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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 15, 2007

LaDonna Castañuela, Chief Clerk
Texas Commission on Environmental Quality
P.O. Box 13087, MC 105
Austin, Texas 78711-3087

Re: Executive Director's Status Report on the Motion to Have the Commission Determine the Technical Sufficiency of TPDES Permit Application WQ0003590000
Docket No. 2007-1128-IWD

Dear Ms. Castañuela:

Enclosed for filing is the original and eleven copies of the "Executive Director's Status Report on the Motion to Have the Commission Determine the Technical Sufficiency of TPDES Permit Application WQ0003590000." Please file stamp these documents and return them to Robert Brush, Attorney, Environmental Law Division, MC 173. If you have any questions or comments, please call me at (512) 239-5600.

Sincerely,

Robert Brush
Attorney
Environmental Law Division

Enclosure

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2007 OCT 15 PM 4:30
CHIEF CLERKS OFFICE

TCEQ Docket No. 2007-1128-IWD

In the Matter of the Application of Elmer Jack Parks d.b.a. Jack Parks Dairy for TPDES Permit No. WQ0003590000	§ § § §	**Before the Texas Commission On Environmental Quality**

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
2007 OCT 15 PM 4:30
CHIEF CLERK'S OFFICE

Executive Director's Status Report on the Motion to Have the Commission Determine the Technical Sufficiency of TPDES Permit Application WQ0003590000

The Executive Director (ED) of the Texas Commission on Environmental Quality (the Commission or TCEQ) files this status report on the Motion for the Commission to Determine the Technical Sufficiency of TPDES Permit Application WQ0003590000 for Elmer Jack Parks, d.b.a. Jack Parks Dairy (Applicant).

I. SUMMARY OF ED'S REVIEW OF THE NEW APPLICATION SUBMITTED BY MR. PARKS

At the September 19, 2007 Agenda, the Commission gave the Applicant 30 days to correct the deficiencies in his permit application. The Commission continued the hearing on the Applicant's motion to the November 7, 2007 agenda and directed the ED to review the information submitted and to update the Commission on the status of the application.

Instead of just correcting the outstanding deficiencies noted in the last notice of deficiency (NOD) letter, the Applicant submitted a new permit application on September 28, 2007 (See Attachment A). In the cover letter for that submittal, the consultant for the Applicant stated that the revised application addressed each of the outstanding deficiencies, but did not specifically identify how the new application accomplished that purpose. Additionally, the Applicant requested a meeting with ED staff to address the remaining deficiencies prior to the November 7, 2007 agenda and we have agreed to meet with the Applicant regarding the deficiencies in the new application (See Attachment B).

The ED's preliminary review of the new application generated a new list of deficiencies based on changes made to previously submitted information. The preliminary review list of the deficiencies in the new application includes five of the seven deficiencies noted on the last NOD letter[1] and a number of new ones. For example, the drainage area of retention control structures (RCSs) #1 and #2 is calculated to be 20 acres. A review of satellite and GIS information show the

1 The deficiencies that remain from the last NOD: 1) NMP management plan issues are still unresolved; 2) the tons of solids are still not consistent; 3) the volumes in the RCSs are still unresolved; 4) the sludge accumulation is still unresolved; and 5) the acres in the run-off control map are still unresolved.

acreage to be close to 30 acres as stated in the previous application. The size of the drainage acreage drives many of the calculations in the application and in the nutrient management plan (NMP), and as such, affects nearly every page in the permit application. For example, a larger drainage area requires a larger RCS to handle the design rainfall event. In this case, the current application bases calculations throughout the application and NMP on a drainage area for RCSs #1 and #2 that is actually 50% larger than is indicated in the application.

Prior to the September 28, 2007 submittal, the prior permit application identified the drainage area for RCSs #1 and #2 as being 31.36 acres, not 20.1 acres as in the new application. The drainage area example is just one of the many technical deficiencies that were created by the Applicant's new permit application.

The submission of the new permit application package also triggered additional administrative review of the application. The administrative portion of the application review process was originally completed on September 21, 2004. However, there are now administrative deficiencies in the application as a result of changes to previously submitted information that were made in the new application.

