

GROUND WATER DISCHARGE PERMIT - RENEWAL
EXISTING DAIRY FACILITY with an EVAPORATIVE DISPOSAL SYSTEM
Barrera Dairy, DP-380

I. INTRODUCTION AND SUMMARY

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal (Discharge Permit), DP-380, to First New Mexico Financial Corporation (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 and 20.6.6 NMAC.

NMED's purpose in issuing this Discharge Permit is to control the discharge of water contaminants from Barrera Dairy (dairy facility) for the protection of ground water and those segments of surface water gaining from ground water inflow, for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health.

The activities which produce the discharge, the location of the discharge, and the quantity, quality and flow characteristics of the discharge are briefly described as follows:

A maximum daily discharge volume of 25,650 gallons per day (gpd) of wastewater may be discharged from the production area. Wastewater flows from the parlor to a concrete-lined sump and is pumped to a single-cell solids settling separator which discharges into a wastewater impoundment system for disposal by evaporation. The wastewater impoundment system currently consists of four impoundments operated in series, of which three of the impoundments are clay-lined and one is clay/manure-lined. The discharge contains water contaminants or toxic pollutants which may be elevated above the standards of Section 20.6.2.3103 NMAC.

The dairy facility is located on Dairy Road, approximately a half-mile southwest of Arrey, in Section 11, Township 17S, Range 5W, Sierra County. Ground water most likely to be affected is at a depth of approximately 60 feet and had a pre-discharge total dissolved solids concentration of approximately 173 milligrams per liter.

The original Discharge Permit was issued on December 3, 1985 and subsequently renewed and/or modified on September 21, 1990, December 30, 1992, June 10, 1996 and October 2, 2001. The application consists of the materials submitted by the permittee dated February 1, 2007 and materials contained in the administrative record associated with issuance of this Discharge Permit. The discharge shall be managed in accordance with all applicable requirements of the Dairy Rule (20.6.6 NMAC) and this Discharge Permit.

Issuance of this Discharge Permit does not relieve the permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state and/or local laws and regulations, such as zoning requirements and nuisance ordinances.

The following acronyms and abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation	Abbreviation	Explanation
Cl	chloride	NO ₃ -N	nitrate-nitrogen
gpd	gallons per day	S	Sulfur

Abbreviation	Explanation	Abbreviation	Explanation
LADS	land application data sheet(s)	SO ₄	Sulfate
mg/L	milligrams per liter	TDS	total dissolved solids
NMAC	New Mexico Administrative Code	TKN	total Kjeldahl nitrogen
NMED	New Mexico Environment Department	WQA	New Mexico Water Quality Act
NMP	Nutrient management plan	WQCC	Water Quality Control Commission
NMSA	New Mexico Statutes Annotated		

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The permittee is discharging from a facility that meets the definition of “dairy facility” and is subject to the Dairy Rule (20.6.6 NMAC). This dairy facility meets the definition of “existing facility”.
2. The permittee is discharging effluent or leachate from the dairy facility that may move directly or indirectly into ground water within the meaning of Section 20.6.2.3104 NMAC.
3. The permittee is discharging effluent or leachate from the dairy facility that may move into ground water of the State of New Mexico which has an existing concentration of 10,000 milligrams per liter or less of total dissolved solids within the meaning of Subsection A of 20.6.2.3101 NMAC.
4. The discharge from the dairy facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.
5. The Discharge Permit for this facility last issued on October 2, 2001 (before the effective date of the Dairy Rule of December 31, 2011) required the wastewater impoundment system to have the capacity to dispose of the maximum daily discharge volume (expressed in gallons per day) by evaporation while preserving two feet of freeboard.
6. The dairy facility was existing as of the effective date of the Dairy Rule (December 31, 2011) and does not measure the volume of wastewater discharged to wastewater impoundment(s) using a flow meter installed on the discharge line(s) from all wastewater sources to the wastewater impoundment(s).
7. This Discharge Permit contains requirements associated with the following potential contaminant sources as identified in the application and the administrative record as of the effective date of this Discharge Permit:

