



TPDES Permit No. WQ0004866000
[For TCEQ use only EPA ID No. TX0128872]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

TPDES PERMIT FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

under provisions of
Section 402 of the Clean Water Act
Chapter 26 of the Texas Water Code and
Section 382.051 of the Texas Clean Air Act

- I. Permittee:
- A. Owner Two Sisters Dairy, LLC
 - B. Business Name Two Sisters Dairy
 - C. Owner Address 235 Private Road 1266
Hico, Texas 76457
- II. Type of Permit: New Air & Water Quality
- III. Nature of Business Producing Waste: Concentrated Animal Feeding Operation (CAFO); dairy cattle;
SIC No. 2410
- IV. General Description and Location of Waste Disposal System:
- Maximum Capacity: 5,500 total head of which 4,000 are milking
Site Plan: See Attachment A.
Retention Control Structures (RCSs) total required capacities without freeboard (acre-feet):
RCS #1-43.85, RCS #2-11.07
Land Management Units (LMUs) (acres): LMU#1-28, LMU#2-22, LMU#3-51, LMU#4-57, LMU#5-44, and LMU#6-18; See Attachment B for locations.
Location: The facility is located on the west side of County Road 209 approximately four miles south of the intersection of County Road 209 and US Highway 67, said intersection is located seven miles east of Stephenville, Erath County, Texas. Latitude: 32° 07' 04"N Longitude: 98° 03' 03"W. See Attachment C.
Drainage Basin: The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin.

This Permit contained herein shall expire at midnight, five years after the date of Commission approval.

ISSUED DATE:

For the Commission

V. **Definitions.** All definitions in Chapter 26 of the Texas Water Code, 30 Texas Administrative Code (TAC) Chapters 305 and 321, Subchapter B shall apply to this permit and are incorporated by reference.

VI. **Permit Applicability and Coverage**

A. **Discharge Authorization.** No discharge is authorized by this permit except as allowed by the provisions in this permit and 40 Code of Federal Regulations Chapter 412, which is adopted by reference in 30 TAC Chapter 305.541.

B. **Application Applicability.** The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

C. **Air Quality Authorization.** The permittee shall comply with the requirements listed in Section VII.D. of this permit and shall:

1. maintain a minimum treatment capacity of 15.34 acre-feet in RCS #1;
2. identify the maximum sludge volume and the minimum treatment volume on the permanent pond marker in RCS #1;
3. maintain a copy of the odor control plan in the Pollution Prevention Plan; and
4. include a stage storage table for the treatment pond in the RCS Management Plan.

VII. **Pollution Prevention Plan (PPP) Requirements**

A. **Technical Requirements**

1. **PPP General Requirements**

(a) The permittee shall update and implement a PPP for this facility upon issuance of this permit. The PPP shall:

- (1) be prepared in accordance with good engineering practices;
- (2) include measures necessary to limit the discharge of pollutants to surface water in the state;
- (3) describe and ensure the implementation of practices which are to be used to assure compliance with the limitations and conditions of this permit;
- (4) include all information listed in Section VII.A.;
- (5) identify specific individual(s) who are responsible for development, implementation, operation, maintenance, inspections, recordkeeping, and revision of the PPP. The activities and responsibilities of the pollution prevention personnel shall address all aspects of the facility's PPP;
- (6) be signed by the permittee or other signatory authority in accordance with 30 TAC §305.44 (relating to Signatories to Applications); and
- (7) be retained on site.

(b) The permittee shall amend the PPP:

- (1) before any change in the number or configuration of the LMU(s);

- (2) before any increase in the maximum number of animals and/or the maximum number of milking cows;
 - (3) before operation of any new control facilities;
 - (4) before any change that has a significant effect on the potential for the discharge of pollutants to water in the state;
 - (5) if the PPP is not effective in achieving the general objectives of controlling discharges of pollutants from the production area or the LMU(s); or
 - (6) within 90 days following written notification from the executive director that the plan does not meet one or more of the minimum requirements of this permit.
- (c) Maps. The permittee shall maintain the following maps as part of the PPP.
- (1) Site Map. The permittee shall update the site map as needed to reflect the layout of the facility. The map shall include, at a minimum, the following information: facility boundaries; pens; barns; berms; open lots; manure storage areas; dead animal burial sites; RCSs or other control facilities; LMUs; water wells, abandoned and in use, which are on-site or within 500 feet of the facility boundary; and all springs, lakes, or ponds located on-site or within one mile of the facility boundary.
 - (2) Land Application Map. Natural Resource Conservation Service (NRCS) soil survey maps of all LMUs shall depict:
 - (i) the boundary of each LMU and acreage;
 - (ii) all buffer zones required by this permit; and
 - (iii) the unit name and symbol of all soils in the LMU(s).
- (d) Potential Pollutant Sources/Site Evaluation
- (1) Potential Pollutant Sources. The PPP shall include a description of potential pollutant sources and indicate all measures that will be used to prevent contamination from the pollutant sources. Potential pollutant sources include any activity or material that may reasonably be expected to add pollutants to surface water in the state from the facility.
 - (2) Soil Erosion. The PPP shall identify areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion. If these areas have the potential to contribute pollutants to surface water in the state, the PPP shall identify measures used to limit erosion and pollutant runoff.
 - (3) Control Facilities. The PPP shall include the location and a description of control facilities. The control facilities shall be appropriate for the identified sources of pollutants at the CAFO.
 - (4) Recharge Feature Certification. The recharge feature certification submitted in the permit application shall be implemented, updated by the permittee as often as necessary, and maintained in the PPP.

- (5) 100-year Floodplain. All control facilities, including holding pens and RCSs, shall be located outside of the 100-year floodplain or protected from inundation and damage that may occur during the flood.
 - (e) Spill Prevention and Recovery. The permittee shall take appropriate measures necessary to prevent spills and to clean up spills of any toxic pollutant. Where potential spills can occur, materials, handling procedures and storage shall be specified. The permittee shall identify the procedures for cleaning up spills and shall make available the necessary equipment to personnel to implement a clean up. The permittee shall store, use, and dispose of all herbicides and pesticides in accordance with label instructions. There shall be no disposal of herbicides, pesticides, solvents or heavy metals, or of spills or residues from storage or application equipment or containers, into RCSs. Incidental amounts of such substances entering a RCS as a result of stormwater transport of properly applied chemicals is not a violation of this permit.
2. Discharge Restrictions and Monitoring Requirements.
- (a) Discharge Restrictions. Wastewater may be discharged to waters in the state from a properly designed, constructed, operated and maintained RCS whenever chronic or catastrophic rainfall events, or catastrophic conditions cause an overflow. There shall be no effluent limitations on discharges from RCSs which meet the above criteria.
 - (b) Monitoring Requirements. The permittee shall sample and analyze all discharges from the RCS(s) for the following parameters:

Parameter	Sample Type	Sample Frequency
BOD ₅	Grab	1/day ¹
Total Coliform	Grab	1/day ¹
Fecal Coliform	Grab	1/day ¹
Total Dissolved Solids (TDS)	Grab	1/day ¹
Total Suspended Solids (TSS)	Grab	1/day ¹
Nitrate (N)	Grab	1/day ¹
Total Phosphorus	Grab	1/day ¹
Ammonia Nitrogen	Grab	1/day ¹
Pesticides ²	Grab	1/day ¹

¹ Sample shall be taken within the first thirty (30) minutes following the initial discharge and then once per day while discharging.

² Any pesticide which the permittee has reason to believe could be present in the wastewater.

- (c) If the permittee is unable to collect samples due to climatic conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.), the permittee shall document why discharge samples could not be collected. Once dangerous conditions have passed, the permittee shall conduct the required sampling.
3. RCS Design and Construction
- (a) RCS Certifications
 - (1) The permittee shall ensure that the design and completed construction of the modified RCS(s) (See Special Provision X.A.) is certified by a licensed Texas Professional Engineer prior to use. The certification shall be signed and sealed in accordance with Texas State Board of Professional Engineers requirements.
 - (2) Documentation of liner and capacity certifications must be completed for each RCS prior to use and kept on-site in the PPP. Once construction is complete, new capacity and liner certifications for RCS #1 and #2 will be provided.
 - (b) Design and Construction Standards. The permittee shall ensure that each RCS is designed and constructed in accordance with the technical standards developed by the NRCS, American Society of Agricultural and Biological Engineers, American Society of Civil Engineers, or American Society of Testing Materials that are in effect at the time of construction. Where site-specific variations are warranted, a licensed Texas Professional Engineer must document these variations and their appropriateness to the design.
 - (c) RCS Drainage Area
 - (1) The permittee shall describe in the PPP and implement measures that will be used to minimize entry of uncontaminated stormwater into the RCS(s).
 - (2) The permittee shall maintain the drainage area to minimize ponding or puddling of water outside the RCS(s).
 - (d) RCS Sizing.
 - (1) The design plan must include documentation describing the sources of information, assumptions and calculations used in determining the appropriate volume capacity and structural features of each RCS, including embankment and liners.
 - (2) Design Rainfall Event. Each RCS authorized under this permit shall be designed and constructed to meet or exceed the margin of safety, equivalent to the volume of runoff and direct precipitation from the 25 year/10 day rainfall event. The design rainfall event for this CAFO is 12.1 inches.

- (3) Any RCS capacity that is greater than the minimum capacity required by this permit may be allocated to additional sludge storage volume, which will increase the design sludge cleanout interval for the RCS. The new sludge cleanout interval will be identified in the RCS management plan maintained in the PPP, the stage storage tables will accurately reflect the new volumes, and the pond markers will visually identify the new volume levels.
- (e) Irrigation Equipment Design. The permittee shall ensure that the irrigation system design is capable of removing wastewater from the RCS(s) on a regular schedule. Equipment capable of dewatering the RCS(s) shall be available and operational whenever needed to restore the operating capacity required by the RCS management plan.
- (f) Embankment Design and Construction. The RCS(s) have a depth of water impounded against the embankment at the spillway elevation of three feet or more, therefore the RCS(s) are considered to be designed with an embankment. The PPP shall include a description of the design specifications for the RCS embankments. The following design specifications are required for all modified portions of existing RCSs.
 - (1) Soil Requirements. Soils used in the embankment shall be free of foreign material such as rocks larger than 4 inches, trash, brush, and fallen trees.
 - (2) Embankment Lifts. The embankment shall be constructed in lifts or layers no more than eight (8) inches compacted to six (6) inches thick at a minimum compaction effort of 95 percent (%) Standard Proctor Density (ASTM D698) at -1% to +3% of optimum moisture content.
 - (3) Stabilize Embankment Walls. All embankment walls shall be stabilized to prevent erosion or deterioration.
 - (4) Compaction Testing. Embankment construction must be accompanied by certified compaction tests including in place density and moisture in accordance with ASTM D 1556, D 2167 or D 2937 for density and D 2216, D 4643, D 4944 or D 4959 for moisture, or D 6938 for moisture and density. Compaction tests will provide support for the liner certification performed by a licensed Texas professional engineer as meeting a permeability no greater than 1×10^{-7} centimeters per second (cm/sec) over a thickness of 18 inches or its equivalency in other materials.
 - (5) Spillway or Equivalent Protection. The modified RCS(s), which are constructed with embankments, shall be constructed with a spillway or other outflow device properly sized according to NRCS design and specifications to protect the integrity of the embankment.
 - (6) Embankment Protection. The modified RCS(s) must have a minimum of two (2) vertical feet of materials equivalent to those used at the time of design and construction between the top of the

embankment and the structure's spillway. RCS(s) without spillways must have a minimum of two (2) vertical feet between the top of the embankment and the required storage capacity.

- (g) RCS Liner Requirements. For all new construction and for all structural modifications of existing RCS(s), the RCS must have a liner consistent with one of the following:
- (1) In-situ Material. In-situ material is undisturbed, in-place, native soil material. In-situ materials must at least meet the minimum criteria for hydraulic conductivity and thickness and specific discharge as described in Section VII.A.3(g)(2) of this permit. Samples shall be collected and analyzed in accordance with Section VII.A.3(g)(3) of this permit. This documentation must be certified by a licensed Texas professional engineer or licensed Texas professional geoscientist.
 - (2) Constructed or Installed Liner.
 - (i) Constructed or installed liners must be designed by a licensed Texas professional engineer. The liner must be constructed in accordance with the design and certified as such by a licensed Texas professional engineer. Compaction tests and post construction sampling and analyses, conducted in accordance with Sections VII.A.3(f)(4) and VII.A.3(g)(3) of this permit, will provide support for the liner certification.
 - (ii) Liners shall be designed and constructed to have hydraulic conductivities no greater than 1×10^{-7} centimeters per second (cm/sec), with a thickness of 18 inches or its equivalency in other materials, and not to exceed a specific discharge through the liner of 1.1×10^{-6} cm/sec with a water level at spillway depth.
 - (iii) Constructed or installed liners must be designed and constructed to meet the soil requirements, lift requirements, and compaction testing requirements as listed in Section VII.A.3(f)(1), (2), and (4) of this permit.
 - (3) Liner Sampling and Analyses.
 - (i) The licensed Texas professional engineer or licensed Texas professional geoscientist shall use best professional practices to ensure that corings or other liner samples will be appropriately plugged with material that also meets liner requirements of this subsection.
 - (ii) Samples shall be collected in accordance with ASTM D 1587 or other method approved by the executive director. For each RCS, a minimum of one undisturbed sample shall be collected per plan surface acre at the spillway elevation. For the purpose of determining the number of samples to collect,

- surface acres shall be rounded up to the next whole acre. Distribution of the samples shall be representative of liner characteristics, and proportional to the surface area of the sidewalls and floor. Documentation shall be provided identifying the sample locations with respect to the RCS liner.
- (iii) Undisturbed samples shall be analyzed for hydraulic conductivity in accordance with ASTM D 5084 or other method approved by the executive director.
 - (4) Leak Detection System. If notified by the executive director that significant potential exists for the adverse impact of water in the state or drinking water from leakage of a RCS, the permittee shall install a leak detection system or monitoring well(s) in accordance with that notice. Documentation of compliance with the notification must be kept with the PPP, as well as copies of all sampling data.
4. Special Considerations for Existing RCSs. An existing RCS that has been properly maintained without any modifications and has no apparent structural problems or leakage is considered to be properly designed with respect to the embankment design and construction and liner requirements of this permit, provided that any required documentation was completed in accordance with the requirements at the time of construction. If no documentation exists, the RCS must be certified by a licensed professional Texas engineer as providing protection equivalent to the requirements of this permit.
5. Operation and Maintenance of RCSs
- (a) RCSs Operation and Maintenance
 - (1) The permittee must operate and maintain a margin of safety in the RCS(s) to contain the volume of runoff and direct precipitation from the 25 year/10 day rainfall event.
 - (2) The permittee shall implement a RCS management plan incorporating the margin of safety developed by a licensed Texas professional engineer (See Special Provision X.A.3). The management plan shall become a component of the PPP, shall be developed for each RCS, and must describe or include:
 - (i) RCS management controls appropriate for the CAFO and the methods and procedures for implementing such controls;
 - (ii) the methods and procedures for proper operation and maintenance of each RCS consistent with the system design;
 - (iii) the appropriateness and priorities of any controls reflecting the identified sources of pollutants at the facility;
 - (iv) a stage/storage table for each RCS with minimum depth increments of one-foot, including the storage volume provided at each depth;
 - (v) a second table or sketch that includes increments of water level ranges for volumes of total design storage, including the