The summary is that the permit application is neither administratively nor technically complete. A full list of the currently identified technical and administrative deficiencies is detailed in the sections that follow.

Attachment A is a copy of the new application and the document was Bates stamped by the ED staff for easier reference to where the deficiencies are in the document.

II. ADMINISTRATIVE REVIEW DEFICIENCIES IN THE NEW PERMIT APPLICATION

The ED's preliminary review of the new application identified the following administrative deficiencies. However, this list may not be comprehensive due to the expedited review of the application before the November 7, 2007 agenda.

1. The Landowner map and landowner list were revised by Mr. Parks and now have the following deficiencies. See requirements at 30 TAC §§ 305.45(a)(6) and 305.48(a)(2).

    a. Landowners map showed Landowner T, but landowner list did not give name and mailing address. Bates #000062 and map #000064.
    b. Landowner list showed Landowner Y, but map did not identify the location of this landowner. Bates #000062 and map #000064.

2. The location and road description in the new application are different from the previous application and is not correct (See requirement in 30 TAC 305.45(a)(1)). Road names are different and the direction is different. Bates #000014.

III. TECHNICAL REVIEW DEFICIENCIES IN THE NEW PERMIT APPLICATION

The ED's preliminary review of the new application identified the following technical deficiencies.

Significant Deficiencies in the New Application

1. The drainage areas for RCS #1 and #2 are not consistent with acreage previously provided by the Applicant and estimated by TCEQ staff. The new application uses engineering calculations based on a drainage area of 20.1 acres, but as presented on the site map and in tax records that were provided with the application, the drainage area is at least 30 acres. That dramatically impacts the engineering design calculations and NMP. This discrepancy makes the design storm volume, operating volume, and sludge volume incorrect. The NMP is also incorrect because of the need to revise the acreage will require the planned withdrawal from the RCSs to increase. See requirement at 30 TAC § 321.36(c). Technical Packet, Page 4. Bates #00028, #000051, #000075, #000076, and #000077.

2. RCS #1 contains 88% of the wastewater pumped for land application, but the only effluent sample provided was from RCS #2 and that is the sample used in the NMP. The NMP is not acceptable without a sample that is representative of the nutrient concentrations in all the effluent to be land applied. Therefore, a sample from RCS #1 is needed to make sure the ED has a representative sample of the nutrient concentrations of the effluent being land applied. See requirement at 30 TAC § 305.45(a)(8)(B)(ii). Bates #000120 and #000144.

3. Proposed crops and yield goals are inconsistent with the NMP. Technical Packet, Page 6 Attachment. Bates #000054, inconsistent with Bates #000114.

4. On the Land Application Summary table, the estimated land application rates are based on the maximum application rate not the planned rate. As presented, it is inconsistent with the NMP and the engineering calculations. The estimated land application rate should not exceed what is available. See requirement at 30 TAC § 305.45(a)(8)(B)(i). Technical Packet, Page 6 attachment. Bates #000054.

5. The available irrigation equipment consists of a pivot for land management unit (LMU) #1 and a wheel roll system. The ED needs verification that the wheel roll system can cover all LMU acreage shown in LMU #7a, #7b, and #7c. The irregular boundary shapes shown for these LMUs do not fit the rectangular shape that would occur due to the use of a wheel roll system. No other system is indicated in the application other than the pivot on LMU #1. The LMU map needs to show the area watered just like it does for the pivot. If some of the acres cannot be watered using the available equipment, the Water Balance and NMP are incorrect. See requirement at 30 TAC § 305.45(a)(8)(B)(i). Technical Packet, Page 7. Bates #000055 and map at Bates #000069.

