 20

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	20

FIELD NAME: MEDERIOS3

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	38

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FIELD NAME: MEDERIOS4

Cropable acres: 80

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	80

FIELD NAME: R & V Fagun West

Cropable acres: 39

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	39
Alfalfa, hay	Early October	Late July	39

FIELD NAME: RD8-2

Cropable acres: 80

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	80

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FIELD NAME: V.C.1

Cropable acres: 84

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [X] Yes [ ] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	84

FIELD NAME: V.C.3

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early July	Late October	38

FIELD NAME: V.C.4

Cropable acres: 38

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	38

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FIELD NAME: VBLEASE

Cropable acres: 59

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Wheat, silage, soft dough	Middle October	Middle April	59
Corn, silage	Middle May	Middle August	59

FIELD NAME: WEHOLT1

Cropable acres: 36

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	36

FIELD NAME: WEHOLT2

Cropable acres: 20

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	20

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FIELD NAME: West1

Cropable acres: 58

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	58

FIELD NAME: West2

Cropable acres: 20

Predominant soil type: Sandy loam

Do irrigation system head-to-head flow conditions exist on the field? [ ] Yes [X] No

Can fresh water for irrigation purposes be delived to the field year round? [ ] Yes [X] No

Can process wastewater be delivered to the field at agronomic rates and times? [ ] Yes [X] No

Tailwater management method: Returned to top of field

Crops grown and rotation:

Crop Type	Plant Date	Harvest Date	Acres Planted
Alfalfa, hay	Early October	Late July	20

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C. LAND APPLICATION AREA FIELDS AND PARCELS

Field name	Cropable acres	Total harvests	Parcel number
10-F1	100	2	0025-0200-00030000
10-F2	42	2	0025-0200-00030000
15-F1	29	2	0026-0231-00140000
16-F1	39	2	0026-0231-00130000
17-F1	38	2	0026-0231-00010000
19-F1	35	2	0026-0272-00110000
19-F2	40	2	0026-0272-00110000
1-F1	52	1	0025-0180-00030000
20-F1	39	2	0025-0150-00210000
21-F1	39	2	0025-0150-00200000
22-F1	38	2	0025-0150-00220000
2-F1	75	1	0025-0190-00010000
31-F1	77	2	0020-0022-00080000
34-F1	38	2	0025-0150-00190000
3-F1	97	1	0025-0130-00050000
3-F2	20	2	0025-0130-00050000
42-F1	84	2	0025-0200-00010000
44-F1	97	2	0025-0200-00120000
4-F1	160	2	0025-0190-00020000
4-F2	43	1	0025-0190-00020000
4-F3	41	2	0025-0190-00020000
5-F1	116	2	0025-0130-00060000
8-F1	39	2	0025-0140-00080000
Hair	39	2	0026-0170-00150000
Looney1	38	2	0025-0140-00030000
Looney2	40	1	0025-0140-00030000
Looney4	97	1	0025-0140-00050000
MEDERIOS1	36	1	0075-0120-00150000
MEDERIOS2	20	1	0075-0120-00460000
MEDERIOS3	38	1	0075-0120-00510000
MEDERIOS4	80	1	0075-0120-00530000
R & V Fagun West	39	1	0024-0080-00100000
R & V Fagun West	39	1	0024-0080-00260000
RD8-2	80	1	0020-0022-00080000

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Field name	Cropable acres	Total harvests	Parcel number
V.C.1	84	1	0025-0210-00010000
V.C.3	38	1	0025-0210-00030000
V.C.4	38	1	0025-0210-00110000
VBLEASE	59	2	0026-0170-00350000
WEHOLT1	36	1	0025-0200-00080000
WEHOLT2	20	1	0025-0200-00050000
West1	58	1	0024-0080-00270000
West2	20	1	0024-0080-00120000
No linked fields			0025-0130-00040000
			0025-0150-00080000
Land application area totals	2,277	64	

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NUTRIENT BUDGET

A. NUTRIENT BUDGET FOR CROP: 10-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	227.0	1,022.0	750.0
Potential crop nutrient removal	206.1	32.2	360.6
Nutrient balance	20.9	989.8	389.4
Applied to removal ratio	1.10	31.74	2.08

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 10-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		80%	50%	80%	
Application method: Lab results					
Dry manure	1	170.0	48.0	225.0	170.0
Nutrient source: From dairy		80%	50%	80%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	5.5
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	160.0
	5.5	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 10-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	6	0.0	0.0	0.0	33.0
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	160.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	38.6	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	170.0	48.0	225.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	251.6	126.6	954.5
Potential crop nutrient removal	187.2	48.0	249.6
Nutrient balance	64.4	78.6	704.9
Applied to removal ratio	1.34	2.64	3.82

Fresh water applied: 2.58 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 10-F2 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 10-F2 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	5.5
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	84.0
	5.5	0.0	0.0	

In season irrigation (no fertilizer)	6	0.0	0.0	0.0	33.0
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	84.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	38.6	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	256.6	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	16.6	86.6	761.5
Applied to removal ratio	1.07	2.92	4.85

Fresh water applied: 2.58 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 15-F1 / Barley silage, soft dough

Activity / Event		# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content		1	36.0	78.6	729.5	36.0
Nutrient source:	Soil		90%	10%	50%	
Application method:	Estimated					
Dry manure		1	145.0	23.0	200.0	145.0
Nutrient source:	From dairy		80%	50%	75%	
Application method:	Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

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NUTRIENT BUDGET FOR CROP: 15-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	4.9
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
15-WA	4.9	0.0	0.0	58.0
	4.9	0.0	0.0	

In season irrigation (no fertilizer)	8	0.0	0.0	0.0	39.1
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
15-WA	4.9	0.0	0.0	58.0
	4.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	44.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	262.0	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	22.0	86.6	761.5
Applied to removal ratio	1.09	2.92	4.85

Fresh water applied: 2.65 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 16-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): 16-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 16-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	5.0
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
15-WA	5.0	0.0	0.0	80.0
	5.0	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 16-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	8	0.0	0.0	0.0	40.1
Nutrient source: Water only		0%	0%	0%	
Application method: Subsurface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
15-WA	5.0	0.0	0.0	80.0
	5.0	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	45.1	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	263.1	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	23.1	86.6	761.5
Applied to removal ratio	1.10	2.92	4.85

Fresh water applied: 2.72 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 17-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 17-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	6.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
17-WA	6.9	0.0	0.0	76.0
	6.9	0.0	0.0	

In season irrigation (no fertilizer)	8	0.0	0.0	0.0	55.0
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
17-WA	6.9	0.0	0.0	76.0
	6.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	61.8	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	279.8	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	39.8	86.6	761.5
Applied to removal ratio	1.17	2.92	4.85