- storage volume provided at each specified depth (or water level) and the type of storage designated by that depth; and
- (vi) the planned end of month storage volume anticipated for each RCS for each month of the year and the corresponding operating depth expected at the end of each month of the year, based on the design assumptions.
- (3) The wastewater level in the RCS shall be maintained at or below the maximum operating level expected during that month, according to the design of the RCS. When rainfall volumes exceed average rainfall data used in design calculations planned end of month storage volumes may encroach into the design storm event storage provided that documentation is available to support that the design parameters have been exceeded and that the RCS is otherwise being managed according to the RCS Management Plan criteria. In circumstances where the RCS has a water level exceeding the expected end of the month depth, the permittee shall document in the PPP why the level of water in the structure is not at or below the expected depth. Also, if the water level in the RCS encroaches into the storage volume reserved for the design rainfall event, the permittee must document, in the PPP, the conditions that resulted in this occurrence. As soon as irrigation is feasible and not prohibited by Section VII.A.8(f) and (g), the permittee shall irrigate until the RCS water level is at or below the maximum operating level expected during that month.
- (4) Imminent Overflow. If a RCS is in danger of imminent overflow from chronic or catastrophic rainfall or catastrophic conditions, the permittee shall take reasonable steps to irrigate wastewaters to the LMU(s) only to the extent necessary to prevent overflow from the RCS. If irrigation results in a discharge from a LMU, the permittee shall collect samples from the drainage pathway at the point of the discharge from the edge of the LMU where the discharge occurs, analyze the samples for the parameters listed in Section VII.A.2(b), and provide the appropriate notifications as required by Section VIII.B of this permit and 30 TAC §321.44.
- (5) Permanent Pond Marker. The permittee shall install and maintain a permanent pond marker (measuring device) in the RCS(s), visible from the top of the levee to show the following:
- (i) the volume for the design rainfall event;
 - (ii) one-foot increments beginning from the predetermined minimum treatment volume of the RCS, or the bottom of the RCS for those without treatment volume, to the top of the embankment or spillway; and
 - (iii) design volume levels for maximum sludge accumulation and operating volume (calculated process generated wastewater

- plus rainfall runoff minus evaporation) must be identifiable on the marker.
- (6) Rain Gauge. A rain gauge capable of measuring the design rainfall event shall be kept on site and properly maintained.
 - (7) Sludge Removal. The permittee shall monitor sludge accumulation and depth, based upon the design sludge storage volume in the RCS. (See Special Provision X.E for additional requirements related to sludge monitoring.) Sludge shall be removed from the RCS(s) in accordance with the design schedule for cleanout in the RCS Management Plan to prevent the accumulation of sludge from exceeding the designed sludge volume of the structure. Removal of sludge shall be conducted during favorable wind conditions that carry odors away from nearby receptors. Sludge may only be beneficially utilized by land application to a LMU if in accordance with a nutrient management plan or disposed of in accordance with Section VII.A.8(e) of this permit.
 - (8) Liner Protection and Maintenance. The permittee shall maintain the liner to inhibit infiltration of wastewater. Liners must be protected from animals by fences or other protective devices. No tree shall be allowed to grow such that the root zone would intrude or compromise the structure of the liner or embankment. Any mechanical or structural damage to the liner shall be evaluated by a licensed Texas professional engineer within thirty (30) days of the damage.
 - (9) Closure Requirements. A closure plan must be developed when a RCS will no longer be used and/or when the CAFO ceases or plans to cease operation. The closure plan shall be submitted to the appropriate regional office and the CAFO Permits Team of the Water Quality Division in Austin (MC-150) within ninety (90) days of when operation of the CAFO or the RCS terminates. The closure plan for the RCS must, at a minimum, be developed using standards contained in the NRCS Practice Standard Code 360 (Closures of Waste Impoundments), as amended, and using the guidelines contained in the Texas AgriLife Extension/ NRCS publication #B-6122 (Closure of Lagoons and Earthen Manure Storage Structures), as amended. The permittee shall maintain or renew its existing authorization and maintain compliance with the requirements of this permit until the facility has been closed.
6. General Operating Requirements
- (a) Flush/Scrape Systems. Flush/scrape systems shall be flushed/scraped in accordance with design criteria in the application.
 - (b) Pen Maintenance. The permittee shall maintain earthen pens to ensure good drainage, minimize ponding, and minimize the entrance of uncontaminated storm water to the RCSs.

- (c) Carcass Disposal. Carcasses shall be collected within twenty four (24) hours of death and properly disposed of within three days of death in accordance with Texas Water Code, Chapter 26; Texas Health and Safety Code, Chapter 361; and 30 TAC Chapter 335 (relating to Industrial Solid Waste and Municipal Hazardous Waste) unless otherwise provided for by the commission. Animals must not be disposed of in any liquid manure or process wastewater system. Disposal of diseased animals shall also be conducted in a manner that prevents a public health hazard in accordance with Texas Agriculture Code, §161.004, and 4 TAC §31.3 and §58.31(b). The collection area for carcasses shall be addressed in the potential pollutant sources section of the PPP with management practices to prevent contamination of surface or groundwater; control access; and minimize odor.
 - (d) Manure and Sludge Storage
 - (1) Manure and sludge storage capacity requirements shall be based on manure and sludge production, land availability, and the NRCS Field Office Technical Guide (Part 651, Chapter 10) or equivalent standards. [See Special Provision X.I for the storage requirements applicable to slurry collected from freestall barns.]
 - (2) When manure is stockpiled, it shall be stored in a well-drained area, and the top and sides of stockpiles shall be adequately sloped to ensure proper drainage and prevent ponding of water. Runoff from manure or sludge storage piles must be retained on site. If the manure or sludge areas are not roofed or covered with impermeable material, protected from external rainfall, or bermed to protect from runoff during the design rainfall event, the manure or sludge areas must be located within the drainage area of a RCS and accounted for in the design calculations of the RCS.
 - (3) Manure or sludge stored for more than thirty (30) days must be stored within the drainage area of a RCS or stored in a manner (i.e. storage shed, bermed area, tarp covered area, etc.) that otherwise prevents contaminated storm water runoff from leaving the storage area. All storage sites and structures located outside the drainage area shall be designated on the site map. Storage for more than thirty (30) days is prohibited in the 100-year floodplain. (4) Temporary storage of manure or sludge shall not exceed thirty (30) days and is allowed only in a LMU or a RCS drainage area. Temporary storage of manure and sludge in the 100-year flood plain, near water courses or near recharge features is prohibited unless protected by berms or other structures to prevent inundation or damage that may occur.
 - (e) Composting. Composting on site is prohibited on this CAFO unless this permit is amended to include composting requirements.
7. Well Protection Requirements.
- (a) The permittee shall not locate or operate a new RCS, holding pen, or LMU

within the following buffer zones:

- (1) public water supply wells - 500 feet;
 - (2) wells used exclusively for private water supply - 150 feet; or
 - (3) wells used exclusively for agriculture irrigation - 100 feet.
- (b) Irrigation of wastewater directly over a well head will require a structure protective of the wellhead that will prevent contact from irrigated wastewater.
 - (c) Construction of any new water wells must be done by a licensed water well driller.
 - (d) All abandoned and unusable wells shall be plugged according to 16 TAC §76.702.
 - (e) The permittee may continue the operation and use of any existing holding pens and RCSs located within the required well buffer zones provided they are in accordance with the facility's approved recharge feature evaluation and certification. Buffer zone variance documentation must be kept on-site and made available to TCEQ personnel upon request. A Well Buffer Exception request for Well Nos. 1, 2, 3, and 9 was submitted to and approved by the TCEQ Water Quality Assessment Team.

The table below shows the status of all wells on the facility and the BMPs used to protect them.

Well Number*	Status	BMPs
1	Producing	Concrete surface slab around the wellhead and located up-gradient from the pollution source.
2	Producing	Concrete slab around the wellhead and located up-gradient from the pollution source.
3	Producing	Concrete surface slab around the wellhead and well is isolated from runoff by concrete retaining wall.
4	Producing	Maintain 150 ft buffer
5	Producing	Maintain 150 ft buffer
6	Producing	Maintain 150 ft buffer
7	Producing	Maintain 150 ft buffer
8	Producing	Maintain 150 ft buffer
9	Producing	Concrete surface slab around the wellhead and well is isolated from runoff by concrete retaining wall.

*Well Numbers correspond with Attachment D.

8. Land Application

- (a) Nutrient Management Plan (NMP) Required. The certified NMP submitted in the permit application shall be implemented upon issuance of this permit.

The plan shall be updated as appropriate or at a minimum of annually according to NRCS guidance for Practice Standard 590. The permittee shall make available to the executive director, upon request, a copy of the site specific NMP and documentation of the implementation.

- (b) Comprehensive Nutrient Management Plan (CNMP) required. The permittee must develop and implement a CNMP certified by the Texas State Soil and Water Conservation Board (TSSWCB) prior to exceeding 199 head. The CNMP must be submitted for approval to the TSSWCB within sixty days of permit issuance.
- (c) Critical Phosphorus Level.
 - (1) When results of the annual soil analysis show a phosphorus level in the soil of more than 200 ppm but not more than 500 ppm in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated) depth for a particular LMU or if ordered by the commission to do so in order to protect the quality of waters in the state, then the permittee shall:
 - (i) file with the executive director a new or amended nutrient utilization plan (NUP) with a phosphorus reduction component based on crop removal that is certified as acceptable by a person described in (3) below; or
 - (ii) show that the level is supported by a NUP that is certified as acceptable by a person described in (3) below.
 - (2) The permittee shall cease land application of wastewater, sludge, slurry and manure to the affected area until the NUP has been approved by the TCEQ. After a NUP is approved, the permittee shall land apply in accordance with the NUP until soil phosphorus is reduced below the critical phosphorus level of 200 ppm extractable phosphorus. Thereafter, the permittee shall implement the requirements of the nutrient management plan.
 - (3) NUP. A NUP is a NMP, based on NRCS Practice Standard Code 590, which utilizes a crop removal application rate. The NUP, based on crop removal, must be developed and certified by one of the following individuals or entities:
 - (i) an employee of the NRCS;
 - (ii) a nutrient management specialist certified by the NRCS;
 - (iii) the Texas State Soil and Water Conservation Board;
 - (iv) the Texas AgriLife Extension;
 - (v) an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas; or
 - (vi) a Certified Professional Agronomist certified by the American Society of Agronomy, a Certified Professional Soil Scientist certified by the Soil Science Society of America, or a licensed Texas professional geoscientist-soil scientist after approval by the executive director based on a determination by the executive director that another person or entity identified in

- this paragraph cannot develop the plan in a timely manner.
- (4) When results of the annual soil analysis for extractable phosphorus indicate a level greater than 500 ppm in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated) depth, the permittee shall file with the executive director a new or amended NUP with a phosphorus reduction component, based on crop removal, that is certified as acceptable by a person described in (3) above. After the new or amended NUP is approved, the permittee shall land apply in accordance with the NUP until soil phosphorus is reduced below 500 ppm extractable phosphorus.
 - (5) If the permittee is required to have a NUP with a phosphorus reduction component based on crop removal, and if the results of tests performed on composite soil samples collected 12 months or more after the plan is filed do not show a reduction in phosphorus concentration in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated) depth, then the permittee is subject to enforcement action at the discretion of the executive director.
- (d) Buffer Requirements. The permittee shall meet the following buffer requirements for each LMU:
- (1) Water in the state. The permittee shall not apply wastewater, sludge, slurry and manure within the buffer distances as noted on Attachment B and Special Provision X.D. Vegetative buffers shall be maintained in accordance with NRCS Field Office Technical Guidance. The permittee shall maintain the filter strip (according to NRCS Code 393) between the vegetative buffer and the land application area. If the land application area is cropland the permittee shall install and maintain contour buffer strips (according to NRCS Code 332) within the land application area in addition to the buffer distances required by this permit.
 - (2) Water wells. The permittee shall comply with the well protection requirements listed in Section VII.A.7.
- (e) Exported wastewater, sludge, and/or manure. Wastewater, sludge, and/or manure removed from the operation shall be disposed of by:
- (1) delivery to a composting facility authorized by the executive director;
 - (2) delivery to a permitted landfill located outside of the major sole source impairment zone;
 - (3) beneficial use by land application to land located outside of the major sole source impairment zone;
 - (4) put to another beneficial use approved by the executive director; or
 - (5) providing wastewater, sludge, and/or manure to operators of third-party fields, i.e. areas of land in the major sole source impairment zone not owned, operated, controlled, rented, or leased by the CAFO owner or operator, that have been identified in the PPP.

- (i) There must be a written contract between the permittee and the recipient that includes, but is not limited to, the following provisions:
 - (A) All transferred wastewater, sludge, and/or manure shall be beneficially applied to third-party fields identified in the PPP in accordance with the applicable requirements in 30 TAC §321.36 and §321.40 at an agronomic rate based on soil test phosphorus. The requirements for development or implementation of a nutrient management plan or nutrient utilization plan, under 30 TAC §321.40, do not apply to third-party fields.
 - (B) Manure and sludge must be incorporated on cultivated fields within forty-eight (48) hours after land application.
 - (C) Land application rates shall not exceed the crop nitrogen requirement when soil phosphorus concentration in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch not incorporated) depth is less than or equal to 50 ppm phosphorus.
 - (D) Land application rates shall not exceed two times the phosphorus crop removal rate, and not to exceed the crop nitrogen requirement, when soil phosphorus concentration in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch not incorporated) depth is greater than 50 ppm phosphorus and less than or equal to 150 ppm phosphorus.
 - (E) Land application rates shall not exceed one times the phosphorus crop removal rate, and not to exceed the crop nitrogen requirement, when soil phosphorus concentration in Zone 1 (0-6 inch incorporated; 0-2 or 2-6 inch not incorporated) depth is greater than 150 ppm phosphorus and less than 200 ppm phosphorus.
 - (F) Before commencing manure, wastewater, and/or sludge application to third-party fields, at least one representative soil sample from each third-party field must be collected by a certified nutrient management specialist and analyzed in accordance with 30 TAC §321.36. Third-party fields which have had wastewater, sludge, and/or manure applied during the preceding year must be sampled annually by a certified nutrient management specialist and the samples analyzed in accordance with 30 TAC

§321.36. For third-party fields that have not received wastewater, sludge, and/or manure during the preceding year, initial sampling must be completed before re-starting land application to the third-party field.

- (G) A copy of the annual soil analyses shall be provided to the permittee within sixty (60) days of the date the samples were taken.
 - (H) Temporary storage of wastewater, sludge, and/or manure is prohibited on third-party fields.
 - (ii) The permittee is prohibited from delivering wastewater, sludge, and/or manure to an operator of a third-party field once the soil test phosphorus analysis shows a level equal to or greater than 200 ppm or after becoming aware that the third-party operator is not following appropriate provisions of 30 TAC §321.36, §321.40 and/or the contract.
 - (iii) The permittee will be subject to enforcement action for violations of the land application requirements on any third-party field under contract.
 - (iv) The permittee shall submit records to the appropriate regional office quarterly that contain the name, locations, and amounts of wastewater, sludge, and/or manure transferred to operators of third-party fields.
- (f) Irrigation Operating Requirements
- (1) Minimize Ponding. Irrigation practices shall be managed so as to minimize ponding or puddling of wastewater on the site, prevent tailwater discharges to waters in the state, and prevent the occurrence of nuisance conditions.
 - (2) Discharge Prohibited.
 - (i) The drainage of wastewater, sludge, slurry and manure is prohibited from the LMU(s), unless authorized under Section VII.A.5(a)(4).
 - (ii) Where wastewater, sludge, slurry and manure is applied in accordance with the nutrient management plan and/or NUP, precipitation-related runoff from the LMU(s) under the control of the permittee is authorized.
 - (iii) If a discharge from the irrigation system is documented as a violation, the permittee may be required by the executive director to install an automatic emergency shut-down or alarm system to notify the permittee of system problems.
 - (3) Backflow Prevention. If the permittee introduces wastewater or chemicals to water well heads for the purpose of irrigation, then backflow prevention devices shall be installed according to 16 TAC

Chapter 76 (related to Water Well Drillers and Water Well Pump Installers).

