GROUND WATER DISCHARGE PERMIT
RENEWAL AND MODIFICATION
New Horizon Dairy, DP-228

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal and Modification (Discharge Permit), DP-228, to Gerrit DeGraff Partnership, Ltd., (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 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from New Horizon Dairy (facility) into ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses and protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been met.

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:

Up to 120,000 gallons per day (gpd) of wastewater is discharged from the milking parlor to a concrete-lined sump and is pumped through a screen solids separator into a three-cell synthetically lined lagoon system for storage. Wastewater is land applied by center pivot sprinkler and flood irrigation to 213 acres of irrigated cropland under cultivation. The modification consists of increasing the land application area from 192 to 213 acres. The two compacted earth-lined lagoons are no longer authorized to receive wastewater and shall only collect stormwater runoff. The discharge contains water contaminants or toxic pollutants which may be elevated above the standards of Section 20.6.2.3103 NMAC. The facility is located at 1673 Corrales Road, approximately six miles south of Roswell, in Sections 35 and 36, T11S, R24E, Chaves County. Ground water most likely to be affected is at a depth of approximately 40 to 60 feet and has a total dissolved solids concentration of approximately 1940 milligrams per liter.

The original Discharge Permit was issued on January 28, 1983 and subsequently renewed and/or modified on March 31, 1988, March 23, 1998, and December 9, 2003. The permittee's application consists of the materials submitted by Glorieta Geoscience, Inc., on behalf of the permittee, dated April 29, 2009 and August 4, 2010. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of ground water quality, and that more stringent requirements to protect and/or remediate ground water quality may be required by NMED. These requirements may include: lining/relining lagoons; expanding the land application area; changing

waste management practices; expanding monitoring requirements; installing an advanced treatment system; and/or implementing abatement of water pollution.

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 abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation		Abbreviation	Explanation
BOD_5	biochemical oxygen demand (5-day)		NTU	nephelometric turbidity units
CFR	Code of Federal Regulations		Org	organisms
Cl	chloride		TDS	total dissolved solids
LADS	land application data sheet(s)		TKN	total Kjeldahl nitrogen
mg/L	milligrams per liter		total nitrogen	TKN+NO_3-N
mL	milliliters		TRC	Total Residual Chlorine
NMAC	New Mexico Administrative Code		TSS	total suspended solids
NMED	New Mexico Environment Department		WQA	New Mexico Water Quality Act
NMSA	New Mexico Statutes Annotated		WQCC	Water Quality Control Commission
NO_3-N	nitrate-nitrogen			

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The permittee is discharging effluent or leachate from the facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of Section 20.6.2.3104 NMAC.

2. The permittee is discharging effluent or leachate from the facility so that such effluent or leachate 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.

3. The discharge from the facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

III. CONDITIONS

The following conditions shall be complied with by the permittee and are enforceable by NMED. The permittee is authorized to discharge water contaminants subject to the following conditions:

OPERATIONAL PLAN

#	Terms and Conditions
1.	The permittee shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 1 and 2 NMAC. [20.6.2.3106.C NMAC, 20.6.2.3107 NMAC]
2.	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. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC]
3.	The permittee is authorized to discharge up to 120,000 gpd of wastewater from a milking parlor. Wastewater flows from the parlor into a concrete-lined sump from where it is pumped through a screen solids separator into a three-cell synthetically lined lagoon system for storage. Wastewater is land applied by center pivot sprinkler and flood irrigation to 213 acres of irrigated cropland under cultivation. The two compacted earth-lined lagoons are no longer authorized to receive wastewater and shall only collect stormwater runoff. [20.6.2.3104 NMAC]
4.	The permittee shall remove or land apply manure solids and composted material from the facility in a manner and at a frequency necessary to prevent the contamination of ground water. Management practices for manure and composted material stored at the facility prior to removal or land application shall minimize generation and infiltration of leachate by diverting stormwater run-on and run-off and by preventing the ponding of water within areas used for manure and compost stockpiling. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
5.	The permittee shall divert stormwater from the corrals and other applicable areas at the facility (i.e., calf pens, alleys, feed storage and mixing, etc.) into two compacted earth-lined stormwater impoundments (North and South Runoff Ponds) and one unlined stormwater impoundment (Calf Runoff Pond) in a manner that minimizes impacts to ground and surface water. The impoundments shall be designed, operated and maintained to contain, at a minimum, run-off and direct precipitation from a 25-year, 24-hour rainfall event. Stormwater collected in the North and South Runoff Ponds shall be pumped to the synthetically lined wastewater lagoon system. Stormwater collected in the Calf Runoff Pond shall be pumped to the irrigation system for the land application area. Stormwater collected in all runoff ponds shall be removed as soon as practicable, and in no case more than 14 days after the subject storm event. The permittee shall maintain operational pumps on-site at all times for the transfer of stormwater to the wastewater lagoon system or the irrigation system for the land application area as described above. [20.6.2.3109 NMAC]
6.	The permittee shall operate and maintain the three-cell synthetically lined lagoon system for the purpose of storing and managing wastewater at the dairy. The permittee shall maintain the capacity of the third lagoon (large storage lagoon) in the three-cell system to store the maximum daily discharge volume allowed by this Discharge Permit for a minimum period of 60 days while maintaining two feet of freeboard at all times. In order

