GROUND WATER DISCHARGE PERMIT - RENEWAL AND MODIFICATION
EXISTING DAIRY FACILITY with a LAND APPLICATION AREA
Highland Dairy, DP-851

I. INTRODUCTION AND SUMMARY

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal and Modification (Discharge Permit), DP-851, to Art Schaap (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 Highland 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 discharge volume of 67,500 gallons per day (gpd) of wastewater may be discharged from the production area. Wastewater is pumped though a screen manure solids separator and drains into two concrete-lined manure solids settling basins. Wastewater then flows into a concrete lined conveyance channel to two clay-lined combination wastewater and stormwater impoundments for storage. Wastewater and stormwater is land applied by center pivot irrigation to up to 400 acres of irrigated cropland under cultivation. The modification consists of an increase in the acreage of the land application area from 208 acres to 400 acres. 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 at 650 Curry Road O, approximately 6 miles southwest of Clovis, in Sections 28, 32 and 33, Township 2N, Range 35E, Curry County. Ground water most likely to be affected is at a depth of approximately 260 feet and had a pre-discharge total dissolved solids concentration of approximately 572 milligrams per liter.

The original Discharge Permit was issued on August 15, 1992 and subsequently renewed on September 17, 1998. The application consists of the materials submitted by the permittee dated August 7, 2003 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.

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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
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 dairy 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 September 17, 1998 (before the effective date of the Dairy Rule of December 31, 2011) did not specify a required capacity for the wastewater impoundment system.

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

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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 Combination Wastewater/Stormwater Impoundments
      i. **PWRS/RCS North** - authorized for use by this Discharge Permit.
      ii. **PWRS/RCS South** - authorized for use by this Discharge Permit.
   b) Fields within the Land Application Area
      i. **Field LAA-A** - authorized for use by this Discharge Permit.
      ii. **Field LAA-B** - authorized for use by this Discharge Permit.
      iii. **Field LAA-C** - authorized for use by this Discharge Permit.
      iv. **Field LAA-D** - 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 67,500 gpd of wastewater from the production area. Wastewater is pumped though a screen manure solids separator and drains into two concrete-lined manure solids settling basins. Wastewater then flows into a concrete lined conveyance channel to two clay-lined combination wastewater and stormwater impoundments for storage. Wastewater and stormwater is land applied by center pivot irrigation to up to 400 acres of irrigated cropland under cultivation.

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) **PWRS/RCS North** – authorized to receive wastewater and stormwater for collection prior to land application. This impoundment exists as of the effective date of this Discharge Permit and is clay-lined.

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b) **PWRS/RCS South** – authorized to receive wastewater and stormwater for collection prior to land application. This impoundment exists as of the effective date of this Discharge Permit and is clay-lined.

3. The permittee is authorized to apply wastewater and stormwater to all fields within the land application area in accordance with Subsections B, C and I of 20.6.6.21 NMAC. The land application area consists of the following fields for a total land application area of 555 acres.
   a) **LAA-A** – consists of 60 acres; applied by center pivot sprinkler; located due east of the corral system. This field was authorized by the last Discharge Permit prior to the effective date of the Dairy Rule (December 31, 2011) to receive wastewater and/or stormwater and has received wastewater and/or stormwater as of the effective date of this Discharge Permit.
   b) **LAA-B** – consists of 125 acres; applied by center pivot sprinkler; located southeast of the corral system. This field was authorized by the last Discharge Permit prior to the effective date of the Dairy Rule (December 31, 2011) to receive wastewater and/or stormwater and has received wastewater and/or stormwater as of the effective date of this Discharge Permit.
   c) **LAA-C** – consists of 125 acres; applied by center pivot sprinkler; located southwest of the corral system. This field was not authorized for use by the last Discharge Permit prior to the effective date of the Dairy Rule (December 31, 2011) to receive wastewater and/or stormwater; however it has received wastewater and wastewater slurry as of the effective date of this Discharge Permit.
   d) **LAA-D** – consists of 90 acres; applied by center pivot sprinkler; located due west of the corral system. This field has not received wastewater and/or stormwater as of the effective date of this Discharge Permit.