Fresh water applied: 2.32 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 19-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

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NUTRIENT BUDGET FOR CROP: 19-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	7.4
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
19-WA	7.4	0.0	0.0	75.0
	7.4	0.0	0.0	

In season irrigation (no fertilizer)	8	0.0	0.0	0.0	59.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
19-WA	7.4	0.0	0.0	75.0
	7.4	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	66.9	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	284.9	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	44.9	86.6	761.5
Applied to removal ratio	1.19	2.92	4.85

Fresh water applied: 2.49 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 19-F2 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): 19-F2 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 19-F2 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	6.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
19-WA	6.5	0.0	0.0	75.0
	6.5	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 19-F2 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	8	0.0	0.0	0.0	52.0
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
19-WA	6.5	0.0	0.0	75.0
	6.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	58.6	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	276.6	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	36.6	86.6	761.5
Applied to removal ratio	1.15	2.92	4.85

Fresh water applied: 2.18 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 1-F1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	12.0	90.0	999.0	12.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	10	50.4	28.6	90.4	519.4
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
2-WA	1.5	0.0	0.0	104.0
	1.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	15.4	0.0	0.0

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Existing soil nutrient content	12.0	90.0	999.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	504.0	286.0	904.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	545.4	376.0	1,903.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-54.6	322.0	1,483.0
Applied to removal ratio	0.91	6.96	4.53

Fresh water applied: 4.05 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 20-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

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NUTRIENT BUDGET FOR CROP: 20-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	3.4
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.4	0.0	0.0	80.0
	3.4	0.0	0.0	

In season irrigation (no fertilizer)	6	0.0	0.0	0.0	20.3
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.4	0.0	0.0	80.0
	3.4	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	23.7	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	241.7	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	1.7	86.6	761.5
Applied to removal ratio	1.01	2.92	4.85

Fresh water applied: 2.64 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 21-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): 21-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 21-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	3.4
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.4	0.0	0.0	80.0
	3.4	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 21-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	6	0.0	0.0	0.0	20.3
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.4	0.0	0.0	80.0
	3.4	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	23.7	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	241.7	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	1.7	86.6	761.5
Applied to removal ratio	1.01	2.92	4.85

Fresh water applied: 2.64 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 22-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	23%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 22-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	3.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.5	0.0	0.0	80.0
	3.5	0.0	0.0	

In season irrigation (no fertilizer)	6	0.0	0.0	0.0	20.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.5	0.0	0.0	80.0
	3.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	24.3	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	242.3	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	2.3	86.6	761.5
Applied to removal ratio	1.01	2.92	4.85

Fresh water applied: 2.71 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 2-F1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	10	50.4	28.6	90.4	519.5
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
2-WA	1.6	0.0	0.0	151.0
	1.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	15.5	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	504.0	286.0	904.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	569.5	364.6	1,633.5
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-30.5	310.6	1,213.5
Applied to removal ratio	0.95	6.75	3.89

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Fresh water applied: 4.08 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 31-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	23%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 31-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	53.6
Nutrient source: Commercial fertilizer		90%	10%	50%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
31-WA2	3.6	0.0	0.0	160.0
	3.6	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 31-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	5	0.0	0.0	0.0	18.2
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
31-WA2	3.6	0.0	0.0	160.0
	3.6	0.0	0.0	

In season irrigation (with fertilizer)	3	50.0	28.0	90.0	160.9
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
31-WA2	3.6	0.0	0.0	160.0
	3.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	32.8	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	50.0	28.0	90.0
Dry manure	0.0	0.0	0.0
Liquid manure	150.0	84.0	270.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	275.8	190.6	1,089.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	35.8	145.6	891.5
Applied to removal ratio	1.15	4.24	5.50

Fresh water applied: 2.41 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 34-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 34-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	3.3
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.3	0.0	0.0	76.0
	3.3	0.0	0.0	

In season irrigation (no fertilizer)	8	0.0	0.0	0.0	26.4
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
22-WA	3.3	0.0	0.0	76.0
	3.3	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	29.7	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	247.7	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	7.7	86.6	761.5
Applied to removal ratio	1.03	2.92	4.85

Fresh water applied: 3.31 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 3-F1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	10	50.4	28.6	90.4	573.8
Nutrient source: Retention pond (lagoon)		90%	10%	50%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
3-WA	7.0	0.0	0.0	195.0
	7.0	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	69.8	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	504.0	286.0	904.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	623.8	364.6	1,633.5
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	23.8	310.6	1,213.5
Applied to removal ratio	1.04	6.75	3.89

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Fresh water applied: 4.07 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 3-F2 / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	132.9
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
3-WA	6.9	0.0	0.0	40.0
	6.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	6.9	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	175.9	150.6	955.5
Potential crop nutrient removal	132.0	20.4	99.6
Nutrient balance	43.9	130.2	855.9
Applied to removal ratio	1.33	7.38	9.59

Fresh water applied: 0.41 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 3-F2 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	50.0
Nutrient source: Retention pond (lagoon)		90%	10%	50%	
Application method: Pipeline					

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NUTRIENT BUDGET FOR CROP (CONTINUED): 3-F2 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	6	0.0	0.0	0.0	41.6
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
3-WA	6.9	0.0	0.0	40.0
	6.9	0.0	0.0	

In season irrigation (with fertilizer)	2	50.0	28.0	90.0	111.0
Nutrient source: Retention pond (lagoon)		90%	10%	50%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	40.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	52.7	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	150.0	84.0	270.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	245.7	162.6	999.5
Potential crop nutrient removal	200.0	37.5	165.0
Nutrient balance	45.7	125.1	834.5
Applied to removal ratio	1.23	4.34	6.06

Fresh water applied: 3.17 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 42-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	726.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					

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NUTRIENT BUDGET FOR CROP (CONTINUED): 42-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	131.5
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	169.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	5.5	0.0	0.0
Existing soil nutrient content	36.0	78.6	726.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	174.5	150.6	952.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	14.5	125.0	819.7
Applied to removal ratio	1.09	5.88	7.17

Fresh water applied: 0.37 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 42-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	55.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	169.0
	5.6	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 42-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	5	0.0	0.0	0.0	28.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	169.0
	5.6	0.0	0.0	

In season irrigation (with fertilizer)	3	50.0	28.0	90.0	166.9
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	169.0
	5.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	50.6	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	200.0	112.0	360.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	293.6	190.6	1,089.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	53.6	145.6	891.5
Applied to removal ratio	1.22	4.24	5.50

Fresh water applied: 2.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 44-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					