- (g) **Nighttime Application.**
 - (1) Land application at night shall only be allowed if there is no occupied residence(s) within one quarter (0.25) of a mile from the outer boundary of the actual area receiving wastewater, sludge, slurry and manure application. In areas with an occupied residence within one quarter (0.25) of a mile from the outer boundary of the actual area receiving wastewater, sludge, slurry and manure application, application shall only be allowed from one (1) hour after sunrise until one (1) hour before sunset, unless the current occupant of such residences have, in writing, agreed to specified nighttime applications.
 - (2) Land application of wastewater, sludge, slurry and manure is prohibited between 12a.m. and 4a.m.
- 9. **Sampling and Testing.**
 - (a) **Manure and Wastewater.** The permittee shall collect and analyze at least one representative sample of wastewater and one representative sample of manure each year for total nitrogen, total phosphorus, and total potassium. The results of these analyses shall be used in determining application rates.
 - (b) **Soils.**
 - (1) **Initial Sampling.** Before commencing wastewater, sludge, slurry and manure application to the LMU(s), the permittee shall have at least one representative soil sample from each LMU, collected and analyzed according to the following procedures.
 - (2) **Annual Sampling.** The permittee shall have soil samples collected annually for each current and historical LMU.
 - (3) **Sampling Procedures.** Sampling procedures shall employ accepted techniques of soil science for obtaining representative samples and analytical results, and be consistent with approved methods described in the executive director's guidance entitled "Soil Sampling for Nutrient Utilization Plans (RG-408)."
 - (i) Soil samples must be collected by one of the following persons:
 - (A) the NRCS;
 - (B) a certified nutrient management specialist;
 - (C) the Texas State Soil and Water Conservation Board;
 - (D) the Texas AgriLife Extension; or
 - (E) an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas.
 - (ii) Samples shall be collected and analyzed within the same forty-five (45) day time frame each year, except when crop rotations or inclement weather require a change in the sampling time. The reason for a change in sampling

timeframe shall be documented in the PPP.

- (iii) Obtain one composite sample for each soil depth zone per uniform soil type (soils with the same characteristics and texture) within each LMU.
- (iv) Composite samples shall be comprised of 10 - 15 randomly sampled cores obtained from each of the following soil depth zones:

- (A) Zone 1: 0-6 inches (where the manure, sludge, or slurry, is physically incorporated or injected directly into the soil) or 0-2 inches (where the manure, sludge or slurry is not incorporated into the soil). Wastewater is considered to be incorporated upon land application if it is less than two percent (2%) solids. Slurry from freestall barns is treated like manure for this sampling requirement. If a 0-2 inch sample is required, then an additional sample from the 2-6 inch soil depth zone shall be obtained in accordance with the provisions of this section; and

- (B) Zone 2: 6-24 inches.

- (4) Laboratory Analysis. Samples shall be analyzed by a soil testing laboratory. Physical and chemical parameters and analytical procedures for laboratory analysis of soil samples shall include the following:

- (i) nitrate reported as nitrogen in ppm;
- (ii) phosphorus (extractable, ppm) using Mehlich III with Inductively Coupled Plasma (ICP);
- (iii) potassium (extractable, ppm);
- (iv) sodium (extractable, ppm);
- (v) magnesium (extractable, ppm);
- (vi) calcium (extractable, ppm);
- (vii) soluble salts (ppm) or electrical conductivity (dS/m) - determined from extract of 2:1 (v/v) water/soil mixture; and
- (viii) soil water pH (soil:water, 1:2 ratio).

10. Preventative Maintenance Program.

(a) Facility Inspections

(1) General Requirements

- (i) Inspections shall include visual inspections and equipment testing to determine conditions that could cause breakdowns or failures resulting in discharge of pollutants to water in the state or the creation of a nuisance condition.
- (ii) The permittee shall draft a report, to be maintained in the PPP, to document the date of inspections, observations and actions taken in response to deficiencies identified during the

- inspection. The permittee shall correct all the deficiencies within thirty (30) days or shall document the factors preventing immediate correction.
- (2) Daily Inspections. The permittee shall conduct daily inspections on all water lines, including drinking water and cooling water lines, which are located within the drainage area of a RCS.
 - (3) Weekly Inspections. The permittee shall conduct weekly inspections on:
 - (i) all control facilities, including RCSs, storm water diversion devices, runoff diversion structures, control devices for management of potential pollutant sources, and devices channeling contaminated storm water to RCSs; and
 - (ii) equipment used for land application of wastewater, sludge, slurry and manure.
 - (4) Monthly Inspections. The permittee shall conduct monthly inspections on:
 - (i) mortality management systems, including collection areas; and
 - (ii) disposal and storage of toxic pollutants, including pesticide containers.
 - (5) Annual Site Inspection.
 - (i) The permittee shall annually conduct a complete site inspection of the production area and the LMU(s).
 - (ii) The inspection shall verify that:
 - (A) the description of potential pollutant sources is accurate;
 - (B) the site plan/map has been updated or otherwise modified to reflect current conditions; and
 - (C) the controls outlined in the PPP to reduce pollutants and avoid nuisance conditions are being implemented and are adequate.
 - (b) Five Year Evaluation. Once every five years the permittee shall have a licensed Texas professional engineer review the existing engineering documentation, complete a site evaluation of the structural controls, review existing liner and RCS capacity documentation, and complete and certify a report of their findings. The report must be kept in the PPP.
11. Management Documentation. The permittee shall maintain the following records in the PPP:
- (a) a copy of the administratively complete and technically complete individual water quality permit application and the written authorization issued by the commission or executive director;
 - (b) a copy of the approved recharge feature certification and appropriate updates;
 - (c) a copy of the comprehensive nutrient management plan, nutrient management

plan, nutrient utilization plan and appropriate updates to these plans, if required;

- (d) the RCS liner certification(s);
- (e) any written agreement with a landowner which documents the allowance of nighttime application of wastewater, sludge, slurry and manure;
- (f) documentation of employee and operator training, including verification of the date, time of attendance, and completion of training;
- (g) the RCS management plan;
- (h) the capacity of each RCS, as certified by a licensed Texas professional engineer; and
- (i) a copy of all third-party field contracts.

B. General Requirements

1. The permittee shall not construct any component of the production area in any stream, river, lake, wetland, or playa (except as defined by and in accordance with the Texas Water Code §26.048).
2. Animals confined on the CAFO shall be restricted from coming into direct contact with surface water in the state through the use of fences or other controls.
3. The permittee shall prevent the discharge of pesticide and herbicide contaminated waters into surface water in the state. All wastes from dipping vats, pest and parasite control units, and other facilities used for the application of potentially hazardous or toxic chemicals shall be handled and disposed of in a manner that prevents any significant pollutants from entering water in the state or creating a nuisance condition.
4. The permittee shall operate the CAFO in such a manner as to prevent nuisance conditions of air pollution as mandated by Texas Health and Safety Code, Chapters 341 and 382.
5. The permittee shall take reasonable steps necessary to prevent adverse effects to human health or safety, or to the environment.
6. The permittee shall maintain control of the RCS(s), required LMU(s), and control facilities identified on the site map submitted in the application. In the event the permittee loses control of any of these areas, the permittee shall notify the executive director within five (5) working days.
7. If animals are maintained in pastures, the permittee shall maintain crops, vegetation, forage growth or post harvest residues in those pastures during the normal growing season, excluding the feed and/or water trough areas and open lots designated on the site map.

C. Training

1. Employee Training
 - (a) CAFO employees who are responsible for work activities relating to compliance with provisions of this permit must be regularly trained or informed of any information pertinent to the proper operation and

- maintenance of the facility and land application of manure, sludge, and wastewater.
- (b) Employee training shall address all levels of responsibility of the general components and goals of the PPP. Training shall include appropriate topics, such as land application of manure, sludge, and wastewater, proper operation and maintenance of the facility, good housekeeping, material management practices, recordkeeping requirements, and spill response and clean up.
 - (c) The permittee is responsible for determining the appropriate training frequency for different levels of personnel. The PPP shall identify periodic dates for such training.
- 2. Operator Training. The operator shall attend and complete at least eight (8) hours of continuing education in animal waste management or its equivalent, developed by the executive director and the Texas AgriLife Extension, for each two year period.
 - 3. Verification of the date and time(s) of attendance and completion of required training shall be documented in the PPP.

D. Air Standard Permit Requirements

- 1. Air emission limitations.
 - (a) Facilities shall be operated in such a manner as to prevent the creation of a nuisance as defined by Texas Health and Safety Code, 30 TAC §§341.011 and 321.32(32), and as prohibited by 30 TAC §101.4. Facilities shall be operated in such a manner as to prevent a condition of air pollution as defined by Texas Health and Safety Code, 30 TAC §382.003(3).
 - (b) The permittee shall take necessary action to identify any nuisance condition that occurs. The permittee shall take action to abate any nuisance condition as soon as practicable or as specified by the executive director.
- 2. Wastewater treatment. The permittee shall design and operate RCSs to minimize odors in accordance with accepted engineering practices. Each RCS shall be operated in accordance with the design and an operation and maintenance plan that minimizes odors. The primary lagoon in a multi-stage lagoon system shall be designed with a minimum treatment volume so that the lagoon maintains a constant level at all times unless prohibited by climatic conditions. A multi-stage lagoon system shall be designed to minimize the amount of contaminated storm water runoff entering the primary lagoon by routing the contaminated storm water runoff into a secondary RCS.
- 3. Dust control. To minimize dust emissions, the CAFO shall be operated and maintained as follows.
 - (a) Fugitive emissions from all grain receiving pits, where a pit is used, shall be minimized through the use of "choke feeding" or through an equivalent method of control. If choke feeding is used, operation of conveyors associated with receiving shall not commence until the receiving pits are full.
 - (b) As necessary, emissions from all in-plant roads, truck loading and unloading areas, parking areas, and other traffic areas shall be controlled with one or

more of the following methods to minimize nuisance conditions and maintain compliance with all applicable commission requirements:

- (1) sprinkled with water;
 - (2) treated with effective dust suppressant(s); or
 - (3) paved with a cohesive hard surface and cleaned.
- (c) All non-vehicular external conveyors or other external conveying systems associated with the feedmill shall be enclosed.
- (d) On-site feed milling operations with processing equipment using a pneumatic conveying system (which may include, but are not limited to, pellet mill/pellet cooler systems, flaker systems, grinders, and roller-mills) shall vent the exhaust air through a properly-sized high efficiency cyclone collector or an equivalent control device before releasing the exhaust air to the atmosphere. This requirement does not include cyclones used as product separators.
- (e) If the executive director determines that the implementation and employment of these practices is not effective in controlling dust, the permittee shall implement any necessary additional abatement measures to control and minimize this contaminant within the time period specified by the executive director.
4. Maintenance and housekeeping. The permittee shall comply with the following to help prevent nuisance conditions.
- (a) The premises shall be maintained to prevent the occurrence of nuisance conditions from odors and dust. Spillage of any raw products or waste products causing a nuisance condition shall be picked up and properly disposed of daily.
 - (b) Proper pen drainage shall be maintained at all times. Earthen pen areas shall be maintained by scraping uncompacted manure and shaping pen surfaces as necessary to minimize odors and ponding.

VIII. Recordkeeping, Reporting, and Notification Requirements

A. Recordkeeping. The permittee shall keep records on site for a minimum of five (5) years from the date the record was created and shall submit them within five (5) days of a written request by the executive director.

1. The permittee shall update records daily to include:
 - (a) all measurable rainfall events; and
 - (b) the wastewater levels in each RCS, as shown on the depth marker. In circumstances where a RCS has a water level exceeding the expected end of the month depth, the permittee shall document in the PPP why the level of water in the structure is not at or below the expected depth.
2. The permittee shall update records weekly to include:
 - (a) records of all wastewater, sludge, and/or manure removed from the CAFO that shows the dates, amount, and recipient. The permittee must make the most recent nutrient analysis available to any hauler; and
 - (b) inspections of control facilities and land application equipment.

3. The permittee shall update records monthly to include:
 - (a) records describing mortality management practices;
 - (b) storage and disposal of chemicals, including pesticide containers; and
 - (c) records of all wastewater, sludge, slurry and manure applied on the LMUs).

Such records must include the following information:

 - (i) date of wastewater, sludge, slurry and manure application to each LMU;
 - (ii) location of the specific LMU and the volume applied during each application event;
 - (iii) acreage on which wastewater, sludge, slurry and manure is applied;
 - (iv) basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU on a dry basis, including sources of nutrients other than wastewater, sludge, slurry and manure; and
 - (v) weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty-four (24) hours before and after the land application.
4. The permittee shall update records annually to include:
 - (a) annual nutrient analysis for at least one representative sample of wastewater and one representative sample of manure for total nitrogen, total phosphorus, and total potassium;
 - (b) any initial and annual soil analysis reports;
 - (c) the annual site inspection report;
 - (d) percent moisture content of the manure, sludge, slurry, and wastewater; and
 - (e) actual annual yield of each harvested crop for each LMU.
5. The Five Year Evaluation report must be updated every five (5) years.
6. The permittee shall keep the following records on-site:
 - (a) a list of any significant spills of potential pollutants at the CAFO that have a significant potential to reach water in the state;
 - (b) documentation of liner maintenance by an NRCS engineer, a licensed Texas professional engineer or a licensed Texas professional geoscientist;
 - (c) RCS design calculations and as built capacity certification;
 - (d) embankment certification;
 - (e) liner certification;
 - (f) a copy of current and amended site plans; and
 - (g) copies of all notifications to the executive director, including any made to a regional office.

B. Reporting and Notifications

1. The permittee shall provide written notice to the appropriate TCEQ regional office as soon as the RCS cleaning is scheduled, but not less than ten (10) days before cleaning. The permittee shall also provide written verification of completion to the same regional office within five days after the cleaning has been completed. This paragraph does not apply to the cleaning of solid separators or settling basins that are

- functioning as solid separators.
2. The permittee shall notify the appropriate TCEQ regional office in writing or by electronic mail with the date, time, and location at least ten (10) working days before collecting soil samples from current and historical LMUs; and third-party fields.
 3. Discharge notification. If for any reason there is a discharge of manure, sludge or wastewater into water in the state, the permittee shall notify the appropriate TCEQ regional office orally within one (1) hour of discovery; unless it is not reasonably possible to do so in which event the discharge shall be reported as soon as reasonably possible, but in no event later than twenty-four (24) hours from when the discharge occurred. The permittee shall also submit written notice, within fourteen (14) working days of the discharge to the Office of Compliance and Enforcement, Enforcement Division (MC 224). In addition, the permittee shall document the following information, keep the information on site, and submit the information to the appropriate regional office within fourteen (14) working days of becoming aware of such discharge. The written notification must include:
 - (a) A description and cause of the discharge, including a description of the flow path to the receiving water body and an estimation of the volume discharged;
 - (b) The period of discharge, including exact dates and times, and, if not corrected, the anticipated time the discharge is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the discharge;
 - (c) If caused by a precipitation event(s), the date(s) of the event(s) and the rainfall amount(s) recorded from an on-site rain gauge; and
 - (d) Discharge monitoring analyses required by this permit.
 4. In the event of a discharge of manure, sludge, or wastewater from a RCS or a LMU during a chronic or catastrophic rainfall event or resulting from catastrophic conditions, the permittee shall orally notify the appropriate TCEQ regional office within one (1) hour of the discovery of the discharge. The permittee shall send written notification to the appropriate regional office within fourteen (14) working days.
 5. Chronic Rainfall Discharge. In the event of a discharge of manure, sludge or wastewater from a RCS or a LMU due to chronic rainfall, the permittee shall submit a report to the appropriate TCEQ regional office showing the CAFO records that substantiates that the overflow was a result of cumulative rainfall that exceeded the design rainfall event without the opportunity for dewatering, and was beyond the control of the permittee. After review of the report, if required by the executive director, the permittee shall have an engineering evaluation by a licensed Texas professional engineer developed and submitted to the executive director. This requirement is in addition to the discharge notification requirement in this permit.
 6. Impacts to Human Health or Safety, or the Environment. The permittee shall provide the following noncompliance notifications:
 - (a) Any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such

information shall be provided orally, e-mail, or electronic facsimile transmission (FAX) to the TCEQ regional office within twenty four (24) hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the TCEQ regional office and the Enforcement Division (MC 224) within five (5) days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times. If the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance and to mitigate its adverse effects.