	to maintain the required capacity, solids shall be removed from the lagoon system as needed in a manner that is protective of the lagoon liner. [20.6.2.3109 NMAC]
7.	The wastewater lagoon system and stormwater impoundments shall be maintained in such a manner as to avoid conditions which could affect the structural integrity of the lagoons, impoundments and/or the associated liners. Such conditions include, but are not limited to, • Erosion damage; • Animal activity/damage; • The presence of vegetation such as: aquatic plants, weeds, woody shrubs or trees growing within five feet of the lagoon edge or within the lagoon or impoundment itself; • Evidence of seepage; • Evidence of berm subsidence; and/or • The presence of large pieces or large quantities of debris in the lagoon or impoundment. The permittee shall visually inspect the wastewater lagoon system, stormwater impoundments and surrounding berms on a monthly basis to ensure proper maintenance. Vegetation growing around the lagoons and impoundments shall be routinely controlled in a manner that is protective of liners. Any evidence of damage to the berm of a lagoon or impoundment or to a liner shall be reported to NMED immediately upon discovery. [20.6.2.3107 NMAC]
8.	Within 180 days of the effective date of this Discharge Permit (by DATE), the permittee shall submit to NMED documentation of the existing infrastructure necessary to properly transfer, distribute and apply wastewater and/or stormwater to Fields 1 and 2, which have previously received wastewater and for which the irrigation systems have been recently reconfigured. Written confirmation of the land application distribution system installation shall include the type and locations of the system, the method of backflow prevention employed, and photographic documentation. [20.6.2.3109 NMAC]
9.	Prior to the initial discharge of wastewater to Field 3, the permittee shall install the infrastructure necessary to properly transfer, distribute and apply wastewater and/or stormwater. Written confirmation of the land application distribution system installation including the type and locations of the system, the method of backflow prevention employed, and photographic documentation, shall be submitted to NMED prior to discharging to Field 3. [20.6.2.3109 NMAC]
10.	The permittee shall apply dairy wastes to up to 213 acres of irrigated cropland. Dairy wastes shall be applied to cropland under cultivation in such a manner that the amount of total nitrogen in the combined applications of wastewater, manure solids, composted material, residual soil nitrogen, stormwater applications, irrigation water and/or commercial fertilizer shall not exceed by more than 25% the amount reasonably expected to be taken up and removed by the harvested crops on an annual basis. Nitrogen content shall not be adjusted to account for volatilization or mineralization processes. Wastewater shall be mixed with irrigation water in-line. All dairy wastes shall be distributed evenly over the

	entire area of application. Excessive ponding shall be prevented. [20.6.2.3109 NMAC]
11.	The permittee shall install, implement, and maintain backflow prevention to protect all wells used in the land application distribution system from contamination by wastewater. Backflow prevention shall be achieved by an air gap method or reduced pressure principal backflow prevention assembly (RP). Backflow prevention assemblies (RPs) shall be tested by a certified backflow prevention assembly tester at the time of installation, repair, or relocation, and at least on an annual schedule thereafter. Copies of the inspection and maintenance records and test results for each RP device associated with the permitted land application area shall be kept on-site and available for inspection upon request. [20.6.2.3109 NMAC]
12.	Within 60 days of the effective date of this Discharge Permit (by DATE), the permittee shall submit, for NMED approval, a plan for lining and maintaining all unlined (earthen) ditches associated with the land application area. The plan shall include the lining material proposed, a timeline for completion not to exceed 180 days of the effective date of this Discharge Permit (by DATE), and a maintenance plan. Alternatively, within 60 days of the effective date of this Discharge Permit (by DATE), the permittee may submit, for NMED approval, a proposal to replace the existing ditch system with another irrigation method (e.g., gated pipe, sprinkler) to be completed within 180 days of the effective date of this Discharge Permit (by DATE). [20.6.2.3109 NMAC]
13.	Within 90 days of the effective date of this Discharge Permit (by DATE), the permittee shall construct a surface pad and provide a permanent well cap cover for each supply well located within the land application area. The surface pad shall be constructed in accordance with the recommendations of Subsection G of 19.27.4.29 NMAC and the well cap installed pursuant to Subsection I of 19.27.4.29 NMAC. Written confirmation of installation of these supply well protection measures, including photographic documentation, shall be submitted to NMED within 180 days of the effective date of this Discharge Permit (by DATE). [20.6.2.3109 NMAC]
14.	Following completion of any additions or changes to the dairy facility which affects the following items, the permittee shall update and resubmit the scaled map of the entire dairy facility to NMED within 120 days of the additions or changes. The map shall be clear and legible, and drawn to a scale such that all necessary information is plainly shown and identified. The map shall show the scale in feet or metric measure, a graphical scale, a north arrow, and the effective date of the map. Documentation identifying the means used to locate the mapped objects (i.e., GPS, land survey, digital map interpolation, etc.) and the relative accuracy of the data (i.e., +/- XX feet or meters) shall be included with the map. The map shall include the following elements: a) overall dairy facility layout (barns, feed storage areas, pens, etc.); b) location of sumps; c) location of manure separators;