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NUTRIENT BUDGET FOR CROP (CONTINUED): 44-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	131.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	195.0
	5.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	5.6	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	174.6	150.6	955.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	14.6	125.0	822.7
Applied to removal ratio	1.09	5.88	7.20

Fresh water applied: 0.22 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 44-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	50%	80%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	55.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	195.0
	5.6	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 44-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	5	0.0	0.0	0.0	28.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	195.0
	5.6	0.0	0.0	

In season irrigation (with fertilizer)	3	50.0	28.0	90.0	166.8
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
42-WA	5.6	0.0	0.0	195.0
	5.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	50.5	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	200.0	112.0	360.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	293.5	190.6	1,089.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	53.5	145.6	891.5
Applied to removal ratio	1.22	4.24	5.50

Fresh water applied: 2.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 4-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	126.0
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	208.0	1,071.0	776.0
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	48.0	1,045.4	643.2
Applied to removal ratio	1.30	41.84	5.84

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 4-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	58.2
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA1	8.2	0.0	0.0	320.0
	8.2	0.0	0.0	

In season irrigation (no fertilizer)	6	0.0	0.0	0.0	49.3
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA1	8.2	0.0	0.0	320.0
	8.2	0.0	0.0	

In season irrigation (with fertilizer)	3	50.0	28.0	90.0	174.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA1	8.2	0.0	0.0	320.0
	8.2	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)

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Irrigation sources	82.1	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	200.0	112.0	360.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	325.1	190.6	1,089.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	85.1	145.6	891.5
Applied to removal ratio	1.35	4.24	5.50

Fresh water applied: 1.84 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 4-F2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	50%	80%	
Application method: Estimated					
In season irrigation (no fertilizer)	6	0.0	0.0	0.0	26.2
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.4	0.0	0.0	80.0
	4.4	0.0	0.0	

In season irrigation (with fertilizer)	4	36.0	78.6	729.5	161.5
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.4	0.0	0.0	80.0
	4.4	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	43.7	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	144.0	314.4	2,918.0
Other	0.0	0.0	0.0

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Atmospheric deposition	14.0		
Nutrients applied	237.7	393.0	3,647.5
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-362.3	339.0	3,227.5
Applied to removal ratio	0.40	7.28	8.68

Fresh water applied: 2.40 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 4-F3 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	130.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.6	0.0	0.0	80.0
	4.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	4.6	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	173.6	150.6	955.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	13.6	125.0	822.7
Applied to removal ratio	1.08	5.88	7.20

Fresh water applied: 0.25 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 4-F3 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): 4-F3 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	726.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	36.0	78.6	729.5	40.6
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.6	0.0	0.0	80.0
	4.6	0.0	0.0	

In season irrigation (no fertilizer)	5	0.0	0.0	0.0	22.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.6	0.0	0.0	80.0
	4.6	0.0	0.0	

In season irrigation (with fertilizer)	3	50.0	28.0	90.0	163.7
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
4-WA2	4.6	0.0	0.0	80.0
	4.6	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	41.2	0.0	0.0
Existing soil nutrient content	36.0	78.6	726.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	186.0	162.6	999.5
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	270.2	241.2	1,726.0
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	30.2	196.2	1,528.0
Applied to removal ratio	1.13	5.36	8.72

Fresh water applied: 2.26 *feet* Total harvests: 1

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NUTRIENT BUDGET FOR CROP: 5-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
In season irrigation (with fertilizer)	1	126.0	72.0	226.0	131.8
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
5-WA	5.8	0.0	0.0	232.0
	5.8	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	5.8	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	126.0	72.0	226.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	174.8	150.6	955.5
Potential crop nutrient removal	204.8	32.0	358.4
Nutrient balance	-30.0	118.6	597.1
Applied to removal ratio	0.85	4.71	2.67

Fresh water applied: 0.29 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 5-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Pre-irrigation prior to planting (with fertilizer)	1	50.0	28.0	90.0	55.8
Nutrient source: Retention pond (lagoon)		90%	10%	50%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
5-WA	5.8	0.0	0.0	232.0
	5.8	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): 5-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	7	0.0	0.0	0.0	40.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
5-WA	5.8	0.0	0.0	232.0
	5.8	0.0	0.0	

In season irrigation (with fertilizer)	2	50.0	28.0	90.0	111.7
Nutrient source: Retention pond (lagoon)		90%	50%	80%	
Application method: Pipeline					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
5-WA	5.8	0.0	0.0	232.0
	5.8	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	58.5	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	150.0	84.0	270.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	251.5	162.6	999.5
Potential crop nutrient removal	187.2	48.0	249.6
Nutrient balance	64.3	114.6	749.9
Applied to removal ratio	1.34	3.39	4.00

Fresh water applied: 2.95 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 8-F1 / Barley silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	188.0	101.6	929.5
Potential crop nutrient removal	160.0	25.6	132.8
Nutrient balance	28.0	76.0	796.7
Applied to removal ratio	1.18	3.97	7.00

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: 8-F1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	36.0	78.6	729.5	36.0
Nutrient source: Soil		90%	50%	80%	
Application method: Estimated					
Dry manure	1	175.0	53.0	230.0	175.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	1.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
8-WA	1.9	0.0	0.0	80.0
	1.9	0.0	0.0	

In season irrigation (no fertilizer)	8	0.0	0.0	0.0	15.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
8-WA	1.9	0.0	0.0	80.0
	1.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	17.0	0.0	0.0

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Existing soil nutrient content	36.0	78.6	729.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	175.0	53.0	230.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	235.0	131.6	959.5
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	-5.0	86.6	761.5
Applied to removal ratio	0.98	2.92	4.85

Fresh water applied: 2.72 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Hair / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	0.0	0.0	0.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	82.0	999.0	550.0
Potential crop nutrient removal	198.0	30.6	149.4
Nutrient balance	-116.0	968.4	400.6
Applied to removal ratio	0.41	32.65	3.68

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Hair / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): Hair / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	5.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	78.0
	5.5	0.0	0.0	

In season irrigation (no fertilizer)	7	0.0	0.0	0.0	38.6
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	78.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	44.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	271.1	1,022.0	750.0
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	31.1	977.0	552.0
Applied to removal ratio	1.13	22.71	3.79

Fresh water applied: 2.95 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Looney1 / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): Looney1 / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	126.0	72.0	226.0	126.0
Nutrient source: From dairy		90%	50%	80%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	126.0	72.0	226.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	208.0	1,071.0	776.0
Potential crop nutrient removal	198.0	30.6	149.4
Nutrient balance	10.0	1,040.4	626.6
Applied to removal ratio	1.05	35.00	5.19