6. The acreage and location of LMU #1 needs verification. The center of the pivot appears to be inside the pond (RCS #1). Also, buffers, well locations, and configuration of LMU #1 on

the Site Map and the Proposed Buffer Map, Figure 6.1 are inconsistent. Some maps show the pivot covering part of the buffered area and others show a portion of the pivot shut off to avoid application in the buffered area. However, all report the same acreage, which is unlikely given their differing areas. The pivot cannot operate over the buffer zone and it needs to be accurately placed on the maps with an accurate representation of the covered acreage. Also, if the end gun is to be shut off the distance needs to be documented in the application and reflected on the map. It is not likely that the shut off of the end gun will exactly match the line on the buffer. See requirements at 30 TAC §§ 321.40(h) and 321.42(w). Bates #000069.

7. The buffered area between LMUs #12a and #12b needs verification. It appears there is an area of the stream that is not properly buffered. No documentation was provided to indicate that this stream is not waters in the state. There are also drainage areas in LMUs #3, #5b, #7a, #7c, #8, #9a, and #9b that need photographic documentation to justify the lack of need for buffering. The addition of the required buffer will change spreadable acreage and affect the NMP and possibly the engineering calculations. See requirements at 30 TAC §§ 321.40(h) and 321.42(w). Bates #000184.

8. On the Runoff Control Map, the calf hutches are outside the RCS Drainage Area. The application proposes to contain only the design storm event runoff. That potential discharge cannot be authorized since there is no RCS for the calf hutches. If left outside the drainage area there can be no discharge of contaminated rainfall runoff and the application will need to be modified to reflect no discharge from this area. See requirements at 30 TAC §§ 321.37(d) and 321.38(e)(7). Bates #0000049 and map at Bates #000070.

9. A portion of the runoff in drainage area #1 flows into the bar ditch and then under a county road. This is a major design change from what was previously provided by Mr. Parks. The county road ditch is considered water in the state and must be protected from the discharge of wastewater. There is no verification that the proposed use of the county road culvert and bar ditch appropriately protects water in the state or that water moving in the bar ditch from above the production area has been accounted for or diverted according to design requirements. With respect to using the county road culvert as a conveyance, there needs to be some verification that the culvert under the road will carry the runoff from a 25-year 10-day storm water event without overtopping the road or that if the road is overtopped, runoff will not discharge down the road. The ED also needs documentation from Erath County that grants the Applicant a legal right to use the road crossing for this purpose. This production area is upstream from a nutrient and bacteria impaired stream segment. The impacts of resolving this issue will most likely require new engineering calculations and a new NMP. See requirements at 30 TAC §§ 321.38(e)(1) and 30 TAC § 321.38(e)(6). Bates #000070 and map at Bates #000161.

10. The design assumptions for the engineering calculations do not demonstrate a way for RCS #1 effluent to get to any LMUs other than LMU #1. If this is the case, the Water Balance is not correct and RCS #1 does not have adequate storage for the operating volume. Either the

Water Balance should be revised or an explanation as to how RCS #1 effluent can be applied to LMUs #7a, #7b, and #7c as assumed in the Water Balance. The same issue arises for RCS #2 effluent being land applied on LMU #1 as assumed in the Water Balance. If all of the RCS #1 effluent can only be applied to LMU #1 and RCS #2 applied only to LMU #7a, #7b, and #7c as it appears in the site plan then the Water Balance and the NMP are both incorrect. See requirement at 30 TAC § 321.38(e)(7)(B). Bates #000072, #000077, and #000112.

11. The application proposes to allow cows to graze on LMUs with filter strips without providing any BMPs to protect the filter strips. Prior representations by the Applicant indicate that there is fencing on the water courses to keep cattle out but the fencing does not enclose the entire buffer area. To the extent the fences do not protect the buffers, the Applicant must submit a grazing plan compliant with NRCS Practice Standard Code 393 to support the NMP. See requirement in NRCS Practice Standard Code 393. Bates #000112 and #000114 (this is the page that would note there is a grazing plan).

12. The phosphorus index (P-Index) Report in the NMP shows LMU #4a and LMU #6a to have soil test phosphorus values in the P-Index that are inconsistent with other application information. See requirement at 30 TAC § 321.36(d). Bates #000106.

13. There are inconsistencies in the numbering of the LMUs on the Soil Test Results and in the NMP. Bates #000125A.

14. If manure or wastewater has planned applications in the NMP to off-site LMUs, soil analyses must be submitted so that the NMP and P-Index can be evaluated. Soil analyses were not included for all the LMUs with planned applications in the NMP. See requirement at 30 TAC § 321.36(g). Bates #000125A.