	d) location of all wastewater storage lagoon(s); e) location of all stormwater impoundment(s); f) location of all mix tanks; g) location and acreage of each field within the land application area; h) location of monitoring wells (including permanent designation); i) location of all irrigation wells; j) location of all meters measuring wastewater discharges to and from lagoons; k) location of all meters measuring stormwater applied to the land application area; l) location of all fixed pump(s) for discharge and transfer of wastewater or stormwater; m) location of all wastewater and stormwater distribution pipelines; n) location of each ditch irrigation system, acequia, irrigation canal and drain; o) location of all backflow prevention methods or devices; and p) wastewater sampling location(s). Any items cannot be directly shown, due to its location inside of existing structures, or because it is buried without surface identification, shall be identified on the map in a schematic format and identified as such. [20.6.2.3106 NMAC, 20.6.2.3109 NMAC]

MONITORING, REPORTING, AND OTHER REQUIREMENTS

#	**Terms and Conditions**
15.	The permittee shall conduct the monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]
16.	METHODOLOGY - Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents: a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18^{th}, 19^{th} or current); b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste; c) U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey; d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31.Water; e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition; and/or f) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods, Part 2. Microbiological and Biochemical Properties, and Part 3. Chemical Methods. American Society of Agronomy. [20.6.2.3107.B NMAC]

17.	The permittee shall submit quarterly monitoring reports to NMED by the 1st of February, May, August, and November of each year. Quarterly monitoring shall be performed during the following quarters and submitted as follows: • January 1st through March 31st (first quarter) – **due by May 1st** • April 1st through June 30th (second quarter) – **due by August 1st** • July 1st through September 30th (third quarter) - **due by November 1st** • October 1st through December 31st (fourth quarter) - **due by February 1st** Monitoring requirements detailed in this Discharge Permit are summarized on the sheet titled *Summary of Required Actions, Monitoring and Reporting*. [20.6.2.3107 NMAC]
18.	Within 90 days of the effective date of this Discharge Permit (by DATE), the permittee shall install the following totalizing flow meters: a) A meter(s) is to be installed on the transfer line from the lagoon system to the land application area to measure the volume of wastewater discharged from the lagoon system to each field within the land application area. b) A meter(s) is to be installed on the transfer line from the Calf Runoff Pond to the land application area to measure the volume of stormwater discharged from the stormwater impoundment to each field within the land application area. Confirmation of meter installation, type, calibration and locations shall be submitted to NMED within 180 days of the effective date of this Discharge Permit (by DATE). [20.6.2.3109 NMAC]
19.	The permittee shall measure the monthly volume of wastewater discharged from the milking parlor to the lagoon system using a totalizing flow meter (FM-2). Flow Meter, FM-2, directly measures the volume of wastewater discharged from the parlor and is located at the sump. Monthly meter readings including units of measurement, calculations, and monthly discharge volumes for the previous three-month period shall be submitted to NMED in the quarterly monitoring reports. The flow meter shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H NMAC]
20.	The permittee shall measure and record all discharges from the lagoon system to each field in the land application area. The volume of each discharge shall be measured using a totalizing flow meter(s) on the transfer line between the lagoon system and the land application area. The permittee shall maintain a log showing the date and location of each discharge, meter readings immediately prior to and after each discharge, and the calculated total volume of each discharge. A copy of the log entries including units of measurement for the previous three-month period shall be submitted to NMED in the quarterly monitoring reports. The discharge volumes shall be used to calculate nitrogen loading to each field, reported on the LADS. The flow meter shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H(1) NMAC]
21.	The permittee shall measure and record all discharges from the Calf Runoff Pond to each