- (b) In the event the permittee discharges manure, sludge, or wastewater other than as authorized in the permit, the permittee shall give twenty four (24) hour oral, email, or fax notice and five (5) day written notice to TCEQ as required by paragraph (a) above.

7. The permittee shall submit an annual report to the appropriate regional office and the Enforcement Division (MC 224) by February 15 of each year for the reporting period of January 1 to December 31 of the previous year. The report shall be submitted on forms prescribed by the executive director to include, but not limited to:

- (a) number and type of animals, whether in open confinement or housed under roof;
- (b) estimated total manure, sludge, and wastewater generated during the reporting period;
- (c) total wastewater, sludge, slurry and manure land applied during the last twelve (12) months on-site at the CAFO facility;
- (d) total wastewater, sludge, and/or manure transferred to other persons during the reporting period;
- (e) total number of acres for land application under the control of the permittee and all third-party acreage;
- (f) summary of discharges of manure, sludge, or wastewater from the production area that occurred during the reporting period including dates, times, and approximate volume;
- (g) a statement indicating that the NMP/NUP, under which the CAFO is operating, was developed and approved by a certified nutrient management specialist;
- (h) a copy of the initial soil analysis for each new LMU, regardless of whether manure, wastewater, or sludge has been applied;
- (i) soil monitoring reports of all soil samples collected in accordance with the requirements of this permit;
- (j) groundwater monitoring reports (if applicable); and
- (k) any other information requested by the executive director.

8. The permittee shall furnish to the appropriate regional office, the Enforcement

Division (MC 224), and the Water Quality Assessment Team (MC 150) soil testing analysis of all soil samples within sixty (60) days of the date the samples were taken in accordance with the requirements of this permit.

IX. Standard Permit Conditions

- A. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit condition is a violation of the permit and statutes under which it was issued and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or an application for a permit for another facility.
- B. The permittee must apply for an amendment or renewal before the expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. Authorization to continue such activity terminates upon the effective denial of said permit.
- C. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
- D. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.
- E. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used by the permittee to achieve compliance with the permit conditions. Proper operation and maintenance also includes adequate laboratory and process controls, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the permit conditions.
- F. The permittee shall furnish any information, at the request of the Executive Director, which is necessary to determine whether cause exists for revoking, suspending, or terminating authorization under this permit. The requested information must be provided within a reasonable time frame and in no case later than 30 days from the date of the request.
- G. The permittee shall give notice to the Executive Director before physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements.
- H. Authorization from the commission is required before beginning any change in the permitted facility or activity that would result in noncompliance with other permit requirements.
- I. Inspection and entry shall be allowed under Texas Water Code, Chapters 26-28, Health and Safety Code, §§361.032-361.033 and §361.037, and 40 Code of Federal Regulations (CFR) §122.41(I). The statement in Texas Water Code, §26.014 that the commission entry of a facility shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection is not grounds for denial or restriction of entry to any part of the facility, but merely describes the commission's duty to observe appropriate rules and regulations during inspection.
- J. Standard monitoring requirements
 1. Samples required by this permit shall be collected and measurements shall be taken at times and in a manner so as to be representative of the monitored discharge or activity. Samples shall be delivered to the laboratory immediately upon collection, in accordance with any applicable analytical method and required maximum holding time. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.
 2. Records of monitoring activities must include:
 - (a) the date, time, and place of sample or measurement;
 - (b) the identity of any individual who collected the sample or made the measurement;
 - (c) the chain-of-custody procedures used to maintain sample integrity from sample collection to laboratory delivery;
 - (d) the date and time of laboratory analysis;
 - (e) the identity of the individual and laboratory who performed the analysis;

- (f) the technique or method of analysis; and
 - (g) the results of the analysis or measurement and quality assurance/quality control records.
- 3. The permittee shall ensure that properly trained and authorized personnel monitor and sample the soil or wastewater related to any permitted activity.
- K. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly shall be reported to the executive director as promptly as possible.
- L. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §305.97 (relating to Action on Application for Transfer).
- M. PPPs, reports, and other information requested or required by the Executive Director shall be signed in accordance with the requirements of 30 TAC §305.128 (relating to Signatories to Reports).
- N. A permit may be amended, suspended and re-issued, or revoked for cause. The filing of a request by the permittee for a permit amendment, suspension and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- O. A permit does not convey any property rights of any sort or any exclusive privilege.
- P. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date.
- Q. If the permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in an application, or in any report to the executive director, the permittee shall promptly submit such facts or information.
- R. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code, §§26.136, 26.212, and 26.213, for violations including but not limited to the following:
 - 1. negligently or knowingly violating Clean Water Act (CWA) §§301, 302, 306, 307, 308, 318, or 405 or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §402(a)(3) or §402(b)(8);
 - 2. falsifying, tampering with, or knowingly rendering inaccurate any monitoring device or method required to be maintained under a permit; or
 - 3. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance.
- S. The permittee shall comply with all applicable rules and regulations of the commission, including 30 TAC 321, Subchapter B.
- T. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:
 - 1. Violation of any terms or conditions of this permit;
 - 2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 - 3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- U. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.
- V. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.
- W. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- X. Notice of Bankruptcy.
 - 1. Each permittee shall notify the executive director, in writing, immediately following the filing of a

voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

- (a) the permittee;
 - (b) an entity (as that term is defined in 11 USC, §101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or
 - (c) an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
2. This notification must indicate:
- (a) the name of the permittee;
 - (b) the permit number(s);
 - (c) the bankruptcy court in which the petition for bankruptcy was filed; and
 - (d) the date of filing of the petition.

X. Special Provisions

A. RCS Modifications.

- 1. The permittee shall modify existing RCS #2 and RCS #3 into one RCS which shall be called RCS #2. The permittee also plans to modify the berm on RSC #1. All modifications shall comply with Section VII.A.3 of this permit. The table below indicates the minimum volume allocations for the RCS(s).

Volume Allocations for RCS(s) (Acre-feet)							
RCS #	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity without Freeboard	Actual Capacity without Freeboard
1	4.59	5.52	15.34	12.73	5.67	43.85	To Be Determined
2	9.71	0	0	0.43	0.93	11.07	To Be Determined

- 2. Compliance Schedule. All RCS modifications required by this permit shall be completed within 180 days after the issuance date of this permit and prior to exceeding 199 head. Upon written request to the TCEQ Regional Office, the Executive Director may grant an extension to the 180 day requirement. However, all modifications must be completed prior to exceeding 199 head.
- 3. Once all modifications of RCS(s) are complete, the RCS management plan shall be developed and implemented within thirty (30) days.
- 4. All certifications required by Section VII.A.3(a) of this permit shall be submitted to the TCEQ Regional Office and CAFO Permitting, Water Quality Division (MC150) within 30 days of completing modifications.

B. Future Revisions to Bosque River Total Maximum Daily Load (TMDL). The permittee is hereby placed on notice that this permit may be amended by the Texas Commission on Environmental Quality in order to make the terms and conditions of this permit consistent with any revisions to the Bosque River TMDL, associated Implementation Plan, and with any revisions to federal regulations.

C. The permittee shall submit the following record to the appropriate regional office and the Enforcement Division (MC 224) by February 15 of each year for the reporting period of January 1 to December 31 of the previous.

1. date of wastewater, sludge, slurry and manure application to each LMU;
2. location of the specific LMU and the volume applied during each application event;
3. acreage of each individual crop on which wastewater, sludge, slurry and manure is applied;
4. basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU, including sources of nutrients other than wastewater, sludge, slurry and manure on a dry basis;
5. weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty four (24) hours before and after the land application; and
6. annual nutrient analysis for at least one (1) representative sample of manure, sludge (if applicable), slurry, and wastewater for total nitrogen, total phosphorus, and total potassium.

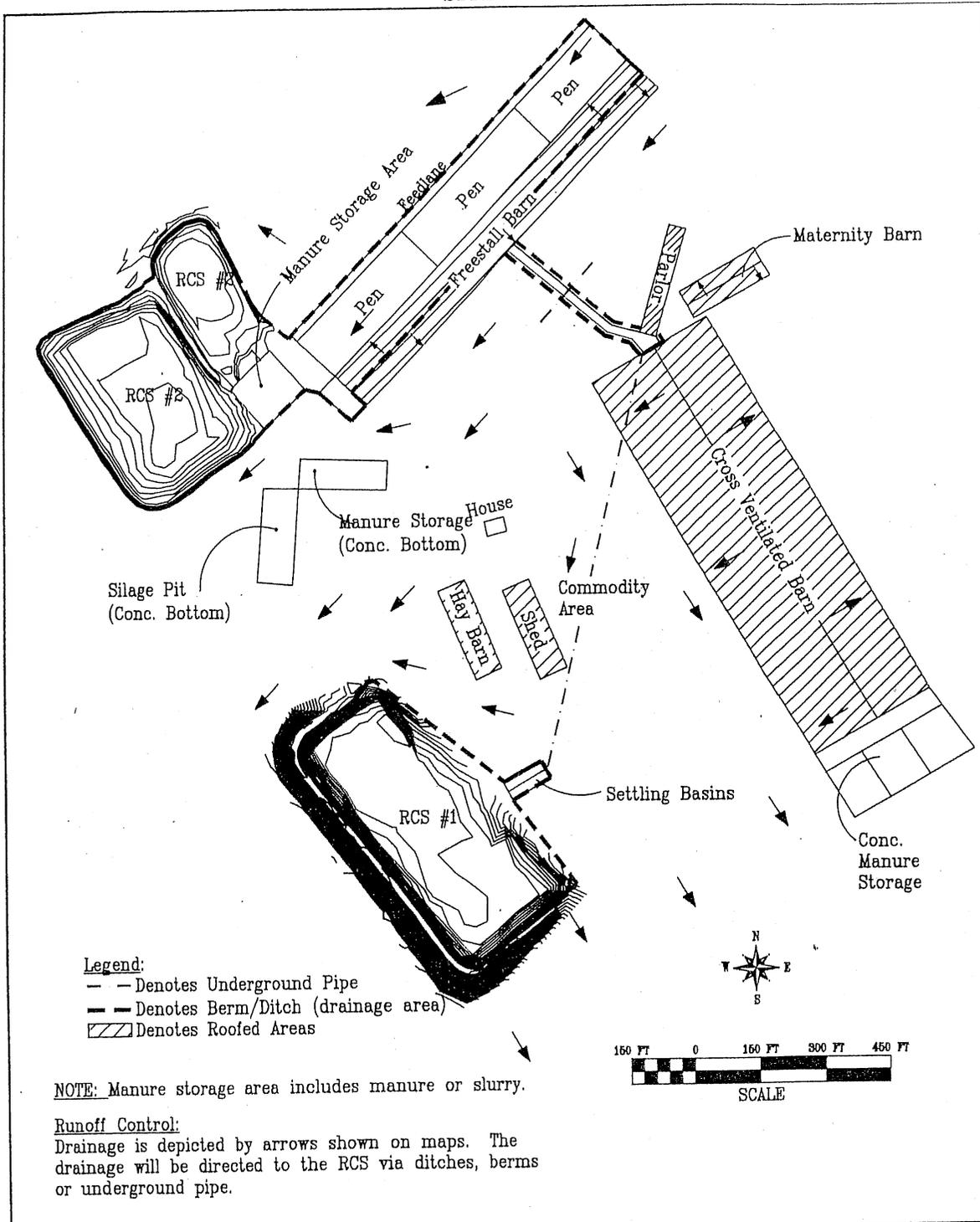
D. The table below describes the buffers that the permittee is required to install and maintain according to the NRCS practice standards in the referenced code. The map in Attachment B specifically describes the location and distance requirements for all buffers.

LMU #	Vegetative Buffer Setback (feet)	Additional Buffer Setback NRCS Code 393 Filter Strip flow length (feet)
1	Not applicable	
2	100	28-40
3	100	28
4	100	33
5	100	33
6	100	36

- E. The sludge volume in each RCS will be measured and recorded in the PPP as necessary, but at least annually beginning in year two (2) of the permit for RCS #2 and at least annually beginning in year three (3) of the permit for RCS #1.
- F. There will be no grazing of livestock on the LMUs for this CAFO unless the NMP reflects grazing and the grazing practices mentioned in the NRCS Conservation Practice Code 393, Filter Strip, are implemented to protect buffers.
- G. Settling basin solids.
1. For the purpose of this permit, settling basin solids shall be defined as manure.
 2. If settling basin solids are land applied, an annual sample must be collected and analyzed in accordance with Section VII.A.9(a), in addition to other manure and wastewater.
- H. All runoff from silage, commodity, manure and hay storage outside the RCS drainage area will be contained. This includes the Manure Storage and Silage Pit located between RCS #1 and #2, and the Manure Storage located southeast of the Cross Ventilated Barn. Appropriate provisions for that containment will be stated in the PPP upon issuance of the permit. This permit does not authorize any discharge from the silage, commodity, manure or hay storage