15. Page 8 of the Technical Packet lists 15 wells. Page 33, the Recharge Feature Certification (RFC) lists 16 wells. The Recharge Feature Map shows 18 wells. All of the documents need to reflect the correct number of wells and the maps need to accurately show locations. Figure 6.1a, Proposed Buffer Map, does not show a neighboring well on the bottom of LMU #5b. It is possible a buffer will be required for that nearby well. See requirement at 30 TAC § 321.34(f)(3). Bates #000056 and map at Bates #000183.

16. The RFC identifies the two seepage detection wells as wells #17 and #18. These wells are required in the permit. Therefore, the wells may not be plugged at this time. The Applicant must revise the BMPs for these wells to reflect how the underlying groundwater will be protected from the introduction of any contaminants. Additionally, the Applicant must include these wells on Table E in the Technical Information Packet and in Table 5.4--Well Information. See requirement at 30 TAC § 321.34(f)(4)(A). Bates #000056 and left off of Bates #000159, maps at Bates #000160 and #000180.

Other Noted Technical Deficiencies in the New Permit Application

17. Page 5 of 13, Administrative Application, Section A Authorization; the application type marked is incorrect, this is a major amendment not a renewal. See requirement at 30 TAC § 305.62(c)(1). Bates #000015.

18. Page 6, Technical Packet; solids application amount is inconsistent with NMP. The difference is small but both documents should be consistent. See requirement at 30 TAC § 305.45(a)(8)(B)(i). Bates #000053.

19. Page 6, Technical Packet; wastewater application amount inconsistent with engineering calculations and NMP. The difference is small but should be consistent. Bates #000053.

20. Page 10 of 13, Administrative Application, Section 2 Technical Information; for amendments, the applicant must describe all major changes proposed for the facility. This section was left blank. See requirement at 30 TAC § 321.34(d). Bates #000015.

21. An improper signature is on the cover page of the NMP, Amy Haschke signed for Corey Mullin. The cover page has to be signed by a certified nutrient management specialist responsible for the plan. Bates #000095.

22. On the signature page of the NMP, Corey Mullin signed for Elmer Jack Parks and there is no indication how the operator was informed of the contents of the NMP. If the operator does not sign the plan it is a requirement of the NMP to provide a statement indicating how the plan will be reviewed with the operator. The date of Mr. Mullin's signature on the signature page is prior to the date on the rest of the NMP. The signature date should be the same or after the date of the plan. Bates #000105.

23. The P-Index Report in the NMP shows LMU #7c to have a slope that appears inconsistent with the USGS topo map provided in the application. See requirement at 30 TAC § 321.36(d). Bates #000106.

24. On Page 21 of the RFC, Section 5.4, Definition of Waste Production, has a reference to a headcount increase that is inconsistent with the application. Bates #000147.

25. On Page 24 of the RFC, the geology map submitted as figure 5.1 appears to have the offsite property incorrectly mapped. The map and RFC (if appropriate) need to be revised. Bates #000150.

26. On Page 25 of the RFC, Section 5.6.2, Excessive Slopes, states that no slopes of greater than 8% on this property will receive manure solids and/or wastewater. The P-Index Report in the NMP states that LMU #12a has a slope of 8.1%. The NMP should be revised so that no application is planned on slopes greater than 8% since that is a NRCS 590 Practice Standard guideline. Bates #000151.

27. There was no documentation submitted indicating whether water has been found in the seepage detection wells identified as wells #17 and #18. If water has ever been detected in

the wells, please identify when the water was detected and submit the test results. Bates #000160.

IV. CONCLUSION

This permit application is still not technically complete. As discussed above, the new application has generated a brand new list of technical and administrative deficiencies. The fact that the Applicant submitted a new application to replace the deficient application supports the ED's decision to return the original application. Therefore, the ED's decision to return the application should be upheld.