	field in the land application area. The volume of each discharge shall be measured using a totalizing flow meter(s) on the transfer line between the Calf Runoff Pond and the land application area. The permittee shall maintain a log showing the date and location of each discharge, meter readings immediately prior to and after each discharge, and the calculated total volume of each discharge. A copy of the log entries including units of measurement for the previous three-month period shall be submitted to NMED in the quarterly monitoring reports. The discharge volumes shall be used to calculate nitrogen loading to each field, reported on the LADS. The flow meter shall be kept operational at all times. [20.6.2.3107.A(1) NMAC, 20.6.2.3109.H(1) NMAC]
22.	Once prior to the expiration date of this Discharge Permit, NMED shall have the option to perform downhole inspections of all monitoring wells identified in this Discharge Permit. NMED shall establish the inspection date and provide at least 60 days notice to the permittee by certified mail. The permittee shall have any existing dedicated pumps removed at least 48 hours prior to NMED inspection to allow adequate settling time of sediment agitated from pump removal. Should a facility not have existing dedicated pumps, but decide to install pumps in any of the monitoring wells, NMED shall be notified at least 90 days prior to pump installation so that a downhole well inspection(s) can be scheduled prior to pump placement. [20.6.2.3107 NMAC]
23.	Within 30 days of the effective date of this Discharge Permit (by DATE), the permittee shall submit a written monitoring well location proposal for review and approval by NMED. The proposal shall designate the locations of all monitoring wells required to be installed by this Discharge Permit. The proposal shall include, at a minimum, the following information: a) A map showing the proposed location of each monitoring well from the boundary of the source it is intended to monitor. b) A written description of the specific location proposed for each monitoring well including the distance (in feet) and direction of each monitoring well from the edge (i.e., toe of lagoon berm) of the source it is intended to monitor. Examples include, 35 feet north-northwest of the northern berm of the synthetically lined wastewater lagoon; 30 feet southeast of the land application area 150 degrees from north. c) A statement describing the ground water flow direction beneath the facility and data supporting the determination. [20.6.2.3107 NMAC]
24.	Within 90 days of the effective date of this Discharge Permit (by DATE), the permittee shall install the following five new monitoring wells: • One monitoring well (MW-6) hydrologically upgradient of the entire facility. • One monitoring well (MW-7) located 20 to 50 feet hydrologically downgradient of the North Pond. • One monitoring well (MW-8) 20 to 50 feet hydrologically downgradient of the Calf

	Runoff Pond. • One monitoring well (MW-9) 20 to 50 feet hydrologically downgradient of Field 1. • One monitoring well (MW-10) 20 to 50 feet hydrologically downgradient of Field 3. All monitoring well locations shall be approved by NMED prior to installation. The wells shall be completed in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.0, July 2008. Construction and lithologic logs shall be submitted to NMED within 180 days of the effective date of this Discharge Permit (by DATE). [20.6.2.3107 NMAC]
25.	Following installation of the new monitoring wells required by this Discharge Permit, the permittee shall sample ground water in the new wells and analyze the samples for NO_3-N, TKN, Cl, and TDS. The permittee shall sample the following wells: • MW-6, intended to be located hydrologically upgradient of the entire facility. • MW-7, intended to be located hydrologically downgradient of the North Runoff Pond. • MW-8, intended to be located hydrologically downgradient of the Calf Runoff Pond. • MW-9, intended to be located hydrologically downgradient of Field 1. • MW-10, intended to be located hydrologically downgradient of Field 3. Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure: a) Measure the depth-to-ground water from the top of well casing to the nearest hundredth of a foot. b) Purge three well volumes of water from the well prior to sample collection. c) Obtain samples from the well for analysis. d) Properly prepare, preserve and transport samples. e) Analyze samples in accordance with the methods authorized in this Discharge Permit. Depth-to-water measurements, analytical results, including laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED within 60 days of the installation of the monitoring wells. [20.6.2.3107 NMAC]
26.	Within 120 days of the effective date of this Discharge Permit (by DATE), the permittee shall survey all wells (MW-1, MW-2, MW-3, MW-5, MW-6, MW-7, MW-8, MW-9 and MW-10) approved by NMED for Discharge Permit monitoring purposes to a U.S. Geological Survey (USGS) or other permanent benchmark. Survey data shall include northing, easting and elevation to the nearest hundredth of a foot or in accordance with the "Minimum Standards for Surveying in New Mexico" (12.8.2 NMAC). A survey elevation shall be established at the top-of-casing, with a permanent marking indicating the point of survey. The survey shall be completed and certified by a licensed New Mexico professional surveyor. Depth-to-water shall be measured to the nearest hundredth of a foot in all surveyed wells, and the data shall be used to develop a map showing the location of all monitoring wells and the direction and gradient of ground water flow at the facility. The