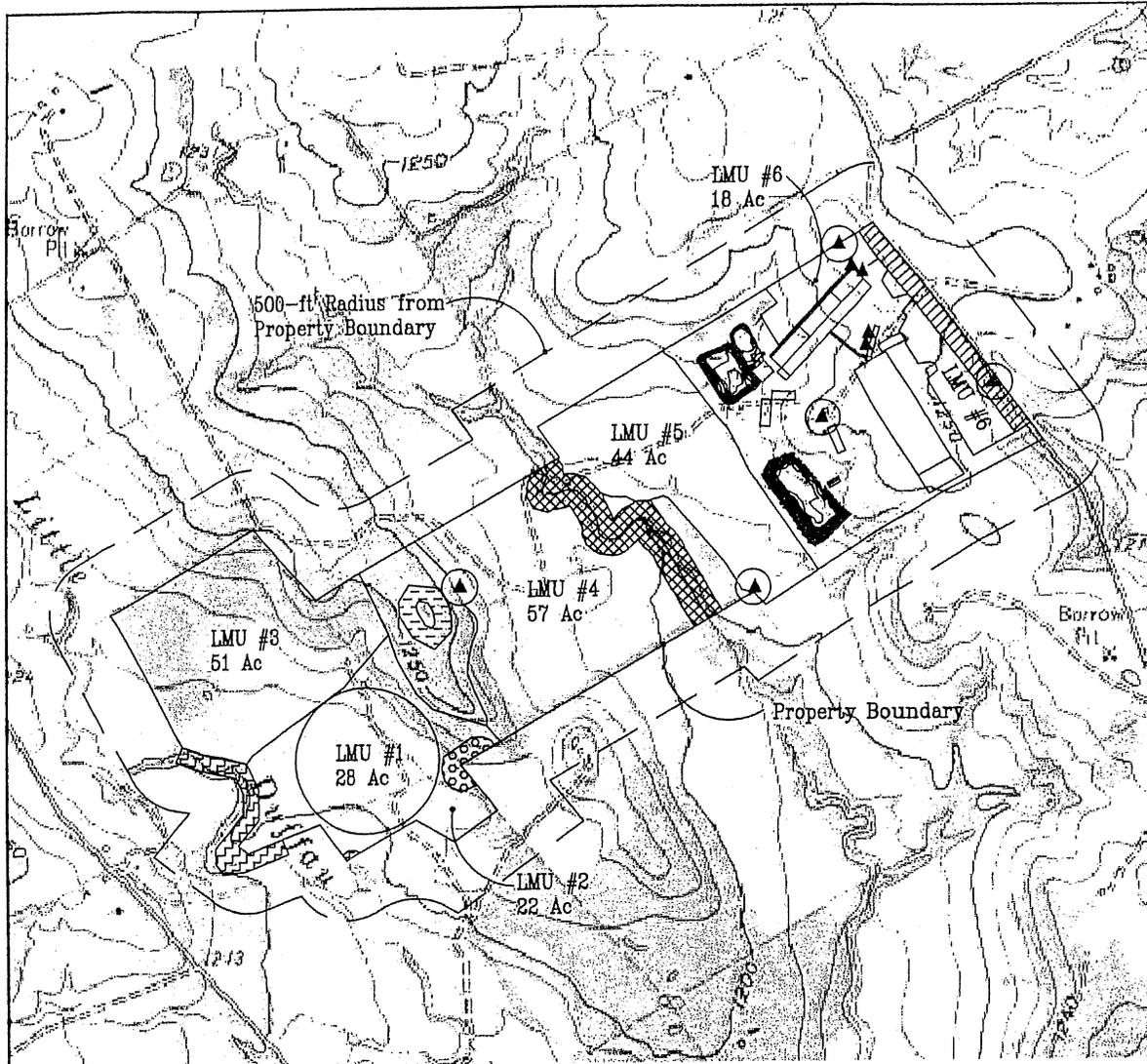
- areas located outside the drainage area of the RCSs.
- I. Slurry from freestall barns.
 - 1. For the purpose of this permit, slurry from freestall or cross ventilated barns shall be defined as manure.
 - 2. If slurry from freestall or cross ventilated barns is land applied, an annual sample must be collected and analyzed in accordance with Section VII.A.9(a), in addition to other manure and wastewater.
 - 3. Slurry removed from freestall or cross ventilated barns must be stored within the manure storage areas identified on Attachment A. The manure storage area within the drainage area of RCS #2 must be large enough to prevent overflow of slurry into the RCS. Any overflow of slurry into the RCS shall be recorded in the PPP and notification shall be provided to the regional office within thirty (30) days. Based on review of the information this permit may be formally amended to require additional controls or other requirements.
 - J. During the annual site inspection, the permittee will inspect the integrity of the concrete slab and well head of well Nos. 1, 2, 3 and 9. Integrity compromises, such as the cement slab cracking, sanitary seal deterioration, cracks in the well casing, or well house deterioration will be repaired. Fertilizers and pesticides will not be stored in any structure that houses the water wellhead.
 - K. Sludge must be analyzed for nutrient content prior to routing offsite for any land application. The analysis for each haul off shall be maintained in the PPP.
 - L. Flushing of the freestall and cross-ventilated barns is prohibited. Manure removal may be accomplished by dry scrape or vacuum only.
 - M. Manure and settled solids accumulations in the settling basin must be removed on a regular and consistent basis so as to assure attainment of the 50% designed removal efficiency.
 - N. There shall be no application of wastewater, manure, sludge, slurry, or solids to LMU #3 until the trees are cleared and the crop prescribed in the NMP is established.
 - O. Future revision to NMP and annual wastewater sampling should be separate for RCS #1 and RCS #2.
 - P. A LMU map showing historical LMUs shall be maintained in the PPP.
 - Q. Within 180 days of issuance of this permit, the permittee shall ensure site-specific documentation is prepared and certified by a licensed Texas professional engineer that shows the concrete basins are free from integrity compromises such as cracking, leaking, or deterioration. This documentation shall be placed in the PPP and made available to the executive director upon request. During the annual site inspection, the permittee shall inspect the integrity of the concrete settling basin. Integrity compromises, such as cracking, leaking, or deterioration shall be repaired within 30 days of the inspection. Inspection and maintenance records for the concrete settling basin shall be maintained in the onsite PPP.

ATTACHMENT A
SITE MAP



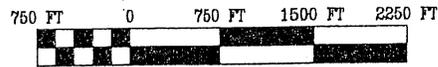
<p>Two Sisters Dairy Hico Erath County, Texas</p>	<p>Proposed Control Facility & Runoff Control Map Figure 1.4 - Page 5</p>	<p>ENVIRO-AG EAE ENGINEERING, INC.</p> <p>Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79116 TEL (806) 353-6123 FAX (806) 353-4132</p>
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ATTACHMENT B
LAND APPLICATION AREAS



Legend:

- ▲ Denotes Water Well
- ⊙ Denotes Well with 150-ft Buffer
- ▨ Denotes 128-ft Buffer
- ▩ Denotes 133-ft Buffer
- ▧ Denotes 136-ft Buffer
- ▦ Denotes 140-ft Buffer
- ▤ Denotes 142-ft Buffer

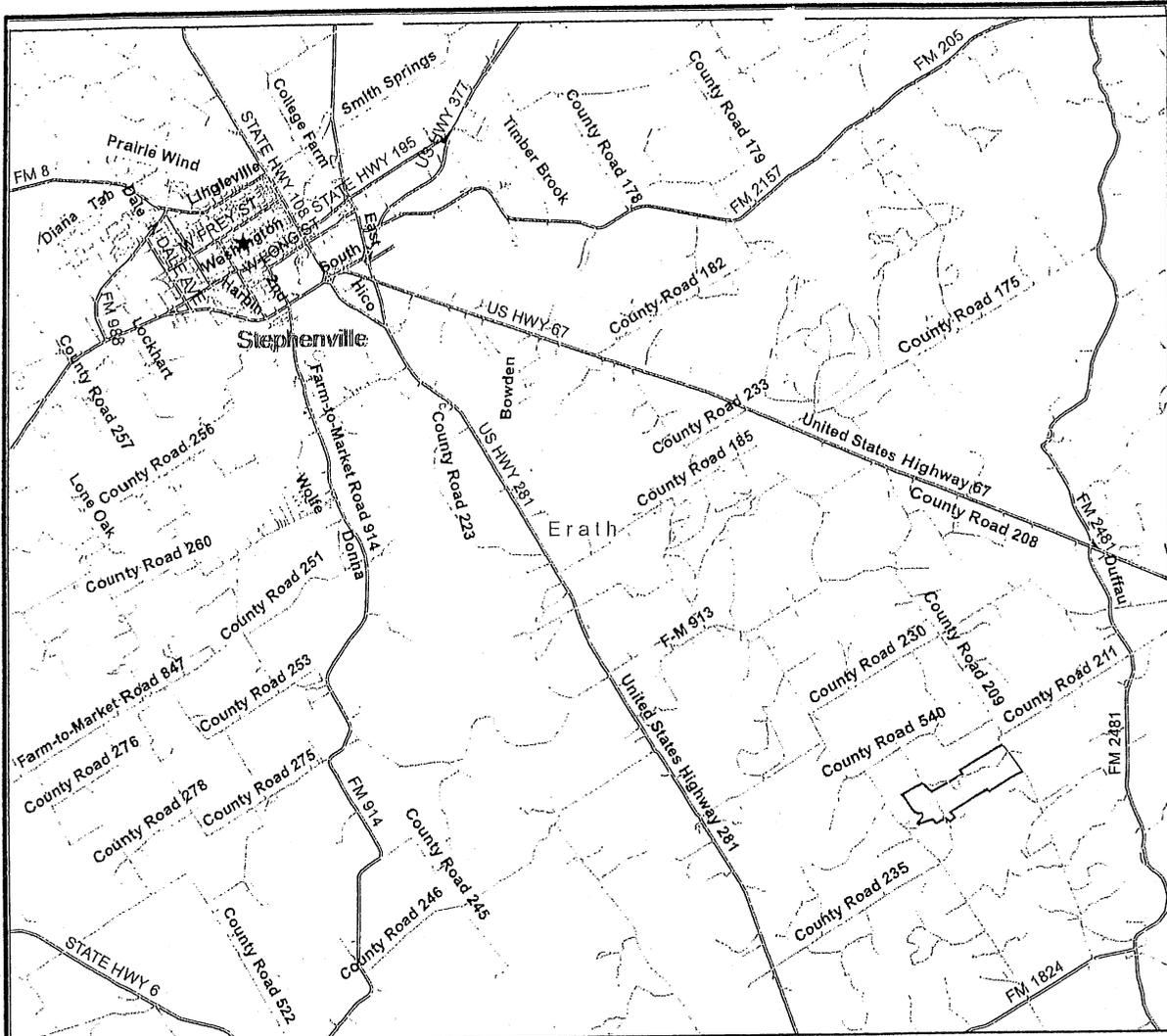


SCALE

Source: TOPOI Software, National Geographic
Seamless Topographic Maps on CD-ROM, 2001.
Clarett, Tex. Quadrangle, 1978.

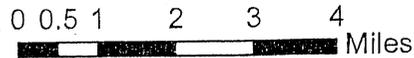
<p>Two Sisters Hico Erath County, Texas</p>	<p>Proposed Site & Land Management Unit Map Figure 1.3 - Page 4</p>	 <p>Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132</p>
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ATTACHMENT C
VICINITY MAP



Legend

- Major Roads
- Erath County Roads
- ▭ Two Sisters Dairy



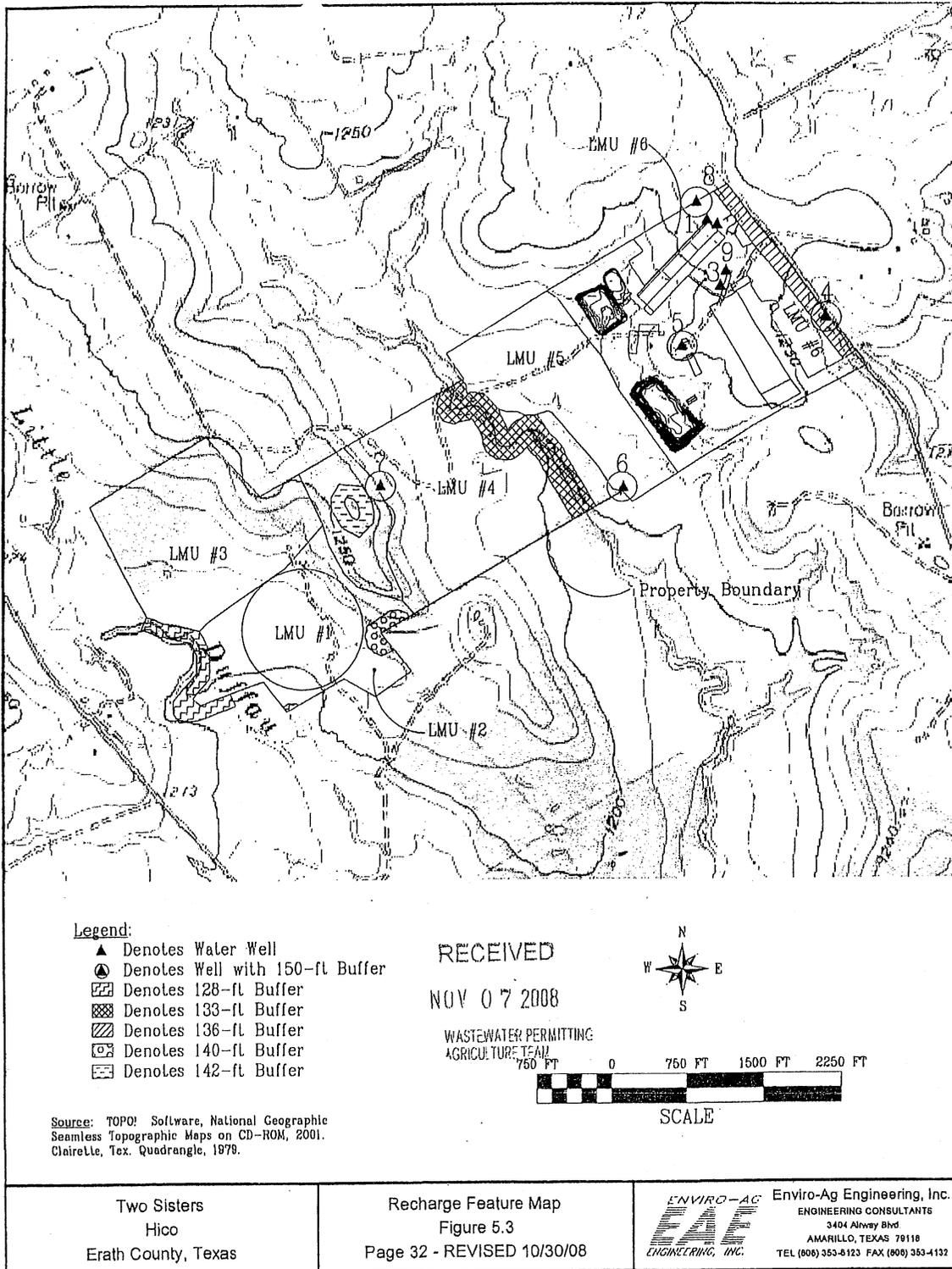
Sundance Dairy
Dublin, Texas
Comanche & Erath Counties

Vicinity Map
Figure 1.1
Page 2



Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
Amarillo, Texas 79118
806-353-6123; FAX 806-353-4132

ATTACHMENT D
WELL LOCATION MAP



FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Permit No.: WQ0004866000

Owner: Two Sisters Dairy, LLC

Regulated Activity: Concentrated Animal Feeding Operation; dairy cattle

Type of Application: New

Request: Air & Water Quality Authorization

Authority: Federal Clean Water Act - Section 402; Texas Water Code §26.027; 30 Texas Administrative Code (TAC) Chapters 39, 305, and 321 Subchapter B; Section 382.051 of the Texas Clean Air Act and Commission Policies and Environmental Protection Agency Guidelines

I. EXECUTIVE DIRECTOR'S RECOMMENDATION

The Executive Director has made a preliminary decision that this proposed permit, if issued, meets all statutory and regulatory requirements. The proposed permit shall be issued for a five year term in accordance with 30 Texas Administrative Code Chapter 305.

II. REASON FOR PROPOSED PROJECT

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a New Texas Pollutant Discharge Elimination System Permit No. WQ0004866000 for a Concentrated Animal Feeding Operation (CAFO) to authorize the permittee to operate a new dairy facility at 5,500 head, of which 4,000 head are milking cows.

III. PROJECT DESCRIPTION AND LOCATION

Maximum Capacity: 5,500 total head, of which 4,000 head are milking
Land Management Units (LMUs) (acres): LMU#1- 28, LMU#2- 22, LMU#3- 51, LMU #4- 57, LMU#5- 44, and LMU#6- 18.

Location: The facility is located on the west side of County Road 209 approximately four miles south of the intersection of County Road 209 and US Highway 67, said intersection is located seven miles east of Stephenville in Erath County, Texas. Latitude: 32° 07' 04"N
Longitude: 98° 03' 03" W.

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 Two Sisters Dairy, LLC, Permit No. WQ0004866000

Drainage Basin: The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin.

The table below indicates the volume allocations for the Retention Control Structure (RCS):

Volume Allocations for RCS(s) (Acre-feet)							
RCS #	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity without Freeboard	Actual Capacity without Freeboard
1	4.59	5.52	15.34	12.73	5.67	43.85	To Be Determined
2	9.71	0	0	0.43	0.93	11.07	To Be Determined

The volume allocations are determined using Natural Resource Conservation Service standards, American Society of Agricultural and Biological Engineers standards, and/or site specific data submitted in the permit application.

The Design Rainfall Event is the volume of runoff from the 25-year, 10-day storm event. The RCS is required to include adequate capacity to contain this amount of runoff as a margin of safety to protect against discharges during rainfall events that may exceed the average monthly values used to design the RCS, but do not constitute chronic or catastrophic rainfall. This volume allocation accommodates runoff from open lot surfaces, all areas between the open lots and the RCS, runoff from roofed areas that contribute to the RCS and direct rainfall on the surface of the RCS. Runoff curve numbers used to calculate the runoff volume from the open lot surfaces are reflective of the characteristics of open lot surfaces and range between 90 and 95. Runoff curve numbers used to compute the runoff from areas between the open lots and the RCS are reflective of the land use and condition of the areas between the open lots and RCS. A curve number of 100 is used for the RCS surface and all roofed areas.