Texas Commission on Environmental Quality

Glenn Shankle
Executive Director

Robert Martinez, Director
Environmental Law Division

by _____
Robert D. Brush, Staff Attorney
Environmental Law Division
State Bar No. 00788772

CERTIFICATE OF SERVICE

I certify that on October 15, 2007, the original and 11 copies of the Executive Director's Status Report on the Motion to Have the Commission Determine the Technical Sufficiency of TPDES Permit Application WQ0003590000 was filed with the TCEQ's Office of the Chief Clerk, and mailed or faxed to all persons on the attached mailing list.

Robert D. Brush, Staff Attorney
Environmental Law Division
State Bar No. 00788772

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ON ENVIRONMENTAL
QUALITY
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MAILING LIST
FOR TPDES Permit No. WQ0003590000
Elmer Jack Parks d.b.a. Parks Dairy
TCEQ Docket No. 2007-1128-IWD

FOR THE APPLICANT:
Elmer Jack Parks
13628 West Farm to Market Road 8
Stephenville, Texas 76401-8666

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ATTACHMENT A

ENVIRO-AG ENGINEERING

September 27, 2007

Via FedEx

Mr. Charles Maguire
TCEQ (MC-150)
P. O. Box 13087
Austin, TX 78711-3087

RE: Elmer Jack Parks dba Lingleville Dairy – WQ Permit No. 3590
CN601127798, RN102091873 – Erath County, Texas

Dear Mr. Maguire:

Enclosed, please find a revised administrative and technical application for the above referenced facility. This revised application addresses each item included in the attached "List of Unresolved Deficiencies".

Should you have any questions or require additional information regarding this application, please do not hesitate to contact me. Thank you in advance for your consideration of this matter.

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WATER QUALITY DIVISION

Sincerely,

Norman Mullin

Norman Mullin, P.E.
President

Enclosure

Attachments

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Cc: Elmer Jack Parks Dairy
Jim Bradbury – Jackson Walker, LLP
Stephenville Public Viewing Copy

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List of Unresolved Deficiencies

1. The Nutrient Management Plan (NMP) does not comply with NRCS guidelines. The volume of effluent to be irrigated used in the 590-633 spreadsheet is the irrigation depth value from the water budget in the engineering calculations. NRCS issued Texas Bulletin No. TX210-06-01 on August 8, 2006 specifying the total actual withdrawal predicted by the water budget should be used as the effluent volume in the spreadsheet. *See* #2 under the Nutrient Management Plan in the 1st Notice of Deficiency (NOD) and #8 under the Land Application Team comments in 2nd NOD.

2. The tons of solid are not consistent between the Technical Packet, engineering calculations, and the NMP. *See* #2 under the Agronomy Comments in 2nd NOD.

3. The RCS Volumes for RCS #1 and #3 in the RCS Volume Allocation Table on page 5 of the Technical Packet are inconsistent with the engineering calculations. *See* #2 under the Engineering Comments in 1st NOD and #4 under the Land Application Team Comments in 2nd NOD. On June 12, 2007, you submitted by fax the volume allocations for the RCSs. This information was provided 62 days late and the staff has not evaluated the sufficiency of this late information.

4. You failed to show sludge accumulations in each RCS. NOTE: When the technical packet was submitted on November 27, 2006, sludge accumulation was shown in each RCS. The latest revision removed sludge accumulation from two of the RCSs in the technical packet. On June 12, 2007, you submitted by fax the sludge volume allocations for the RCSs. This information was provided 62 days late and the staff has not evaluated the sufficiency of this late information.

5. On the bottom of page 6, you failed to show the quantities of manure/litter production in tons per year with consistent moisture content or label which are wet tons and which are dry tons. NOTE: In earlier technical submissions, the wet tons and dry ton quantities were consistent.

6. The acres on the Runoff Control Map do not add correctly. NOTE: This was not verified earlier because the drainage areas were not correct. *See* #4 under the Land Application Team comments in the 2nd NOD.

7. You failed to submit Lab Reports for the liner certifications. *See* #2 under the Recharge Feature Certification comments in 1st NOD and #10 under the Land Application Team comments in 2nd NOD.