- a) Wastewater Impoundments
 - i. **Wastewater Impoundment 1** - authorized for use by this Discharge Permit.
 - ii. **Wastewater Impoundment 2** - authorized for use by this Discharge Permit.
 - iii. **Wastewater Impoundment 3** - authorized for use by this Discharge Permit.
 - iv. **Wastewater Impoundment 4** - authorized for use by this Discharge Permit.
- b) Stormwater Impoundments
 - i. **Stormwater Impoundment North** - authorized for use by this Discharge Permit.
 - ii. **Stormwater Impoundment Northeast** - authorized for use by this Discharge Permit.
 - iii. **Stormwater Impoundment South** - authorized for use by this Discharge Permit.

III. APPLICABLE RULES

Sections 20.6.2.3000 through 20.6.2.3114 NMAC and Part 20.6.6 NMAC (Dairy Rule) apply to discharges specific to dairy facilities and their operations.

IV. DISCHARGE PERMIT REQUIREMENTS

The permittee is authorized to discharge water contaminants pursuant to this Discharge Permit which contains requirements authorized or specified by the Dairy Rule. The permittee shall comply with the Dairy Rule and this Discharge Permit, which are enforceable by NMED. The permittee is authorized to discharge water contaminants subject to the following requirements:

AUTHORIZATION TO DISCHARGE

1. The permittee is authorized to discharge up to 25,650 gpd of wastewater from the production area. Wastewater flows from the parlor to a concrete-lined sump and is pumped to a single-cell solids settling separator which discharges into a wastewater impoundment system for disposal by evaporation. The wastewater impoundment system currently consists of four impoundments operated in series, of which three of the impoundments are clay-lined and one is clay/manure-lined.
2. The permittee is authorized to use the following impoundments for the following purposes in accordance with Subsection B of 20.6.6.20 NMAC.
 - a) **Wastewater Impoundment 1** - authorized to receive wastewater for disposal by evaporation. This impoundment exists as of the effective date of this Discharge

- Permit and is clay/manure-lined. Wastewater from the solids settling separator flows into this impoundment which then flows into Wastewater Impoundment 2.
- b) **Wastewater Impoundment 2** - authorized to receive wastewater for disposal by evaporation. This impoundment exists as of the effective date of this Discharge Permit and is clay-lined. Wastewater from Wastewater Impoundment 1 flows into this impoundment which then flows into Wastewater Impoundment 3.
 - c) **Wastewater Impoundment 3** - authorized to receive wastewater for disposal by evaporation. This impoundment exists as of the effective date of this Discharge Permit and is clay-lined. Wastewater from Wastewater Impoundment 2 flows into this impoundment which then flows into Wastewater Impoundment 4.
 - d) **Wastewater Impoundment 4** - authorized to receive wastewater for disposal by evaporation. This impoundment exists as of the effective date of this Discharge Permit and is clay-lined. Wastewater from Wastewater Impoundment 3 flows into this impoundment.
 - e) **Stormwater Impoundment North** - authorized to collect stormwater for transfer to the wastewater impoundment system. This impoundment exists as of the effective date of this Discharge Permit and is unlined. Also known as Stormwater Pond 3 and North Basin.
 - f) **Stormwater Impoundment Northeast** - authorized to collect stormwater for transfer to the wastewater impoundment system. This impoundment exists as of the effective date of this Discharge Permit and is unlined. Also known as Stormwater Pond 2 and Northeast Basin.
 - g) **Stormwater Impoundment South** - authorized to collect stormwater for transfer to the wastewater impoundment system. This impoundment exists as of the effective date of this Discharge Permit and is unlined. Also known as Stormwater Pond 1 and South Basin.

DAIRY RULE TRANSITION REQUIREMENTS

3. The permittee shall have 90 days from the effective date of this Discharge Permit (**by DATE**) to submit all the necessary information to comply with Sections 20.6.6.10 through 20.6.6.13 NMAC, in accordance with Subsection D of 20.6.6.35 NMAC. The permittee shall submit the necessary information by completing the application form for Renewal and/or Modification located at the following address:
- <http://www.nmenv.state.nm.us/gwb/NMED-GWQB-dairies.htm>

The following sections of the application form for renewal and/or modification shall be completed, and the form shall be signed by the permittee and notarized prior to submission.