Process Generated Wastewater is the volume of wet manure and wastewater generated by the facility that is flushed or otherwise directed to the RCS. Wastewater includes all water used directly or indirectly by the facility that comes in contact with manure or other waste. The RCS must contain the process generated wastewater from a 21 day period or greater. RCS #1 is designed to contain 30 days of process generated wastewater for this permit.

Treatment volume is required to minimize odors for facilities requesting air authorization under the Air Standard Permit in 30 TAC Section 321.43. Treatment volume is based on the amount of volatile solids produced and the volatile solids loading rate. Volatile solids are solid material in waste that can be decomposed through biological, physical, and chemical activity. The rate of solids decomposition is based on temperature; therefore it varies by geographic location. The volatile solids loading rate for this facility is 5.3 pounds per day of

volatile solids per 1000 ft³ of treatment volume.

Sludge accumulation volumes are required in the RCS that receives runoff from open lots, and flushwater from the milking parlor. The sludge accumulation volume for flushwater entering the RCS is based on a rate of 0.0729 cubic feet of storage capacity per pound of total solids in the wet manure entering the RCS during the design sludge accumulation period, then multiplied by the design sludge accumulation period. The sludge accumulation volume allocated for runoff from open lots is calculated using USDA Agricultural Field Waste Handbook, Kansas, Part 651.1083, which uses the following equation: (%SC) x (MAR) x (DA) x (SP), where %SC = percent solids content of runoff, MAR = mean annual runoff (in inches), DA = contributing drainage area (in acres), and SP = sediment storage period (in years). A minimum of one year of sludge storage is required in the RCS. Design sludge volumes in this permit reflect a five (5) year sludge accumulation period.

The RCS volume designated as Water Balance is the capacity needed in addition to the Process Generated Wastewater volume to provide adequate operating capacity so that the operating volume does not encroach into the design storm volume. The water balance is an analysis of the inflow into the RCS, all outflows from the RCS and the consumptive use requirements of the crops on the land areas being irrigated. The water balance is developed on a monthly basis. It estimates all inflows into the RCS including process generated wastewater and runoff from open lots, areas between open lots and the RCS, roofed areas and direct rainfall onto the RCS surface. Consumptive use potential for the areas to be irrigated is developed based on the potential evapotranspiration of the crops and the effective average monthly rainfall on the area to be irrigated. Runoff curve numbers used for the water balance are adjusted from 1 day to 30 day curve numbers to more accurately reflect monthly values. Evaporation from the RCS surface is computed on a monthly basis. Monthly withdrawals from the RCS are developed based on the total inflow to the RCS minus evaporation from the RCS surface and limited by the monthly crop consumptive use potential.

IV. SUMMARY OF CHANGES FROM EXISTING AUTHORIZATION

The existing facility was not previously required to obtain written authorization because it operated under the head count requiring a permit, but was permitted by rule and required to operate in accordance with the requirements in 30 TAC §321.47 (relating to Requirements for Animal Feeding Operations (AFOs) Not Defined or Designated As Concentrated Animal Feeding Operations (CAFOs)). The applicant is requesting authorization to operate the existing dairy cattle facility at 5,500 head. The applicant proposes to utilize 220 acres for land application. The proposed permit requires a total RCS capacity of 44.92 acre-feet to accommodate the required margin of safety. Furthermore, land application of wastewater, sludge, slurry and manure must be in accordance with a nitrogen and phosphorus based nutrient management plan in accordance with United States Department of Agriculture/Natural Resource Conservation Service (NRCS) Practice Standard Code 590. For additional changes from the existing authorization, see Attachment 1.

V. WATER QUALITY PROTECTION

Although the proposed permit is allowing an increase from 199 head to 5,500 head, this proposed permit includes many requirements not required by the existing authorization. As a result, this proposed permit is more stringent. The new requirements can be categorized based on their intended goal: reduce the potential for discharges, minimize the nutrient loading to land and surface water, and increase the oversight of operational activities by the TCEQ.

The following requirements are designed to reduce the potential for discharges:

1. The design rainfall event, at which time the CAFO is authorized to discharge, has been increased from a 25-year, 24-hour rainfall event (7.3 inches) to a 25-year, 10-day rainfall event (12.1 inches). This is approximately a 60% increase to the design rainfall event which will result in an approximate 60% increase to the required design storm event storage capacity. The additional storage capacity creates a portion of the structure above the maximum operating capacity that will remain dry, except during chronic or catastrophic rainfall events. The increased storage capacity is expected to reduce the potential for discharge from the RCSs.
2. A RCS management plan is required to be implemented. This plan must establish expected end of the month water storage volumes for each RCS. These maximum levels are based on the design assumptions used to determine the required size of the RCS. This plan assures the permittee will maintain wastewater volumes within the designed operating capacity of the structures, except during chronic or catastrophic rainfall events. The permittee must document and provide an explanation for all occasions where the water level exceeds the expected end of the month storage volumes. By maintaining the wastewater level at or below the expected monthly volume, the RCS will be less likely to encroach into the volume reserved for the design rainfall event and/or discharge during smaller rainfall events. This has resulted in an increased operating volume in each RCS. An operating volume of 12.12 acre-feet (process generated wastewater volume plus the water balance volume) exceeds calculations of the maximum 30-day inflow (runoff plus process generated wastewater minus evaporation).
3. The wastewater level in the RCS(s) must be recorded daily. This requirement will assist the permittee in the implementation of the RCS management plan and will provide a visual indication of compliance.
4. The pond marker must have one foot increments. This requirement identifies the level of wastewater storage to assist the permittee in the implementation of the RCS management plan. It also acts as an enforcement tool for TCEQ to determine compliance with the RCS management plan.

5. Proper sludge management will reduce overflows associated with insufficient wastewater storage capacity. This permit requires that sludge accumulations in the RCS(s) be measured at least annually beginning in year three of the permit in RCS #1 and at least annually beginning in year two of the permit in RCS #2. The proposed sludge volume allocation for RCS #1 is 12.73 acre feet and RCS #2 is 0.43 acre feet, which are designed for a five (5) year accumulation.
6. Land application is prohibited between the hours of 12 a.m. and 4 a.m. This provision reduces the potential of irrigation related discharges associated with equipment malfunctions.

The following requirements are designed to help minimize the nutrient loading to land and the potential for nutrient loading to surface water:

1. Although not a new requirement, the land application of commercial fertilizer, wastewater, sludge, slurry and manure must be in accordance with a Nutrient Management Plan (developed by a certified nutrient management specialist, based on United States Department of Agriculture/Natural Resource Conservation Service (NRCS) Practice Standard 590) which provides the permittee the necessary information to properly manage the amount, form, placement and timing for the application of nutrients to the LMUs. The proposed permit requires a nutrient management plan to be implemented upon issuance of this permit. This plan involves a site specific evaluation of the land management unit to include soils, crops, nutrient needs and includes the phosphorus index tool. The phosphorus index is a site specific evaluation of the risk potential for phosphorus movement into watercourses. The risk potential is determined by site characteristics such as soil phosphorus level, proposed phosphorus application rate, application method and timing, proximity of the nearest field edge to a named stream or lake, runoff class, and soil erosion potential. The application rates are adjusted according to the risk potential. The higher the risk potential, the lower the application rate. In determining the application rate, the nutrient management plan also considers the nitrogen and phosphorus inputs from the organic wastes, the soil content of these plant nutrients and the phosphorus loading potential into watercourses for each LMU. Once the nutrients are in balance, there is minimal potential to have excess nutrients available to leave the site and affect water quality. This proposed permit requires all excess manure, sludge and wastewater that cannot be land applied in accordance with the nutrient management plan to be removed (exported) from the facility (see item #3 below for additional discussion on manure and sludge management).

This plan determines the application rate based on nitrogen and phosphorus, whereas the previous land application rates were based on the nitrogen requirement of the crop. Implementation of a NMP will ensure that nitrogen will not be land applied beyond the amount needed to achieve the stated target crop yields and that

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phosphorus loss in surface runoff will be minimized and will not exceed the limits defined by the NRCS Practice Standard 590. Further, implementation of the NMP will define the amount of excess waste to be exported thus lowering the potential for land applied nutrients to enter surface waters. Record keeping and reporting requirements, such as the amount of manure produced, amount of wastewater, sludge, slurry and manure land applied, soil sampling and analyses, and the amount of wastewater, sludge, and/or manure removed from the facility, can be used to verify compliance with the nutrient management plan.

2. In addition to the requirements for implementation of a nutrient management plan, the permittee must develop and implement a Comprehensive Nutrient Management Plan (CNMP) certified by the Texas State Soil and Water Conservation Board. The CNMP must be developed by a qualified individual(s) in accordance with Texas State Soil and Water Conservation Board regulations. The CNMP is a whole farm plan that addresses nutrient management from the origin in the feed rations to final disposition. The CNMP considers all nutrient inputs, onsite use and treatment, outputs, and losses. Inputs include animal feed, purchased animals, and commercial fertilizer. Outputs include animals sold, harvested crops removed from the facility, and manure removed from the facility. Losses include volatilization, stormwater runoff, and leaching.
3. All generated manure, sludge or wastewater in excess of the amount allowed by the nutrient management plan must be delivered to a composting facility authorized by the executive director, delivered to a permitted landfill, beneficially used by land application to land located outside of the major sole source impairment zone, or provided to operators of third-party fields for beneficial use subject to specified land application requirements and testing. By requiring specific outlets for excess manure, sludge and wastewater, the permit limits unregulated use of manure, sludge and wastewater within the watershed. Exported use requires additional record-keeping to document how manure, sludge and wastewater are used and provides a mechanism to track each permittee's contribution toward the 50% voluntary removal goal in the Bosque River Total Maximum Daily Load (TMDL).
4. Additional conservation practices have been imposed on LMUs adjacent to water in the state. These conservation practices include a 100 foot vegetative buffer, filter strips, vegetative barrier, and/or contour buffer strips. Site specific conditions and NRCS practice standards specify which conservation practices, in addition to the required 100 foot vegetative buffer, must be implemented. The conservation practices reduce erosion, suspended solids and nutrients in runoff from LMUs. This will improve the quality of stormwater runoff prior to entering water in the state.

In the table below, the Additional Buffer Setback length was determined by using the NRCS Conservation Practice Code 393, Filter Strip. The practice code uses a

combination of hydrologic soil groups and field slope percentages to calculate an appropriate filter strip length.

LMU #	Vegetative Buffer Setback (feet)	Additional Buffer Setback NRCS Code 393 Filter Strip flow length (feet)
1	Not applicable	
2	100	28-40
3	100	28
4	100	33
5	100	33
6	100	36

- The table below illustrates numbers from the permittee's NMP, dated November 11, 2008, to compare the maximum application rate versus the planned application rate. The plan is based on a goal of maintaining soil test Phosphorus (P) levels below 200 ppm, which results in a planned application amount, for all LMUs collectively, that is less than the maximum allowed under the East Texas Phosphorus Index. NMPs are routinely updated and the values shown below are subject to change.

LMU #	Soil Test P (ppm)	Max Annual P ₂ O ₅ (lbs/ac)	Proposed Annual P ₂ O ₅ (lbs/ac)	% of Max Allowable
1	137	460	55	12
2	56	490	101	22
3	56	202	0	0
4	124	460	55	12
5	129	460	55	12
6	129	350	0	0

The following requirements allow for increased oversight of operational activities by the TCEQ:

- The permittee must provide a report to the TCEQ to substantiate a chronic rainfall discharge. After review of the report, if required by the executive director, the permittee must have an engineering evaluation by a licensed Texas professional engineer developed and submitted to the executive director. The report and engineering evaluation may be used to verify that the facility was maintained and operated according to the permit conditions. Information reviewed may include rainfall records at the CAFO, RCS wastewater levels preceding the discharge, irrigation records, and the current sludge volume. This requirement allows for closer scrutiny by TCEQ for discharges resulting from chronic conditions and provides documentation for enforcement of unauthorized discharges. The current authorization does not require chronic discharge documentation or an engineering evaluation.

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2. The TCEQ regional office must be notified ten (10) days prior to annual soil sample collection activities. This allows the TCEQ to observe sample collection and/or obtain split samples for duplicate analysis to help assure that data collected are credible to support application rates in the nutrient management plan. The current authorization does not require notification of soil sample collection activities.
3. Annual soil samples must be collected by one of the following persons: the NRCS; a certified nutrient management specialist; the Texas State Soil and Water Conservation Board; the Texas AgriLife Extension; or an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas. This ensures that samples are collected by individuals who are knowledgeable about soil sampling techniques and sample preservation. The current authorization does not specify who must collect the annual soil samples.
4. Some of the land application records maintained by the permittee must be submitted to the TCEQ annually. These records include: date of wastewater, sludge, slurry and manure application to each LMU; location of the specific LMU and the volume applied during each application event; acreage of each individual crop on which wastewater, sludge, slurry and manure is applied; basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU, including sources of nutrients and amount of nutrients on a dry weight basis other than wastewater, sludge, slurry and manure; weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty-four (24) hours before and after the land application; and annual nutrient analysis for at least one (1) representative sample of each type of waste to be applied (wastewater, sludge (if applicable), or manure) for total nitrogen, total phosphorus, and total potassium. This will assist the TCEQ in monitoring compliance with land application requirements of the permit.

Although the proposed permit authorizes an expansion from 199 head to 5,500 head, the conditions being proposed in this permit are anticipated to significantly reduce pollutants entering receiving waters. These reductions are from limiting the potential for RCS overflows and better managing land application of nutrients to LMUs. Regardless of the number of head, this permit requires all exported manure, sludge and wastewater that cannot be land applied in accordance with the nutrient management plan to be exported from the facility (i.e. composting, landfill, outside of the watershed, or third-party fields). The wastewater generated by the facility is retained and managed in a RCS that must be designed to exceed the federal sizing requirement. The RCS is required to be designed with a margin of safety, which requires a larger portion of the RCS to remain dry (i.e. the distance between the normal wastewater operating level and the spillway). This permit requires each RCS to accommodate rainfall and runoff from a 25-year, 10-day rainfall event rather than the 25-year, 24-hour rainfall event specified in Federal regulations. This results in approximately a

60% increase in the required storage capacity and is intended to reduce the potential for discharges from the RCS. The normal wastewater operating level is required to be closely monitored and maintained by implementation of the RCS management plan and increased recordkeeping by the permittee. The dry storage area is available to capture rainfall from extended periods of wet weather without overflow. In the unlikely event of an overflow, the permittee must provide records to the TCEQ to prove that the overflow was unavoidable. If the overflow is determined to be unauthorized, this documentation provides TCEQ additional tools to initiate enforcement proceedings. These permit requirements, best management practices, and increased management and TCEQ oversight will protect water quality, when properly implemented.

VI. 303(d) LISTING and TOTAL MAXIMUM DAILY LOAD (TMDL)

The facility for this permit action is located within the watershed of the North Bosque River in Segment No. 1226 of the Brazos River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 Texas Administrative Code §307.10) for Segment No. 1226 are contact recreation, public water supply, high aquatic life use, and 5.0 mg/L dissolved oxygen.

Segment No. 1226 is currently listed on the State's inventory of impaired and threatened waters (the 2008 Clean Water Act Section 303(d) list) for bacteria. The North Bosque River (Segments 1226 and 1255) was included in the 1998 Texas Clean Water Act 303(d) List and deemed impaired under narrative water quality standards related to nutrients and aquatic plant growth.