	data and map of ground water flow direction at the facility shall be submitted to NMED within 180 days for the effective date of this Discharge Permit (by DATE). [20.6.2.3107 NMAC]
27.	The permittee shall perform quarterly ground water sampling in nine monitoring wells and analyze the samples for NO_3-N, TKN, Cl, and TDS. The permittee shall sample the following monitoring wells: • MW-1, located southeast of South Runoff Pond, intended to be located hydrologically downgradient of the South Runoff Pond. • MW-2, located southeast of the synthetically lined wastewater lagoon system, intended to be located hydrologically downgradient of the lagoon system. • MW-3, south-southeast of Field 2, intended to be located hydrologically downgradient of Field 2. • MW-5, located southeast of the previously permitted southern land application area, intended to be located hydrologically downgradient of the previously permitted land application area. • MW-6, intended to be located hydrologically upgradient of the entire facility. • MW-7, intended to be located hydrologically downgradient of the North Runoff Pond. • MW-8, intended to be located hydrologically downgradient of the Calf Runoff Pond. • MW-9, intended to be located hydrologically downgradient of Field 1. • MW-10, intended to be located hydrologically downgradient of Field 3. Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure: a) Measure the depth-to-ground water from the top of well casing to the nearest hundredth of a foot. b) Purge three well volumes of water from the well prior to sample collection. c) Obtain samples from the well for analysis. d) Properly prepare, preserve and transport samples. e) Analyze samples in accordance with the methods authorized in this Discharge Permit. Depth-to-water measurements, analytical results, including laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]
28.	The permittee shall develop a ground water elevation contour map on a quarterly basis using the monitoring well survey data and quarterly depth-to-water measurements as required by this Discharge Permit. The ground water elevation contour map shall depict the ground water flow direction based on the ground water elevation contours. The data and ground water elevation contour maps shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]
29.	The permittee shall collect and analyze wastewater samples on a quarterly basis for NO_3-N, TKN, Cl, and TDS. Samples shall be collected during active milking from a location

	between the manure screen solids separator and the wastewater lagoon system. Analytical results shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]
30.	The permittee shall collect fresh irrigation water samples from irrigation wells used to supply fresh water to fields within the land application area to account for potential nitrogen supplied to the land application area from fresh irrigation water sources. Each irrigation well shall be identified in association with the field(s) to which it supplies fresh water. A sample shall be collected from each irrigation well annually and analyzed for NO_3-N and TKN. Analytical results shall be submitted to NMED in the monitoring reports due by May 1. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
31.	The permittee shall determine the total nitrogen concentration of each harvested crop grown to verify plant nitrogen removal levels. A composite sample consisting of 15 sub-samples of plant material shall be taken from each field during the final harvest of each crop grown per year. Samples shall be analyzed for percent total nitrogen and percent dry matter. Analytical reports shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
32.	Yield documentation and plant and harvest dates of each crop grown shall be submitted to NMED in the quarterly monitoring reports. Yield documentation shall consist of scale-weight tickets or harvest summaries based on scale-weights. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
33.	The permittee shall complete LADS which document the amount of nitrogen from wastewater, stormwater and/or manure solids, applied to each field in the land application area. The LADS shall be completed for each crop grown associated with each field and shall reflect the nitrogen concentration from the quarterly wastewater analyses and the measured discharge volumes for each month. The volume of wastewater and stormwater used in the LADS calculations shall be the volume obtained from meter readings required in this Discharge Permit. The nitrogen concentration of the applied manure solids may be estimated at 13 pounds per ton. The permittee shall also include with the LADS, the crops grown, yields removed and the total nitrogen concentration of the harvested crop for each crop grown. The LADS or a statement that no land application occurred shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
34.	For the **first soil sampling event** during the first year following the effective date of the discharge permit, the permittee shall collect composite soil samples from each field within the 213-acre land application area. Composite soil samples shall be collected in the five-month period between September 1 and January 31 for all fields regardless of whether the field is cropped, remains fallow, or has received wastewater or stormwater. One surface composite soil sample (first-foot) and two sub-surface composite soil samples (second-foot and third-foot) shall be collected from each field. Composite soil samples shall be collected and analyzed according to the following procedure. 1. Each surface and sub-surface soil sample shall consist of a single composite of 15 soil

	cores collected randomly throughout each field. Should a field consist of different soil textures (i.e., sandy and silty clay), a composite soil sample shall be collected from each soil texture within each field. 2. Surface soil samples (first-foot) shall be collected from a depth of 0 to 12 inches. 3. Each second-foot sub-surface soil sample shall be collected from a depth of 12 to 24 inches. 4. Each third-foot sub-surface soil sample shall be collected from a depth of 24 to 36 inches. 5. Each surface and sub-surface composite sample shall be analyzed for pH, electrical conductivity (EC), TKN, NO_3-N, Cl, organic matter (OM), potassium (K), phosphorus (P), sodium (Na), calcium (Ca), magnesium (Mg), sulfate (SO_4), soil texture, and sodium adsorption ratio (SAR). 6. Soil pH, EC, Na, Ca, Mg, and SO_4 shall be analyzed using a saturated paste extract in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil P shall be analyzed using the Olsen sodium bicarbonate method in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil NO_3-N shall be analyzed by a 2 molar KCl extract in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil TKN, Cl, OM, K, soil texture, and SAR shall be analyzed in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. The permittee shall submit the analytical results and a map showing the fields and the sampling locations within each field to NMED in the monitoring report due by May 1 following the effective date of the discharge permit. [20.6.2.3107 NMAC]
35.	Beginning in the year following the initial soil sampling required by this section, the permittee shall collect annual soil samples from each field (within the 213-acre land application area) that has received or is actively receiving wastewater or stormwater. Composite soil samples shall be collected in the five-month period between September 1 and January 31. For those fields that have never before received wastewater, the permittee shall collect soil samples immediately before initial wastewater application and annually thereafter. Once a field has received wastewater it shall be sampled annually, for the term of the discharge permit, regardless of whether the field is cropped, remains fallow, or has recently received wastewater or stormwater. One surface composite soil sample (first-foot) and two sub-surface composite soil samples (second-foot and third-foot) shall be collected from each field. Composite soil samples shall be collected and analyzed according to the following procedure. 1. Each surface and sub-surface soil sample shall consist of a single composite of 15 soil cores collected randomly throughout each field. Should a field consist of different soil textures (i.e., sandy and silty clay), a composite soil sample shall be collected from each soil texture within each field. 2. Surface soil samples (first-foot) shall be collected from a depth of 0 to 12 inches. 3. Each second-foot sub-surface soil sample shall be collected from a depth of 12 to 24 inches.