- a) Introduction – *Applicant’s Signature and Notary Certification only*
- b) Part I.A
- c) Part II.A.1
- d) Part II.A.2(a) and (b)
- e) Part II.B.1, 2, 4, 5 and 7
- f) Part II.C

- g) Part II.D.2
- h) Part II.D.3(a) and (b)
- i) Part II.E.3
- j) Part IV.A
- k) Part IV.B
- l) Part IV.C

ENGINEERING AND SURVEYING REQUIREMENTS

- 4. The permittee shall comply with the requirements of Section 20.6.6.17 NMAC and shall submit to NMED all information or documentation required by the applicable portions of Section 20.6.6.17 NMAC.
- 5. The permittee shall complete the following items and submit documentation to NMED as summarized in the following table:

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
A.	<p><u>Impoundment Plans and Specifications:</u></p> <p>Submit construction plans and specifications for installation of a wastewater impoundment(s) to achieve compliance with the disposal capacity requirements of Subsection D of 20.6.6.17 NMAC. Impoundment to be known as Wastewater Impoundment 5.</p>	[90 days of effective date]	20.6.6.17.C(1) NMAC
B.	<p><u>Flow Metering Plans:</u></p> <p>To achieve compliance with Subsection J of 20.6.6.20 NMAC, submit a description of the location and installation/construction information for a flow meter(s) to measure the following:</p> <ul style="list-style-type: none"> • the volume of wastewater discharged from all wastewater sources to the impoundment(s)* <p>*Alternatively, to achieve compliance with Subsection J of 20.6.6.20 NMAC, submit a description of the location and installation/construction information for a flow meter(s) installed on the fresh water supply line(s) to measure the volume of all sources contributing to the wastewater discharged to the impoundment(s).</p>	[90 days of effective date]	20.6.6.17.C(7) NMAC

OPERATIONAL REQUIREMENTS

- 6. The permittee shall comply with the requirements of Sections 20.6.6.20 and 20.6.6.22 NMAC, and shall submit to NMED all information or documentation required by the applicable portions of Sections 20.6.6.20 and 20.6.6.22 NMAC.

7. The permittee shall provide written notice to NMED regarding any changes to the presence of lactating cows and/or the status of wastewater discharges at the facility in accordance with Subsection A of 20.6.6.20 NMAC (summarized in the table below).

Activity	Notification of Estimated Date	Verification of Actual Date
Removal of Lactating Cows	Not required	Within 30 days of removal
Reintroduction of Lactating Cows	Not required	Within 30 days of reintroduction
Cessation of wastewater discharge	Not required	Within 30 days of cessation of discharge
Resumption of Discharge	Minimum 30 days prior to resumption	Within 30 days of resumption

8. The permittee is authorized and required to transfer stormwater collected in the unlined stormwater impoundment(s) to the wastewater impoundment(s) in accordance with Subsection I of 20.6.6.20 NMAC.
9. The permittee shall install and use the following flow meter(s) in accordance with Subsections J, K, L and N of 20.6.6.20 NMAC.
- a) **Flow Meter 1** – to be located at this parlor sump to measure the volume of wastewater discharged from the production area to the wastewater impoundment system.

- OR -

The permittee shall install and use the following flow meters in accordance with Subsections J, K, L and N of 20.6.6.20 NMAC to measure the volume of all fresh water contributing to the wastewater discharged to the wastewater impoundment system. If possible, a single flow meter may be installed and used to measure the total volume of all fresh water contributing to the wastewater discharged from the production area.

- a) **Parlor Meter** – to be located on the supply line to the parlor to measure all fresh water used in parlor operations discharged as wastewater.
- b) **Cow Wash Meter** – to be located on the supply line for the cow wash to measure all fresh water used for cow wash discharged as wastewater.

Confirmation of flow meter installation shall be completed in accordance with Subsection J of 20.6.6.20 NMAC.