Segment No. 1226 is included in the agency's document *Two Total Maximum Daily Loads for Phosphorus in the North Bosque River*, adopted by the Commission on February 9, 2001 and approved by EPA on December 13, 2001. *An Implementation Plan for Soluble Reactive Phosphorus in the North Bosque River Watershed* (TMDL Implementation Plan) was approved by the Commission on December 13, 2002 and approved by the Texas State Soil and Water Conservation Board on January 16, 2003.

The TMDL for the North Bosque River, Segments 1226 and 1255, identified the amount of phosphorus introduced into these segments, i.e. the load. Phosphorus load from two categories of sources was modeled to calculate the expected reductions in phosphorus load to meet instream water quality standards. Point sources included wastewater treatment plants; non-point sources included all other sources, such as CAFOs. The TMDL called for an average 50% reduction in the average concentration of soluble reactive phosphorus across river index stations and was to be achieved by a 50% reduction in soluble reactive phosphorus loadings from both point sources and non-point sources. The TMDL was developed assuming implementation of specific best management practices. This set of best management practices represents one way to achieve the water quality targets in stream and the overall reduction goal of the TMDL.

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The TMDL was approved with the understanding that an adaptive management approach was an appropriate means to manage phosphorus load to the stream. The TMDL Implementation Plan emphasized this approach to achieve the phosphorus reductions targeted in the TMDL. Adaptive management envisions adjustment of management practices over time as necessary to reach this target. The TMDL anticipated that, to control loading to the stream, dairy CAFO permittees would implement those best management practices which best addressed site-specific conditions. Accordingly, the TMDL is not directly tied to the number of animal units permitted in the watershed; it is instead tied to the amount of nutrients that may be land applied consistent with management practices that ensure appropriate agricultural utilization of nutrients.

The provisions of this permit seek to reduce the amount of phosphorus (and other pollutants) discharged to water in the state from the CAFO. Primary management strategies for dairies, both voluntary and regulatory, were identified in the TMDL Implementation Plan which included: requiring phosphorus-based application rates when applying manure, wastewater, or sludge to LMUs; voluntarily implementing efforts to reduce the amount of phosphorus in dairy cow diets; and removing significant quantities of dairy-generated manure from the watershed for the production of compost, beneficial use on crops, or disposal. The permit application includes a nutrient management plan, which allocates the amount of nutrients to each LMU based on target agronomic crop yields. The proposed permit requires a nutrient management plan to be implemented upon issuance of the permit and also specifies how the excess manure will be managed. The voluntary phosphorus diet reductions may be implemented through consultations between a nutritionist and the permittee. Any such dietary phosphorus reductions will result in reduced phosphorus concentrations in manure. These strategies are facets of CNMPs; CNMPs are required for all dairy CAFOs in the major sole-source impairment zone.

The CNMP must consider manure phosphorus content, the LMU area available for land application based on phosphorus-rate application, and the amount of exported manure that would remain. It must also account for all pathways of manure use or disposal, which would include removal to compost facilities, transport to another watershed for land application, or land application at onsite LMUs. The proposed permit requires the permittee to continue implementation of a CNMP.

These nutrient management plans determine the nutrient application rate based on nitrogen and phosphorus, whereas the current authorization allows land application rates based on the nitrogen requirement of the crop. The implementation of these enhanced nutrient management plans and best management practices for phosphorus reduction within the watershed is expected to result in phosphorus load reduction consistent with the TMDL Implementation Plan.

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Continuing education requirements in the proposed permit mandate that the operator be trained on management practices that are also consistent with the TMDL Implementation Plan regarding feed management and waste management practices.

The TMDL Implementation Plan also includes a recommendation that the CAFO rule making consider more stringent requirements for RCSs, in order to reduce the potential for overflows from RCSs. In response, several permit provisions have been proposed that are consistent with the TMDL Implementation Plan, which include:

1. RCSs must be designed to contain the volume associated with a 25 year/10 day rainfall event,
2. installation of a permanent marker, graduated in one foot increments from the minimum treatment volume to the top of the spillway or graduated in one-foot increments beginning from the bottom of the RCS to the top of the embankment or spillway for RCSs without treatment volume,
3. a RCS management plan detailing procedures for proper operation and management of wastewater levels based on design and assumptions of monthly expected operating levels,
4. daily monitoring records of wastewater levels,
5. notification of discharges within one hour,
6. discharge sample analyses to be submitted to the TCEQ, and
7. a report of discharges to be submitted to the TCEQ regional office, documenting that overflows from cumulative rainfall events were beyond the permittee's control.

In addition, the September 15, 2003 White Paper, *Standards for Waste Retention Facilities in the North Bosque River Watershed*, contains a statement indicating that "...some of the technical professionals working on this committee are convinced that a significant part of the dairy source loading as being from retention facilities." Although not directly quantifiable, it is expected that a significant phosphorus load reduction will occur as a result of these enhanced design standards. Not only will the increased capacity requirements result in load reductions, but the additional operation, maintenance, recordkeeping and reporting requirements will aid in achieving the water quality target for the North Bosque River.

The TMDL Implementation Plan includes a recommendation that the CAFO rule making consider whether additional limitations or requirements are needed for runoff control and whether additional irrigation management is needed to prevent excessive runoff. In response, the proposed permit includes the requirement for a CNMP (mentioned above), and a 100-foot wide vegetative buffer plus an additional site specific filter strip width between every application area and a water in the state. The proposed permit also specifies that automatic irrigation shutdown requirements may be imposed and prohibits nighttime land application from midnight to 4:00 a.m.

The RCS storage capacity requirements, nutrient management practices, increased TCEQ oversight of operational activities, and requirements of the TMDL Implementation Plan,

which are incorporated into the draft permit, are designed to reduce the potential for this CAFO to contribute to further impairment from bacteria and nutrients such as total phosphorus. Furthermore, it is anticipated the implementation of the primary management strategies and permit provisions identified above will result in phosphorus load reduction in the watershed and achieve the reductions targeted in the TMDL. Attachment 2 outlines the proposed permit provisions discussed above and provides the purpose of each provision. The permit provisions are consistent with the approved TMDL that establishes measures for reductions in loadings of phosphorus (and consequently other potential pollutants) to the North Bosque River Watershed. Therefore, this permit is consistent with the requirements of the antidegradation implementation procedures in 30 Texas Administrative Code Section 307.5 (c)(2)(G) of the Texas Surface Water Quality Standards.

VII. DRAFT PERMIT RATIONALE

A. PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

The following items were considered in developing the proposed draft permit:

1. The application received on August 18, 2008 and subsequent revisions,
2. 30 TAC §321.47 (Requirements for Animal Feeding Operations (AFOs) Not Defined or Designated As Concentrated Animal Feeding Operations (CAFOs)),
3. Interoffice Memorandum from the Water Quality Assessment Team, Water Quality Assessment Section, Water Quality Division, dated November 14, 2008,
4. Interoffice Memorandum from the Water Quality Standards Team, Water Quality Assessment Section, Water Quality Division, dated November 14, 2008,
5. TCEQ rules,
6. Bosque River TMDL Implementation Plan,
7. NRCS Animal Waste Management Field Handbook, Nutrient Management Practice Standard Code 590, the Field Office Technical Guidance for Texas, and ASABE Standards, and
8. Environmental Protection Agency rules

Wasterwater, sludge, slurry and manure may only be discharged from a LMU or a properly designed, constructed, operated and maintained RCS into water in the state from this CAFO if any of the following conditions are met:

1. discharge resulting from a catastrophic condition other than a rainfall event that the permittee cannot reasonably prevent or control;
2. a discharge resulting from a catastrophic rainfall event from a RCS;
3. a discharge resulting from a chronic rainfall event from a RCS; or

4. a discharge resulting from a chronic rainfall event from a LMU that occurs because the permittee takes measures to de-water the RCS in accordance with the individual permit, relating to imminent overflow.

For a discharge resulting from a chronic rainfall event, the permittee shall submit a report to the appropriate TCEQ regional office that includes the CAFO records that substantiates that the overflow was a result of cumulative rainfall that exceeded the design rainfall event, without the opportunity for dewatering, and was beyond the control of the permittee. After review of the report, if required by the executive director, the permittee shall have an engineering evaluation by a licensed Texas professional engineer developed and submitted to the executive director.

All waste including any manure, bedding or feed waste from the CAFO and any water contaminated by waste contact must be stored or utilized to comply with the permit and TCEQ Rules. The proposed permit satisfies the Environmental Protection Agency effluent limitation guidelines in 40 Code of Federal Regulations, Parts 412 and 122.

40 Code of Federal Regulations § 122.44 specifies that any requirements, in addition to or more stringent than promulgated effluent limitation guidelines, must be applied when they are necessary to achieve state water quality standards. Water quality based effluent limitations must be established when TCEQ determines there is a reasonable potential to cause or to contribute to an in-stream excursion above the allowable ambient concentration of a state numeric criterion. For CAFO discharges the TCEQ must consider:

1. existing controls on point and non-point sources of pollution;
2. variability of the pollutant in the effluent; and
3. dilution of the effluent in the receiving water.

In proposing this permit, the TCEQ addresses considerations 2. and 3. since continuous discharges are prohibited and effluent discharges are authorized only during catastrophic conditions or a chronic or catastrophic rainfall event from a RCS properly designed, constructed, operated and maintained. The effluent pollutant levels are variable and effluent is usually not discharged. Additionally, during these climatic events, water bodies receiving a contribution of CAFO wastewater should be significantly diluted by other rainfall runoff.

Consideration 1. requires permit controls on CAFO discharges which will result in the numeric criteria of the water quality standards being met, thus ensuring that applicable uses of water in the state are attained. The principal pollutants of concern include organic matter causing biochemical oxygen demand, the discharge of

ammonia-nitrogen, phosphorus and fecal coliform bacteria. This permit requires discharges to be monitored for the pollutants of concern. Existing technology does not allow for practicable or economically achievable numeric effluent limitations at this time. The Environmental Protection Agency has not promulgated effluent guidelines or numeric effluent limitations that would allow regular discharges of CAFO process wastewater or process-generated wastewater. The proposed permit addresses potential pollutant impacts through requirements including numerous narrative (non-numeric) controls on CAFO process wastewater and non-point sources of pollutant discharges associated with CAFOs. Setting specific water quality-based effluent limitations in this permit is not feasible (see 40 Code of Federal Regulations §122.44 (k)(3)). Instead, the proposed permit provides general and site specific provisions which are expected to result in compliance with water quality criteria and protection of attainable water quality as follows:

1. The approved recharge feature certification submitted in the permit application must be updated and maintained in the onsite pollution prevention plan. The recharge feature certification describes the location of the CAFO relative to certain natural and artificial features that could result in adverse ground water impacts. Groundwater has the potential to resurface as surface water. Therefore, preventing impacts to groundwater also provides protection to surface water.

The table below shows potential soil limitations identified in the recharge feature evaluation and the proposed management practices to address those limitations.

Soil Series and Map ID	Potential Limitations	Best Management Practices
Fr, WaB, WkA	Percolates slowly, Slow water movement, Depth to saturated zone.	Land application not to exceed agronomic rates and soil infiltration rates, and no land application to inundated soils.
Ma, Pd	Depth to bedrock, Droughty.	Land application not to exceed agronomic rates and soil infiltration rates, maintain soil moisture to promote crop growth, and maintain cover crop in LMUs.
WsD3	Percolates slowly.	Maintain all RCSs as meeting TCEQ liner requirements.

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Soil Series and Map ID	Potential Limitations	Best Management Practices
Pd	Low adsorption.	Land application not to exceed agronomic rates and soil infiltration rates, maintain soil moisture to promote crop growth, and maintain cover crop in LMUs.
Fr	Flooding.	No land application to inundated soils.
WkA, WaB	Runoff.	Will not apply when ponded or within 24 hours of a 0.5 inch or more rainfall event.

Seldon fine sand, 1 to 5 percent slopes, have been identified by the NRCS as highly erodible land (HEL). If erosion is detected, the LMUs will be protected with conservation farming practices within the standards of NRCS.

The table below lists all wells on the facility, their status, and what measure will be taken to protect groundwater. A Well Buffer Exception request for Well Nos. 1, 2, 3, and 9 was submitted to and approved by the TCEQ Water Quality Assessment Team.

Well Number*	Status	BMPs
1	Producing	Concrete surface slab around the wellhead and located up-gradient from the pollution source.
2	Producing	Concrete slab around the wellhead and located up-gradient from the pollution source.
3	Producing	Concrete surface slab around the wellhead and well is isolated from runoff by concrete retaining wall.
4	Producing	Maintain 150 ft buffer
5	Producing	Maintain 150 ft buffer
6	Producing	Maintain 150 ft buffer
7	Producing	Maintain 150 ft buffer
8	Producing	Maintain 150 ft buffer
9	Producing	Concrete surface slab around the wellhead and well is isolated from runoff by concrete retaining wall.

- Each RCS at the CAFO must be adequately lined and certified by a professional engineer. Groundwater has the potential to resurface as surface

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water. Therefore, preventing impacts to groundwater also provides protection to surface water.

3. RCS design criteria must include volumes for the design rainfall event, sludge, process generated wastewater, and treatment volume for the air standard permit to meet "best available technology economically achievable" and "best practicable control technology". These design criteria must be supplemented with a water balance analysis that demonstrates that wastewater can be sufficiently stored and irrigated and that consumption of the wastewater will not induce runoff or create tailwater. The application includes design calculations, certified by a professional engineer, which determine the design criteria for each RCS.
4. The modified RCSs must maintain two vertical feet of material equivalent to construction materials between the top of the embankment and the structure's spillway to protect from overtopping the structure. RCSs without spillways must have a minimum of two vertical feet between the top of the embankment and the required storage capacity.
5. Recordkeeping and reporting requirements are designed to help ensure that the permittee complies with the permit provisions. Some of these requirements include daily records of RCS wastewater levels and measurable rainfall; weekly records of manure, wastewater, and sludge removed from the facility, inspections of control facilities and land application equipment; and monthly records of wastewater, sludge, slurry and manure land applied. The permittee is required to submit an annual report to the TCEQ which includes a subset of the permit recordkeeping requirements.
6. Discharge of wastewater from irrigation is prohibited, except a discharge resulting from irrigation events associated with imminent overflow conditions. Precipitation-related runoff from LMUs is allowed by the permit, when land application practices are consistent with a nutrient management plan or nutrient utilization plan.
7. Solid waste management provisions specify requirements which minimize adverse water quality impacts.
8. The entry of uncontaminated stormwater runoff into RCSs must be minimized. The site includes berms to direct contaminated runoff into the RCSs as well as prevent uncontaminated stormwater runoff from entering the RCSs.
9. The permittee shall take all steps necessary to prevent any adverse effect to

human health or safety, or the environment.

10. The permittee shall provide the following notifications:

- (a) Any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ, orally or by facsimile transmission within twenty-four (24) hours and in writing within five (5) days of becoming aware of the noncompliance.
- (b) Discharges resulting from a chronic or catastrophic rainfall event or catastrophic conditions must be reported orally within one hour of the discovery of the discharge and in writing within fourteen (14) working days.

Where a specific chemical pollutant does not have a water quality criterion and that pollutant is present in CAFO effluent at a concentration that has the reasonable potential to cause, or contribute to, an excursion above a narrative criterion in the state water quality standards, TCEQ must establish effluent limits, except as provided by 40 Code of Federal Regulations Section 122.44(k).

Nutrient pollutants of concern have narrative criteria and are discharged in CAFO wastewater. As described above, effluent limitations are not feasible at this time. Nutrient management has been addressed through the imposition of a three tiered approach, based on the soil phosphorus concentration.