	4. Each third-foot sub-surface soil sample shall be collected from a depth of 24 to 36 inches. 5. Surface soil samples shall be analyzed for pH, EC, NO_3-N, Cl, OM, K, P, Na, Ca, Mg, and SAR. 6. Sub-surface soil samples shall be analyzed for EC, NO_3-N, and Cl. 7. Soil pH, EC, Na, Ca, and Mg shall be analyzed using a saturated paste extract in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil P shall be analyzed using the Olsen sodium bicarbonate method in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil NO_3-N shall be analyzed by a 2 molar KCl extract in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. Soil Cl, OM, K, and SAR shall be analyzed in accordance with the analytical methodology required by Condition 16 of this Discharge Permit. The permittee shall submit the analytical results and a map showing the fields and the sampling locations within each field to NMED in the monitoring reports due by May 1. [20.6.2.3107 NMAC]
36.	The permittee shall keep a log of all additional fertilizer applied to each field in the land application area. The log shall contain the date of fertilizer application, the type and fertilizer analysis, and the amount of fertilizer applied (lbs/ac) to each field. A copy of the log entries for the previous three-month period shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]

CONTINGENCY PLAN

#	**Terms and Conditions**
37.	In the event that ground water monitoring indicates that one or more of the ground water standards of Section 20.6.2.3103 NMAC are violated during the term of this Discharge Permit, upon closure of the facility or during post-closure monitoring, the permittee shall perform the following actions: a) Collect a second sample from the monitoring well(s) within 30 days of the initial sample analysis date to verify the initial results. b) Submit the analytical results for both the initial and second ground water samples to NMED within 30 days of the analysis date of the second ground water sample. In the event that analytical results of the second ground water sample verify the exceedance of one or more of the ground water standards of Section 20.6.2.3103 NMAC, within 60 days of the second sample analysis date the permittee shall submit a corrective action plan to NMED and implement the plan upon NMED approval. The corrective action plan shall propose measures to mitigate damage from the discharge including, at a minimum, source control measures and an implementation schedule. The permittee may be required to abate water pollution pursuant to Sections 20.6.2.4000 though 20.6.2.4115 NMAC, if the

	corrective action plan will not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmed ground water contamination. [20.6.2.1203 NMAC, 20.6.2.4105.A(8) NMAC]
38.	In the event that analytical results of ground water sampling from the monitoring wells (MW-1, MW-7 and MW-8) located hydrologically downgradient of the stormwater impoundments verify the exceedance of one or more of the ground water standards of Section 20.6.2.3103 NMAC, the permittee shall within 90 days of the date of verification submit for NMED approval, construction plans and specifications, and supporting design calculations for either lining the respective existing impoundment(s) with a synthetic liner or constructing a new synthetically lined stormwater impoundment(s) for the collection and management of stormwater runoff, certified by a licensed New Mexico professional engineer. The plans shall demonstrate that the stormwater impoundments are designed at a minimum to contain stormwater runoff and direct precipitation generated from a 25-year, 24-hour storm event. [20.6.2.3109 NMAC]
39.	Within one year from the date of verification of the exceedance of a ground water standard(s) of Section 20.6.2.3103 NMAC in MW-1, MW-7 and/or MW-8, the permittee shall install a synthetic liner in the respective impoundment(s) or construct a new synthetically lined stormwater impoundment(s) to replace the existing stormwater impoundment(s). The stormwater impoundment(s) shall be lined or constructed in accordance with the approved construction plans and specifications as required by the contingency plan in this Discharge Permit and the attachment titled *Ground Water Discharge Permit Conditions for Synthetically Lined Lagoons - Liner Material and Site Preparation*, Revision 0.0, May 2007. The permittee shall notify NMED at least five working days prior to stormwater impoundment construction to allow NMED personnel to be on-site for inspection. Record drawings and final specifications for the stormwater impoundment(s) and impoundment liner(s), and final capacity calculations, shall be submitted to NMED within 60 days of liner installation. A licensed New Mexico professional engineer shall certify all record drawings and final specifications for the stormwater impoundment(s) and liner(s), as well as final capacity calculations. [20.6.2.3109 NMAC]
40.	In the event that a minimum of two feet of freeboard cannot be maintained in the wastewater lagoon system at all times, the permittee shall submit a corrective action plan for NMED approval within 30 days of the date when the two feet of freeboard limit was initially exceeded. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
41.	In the event that information available to NMED indicates that a well(s) is not appropriately constructed to effectively monitor ground water quality, contains insufficient water to allow the collection of representative ground water samples, or is not completed in a manner that is protective of ground water quality, the permittee shall install a replacement well(s) within 90 days of notification from NMED. The replacement well location(s) shall be approved by NMED prior to installation and completed in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and*