DAIRY RULE TRANSITION REQUIREMENTS

4. 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 I.B.4
   d) Part II.A.1

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e) Part II.A.2(a) and (b)
f) Part II.B.1 through 7
g) Part II.C
h) Part II.D.2
i) Part II.D.3(a)
j) Part II.E.3
k) Part II.F
l) Part IV.B
m) Part IV.C

ENGINEERING AND SURVEYING REQUIREMENTS

5. 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.

OPERATIONAL REQUIREMENTS

6. The permittee shall comply with the requirements of Sections 20.6.6.20 and 20.6.6.21 NMAC, and shall submit to NMED all information or documentation required by the applicable portions of Sections 20.6.6.20 and 20.6.6.21 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
Recommencement of Discharge	Minimum 30 days prior to recommencement	Within 30 days of recommencement

8. Pursuant to Subsection D of 20.6.6.35 NMAC, the permittee have shall 90 days from the effective date of this Discharge Permit (**by DATE**) to submit documentation in accordance with Subsection M of 20.6.6.20 NMAC to demonstrate that the existing flow meter(s) meets the requirements of Subsection M of 20.6.6.20 NMAC.

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9. The permittee is authorized to <u>use</u> the following existing flow meter(s) provided that the requirements of Subsection M of 20.6.6.20 NMAC have been met.
   a) **Land Application Meter –** located at the base of the pivot for field LAA-A to measure the volume of wastewater and stormwater applied from combination wastewater and stormwater impoundments to each field in the land application area.

10. The permittee is authorized to <u>use</u> the following existing flow meter(s) pursuant to the alternative requirements of Subsection N of 20.6.6.20 NMAC provided that the requirements of Subsection M of 20.6.6.20 NMAC have been met.
   a) **Supply Meter –** located in the parlor mechanical room to measure the volume of all fresh water contributing to the wastewater discharged to the combination wastewater and stormwater impoundments; providing an estimate of the volume of wastewater generated from the production area.

11. The permittee is authorized, pursuant to Subsection S of 20.6.6.20 NMAC, to land apply manure solids and composted material to the land application area. Manure solids and composted material shall be applied in accordance with the Nutrient Management Plan (NMP) required by Subsection I of 20.6.6.21 NMAC.

12. The permittee is authorized to blend wastewater with fresh irrigation water for land application using any of the methods provided in Subsection D of 20.6.6.21 NMAC. Fresh water may be added to a wastewater impoundment prior to land application in accordance with Subsection D of 20.6.6.21 NMAC.

13. The permittee shall remove crops from the following fields within the land application area using the following methods in accordance with Subsection I and J of 20.6.6.21 NMAC. Crops may be grazed prior to and between mechanical harvests, however, nitrogen removal credit shall not be taken for grazing activities unless a grazing plan is developed and submitted in accordance with Subsections I and J of 20.6.6.21 NMAC.
   a) **LAA-A –** crops shall be harvested mechanically.
   b) **LAA-B –** crops shall be harvested mechanically.
   c) **LAA-C –** crops shall be harvested mechanically.
   d) **LAA-D –** crops shall be harvested mechanically.

   The permittee shall submit an application for Discharge Permit Modification to NMED for any proposed changes to the method(s) of crop removal for any field within the land application area as required by Subsection K of 20.6.6.21 NMAC.

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14. 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.	**Scaled Map of Dairy Facility – Updates:** 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.	**Within 90 days of any addition or change.**	20.6.6.20.V NMAC
B.	**Nutrient Management Plan:** Develop and submit annual updates to the NMP.	**Annually:** May 1	20.6.6.21.I NMAC

GROUND WATER MONITORING REQUIREMENTS

15. 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.