For LMUs with a soil phosphorus concentration of less than 200 ppm in Zone 1 (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated) depth, a certified nutrient management plan is required. This plan is based on the NRCS Practice Standard Code 590. It uses site specific criteria to determine the phosphorus application rate based on the crop requirement. It addresses the amount, source, placement, form, and timing of the application of all nutrients and soil amendments to meet crop needs. As previously discussed in Section V of this Fact Sheet, the nutrient application rate is based on the most limiting nutrient with phosphorus inputs not to exceed ceiling levels as described in the nutrient management plan, thus there is minimal potential to have excess nutrients available to leave the site and affect water quality.

As required by Texas Water Code §26.504, for LMUs with a soil phosphorus concentration of 200 - 500 ppm in Zone 1 (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated) depth, the permittee must submit a nutrient utilization plan based on crop removal. At the discretion of the certified nutrient management specialist, the nutrient utilization plan may also include a phosphorus reduction component. This nutrient utilization plan must be submitted to the TCEQ for review and

approval. The nutrient utilization plan is a revised nutrient management plan developed utilizing the same NRCS 590 Practice Standard tool to evaluate the site specific elements in the LMU such as slope and distance to water courses, the rates, methods, schedules of wastewater, sludge, slurry and manure application, and best management practices including physical structures and conservation practices utilized by the CAFO to assure the beneficial use of wastewater, sludge, slurry and manure is conducted in a manner that prevents phosphorus impacts to water quality. A crop removal application rate is the amount of nutrients contained in and removed by the proposed crop.

As required by Texas Water Code §26.504, for LMUs with a soil phosphorus concentration of greater than 500 ppm in Zone 1 (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated) depth, the nutrient utilization plan must be based on crop removal and include a phosphorus reduction component. A phosphorus reduction component is a management practice, incorporated into the nutrient utilization plan, which is designed to further reduce the soil phosphorus concentration by means such as phosphorus mining, moldboard plowing, or other practices utilized by the permittee. This revised nutrient utilization plan must also be submitted to the TCEQ for review and approval. Permittees required to operate under a nutrient utilization plan with a phosphorus reduction component must show a reduction in the soil phosphorus concentration within twelve (12) months or may be subject to enforcement actions.

After a nutrient utilization plan is implemented, the permittee shall land apply in accordance with the nutrient utilization plan until the soil phosphorus is reduced below 200 ppm. Each of these plans must be developed and certified by a nutrient management specialist. This three tiered approach, when implemented, should minimize the potential for nutrients to accumulate in the soil and reduce nutrient concentrations in LMUs. Failure to operate in accordance with a nutrient management plan or nutrient utilization plan may constitute a violation of state law and this permit and may subject the permittee to enforcement action.

B. TECHNOLOGY-BASED REQUIREMENTS

Technology-based effluent limitations are considered in the proposed individual permit. Effluent limitations are based on "best conventional pollutant control technology", and "best available technology economically achievable", a standard which individually represents the best performing existing technology in an industrial category or subcategory. "Best available technology economically achievable" and "best conventional pollutant control technology" effluent limitations may never be less stringent than corresponding effluent limitations based on "best practicable control technology", a standard applicable to similar discharges before March 31, 1989 under Clean Water Act §301(b)(1)(A).

Frequently, the Environmental Protection Agency adopts nationally applicable guidelines identifying the "best practicable control technology", "best conventional pollutant control technology", and "best available technology economically achievable" standards to which specific industrial categories and subcategories are subject. When such guidelines are published, the Clean Water Act, §402(a)(1) requires that appropriate "best conventional pollutant control technology" and "best available technology economically achievable" effluent limitations be included in permitting actions on the basis of the permitting authority's best professional judgment.

The Environmental Protection Agency standard for CAFOs, as contained in 40 Code of Federal Regulations Parts 122 and 412, is no discharge of waste or wastewater from animal feeding operations into water of the United States, except when chronic or catastrophic rainfall or catastrophic conditions cause an overflow. All waste including any manure, litter, bedding or feed waste from animal feeding operations and any water contaminated by waste contact must be stored or utilized to comply with this individual permit, which requires applicable technology control.

The conditions of the proposed permit have been developed to comply with the technology-based standards of 40 Code of Federal Regulations Part 412. The proposed permit includes provisions and performance standards based on NRCS technical standards rather than numeric limitations, to address the collection, storage, treatment and land application of manure, sludge, or wastewater and to limit pollutants in discharges. This permit exceeds these standards by requiring the 25-year/10-day design storm event storage volume.

C. WATER QUALITY-BASED REQUIREMENTS

The proposed permit would authorize the land application of wastewater, sludge, slurry and manure, and would only allow a discharge to surface water when chronic or catastrophic rainfall or catastrophic conditions result in an overflow of a properly designed, operated and maintained RCS. No water quality impacts are expected to occur from land application based upon properly prepared and implemented nutrient management practices.

Instead of numeric water quality based effluent limitations, this permit establishes management practices to restrict discharges to occur only during defined chronic or catastrophic rainfall events or catastrophic conditions. Discharges occurring during these conditions would be highly intermittent in nature and should be significantly diluted by rainfall runoff.

D. MONITORING REQUIREMENTS

Monitoring requirements were established based on TCEQ rules, and 40 Code of Federal Regulations Part 412. For any discharges, grab samples must be collected and analyzed for Biochemical Oxygen Demand, Total and Fecal Coliform, Total Dissolved Solids, Total Suspended Solids, Nitrate, Total Phosphorus, Ammonia Nitrogen and pesticides (if suspected). Soil samples must be taken annually from LMUs and analyzed for Nitrate, Phosphorus, Potassium, Sodium, Magnesium, Calcium, Soluble salts/electrical conductivity, and pH. Discharges and soil analyses are reported to TCEQ.

E. REQUIREMENTS FOR BENEFICIAL USE OF MANURE, SLUDGE, AND WASTEWATER

The proposed permit contains requirements related to the collection, handling, storage and beneficial use of manure, wastewater, and sludge. These requirements were established based on TCEQ rules, Environmental Protection Agency guidance, NRCS Field Operations Technical Guidance and the Animal Waste Management Field Handbook, recommendations from the TCEQ's Water Quality Assessment Team, and best professional judgment.

40 Code of Federal Regulations §122.42(e)(1) specifies that a nutrient management plan must be developed and implemented by February 27, 2009. The elements of a nutrient management plan as listed in 40 Code of Federal Regulations §122.42(e)(1) have been incorporated into this permit. This permit requires a nutrient management plan and each of the required elements to be implemented upon issuance of this permit. In relation to these items, the proposed permit is more stringent than federal requirements.

This permit also requires the implementation of a CNMP. The CNMP must consider manure, wastewater, and sludge handling and storage, land treatment practices, nutrient management, documentation of implementation and management activities associated with the CNMP, feed management (voluntary), and alternative uses for manure. This requirement is not required by federal rule and is, consequently, more stringent than federal requirements.

The proposed permit authorizes the use of third-party fields, i.e. land not owned, operated, controlled, rented, or leased by the CAFO owner or operator that have been identified in the PPP. The permittee must have a contract with the operator of the third-party fields. The written contract must require all transferred manure, wastewater, and sludge to be beneficially applied to third-party fields in accordance with the applicable requirements in 30 Texas Administrative Code §321.36 and §321.40 at an agronomic rate based on soil test phosphorus in Zone 1 (0-6 inches if

incorporated, 0-2 or 2-6 inch if not incorporated) depth. A certified nutrient management specialist must annually collect soil samples from each third-party field used and have the samples analyzed in accordance with the requirements for permitted LMUs. The permittee is prohibited from delivering manure, wastewater, and sludge to an operator of a third-party field once the soil test phosphorus analysis shows a level equal to or greater than 200 ppm in Zone 1 (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated) depth or after becoming aware that the third-party operator is not following the specified requirements and the contract. The permittee will be subject to enforcement action for violations of the land application requirements on any third-party field. The third-party fields must be identified in the pollution prevention plan. The permittee must submit a quarterly report with the name, locations, and amounts of manure, wastewater, and sludge transferred to operators of third-party fields.

VIII. THREATENED OR ENDANGERED SPECIES

The discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) Biological Opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES) dated September 14, 1998 and the October 21, 1998 update. To make this determination for TPDES permits, TCEQ and Environmental Protection Agency only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS Biological Opinion. This determination is subject to reevaluation due to subsequent updates or amendments to the Biological Opinion. The permit does not require Environmental Protection Agency review with respect to the presence of endangered or threatened species.

IX. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant instructing the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the people identified on the Office of

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the Chief Clerk mailing list and published in the newspaper. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application.

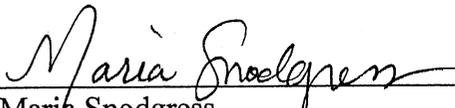
Any interested person may request a public meeting on the application. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that a person may request a contested case hearing or file a request for reconsideration of the Executive Director's decision within thirty (30) days after the notice is mailed.

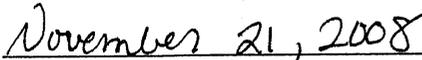
The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within thirty (30) days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application, contact Maria Snodgrass at (512)239-1298.



Maria Snodgrass
CAFO Permits Team
Water Quality Assessment Section
Water Quality Division



Date

Attachment 1

	Existing Authorization: Permit by Rule under 30 TAC §321.47	Proposed permit
Head Count	199	5,500
RCS Required Capacity (acre-feet)	25 year, 24 hour runoff	44.92
RCS Actual Capacity (acre-feet)	73.27	To be determined
design rainfall criteria	25 year/24 hour rainfall event	25 year/10 day rainfall event
RCS management plan	not required	required
RCS depth marker	25 year/24 hour designation	25 year/10 day designation; and 1 foot graduations to bottom of pond
management of sludge volume in RCSs	No monitoring frequency required	Sludge volume accumulations measured as needed first two years, then annually beginning in year 2 for RCS #2 and year 3 for RCS #1 of the permit.

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RCS discharge monitoring	not required	monitored for fecal coliform, total coliform, total dissolved solids, nitrate, total, phosphorus, 5-day biochemical oxygen demand, total suspended solids, ammonia nitrogen, and any pesticide which the operator has reason to believe could be in the discharge
Chronic discharge determination	not required	required
Monitoring wastewater volume in RCS	weekly	daily
CNMP	not required	required
additional manure removed from the facility	compost facility, land fill, or beneficially applied outside the watershed	compost facility, landfill or beneficially land applied outside the watershed, or beneficially land applied to third-party fields
Buffer distances between land application and surface water	100 ft	100 ft plus additional NRCS conservation practices
nighttime land application	allowed	prohibited between 12 am and 4 am
soil sampling notification	no notice required	regional office notification prior to sampling
soil sampling	permittee collects annually	CNMS collects annually

Attachment 2

Permit Provision	Purpose
25 year/24 hour rainfall event to 25 year/10 day rainfall event	<ul style="list-style-type: none"> • 60% increase to the storage capacity reserved for chronic rainfall • an additional portion of the structure will remain dry, except during chronic or catastrophic rainfall events • will reduce potential for overflow
RCS management plan	<ul style="list-style-type: none"> • predicts expected end of the month water storage volumes for each RCS • requires permittee to manage water level accordingly • requires permittee to maintain minimum wastewater volume • will reduce potential for overflow
monitor and record RCS wastewater level daily	<ul style="list-style-type: none"> • provides visual indication of compliance
One foot increments on pond marker	<ul style="list-style-type: none"> • identifies the level of wastewater storage to assist the permittee in the implementation of RCS management plan • enforcement tool
maintain RCS sludge volume at or below designed sludge volume	<ul style="list-style-type: none"> • requires sludge removal to maintain the required wastewater storage capacity • will reduce overflows associated with insufficient wastewater storage capacity
Land application prohibited 12 am to 4 am	<ul style="list-style-type: none"> • reduces the potential of irrigation related discharges associated with equipment malfunctions

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<p>Nutrient Management Plan (based on crop requirement rate)</p>	<ul style="list-style-type: none"> • evaluates risk potential for phosphorus movement into watercourses • establishes the annual application rate based on annual soil analyses, nutrient content of the land applied materials, phosphorus index, and management practices used at the facility • based on NRCS Practice Standard 590
<p>Nutrient Utilization Plan (based on crop removal rate)</p>	<ul style="list-style-type: none"> • stabilizes and/or reduces phosphorus on high phosphorus LMUs by establishing the annual application rate based on the amount of nutrients removed by the previous year's harvest based on NRCS Practice Standard 590
<p>CNMP</p>	<ul style="list-style-type: none"> • whole farm mass balance of nutrients which considers all inputs, onsite use and treatment, outputs, and losses. • Inputs include animal feed, purchased animals, fertilizer • Outputs include animals sold, harvested crops removed from facility, and manure removed from the facility • Losses include volatilization, runoff, and leaching
<p>Excess manure must go to compost, landfill, outside of watershed, or third-party fields</p>	<ul style="list-style-type: none"> • limits unregulated use of manure within the watershed • offsite use incurs additional record-keeping to document how excess manure is used. • provides mechanism to track 50% voluntary removal goal in TMDL
<p>chronic discharge determination</p>	<ul style="list-style-type: none"> • discharges resulting from chronic conditions are more closely scrutinized by TCEQ Regional Office • validates chronic conditions claim • provides documentation to TCEQ for enforcement of unauthorized discharge

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soil sampling notification	<ul style="list-style-type: none"> allows the TCEQ to observe sample collection and/or obtain split samples for duplicate analysis assures data collected is credible to support application rates in nutrient management plan
soil sampling by technical service provider	<ul style="list-style-type: none"> ensures that samples are collected by unbiased individuals who are knowledgeable about soil sampling techniques and sample preservation
Conservation Practices for LMUs adjacent to water of the state (100 foot vegetative buffer, filter strips, vegetative barrier, contour buffer strips)	<ul style="list-style-type: none"> reduce erosion, suspended solids, pathogens, and nutrients in runoff from LMUs. site specific conditions and NRCS practice standards specifies which Conservation Practices must be implemented

Compliance History Report

Customer/Respondent/Owner-Operator: CN603059130 Two Sisters Dairy, LLC Classification: AVERAGE Rating: 3.00
Regulated Entity: RN104994611 TWO SISTERS DAIRY Classification: AVERAGE Site Rating: 3.00
ID Number(s): WASTEWATER AGRICULTURE PERMIT WQ0004866000
Location: 235 PRIVATE ROAD 1266, HICO, TX, 76457
TCEQ Region: REGION 04 - DFW METROPLEX
Date Compliance History Prepared: October 16, 2009
Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.
Compliance Period: September 01, 2004 to August 31, 2009
TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History
Name: Maria Snodgrass Phone: 239 - 1000

Site Compliance History Components

1. Has the site been in existence and/or operation for the full five year compliance period? Yes
2. Has there been a (known) change in ownership/operator of the site during the compliance period? No
3. If Yes, who is the current owner/operator? N/A
4. If Yes, who was/were the prior owner(s)/operator(s)? N/A
5. When did the change(s) in owner or operator occur? N/A
6. Rating Date: 9/1/2009 Repeat Violator: NO

Components (Multimedia) for the Site :

- A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.
N/A
- B. Any criminal convictions of the state of Texas and the federal government.
N/A
- C. Chronic excessive emissions events.
N/A
- D. The approval dates of investigations. (CCEDS Inv. Track. No.)
N/A
- E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)
Date: 01/07/2009 (721472) CN603059130
Self Report? NO Classification: Moderate
Citation: 30 TAC Chapter 321, SubChapter B 321.31(b)
Description: Failure to operate an AFO in such a manner as to prevent the creation of a nuisance or a condition of air pollution as mandated by Texas Health and Safety Code, Chapter 341 and Chapter 382. 321.32(b)
- F. Environmental audits.
N/A
- G. Type of environmental management systems (EMSs).
- H. Voluntary on-site compliance assessment dates.
N/A
- I. Participation in a voluntary pollution reduction program.
N/A
- J. Early compliance.

N/A

Sites Outside of Texas

N/A