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Looney1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
Pre-irrigation prior to planting (no fertilizer)	1	0.0	0.0	0.0	2.9
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
7-WA	2.9	0.0	0.0	78.0
	2.9	0.0	0.0	

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NUTRIENT BUDGET FOR CROP (CONTINUED): Looney1 / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	7	0.0	0.0	0.0	20.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
7-WA	2.9	0.0	0.0	78.0
	2.9	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	23.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	250.0	1,022.0	750.0
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	10.0	977.0	552.0
Applied to removal ratio	1.04	22.71	3.79

Fresh water applied: 3.02 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Looney2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	80.0
	5.5	0.0	0.0	

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: Looney4 / Alfalfa, hay

Activity / Event		# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content		1	75.0	999.0	550.0	75.0
Nutrient source:	Soil		90%	10%	50%	
Application method:	Estimated					
Dry manure		1	252.0	143.0	452.0	252.0
Nutrient source:	From dairy		80%	50%	75%	
Application method:	Broadcast/incorporate					
In season irrigation (no fertilizer)		8	0.0	0.0	0.0	22.4
Nutrient source:	Water only		0%	0%	0%	
Application method:	Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
7-WA	2.8	0.0	0.0	194.0
	2.8	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	22.4	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		

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Nutrients applied	363.4	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-236.6	1,088.0	582.0
Applied to removal ratio	0.61	21.15	2.39

Fresh water applied: 2.95 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: MEDERIOS1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	72.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: MEDERIOS2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): MEDERIOS2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	40.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: MEDERIOS3 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

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NUTRIENT BUDGET FOR CROP (CONTINUED): MEDERIOS3 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	76.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: MEDERIOS4 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	160.0
	5.5	0.0	0.0	

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: R & V Fagun West / Alfalfa, hay

Activity / Event		# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content		1	75.0	999.0	550.0	75.0
Nutrient source:	Soil		90%	10%	50%	
Application method:	Estimated					
Dry manure		1	252.0	143.0	452.0	252.0
Nutrient source:	From dairy		80%	50%	75%	
Application method:	Broadcast/incorporate					
In season irrigation (no fertilizer)		10	0.0	0.0	0.0	55.1
Nutrient source:	Water only		0%	0%	0%	
Application method:	Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	78.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		

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Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: R & V Fagun West / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	78.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: RD8-2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): RD8-2 / Alfalfa, hay

Activity / Event		# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content		1	75.0	999.0	550.0	75.0
Nutrient source:	Soil		90%	10%	50%	
Application method:	Estimated					
Dry manure		1	252.0	143.0	452.0	252.0
Nutrient source:	From dairy		80%	50%	75%	
Application method:	Broadcast/incorporate					
In season irrigation (no fertilizer)		10	0.0	0.0	0.0	55.1
Nutrient source:	Water only		0%	0%	0%	
Application method:	Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	160.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: V.C.1 / Alfalfa, hay

Activity / Event		# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content		1	75.0	999.0	550.0	75.0
Nutrient source:	Soil		90%	10%	50%	
Application method:	Estimated					
Dry manure		1	252.0	143.0	452.0	252.0
Nutrient source:	From dairy		80%	50%	75%	
Application method:	Broadcast/incorporate					

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NUTRIENT BUDGET FOR CROP (CONTINUED): V.C.1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	168.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: V.C.3 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	56.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.7	0.0	0.0	78.0
	5.7	0.0	0.0	

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	56.5	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	397.5	1,142.0	1,002.0
Potential crop nutrient removal	600.0	52.0	420.0
Nutrient balance	-202.5	1,090.0	582.0
Applied to removal ratio	0.66	21.96	2.39

Fresh water applied: 3.78 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: V.C.4 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	56.5
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.7	0.0	0.0	78.0
	5.7	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	56.5	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		

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Nutrients applied	397.5	1,142.0	1,002.0
Potential crop nutrient removal	480.0	43.2	336.0
Nutrient balance	-82.5	1,098.8	666.0
Applied to removal ratio	0.83	26.44	2.98

Fresh water applied: 3.78 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: VBLEASE / Wheat, silage, soft dough

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	0.0	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	227.0	1,022.0	750.0
Potential crop nutrient removal	198.0	30.6	149.4
Nutrient balance	29.0	991.4	600.6
Applied to removal ratio	1.15	33.40	5.02

Fresh water applied: 0.00 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: VBLEASE / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	145.0	23.0	200.0	145.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					

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NUTRIENT BUDGET FOR CROP (CONTINUED): VBLEASE / Corn, silage

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
In season irrigation (no fertilizer)	9	0.0	0.0	0.0	49.6
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	118.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	49.6	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	145.0	23.0	200.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	7.0		
Nutrients applied	276.6	1,022.0	750.0
Potential crop nutrient removal	240.0	45.0	198.0
Nutrient balance	36.6	977.0	552.0
Applied to removal ratio	1.15	22.71	3.79

Fresh water applied: 3.31 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: WEHOLT1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	72.0
	5.5	0.0	0.0	

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	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: WEHOLT2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	40.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		

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Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: West1 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	116.0
	5.5	0.0	0.0	

	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

NUTRIENT BUDGET FOR CROP: West2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)

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NUTRIENT BUDGET FOR CROP (CONTINUED): West2 / Alfalfa, hay

Activity / Event	# of Events	N (lbs/acre) % avail.	P (lbs/acre) % avail.	K (lbs/acre) % avail.	Total N (lbs/acre)
Existing soil nutrient content	1	75.0	999.0	550.0	75.0
Nutrient source: Soil		90%	10%	50%	
Application method: Estimated					
Dry manure	1	252.0	143.0	452.0	252.0
Nutrient source: From dairy		80%	50%	75%	
Application method: Broadcast/incorporate					
In season irrigation (no fertilizer)	10	0.0	0.0	0.0	55.1
Nutrient source: Water only		0%	0%	0%	
Application method: Surface					

Irrigation Source	N (lbs/acre)	P (lbs/acre)	K (lbs/acre)	Runtime (hrs)
10-WA	5.5	0.0	0.0	40.0
	5.5	0.0	0.0	