16. Monitoring wells shall be constructed and completed in accordance with Subsection D of 20.6.6.23 NMAC.

17. Monitoring wells shall be permanently identified in accordance with Subsection C of 20.6.6.23 NMAC.

18. 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.	**Ground Water Monitoring – Existing Combination Wastewater/Stormwater Impoundments:** Install the following monitoring wells within 75 feet hydrologically downgradient of the top inside edge of each existing combination impoundment: i) **MW-5**, hydrologically downgradient of PWRS/RCS North. ii) **MW-6**, hydrologically downgradient of PWRS/RCS South.	**[120 days of effective date]**	20.6.6.23.A(2) NMAC
B.	**Ground Water Monitoring – Existing Land Application Area:** Install the following monitoring wells within 50 feet hydrologically downgradient of the downgradient boundary	**[120 days of effective date]**	20.6.6.23.A(4)(b) NMAC

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Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
	of existing fields within the land application area: i) **MW-7**, hydrologically downgradient of LAA-A. ii) **MW-8**, hydrologically downgradient of LAA-B. iii) **MW-9**, hydrologically downgradient of LAA-C.		
C.	**Ground Water Monitoring – New Land Application Area:** Install the following monitoring wells within 50 feet hydrologically downgradient of the downgradient boundary of new fields within the land application area: i) **MW-10**, hydrologically downgradient of LAA-D.	**Prior to applying wastewater or stormwater to the field.**	20.6.6.23.A(4)(b) NMAC
D.	**Ground Water Monitoring – Upgradient:** Install a monitoring well, **MW-4**, hydrologically upgradient of all contamination sources at the dairy facility.	**[120 days of effective date]**	20.6.6.23.A(5) NMAC
E.	**Ground Water Sampling and Reporting – Routine:** Collect and analyze ground water samples quarterly from all monitoring wells identified in this Discharge Permit. Sampling shall be performed and results submitted in accordance with Subsection F of 20.6.6.23 NMAC.	**Quarterly**	20.6.6.23.G
F.	**Ground Water Sampling – New Monitoring Wells:** Collect ground water samples from monitoring wells required to be installed *within 120 days of the effective date of the Discharge Permit*. Sampling shall be performed in accordance with Subsection F of 20.6.6.23 NMAC using the following monitoring wells required to be installed in the following locations: i) **MW-4**, hydrologically upgradient of all contamination sources at the dairy facility. ii) **MW-5**, hydrologically downgradient of PWRS/RCS North. iii) **MW-6**, hydrologically downgradient of PWRS/RCS South. iv) **MW-7**, hydrologically downgradient of LAA-A. v) **MW-8**, hydrologically downgradient of LAA-B. vi) **MW-9**, hydrologically downgradient of LAA-C.	**[150 days of effective date]**	20.6.6.23.H NMAC
G.	**Ground Water Sampling – New Monitoring Wells for New Fields:** Collect ground water samples from monitoring wells required to be installed *within the term of the Discharge Permit*, (i.e., installed prior to land application on a newly activated field). Sampling shall be performed in accordance with Subsection F of 20.6.6.23 NMAC using the following monitoring wells required to be installed in the following locations: i) **MW-10**, hydrologically downgradient of LAA-D.	**Within 30 days of well completion.**	20.6.6.23.H NMAC

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Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
H.	**<u>Monitoring Well Survey and Ground Water Flow Determination:</u>** Survey monitoring wells to a U.S. Geological Benchmark.	**[150 days of effective date]**	20.6.6.23.I NMAC
I.	**<u>Monitoring Well Completion Report:</u>** Submit a monitoring well completion report which includes information from monitoring wells required to be installed *within 120 days of the effective date of the Discharge Permit*.	**[180 days of effective date]**	20.6.6.23.J NMAC
J.	**<u>Monitoring Well Completion Report – Monitoring Wells for New Fields:</u>** Submit a monitoring well completion report for monitoring wells required to be installed *within the term of the Discharge Permit* (i.e., installed prior to land application on a newly activated field). 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

<u>MONITORING REQUIREMENTS</u>

19. The permittee shall comply with the requirements of Sections 20.6.6.24 and 20.6.6.25 NMAC, and shall submit to NMED all information or documentation required by the applicable portions of Sections 20.6.6.24 and 20.6.6.25 NMAC.