10. The permittee shall remove all manure solids and composted material from the dairy in accordance with Subsection S of 20.6.6.20 NMAC.
11. The permittee shall complete the following items and submit documentation to NMED as summarized in the following table:

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
A.	<p><u>Impoundment Construction or Improvement:</u></p> <p>i) Complete construction of a new or improvements to an existing impoundment to achieve compliance with the Dairy Rule, in accordance with construction plans and specifications, and supporting design calculations.</p> <p>ii) Submit the Construction Certification Report verifying construction pursuant to Subsection C of 20.6.6.17 NMAC.</p>	<p>[1 yr of effective date]</p> <p>Within 90 days of completed impoundment construction.</p>	20.6.6.20.E NMAC
B.	<p><u>Flow Meter Installation:</u></p> <p>i) Complete installation of flow meter(s).</p> <p>ii) Submit confirmation of installation.</p>	<p>[150 days of effective date]</p> <p>[180 days of effective date]</p>	20.6.6.20.J NMAC
C.	<p><u>Scaled Map of Dairy Facility – Updates:</u></p> <p>Following completion of any additions or changes to the dairy facility which affect the items listed in Subsection U of 20.6.6.20 NMAC, the permittee shall update and resubmit the facility map.</p>	<p>Within 90 days of any addition or change.</p>	20.6.6.20.V NMAC

GROUND WATER MONITORING REQUIREMENTS

12. The permittee shall comply with the requirements of Section 20.6.6.23 NMAC and shall submit to NMED all information or documentation required by the applicable portions of Section 20.6.6.23 NMAC.
13. Monitoring wells shall be constructed and completed in accordance with Subsection D of 20.6.6.23 NMAC.
14. Monitoring wells shall be permanently identified in accordance with Subsection C of 20.6.6.23 NMAC.
15. Pursuant to Subsection D of 20.6.6.35 NMAC, the permittee shall have 90 days from the effective date of this Discharge Permit (by **DATE**) to submit the information required by Paragraph (6) of Subsection A of 20.6.6.23 NMAC to verify that monitoring wells in existence as of the effective date of this Discharge Permit and prior to the effective date of the Dairy Rule (December 31, 2011) are appropriate for continued use for ground water monitoring.

The permittee is authorized to use the following monitoring well(s) provided that the requirements of Paragraph (6) of Subsection A of 20.6.6.23 NMAC are met.

- a) **B1 MW-1**, hydrologically downgradient of Wastewater Impoundment 4; located southeast of Wastewater Impoundment 4. Also known as MW-4.
- b) **B1 MW-2**, hydrologically downgradient of Wastewater Impoundment 3; located east of Wastewater Impoundment 3. Also known as MW-3.

16. The permittee shall complete the following items and submit documentation to NMED as summarized in the following table:

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
A.	<p><u>Ground Water Monitoring – Existing Wastewater Impoundments:</u></p> <p>Install the following monitoring wells within 75 feet hydrologically downgradient of the top inside edge of each <u>existing</u> wastewater impoundment:</p> <p>i) B1 MW-3, hydrologically downgradient of Wastewater Impoundments 1 and 2.</p>	[120 days of effective date]	20.6.6.23.A(1) NMAC and 20.6.6.23.A(7) NMAC
B.	<p><u>Ground Water Monitoring – New Wastewater Impoundments:</u></p> <p>Install the following monitoring wells within 75 feet hydrologically downgradient of the top inside edge of each <u>new</u> wastewater impoundment:</p> <p>i) B1 MW-7, hydrologically downgradient of Wastewater Impoundment 5.</p>	Prior to discharging wastewater into the impoundment or within 120 days of impoundment completion, <u>whichever occurs first.</u>	20.6.6.23.A(1) NMAC
C.	<p><u>Ground Water Monitoring – Existing Stormwater Impoundments:</u></p> <p>Install the following monitoring wells within 75 feet hydrologically downgradient of the top inside edge of each <u>existing</u> stormwater impoundment:</p> <p>i) B1 MW-4, hydrologically downgradient of Stormwater Impoundment North.</p> <p>ii) B1 MW-5, hydrologically downgradient of Stormwater Impoundment Northeast.</p> <p>iii) B1 MW-6, hydrologically downgradient of Stormwater Impoundment South.</p>	[120 days of effective date]	20.6.6.23.A(3) NMAC
D.	<p><u>Ground Water Monitoring – Upgradient:</u></p> <p>Install a monitoring well, B1 MW-1, hydrologically upgradient of all contamination sources at the dairy facility.</p>	[120 days of effective date]	20.6.6.23.A(5) NMAC
E.	<p><u>Ground Water Sampling and Reporting – Routine:</u></p> <p>Collect and analyze ground water samples quarterly from all monitoring wells identified in this Discharge Permit.</p>	Quarterly	20.6.6.23.G NMAC