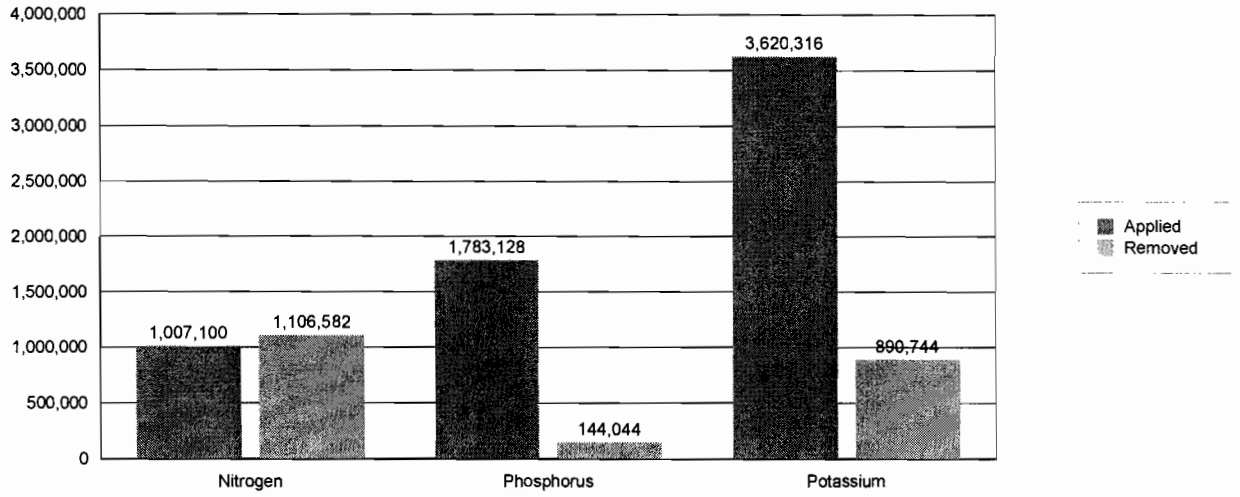
	Total N (lbs/acre)	Total P (lbs/acre)	Total K (lbs/acre)
Irrigation sources	55.1	0.0	0.0
Existing soil nutrient content	75.0	999.0	550.0
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	0.0	0.0	0.0
Dry manure	252.0	143.0	452.0
Liquid manure	0.0	0.0	0.0
Other	0.0	0.0	0.0
Atmospheric deposition	14.0		
Nutrients applied	396.1	1,142.0	1,002.0
Potential crop nutrient removal	600.0	54.0	420.0
Nutrient balance	-203.9	1,088.0	582.0
Applied to removal ratio	0.66	21.15	2.39

Fresh water applied: 3.68 *feet* Total harvests: 1

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

NUTRIENT APPLICATIONS, POTENTIAL REMOVAL, AND BALANCE

A. POUNDS OF NUTRIENT APPLIED VS. CROP REMOVAL POTENTIAL



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	110,795.3	0.0	0.0
Existing soil nutrient content	173,901.0	1,447,945.2	2,326,354.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	3,850.0	2,156.0	6,930.0
Dry manure	394,824.0	155,397.0	620,744.0
Liquid manure	292,132.0	177,629.8	666,287.5
Other	0.0	0.0	0.0
Atmospheric deposition	31,598.0		
Nutrients applied to all crops	1,007,100.3	1,783,128.0	3,620,316.0
Potential crop nutrient removal	1,106,582.4	144,044.2	890,743.6
Nutrient balance	-99,482.1	1,639,083.8	2,729,572.4
Applied to removal ratio	0.91	12.38	4.06

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
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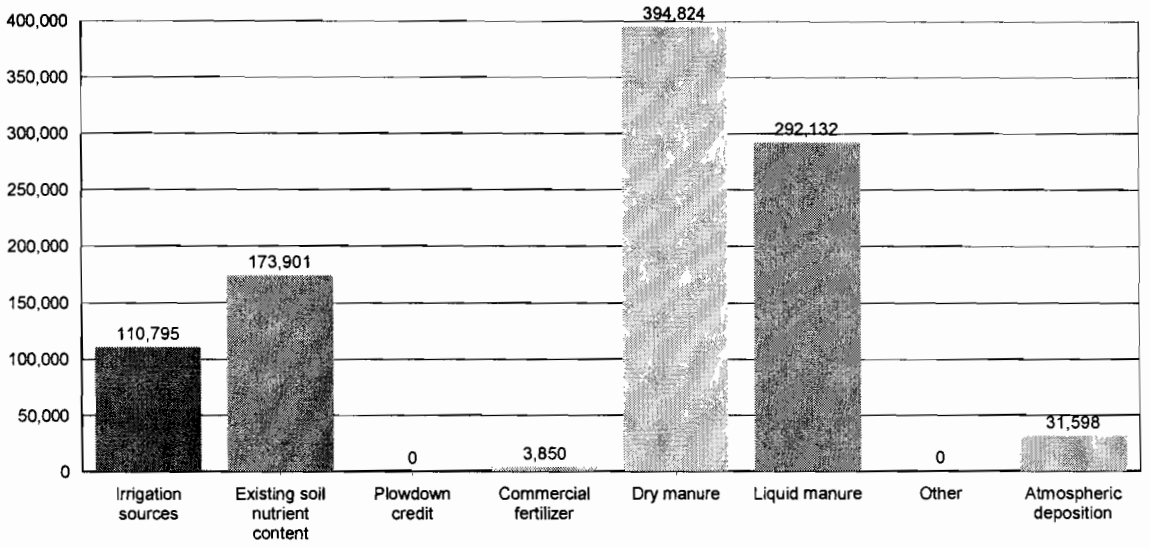
B. POUNDS OF NITROGEN APPLIED BY NUTRIENT SOURCE



	Total N (lbs)	Total P (lbs)	Total K (lbs)
Irrigation sources	110,795.3	0.0	0.0
Existing soil nutrient content	173,901.0	1,447,945.2	2,326,354.5
Plowdown credit	0.0	0.0	0.0
Commercial fertilizer	3,850.0	2,156.0	6,930.0
Dry manure	394,824.0	155,397.0	620,744.0
Liquid manure	292,132.0	177,629.8	666,287.5
Other	0.0	0.0	0.0
Atmospheric deposition	31,598.0		
Nutrients applied to all crops	1,007,100.3	1,783,128.0	3,620,316.0
Potential crop nutrient removal	1,106,582.4	144,044.2	890,743.6
Nutrient balance	-99,482.1	1,639,083.8	2,729,572.4
Applied to removal ratio	0.91	12.38	4.06

Nutrient Management Plan Report
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NUTRIENT BALANCE

A. WHOLE FARM BALANCE

	Total N (lbs)	Total P (lbs)	Total K (lbs)
Nutrients in storage from herd*			
Daily gross	4,824.8	799.0	2,406.7
Annual gross	1,761,068.6	291,624.8	878,461.3
Net to pond storage after ammonia losses (30% loss applied)	0.0	0.0	0.0
Net to drylot storage after ammonia losses (30% loss applied)	1,232,748.0	291,624.8	878,461.3
Net in storage (30% loss applied)	1,232,748.0	291,624.8	878,461.3
Irrigation sources	110,795.3	0.0	0.0
Atmospheric deposition	31,598.0		
Imports	0.0	0.0	0.0
Exports	0.0	0.0	0.0
Potential crop nutrient removal	1,106,582.4	144,044.2	890,743.6
Nutrient balance	268,558.9	147,580.6	-12,282.3
Nutrient balance ratio	1.24	2.02	0.99

* Potassium excretion from milk cows and dry cows only.