20. 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**

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21. 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.	**Wastewater Volume Estimation and Reporting:** 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 adjustments or deductions in accordance with Subsection N of 20.6.6.20 NMAC).	**Quarterly**	20.6.6.24.C NMAC
B.	**Flow Meter Field Calibration:** Perform flow meter field calibrations annually and submit a flow meter field calibration report.	**Annually:** May 1	20.6.6.24.E NMAC
C.	**Volume of Wastewater and Wastewater/Stormwater Land Applied – Measurement and Reporting:** Measure the volume of all wastewater discharges to each field within the land application area using a flow meter(s) and submit the information.	**Quarterly**	20.6.6.25.A NMAC
D.	**Wastewater to be Land Applied – Sampling and Reporting:** The permittee shall collect a representative wastewater sample (consisting of eight subsamples) from each wastewater or combination wastewater/stormwater impoundment. Analyze each representative wastewater sample on a quarterly basis and submit results.	**Quarterly**	20.6.6.25.C NMAC
E.	**Manure Solids – Nitrogen Content:** Should a permittee choose to use actual nitrogen content values of on-site manure solids for the purpose of applying to the land application area, the permittee shall collect and analyze samples annually, and submit results.	**Quarterly**	20.6.6.25.D NMAC
F.	**Irrigation Water – Sampling, Volume Applied and Reporting:** Collect and analyze fresh irrigation water samples on an annual basis from each irrigation well associated with the land application area. Estimate the annual volume of irrigation water applied to each field from each well. Submit estimated volumes and analytical results.	**Annually:** May 1	20.6.6.25.E NMAC
G.	**Fertilizer Application Reporting:** Maintain and submit a log of all additional fertilizer applied to each field within the land application area.	**Quarterly**	20.6.6.25.F NMAC
H.	**Land Application Data Sheets:** Complete and submit land application data sheets (LADS) for each field within the land application area.	**Quarterly**	20.6.6.25.G NMAC

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Item No.	Action Required and Submittal Due to NMED	Due Date	Citation
I.	**Crop Yield Documentation:** Submit crop yield documentation and plant and harvest dates of each crop grown.	**Quarterly**	20.6.6.25.H NMAC
J.	**Nitrogen Concentration of Harvested Crop:** Determine the percent total nitrogen and dry matter of each harvested crop and submit results.	**Quarterly**	20.6.6.25.I NMAC
K.	**Nitrogen Removal Summary of Harvested Crop:** Develop and submit a nitrogen removal summary for each crop grown on each field within the land application area.	**Quarterly**	20.6.6.25.J NMAC
L.	**Soil Sampling – Initial Event in a Discharge Permit Term:** Collect and analyze initial soil samples from each field in the land application area for the first soil sampling event during the first year following the effective date of this Discharge Permit. Submit the results.	**Annually:** May 1	20.6.6.25.K NMAC
M.	**Soil Sampling – Routine:** Collect and analyze routine soil samples annually from each field in the land application area beginning the year following the initial sampling event. Submit the results.	**Annually:** May 1	20.6.6.25.L NMAC

CONTINGENCY REQUIREMENTS

22. The permittee shall comply with the requirements of Section 20.6.6.27 NMAC and shall submit to NMED all information or documentation required by the applicable portions of Section 20.6.6.27 NMAC.

CLOSURE REQUIREMENTS

23. 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

24. 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.

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25. 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.

26. Transfer of a Discharge Permit for a dairy facility shall be completed in accordance with Section 20.6.6.34 NMAC.

27. 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.

28. 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]**

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

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