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
	Sampling shall be performed and results submitted in accordance with Subsection F of 20.6.6.23 NMAC.		
F.	<p><u>Ground Water Sampling – New Monitoring Wells:</u></p> <p>Collect ground water samples from monitoring wells required to be installed <i>within 120 days of the effective date of the Discharge Permit</i>. Sampling shall be performed in accordance with Subsection F of 20.6.6.23 NMAC using the monitoring wells required to be installed in the following locations:</p> <ul style="list-style-type: none"> i) B1 MW-1, hydrologically upgradient of all contamination sources at the dairy facility. ii) B1 MW-3, hydrologically downgradient of Wastewater Impoundments 1 and 2. iii) B1 MW-4, hydrologically downgradient of Stormwater Impoundment North. iv) B1 MW-5, hydrologically downgradient of Stormwater Impoundment Northeast. v) B1 MW-6, hydrologically downgradient of Stormwater Impoundment South. 	[150 days of effective date]	20.6.6.23.H NMAC
G.	<p><u>Ground Water Sampling – New Monitoring Wells for New Impoundment:</u></p> <p>Collect ground water samples from monitoring wells required to be installed <i>within the term of the Discharge Permit</i>, (i.e., associated with the newly constructed impoundments). Sampling shall be performed in accordance with Subsection F of 20.6.6.23 NMAC using the monitoring wells required to be installed in the following locations:</p> <ul style="list-style-type: none"> i) B1 MW-7, hydrologically downgradient of Wastewater Impoundment 5. 	Within 30 days of well completion.	20.6.6.23.H NMAC
H.	<p><u>Monitoring Well Survey and Ground Water Flow Determination:</u></p> <p>Survey monitoring wells required to be installed <i>within 120 days of the effective date of the Discharge Permit</i> to a USGS benchmark.</p> <p>Survey monitoring wells required to be installed <i>within the term of the Discharge Permit</i> to a USGS benchmark.</p>	<p>[150 days of effective date]</p> <p>Upon well completion, to be included in the well completion report.</p>	20.6.6.23.I NMAC
I.	<p><u>Monitoring Well Completion Report:</u></p> <p>Submit a monitoring well completion report for monitoring wells required to be installed <i>within 120 days of the effective date of the Discharge Permit</i>. The report shall include information from all monitoring wells.</p>	[180 days of effective date]	20.6.6.23.J NMAC
J.	<p><u>Monitoring Well Completion Report – Monitoring Wells for New Impoundment:</u></p>		

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
	Submit a monitoring well completion report for monitoring wells required to be installed <i>within the term of the Discharge Permit</i> (i.e., associated with the newly constructed impoundments). The report shall include information from all monitoring wells.	Within 60 days of well completion.	20.6.6.23.J NMAC
K.	<u>Ground Water Elevation Contour Maps:</u> Develop and submit ground water elevation contour maps on a quarterly basis using data collected from all monitoring wells used for ground water monitoring at the dairy facility.	Quarterly	20.6.6.23.L NMAC

MONITORING REQUIREMENTS

17. The permittee shall comply with the requirements of Sections 20.6.6.24 and 20.6.6.26 NMAC, and shall submit to NMED all information or documentation required by the applicable portions of Sections 20.6.6.24 and 20.6.6.26 NMAC.