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SAMPLING AND ANALYSIS PLAN

A. MANURE SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each application to each land application area	For each applied manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each applied manure source, a scaled weight by truckload will be recorded.	Corral solids	Date applied and total weight (tons) applied	Use Biannual Analysis
Once within 12 months	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	Corral solids	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride
Twice per year	For each manure source, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	Corral solids	None required	Total nitrogen, total phosphorus, potassium, and percent moisture

Nutrient Management Plan Report
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A. MANURE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Annually	Annual estimation for total manure dry weight applied to each field will be quantified using the following: Dry weight applied from a source to a crop per application event = weight applied * (1 - (percent moisture / 100)) Dry weight applied to crop per application event = sum of dry weights applied from each source Dry weight applied to a crop = sum of dry weights applied during each application Dry weight applied to a field = sum of dry weights applied to each crop Annual estimation for total manure dry weight exported will be quantified using the following: Dry weight exported from a source per event = weight exported * (1 - (percent moisture / 100)) Dry weight exported per event = sum of dry weights exported from each source Dry weight exported to any offsite destination = sum of dry weights exported per event	Corral solids	Total dry weight (tons) manure applied annually to each land application area, and total dry weight (tons) manure exported offsite annually	None required

Nutrient Management Plan Report
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B. PROCESS WASTEWATER SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each application	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	Storage Pond	Date applied and volume (gallons or acre-inches) applied	None required
Quarterly during one application event	For field measurement: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For laboratory analyses: For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	Storage Pond	Date applied	Electrical conductivity, nitrate-nitrogen (only when pond is aerated), ammonium-nitrogen, total Kjeldahl nitrogen, total phosphorus, and potassium
Once within 12 months and annually for two years after groundwater monitoring wells are required	For each pond, a composite or grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	Storage Pond	None required	General minerals, including: calcium, magnesium, sodium, bicarbonate, carbonate, sulfate, and chloride

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C. SOIL SAMPLING AND ANALYSIS PLAN

				Minimum data collection requirements	
Frequency	Sampling Methods	Source		Field Analytes	Lab Analytes
Once in Fall of 2008 and then once every five years for each land application area	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	2-F1 3-F2 5-F1 8-F1 10-F1 10-F2 15-F1 16-F1 17-F1 19-F1 19-F2 20-F1 21-F1 22-F1 31-F1 34-F1 4-F1 4-F2 4-F3 42-F1 44-F1	- 76 acre - 42 acre - 116 acre - 40 acre - 101 acre - 43 acre - 29 acre - 40 acre - 39 acre - 35 acre - 40 acre - 40 acre - 39 acre - 39 acre - 77 acre - 38 acre - 161 acre - 43 acre - 42 acre - 85 acre - 98 acre	None required	0 to 1 foot: Total phosphorus
Spring pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	2-F1 3-F2 5-F1 8-F1 10-F1 10-F2 15-F1 16-F1 17-F1 19-F1 19-F2 20-F1 21-F1 22-F1 31-F1 34-F1 4-F1 4-F2 4-F3 42-F1 44-F1	- 76 acre - 42 acre - 116 acre - 40 acre - 101 acre - 43 acre - 29 acre - 40 acre - 39 acre - 35 acre - 40 acre - 40 acre - 39 acre - 39 acre - 77 acre - 38 acre - 161 acre - 43 acre - 42 acre - 85 acre - 98 acre	None required	0 to 1 foot: Nitrate-nitrogen and organic matter 1 to 2 foot: Nitrate-nitrogen

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C. SOIL SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Fall pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	2-F1 - 76 acre 3-F2 - 42 acre 5-F1 - 116 acre 8-F1 - 40 acre 10-F1 - 101 acre 10-F2 - 43 acre 15-F1 - 29 acre 16-F1 - 40 acre 17-F1 - 39 acre 19-F1 - 35 acre 19-F2 - 40 acre 20-F1 - 40 acre 21-F1 - 39 acre 22-F1 - 39 acre 31-F1 - 77 acre 34-F1 - 38 acre 4-F1 - 161 acre 4-F2 - 43 acre 4-F3 - 42 acre 42-F1 - 85 acre 44-F1 - 98 acre	None required	0 to 1 foot: Electrical conductivity, nitrate-nitrogen, soluble phosphorus, potassium, organic matter 1 to 2: Nitrate-nitrogen 2 to 3 foot: Nitrate-nitrogen
Once in summer of 2008 and then once every five years for each land application area	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	1-F1 52acres 3-F1 97 acres Hair 39 acres Looney 1 38 acres Looney 2 40 acres Looney 4 97 acres MEDERIOS 1 36 acres MEDERIOS 2 20 acres MEDERIOS 3 38 acres MEDERIOS 4 80 acres R&V Fagundes West 39 acres R&V Fagundes West 39 acres RD8-2 80 acres V.C.1 84 acres V.C.3 38 acres V.C.4 38 acres VBLEASE 59 acres WEHOLT 1 36 acres WEHOLT 2 20 acres West 1 58 acres West 2 20 acres	None required	0 to 1 foot: Total phosphorus

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C. SOIL SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Spring pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	1-F1 52 acres 3-F1 97 acres Hair 39 acres Looney 1 38 acres Looney 2 40 acres Looney 4 97 acres MEDERIOS 1 36 acres MEDERIOS 2 20 acres MEDERIOS 3 38 acres MEDERIOS 4 80 acres R&V Fagundes West 39 acres R&V Fagundes West 39 acres RD8-2 80 acres V.C. 1 84 acres V.C. 3 38 acres V.C. 4 38 acres VBLEASE 59 acres WEHOLT 1 36 acres WEHOLT 2 20 acres West 1 58 acres West 2 20 acres	None required	0 to 1 foot: Nitrate-nitrogen and organic matter 1 to 2 foot: Nitrate-nitrogen