	Abandonment Conditions, Revision 1.0, July 2008. Construction and lithologic logs shall be submitted to NMED within 60 days of well completion. Upon completion of the replacement monitoring well(s), the monitoring well(s) requiring replacement shall be properly plugged and abandoned. The well(s) shall be plugged and abandoned in accordance with the abandonment details in the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.0, July 2008, and any applicable local, state, and federal regulations. Documentation describing the plugging and abandonment procedures, including photographic documentation, shall be submitted to NMED within 60 days of completed well abandonment. [20.6.2.3107 NMAC]
42.	In the event that information on the direction of ground water flow obtained pursuant to this Discharge Permit indicates that a monitoring well(s) is not located hydrologically downgradient of the discharge location(s) the well(s) is intended to monitor, the permittee shall propose a location(s) for a replacement monitoring well(s) within 30 days of notification from NMED. The permittee shall propose a replacement monitoring well location(s) that is anticipated to be hydrologically downgradient of the discharge location(s) to be monitored. The permittee shall install the replacement monitoring well(s) within 90 days of NMED approval of the proposed replacement monitoring well location(s). The replacement monitoring well(s) shall be completed in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.0, July 2008. Construction and lithologic logs shall be submitted to NMED within 60 days of well completion. [20.6.2.3107 NMAC]
43.	In the event that LADS show that the amount of nitrogen applied to a field(s) within the land application area exceeds by more than 25% the amount reasonably expected to be taken up and removed by the harvested crop(s), the permittee shall submit to NMED for approval a corrective action plan for the reduction of nitrogen loading to the land application area within 30 days of the exceedance. The corrective action plan shall be implemented within 30 days of NMED approval. [20.6.2.3107.A(10) NMAC, 20.6.2.3109 NMAC]
44.	In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notifications and corrective actions as required in Section 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate the damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of Subsection A of 20.6.2.1203 NMAC. Wastewater shall be contained, pumped and/or transferred to the concrete sump, lagoon and/or land application area as necessary. Failed components shall be repaired or replaced within 48 hours from the time of failure or as soon as possible. Within seven days of discovering the discharge, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]

45.	In the event NMED or the permittee identifies any other failures of the Discharge Permit or system not specifically noted herein, NMED may require the permittee to develop for NMED approval contingency plans and schedules to cope with the failures. [20.6.2.3107.A(10) NMAC]

CLOSURE PLAN

#	Terms and Conditions
46.	Within 90 days of the effective date of this Discharge Permit (by DATE), the permittee shall properly plug and abandon MW-4, located on the northern property boundary, northwest of the calf operation. The well shall be plugged and abandoned in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.0, July 2008, and any applicable local, state, and federal regulations. Documentation describing the plug and abandonment procedures, including photographic documentation, shall be submitted to NMED within 180 days of the effective date of this Discharge Permit (by DATE). [20.6.2.3107 NMAC]
47.	Upon closure of the facility, the permittee shall perform the following closure measures: a) Complete the installation of all monitoring wells as required by this Discharge Permit. b) Remove all manure solids and compost from the facility and apply to the designated land application area or transfer offsite for proper disposal. c) Empty lagoons and impoundments of all wastewater, stormwater and manure solids. d) Perforate or remove the lagoon liner(s) and re-grade the lagoon(s) with clean fill to blend with surface topography and prevent ponding. e) Perforate or remove the stormwater impoundment liner(s) and re-grade the impoundment(s) with clean fill to blend with surface topography and prevent ponding. f) Continue ground water monitoring as required by this Discharge Permit for two years after closure to confirm the absence of ground water contamination. If monitoring results show that the ground water standards in Section 20.6.2.3103 NMAC are being violated, the permittee shall implement the contingency plan required by this Discharge Permit. g) Following notification from NMED that post-closure monitoring may cease, the permittee shall plug and abandon the monitoring well(s) in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.0, July 2008. When all post-closure requirements have been met, the permittee may request to terminate the Discharge Permit. [20.6.2.3107.A(11) NMAC]