18. The permittee shall submit monitoring reports to NMED on a quarterly schedule that contain monitoring data and information collected pursuant to the Dairy Rule and submitted in accordance with Subsection A of 20.6.6.24 NMAC.

Quarterly monitoring reports shall be submitted according to the following schedule:

- January 1 through March 31 (first quarter) – report due by **May 1**
- April 1 through June 30 (second quarter) – report due by **August 1**
- July 1 through September 30 (third quarter) – report due by **November 1**
- October 1 through December 31 (fourth quarter) – report due by **February 1**

19. The permittee shall perform the following monitoring and submit to NMED the required documentation in monitoring reports as summarized in the following table:

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
A.	<u>Wastewater Volume Measurement/Estimation and Reporting:</u> Using a flow meter(s) installed on the discharge line(s), measure the volume of all wastewater discharged to the impoundment(s) authorized to contain wastewater. Submit the information. -OR- Using a flow meter(s) installed on the fresh water supply line(s), measure the volume of all sources contributing to the wastewater discharged to the impoundment(s) authorized to contain wastewater. Submit the meter readings (without	Quarterly	20.6.6.24.C NMAC

Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
	adjustments or deductions in accordance with Subsection N of 20.6.6.20 NMAC).		
B.	<u>Stormwater Sampling and Reporting:</u> Collect and analyze stormwater samples on a quarterly basis from each stormwater impoundment, and submit results.	Quarterly	20.6.6.24.D NMAC
C.	<u>Flow Meter Field Calibration:</u> Perform flow meter field calibrations annually and submit a flow meter field calibration report.	Annually: May 1	20.6.6.24.E NMAC
D.	<u>Wastewater to be Evaporated – Sampling and Reporting:</u> Analyze wastewater samples on a semi-annual basis collected from each impoundment used for disposal of wastewater by evaporation, and submit results.	Semi-annually: May 1 November 1	20.6.6.26 NMAC

CONTINGENCY REQUIREMENTS

20. The permittee shall comply with the requirements of Sections 20.6.6.27 and 20.6.6.29 NMAC, and shall submit to NMED all information or documentation required by the applicable portions of Sections 20.6.6.27 and 20.6.6.29 NMAC.

CLOSURE REQUIREMENTS

21. The permittee shall comply with the requirements of Section 20.6.6.30 NMAC and shall submit to NMED all information or documentation required by the applicable portions of Section 20.6.6.30 NMAC.

GENERAL REQUIREMENTS

22. The permittee shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated.
23. The permittee shall retain required records for a minimum period of 10 years from the date of sample collection, measurement, report or application in accordance with Section 20.6.6.33 NMAC.
24. Transfer of a Discharge Permit for a dairy facility shall be completed in accordance with Section 20.6.6.34 NMAC.
25. To renew this Discharge Permit, the permittee shall submit an application for renewal, renewal and modification, or renewal for closure at least one year prior to the expiration date of the Discharge Permit in accordance with Section 20.6.6.10 NMAC.

26. In accordance with Subsection A of 20.6.6.9 NMAC, the permittee shall remit a permit fee payment equal to one-tenth of the applicable permit fee from Table 1 of Section 20.6.2.3114 NMAC on the first occurrence of August 1 after the effective date of the Discharge Permit, and annually thereafter until expiration or termination of the Discharge Permit.

V. ADDITIONAL CONDITIONS

In addition to the requirements of 20.6.6 NMAC, the permittee shall comply with the following conditions as authorized by Subsection H of 20.6.6.10 NMAC pursuant to Section 74-6-5 WQA. A hearing may be requested on additional conditions in accordance with Section 20.6.6.15 NMAC.

1. This Discharge Permit does not contain additional conditions.

VI. PERMIT ISSUANCE

Pursuant to WQA 74-6-5(I), the term of this Discharge Permit shall be for the fixed term of five years from the effective date of the Discharge Permit.

Issued by: New Mexico Environment Department

Effective Date: **DATE**

Expiration Date: **DATE**

JERRY SCHOEPPNER
Chief, Ground Water Quality Bureau
New Mexico Environment Department