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C. SOIL SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Fall pre-plant for each crop	For each field, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	1-F1 52 acres 3-F1 97 acres Hair 39 acres Looney 1 38 acres Looney 2 40 acres Looney 4 97 acres MEDERIOS 1 36 acres MEDERIOS 2 20 acres MEDERIOS 3 38 acres MEDERIOS 4 80 acres R&V Fagundes West 39 acres R&V Fagundes West 39 acres RD8-2 80 acres V.C. 1 84 acres V.C. 3 38 acres V.C. 4 38 acres VBLEASE 59 acres WEHOLT 1 36 acres WEHOLT 2 20 acres West 1 58 acres West 2 20 acres	None required	0 to 1 foot: Electrical conductivity, nitrate-nitrogen, soluble phosphorus, potassium, organic matter 1 to 2: Nitrate-nitrogen 2 to 3 foot: Nitrate-nitrogen

D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes

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D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each crop harvest from each land application area	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each field and crop, a scaled weight by truckload will be recorded.	2-F1 Winter Forage/Corn 3-F2 Winter Forage/Corn 5-F1 Winter Forage/Corn 8-F1 Winter Forage/Corn 10-F1 Winter Forage/Corn 10-F2 Winter Forage/Corn 15-F1 Winter Forage/Corn 16-F1 Winter Forage/Corn 17-F1 Winter Forage/Corn 19-F1 Winter Forage/Corn 19-F2 Winter Forage/Corn 20-F1 Winter Forage/Corn 21-F1 Winter Forage/Corn 22-F1 Winter Forage/Corn 31-F1 Winter Forage/Corn 34-F1 Winter Forage/Corn 4-F1 Winter Forage/Corn 4-F2 Winter Forage/Corn 4-F3 Winter Forage/Corn 42-F1 Winter Forage/Corn 44-F1 Winter Forage/Corn	Date harvested and total weight (tons) of harvested material removed from each land application area	Percent wet weight of harvested plant removed Total nitrogen, phosphorus, and potassium, expressed on a dry weight basis

D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Mid-season, as necessary to assess need for additional nitrogen during the growing season (only required if Discharger wants to add fertilizer in excess of 1.4 times the nitrogen expected to be removed by the harvested portion of the crop)	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	2-F1 Winter Forage/Corn 3-F2 Winter Forage/Corn 5-F1 Winter Forage/Corn 8-F1 Winter Forage/Corn 10-F1 Winter Forage/Corn 10-F2 Winter Forage/Corn 15-F1 Winter Forage/Corn 16-F1 Winter Forage/Corn 17-F1 Winter Forage/Corn 19-F1 Winter Forage/Corn 19-F2 Winter Forage/Corn 20-F1 Winter Forage/Corn 21-F1 Winter Forage/Corn 22-F1 Winter Forage/Corn 31-F1 Winter Forage/Corn 34-F1 Winter Forage/Corn 4-F1 Winter Forage/Corn 4-F2 Winter Forage/Corn 4-F3 Winter Forage/Corn 42-F1 Winter Forage/Corn 44-F1 Winter Forage/Corn	None required	Total nitrogen (corn), nitrate nitrogen (wheat/oat), expressed on a dry weight basis

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D. PLANT TISSUE SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Mid-season, as necessary to assess need for additional nitrogen during the growing season (only required if Discharger wants to add fertilizer in excess of 1.4 times the nitrogen expected to be removed by the harvested portion of the crop)	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected.	1-F1 Alfalfa 3-F1 Alfalfa Hair Corn/Winter Forage Looney 1 Corn/Winter Forage Looney 2,4 Alfalfa Mederios 1,2,3,4 Alfalfa R & V Fagundes West Alfalfa R & V Fagundes West Alfalfa RD8-2 Alfalfa V.C.1,3,4 Alfalfa VBLEASE Corn/Winter Forage WEHOLT 1,2 Alfalfa West 1,2 Alfalfa	None required	Total nitrogen, expressed on a dry weight basis
Each crop harvest from each land application area	For each field and crop, a composite sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. For each field and crop, a scaled weight by truckload will be recorded.	1-F1 Alfalfa 3-F1 Alfalfa Hair Corn/Winter Forage Looney 1 Corn/Winter Forage Looney 2,4 Alfalfa Mederios 1,2,3,4 Alfalfa R & V Fagundes West Alfalfa R & V Fagundes West Alfalfa RD8-2 Alfalfa V.C. 1,3,4 Alfalfa VBLEASE Corn/Winter Forage WEHOLT 1,2 Alfalfa West 1,2	Date harvested and total weight (tons) of harvested material removed from each land application area	Percent wet weight of harvested plant removed Total nitrogen, phosphorus, and potassium, expressed on a dry weight basis

E. IRRIGATION WATER SAMPLING AND ANALYSIS PLAN

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes

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E. IRRIGATION WATER SAMPLING AND ANALYSIS PLAN (CONTINUED)

			Minimum data collection requirements	
Frequency	Sampling Methods	Source	Field Analytes	Lab Analytes
Each fresh water irrigation event for each land application area	Irrigation Well - flow rate multiplied by runtime Canal - flow rate multiplied by runtime	2-WA 3-WA 4-WA1 4-WA2 5-WA 7-WA 8-WA 10-WA 11-WA 14-WA 15-WA 19-WA 22-WA 31-AW1 31-AW2 33-WA 48-WA 50-WA	Date applied and volume (gallons or acre-inches) applied	None required
One irrigation event during each irrigation season during actual irrigation events – for each irrigation water source (well and canal)	For each irrigation source, a grab sample per the "Approved Sampling Procedures for Nutrient and Groundwater Monitoring at Existing Milk Cow Dairies" will be collected. [OR] Groundwater monitoring data will be used to satisfy monitoring requirements for all irrigation well water. Irrigation district data will be used to satisfy monitoring requirements for all canal/surface water.	2-WA 3-WA 4-WA1 4-WA2 5-WA 7-WA 8-WA 10-WA 11-WA 14-WA 15-WA 19-WA 22-WA 31-AW1 31-AW2 33-WA 48-WA 50-WA	None required	Electrical conductivity and nitrate-nitrogen Data collected to satisfy the groundwater monitoring requirements will satisfy this requirement for irrigation wells

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NUTRIENT MANAGEMENT PLAN REVIEW

A. NUTRIENT MANAGEMENT PLAN REVIEW

Person who created the NMP:	Schmidt, Jon	*See above for contact information.*
Date the NMP was drafted:	06/01/2008	
Person who approved the final NMP:	Schmidt, Jon	*See above for contact information.*
Date of NMP implementation:	07/01/2008	

Nutrient Management Plan Report
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ATTACHED MAP AND DOCUMENTATION REFERENCES

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Nutrient Management Plan for the reporting schedule of 'July 1, 2009'.

A. PRELIMINARY DAIRY FACILITY ASSESSMENT

The NMP will include the initial Preliminary Dairy Facility Assessment (Attachment A) and the annual updates as required by Monitoring and Reporting Program No. R5-2007-0035. Copies of these assessments shall be maintained for 10 years.