GENERAL TERMS AND CONDITIONS

#	Terms and Conditions

48.	RECORD KEEPING - The permittee shall maintain at its facility a written record of all data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and shall be made available to NMED upon request: a) The dates, exact place and times of sampling or field measurements; b) The name and job title of the individuals who performed each sample collection or field measurement; c) The date of the analysis of each sample; d) The name and address of the laboratory and the name and job title of the person that performed the analysis of each sample; e) The analytical technique or method used to analyze each sample or take each field measurement; f) The results of each analysis or field measurement, including raw data; g) The results of any split sampling, spikes or repeat sampling; and h) A description of the quality assurance and quality control procedures used. [20.6.2.3107.A NMAC]
49.	RECORD KEEPING - The permittee shall maintain a written record of any spills, seeps, and/or leaks of effluent, and of leachate and/or process fluids not authorized by this Discharge Permit. [20.6.2.3107.A NMAC]
50.	RECORD KEEPING - The permittee shall maintain a written record of the operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater; to measure flow rates, to monitor water quality, or to collect other data required by this Discharge Permit. This record shall include repair, replacement or calibration of any monitoring equipment and repair or replacement of any equipment used in the permittee's waste or wastewater treatment and disposal system. [20.6.2.3107.A NMAC]
51.	RECORD KEEPING - The permittee shall maintain a written record of the amount of wastewater, effluent, leachate or other wastes discharged pursuant to this Discharge Permit. [20.6.2.3107.A NMAC]
52.	RECORD KEEPING - The permittee shall retain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by this Discharge Permit, and records of all data used to complete the application for this Discharge Permit for a period of at least five years from the date of the sample collection, measurement, report or application. This period may be extended by request of the Secretary at any time. [20.6.2.3107.A NMAC]
53.	INSPECTION and ENTRY - The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials, to: a) Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.

	b) Inspect and copy, during regular business hours or at other reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation. c) Inspect, at regular business hours or at other reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation. d) Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the WQA, any effluent, water contaminant, or receiving water at any location before or after discharge. [20.6.2.3107.D NMAC, 74-6-9(B) & (E) WQA]
54.	INSPECTION and ENTRY - Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC, 74-6-9(B) & (E) WQA]
55.	DUTY to PROVIDE INFORMATION - The permittee shall furnish to NMED, within a reasonable time, any documents or other information which it may request to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit. The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, 74-6-9(B) & (E) WQA]
56.	SPILLS, LEAKS, and OTHER UNAUTHORIZED DISCHARGES - This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges violate Section 20.6.2.3104 NMAC and must be reported to NMED and remediated as required by Section 20.6.2.1203 NMAC. [20.6.2.1203 NMAC]
57.	MODIFICATIONS and/or AMENDMENTS - The permittee shall notify NMED of any changes to the permittee's wastewater treatment and disposal system, including any changes in the wastewater flow rate or the volume of wastewater storage, or of any other changes to operations or processes that would result in any significant change in the discharge of water contaminants. The permittee shall obtain NMED's approval, as a modification to this Discharge Permit pursuant to Subsections E, F, or G of 20.6.2.3109 NMAC, prior to any increase in the quantity discharged, or any increase in the concentration of water contaminants discharged, above those levels approved in this Discharge Permit. [20.6.2.3107.C NMAC]
58.	PLANS and SPECIFICATIONS - The permittee shall file plans and specifications with NMED for the construction of a wastewater system and for proposed changes that will change substantially the quantity or quality of the discharge from the system. The permittee shall file plans and specifications prior to the commencement of construction. Changes to the wastewater system having a minor effect on the character of the discharge shall be reported as of January 1 and June 30 of each year to NMED. [20.6.2.1202

	NMAC]
59.	CIVIL PENALTIES - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [74-6-10 WQA, 74-6-10.1 WQA]
60.	CRIMINAL PENALTIES – Any person who knowingly violates or knowingly causes or allows another person to: 1) make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA; 2) falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or 3) fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation, is subject to felony charges and shall be sentenced in accordance with the provisions of Section 31-18-15 NMSA 1978. [74-6-10.2(A-F) WQA]
61.	COMPLIANCE WITH OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders. [20.6.2 NMAC]
62.	RIGHT to APPEAL - The permittee may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty (30) days of the receipt of this Discharge Permit. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [74-6-5(O) WQA]
63.	TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Discharge Permit with the notice. The permittee shall deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.2.3111 NMAC]

64.	TERM - Pursuant to the WQA 74-6-5(I) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit is five years from its effective date. To renew this Discharge Permit, the permittee shall submit an application for renewal at least 120 days before the termination date. [20.6.2.3109.H NMAC, 74-6-5(I) WQA]
65.	Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date. An approved Discharge Permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date. [20.6.2.3114.F NMAC, 74-6-5(K) WQA]

EFFECTIVE DATE: effective date
EXPIRATION DATE: expiration date

WILLIAM C. OLSON
Chief, Ground Water Quality Bureau
New Mexico Environment Department