B. LAND AREA MAP(S)

Identify each field under control of the Discharger and within five miles of the dairy where neither process wastewater nor manure is applied. Each field shall be identified on a single published base map at an appropriate scale by the following:

1. Assessor's Parcel Number.
2. Total acreage.
3. Information on who owns or leases the field

Non-application area map reference number: Attachment 1

Setbacks, Buffers, and Other Alternatives to Protect Surface Water (see Technical Standard VII):

1. Identify all potential surface waters or conduits to surface water that are within 100 feet of any land application area.
2. For each land application area that is within 100 feet of a surface water or a conduit to surface water, identify the setback, vegetated buffer, or other alternative practice that will be implemented to protect surface water (Technical Standard VII).

Setbacks and buffers map reference number: Attachment 2

C. PROCESS WASTEWATER WRITTEN AGREEMENTS

Provide copies of written agreements with third parties that receive process wastewater for their own use from the Discharger 's dairy (Technical Standards V.A.1 and V.A.3).

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SAMPLING AND ANALYSIS PLAN CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Fagundes Dairy

Physical address of dairy:

23732 Road 12	Chowchilla	Madera	93610
Physical Address Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I certify that I meet the requirements as a certified specialist in developing nutrient management plans as described in Attachment C of Waste Discharge Requirements General Order No. R5-2007-0035 and that I prepared the Sampling and Analysis plan.

Agronomist
TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL DATE

Jon Schmidt
PRINT OR TYPE NAME

1490 N Buhach; Atwater, CA 95301
MAILING ADDRESS

(209) 386-3695
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER OF FACILITY	SIGNATURE OF OPERATOR OF FACILITY
Fredrick Fagundes	Bros Dairy Fagundes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
DATE	DATE

Nutrient Management Plan Report
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NUTRIENT BUDGET CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Fagundes Dairy

Physical address of dairy:

23732 Road 12	Chowchilla	Madera	93610
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address): _____

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I certify that I meet the requirements as a certified specialist in developing nutrient management plans as described in Attachment C of Waste Discharge Requirements General Order No. R5-2007-0035 and that I prepared the Nutrient Budget plan.

Agronomist
TITLE/QUALIFICATIONS OF CERTIFIED NUTRIENT MANAGEMENT SPECIALIST

SIGNATURE OF TRAINED PROFESSIONAL DATE

Jon Schmidt
PRINT OR TYPE NAME

1490 N Buhach; Atwater, CA 95301
MAILING ADDRESS

(209) 386-3695
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER OF FACILITY	SIGNATURE OF OPERATOR OF FACILITY
Fredrick Fagundes	Bros Dairy Fagundes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
DATE	DATE

Nutrient Management Plan Report
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July 1, 2009 deadline

STATEMENTS OF COMPLETION

Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies (General Order) requires owners and operators of existing milk cow dairies (Dischargers) to develop and implement a Nutrient Management Plan for their land application areas (land under control of the Discharger, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient cycling). The Discharger is required to maintain the NMP at the dairy, make the NMP available to Central Valley Water Board staff during their inspections, and submit the NMP to the Executive Officer upon request.

The General Order requires the Discharger to submit two Statements of Completion during development of the NMP. The Discharger may use this form to comply with the General Order requirement to submit one or both of these Statements of Completion. Parts A and E must be completed for each Statement of Completion. Parts B, C and D are to be completed for the Statements of Completion due by 1 July 2008, 31 December 2008 and 1 July 2009, respectively. Both the owner and the operator of the dairy must sign this form in Part E below.

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Fagundes Dairy

23732 Road 12	Chowchilla	Madera	93610
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

Operator name: Fagundes, Bros Dairy Telephone no.: (559) 665-7314 Landline Cellular

24476 Road 14	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Legal owner name: Fagundes, Lloyd John Telephone no.: (559) 665-4465 Landline (209) 761-3282 Cellular

11158 Ave 24	Chowchilla	CA	93610
Mailing Address Number and Street	City	State	Zip Code

Nutrient Management Plan Report
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B. STATEMENT OF COMPLETION DUE 1 JULY 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2008:

☐ **Item I.A.1 Land Application Information**
Identification of land used for manure application and needed information on a facility map.

☐ **Item I.B Land Application Information**
Information list for information provided on map above.

☐ **Item I.C Land Application Information**
Copies of written third-party process wastewater agreements.

☐ **Item I.D Land Application Information**
Identification of fields under control of the discharger within five miles of the dairy where neither process wastewater nor manure is applied.

☐ **Item II Sampling and Analysis Plan**

☐ **Item IV Setbacks, Buffers, and Other Alternatives to Protect Surface Water**
Identification of all potential surface waters or conduits to surface waters within 100 feet of land application areas and appropriate protection.

☐ **Item VI Record-Keeping Requirements**
Identification of monitoring records that will be maintained as required in the production and land application areas.

Has Item II (Sampling and Analysis Plan) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☐ Yes ☐ No

C. STATEMENT OF COMPLETION DUE 31 DECEMBER 2008

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 31 December 2008:

☐ **Item V Field Risk Assessment**
Evaluation of the effectiveness of management practices used to control the discharge of waste constituents from land application areas by assessing the water quality monitoring results of discharges of manure, process wastewater, tailwater, subsurface (tile) drainage, or storm water from the land application areas.

D. STATEMENT OF COMPLETION DUE 1 JULY 2009

I have completed the following items of the Nutrient Management Plan (check the boxes of completed sections), which are due 1 July 2009:

☐ **Item I.A.2 Land Application Area Information**
Identification of process wastewater conveyance, mixing and drainage information for each land application area on a facility map.

☐ **Item III Nutrient Budget**
Established planned rates of nutrient applications by crop based on nutrient monitoring results for each land application area.

Has Item III (Nutrient Budget) of the Nutrient Management Plan been certified by a Certified Nutrient Management Specialist as required in the General Order?

☐ Yes ☐ No

Nutrient Management Plan Report
General Order No. R5-2007-0035, Attachment C
July 1, 2009 deadline

E. CERTIFICATION STATEMENT

I certify under penalty of law that I have completed the items of the Nutrient Management Plan that are checked in Parts B, C and/or D above for the dairy identified in Part A above and that the appropriate certified nutrient management specialist has certified the items requiring such certification as noted in part B and/or D above and that I have personally examined and am familiar with the information submitted in Parts A, B, C and D of this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER OF FACILITY	SIGNATURE OF OPERATOR OF FACILITY
Lloyd John Fagundes	Bros Dairy Fagundes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
DATE	DATE