30 TAC 321, SUBCHAPTER B APPLICATION, POLLUTION PREVENTION PLAN & COMPREHENSIVE NUTRIENT MANAGEMENT PLAN, SECTION 9

Prepared for:

Lingleville Dairy
429 County Road 297
Stephenville, Texas 76401

SUBCHAPTER B APPLICATION
FOR RENEWAL OF #03590

Prepared By:

ENVIRO-AG
EAE
ENGINEERING, INC.

ENVIRO-AG EAE ENGINEERING, INC. 3404 Airway Blvd. ♦ Amarillo, Texas 79118 ♦ Tel 806/353-6123 ♦ Fax 806/353-4132 ♦

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Lingleville Dairy
Erath County, Texas

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INSTRUCTIONS AND INDIVIDUAL PERMIT APPLICATION FOR A CONCENTRATED ANIMAL FEEDING OPERATION

Concentrated animal feeding operations (CAFOs) in Texas are regulated by the Texas Commission On Environmental Quality (TCEQ). The following information provides assistance in completing the Individual Permit Application for a Concentrated Animal Feeding Operation Authorization (TCEQ-0728). If you need further assistance with this application or to request a different application, please visit our world wide web site at www.tceq.state.tx.us or call us at (512) 239-4671.

1. Administrative Information

A. AUTHORIZATION:

- COVERAGE: The State of Texas received delegation of the National Pollutant Discharge Elimination System (NPDES) from the Environmental Protection Agency on September 14, 1998. All CAFOs as defined in 40 CFR 122.23 are required to obtain federal authorization prior to operation. The state provides both state and federal authorization through the Texas Pollutant Discharge Elimination System (TPDES).

- APPLICATION TYPE: There are four alternatives available to the applicant: new applications, major amendments to existing authorizations, minor amendments or modifications to existing authorizations, or renewals of existing authorizations. The following information provides a description of each alternative:

New	For applicants that currently do not operate under a Subchapter B written authorization.
Major amendment	For applicants that currently operate under a Subchapter B written authorization and are requesting to change a substantive term, provision, requirement, or a limiting parameter of the authorization such as to expand capacity, add a wastewater storage pond, add land application fields, etc.
Minor amendment	For applicants that currently operate under a Subchapter B written authorization and are requesting to improve or maintain the permitted quality or method of disposal of waste if there is neither a significant increase of the quantity of waste nor a material change in the pattern or place of disposal.
Renewal	For applicants that currently operate under a Subchapter B written authorization and are requesting to renew that authorization.

- MEDIA TYPE: Each authorization may be issued to provide coverage under the Texas Water Code (TWC) and the Texas Health and Safety Code.

Water Quality	For applicants requesting authorization to operate a CAFO as required by the Texas Water Code.

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Water & Air Quality For applicants requesting a water quality authorization with an air quality standard permit in lieu of separate air quality authorization through a Chapter 116 permit or Chapter 106 Standard Exemption. The air quality standard permit requirements are described in 30 TAC Chapter 321, Subchapter B.

B. APPLICANT:

The **owner of the land** must be either the applicant or co-applicant. If the **owner of the facilities** is a separate entity or individual, then the owner of the facilities must be included as the applicant or co-applicant. For all TPDES applications, the **operator** must be listed as a co-applicant. An affidavit page must be completed for each applicant. If the ownership has changed, a separate application is necessary to transfer the authorization. Please contact the Permit Administrative Review Team at (512) 239-5160 to request an Application to Transfer Ownership of a Concentrated Animal Feeding Operation (TCEQ-20031).

The applicant may either be a corporation, partnership, or an individual. Please provide the requested information for each applicant and co-applicant.

Corporations Must provide documentation of their status to include a letter of certification as required by Texas Business Corporation Act, Article 2.45. To obtain the certification, applicants may contact the Office of the State Comptroller of Public Accounts at www.cpa.state.tx.us or at 800-252-5555.

Partnerships Must provide documentation of their status to include a Certificate of Existence. Applicants may contact the Office of the Secretary of State at 512-463-5555.

Individuals Must provide information on **each** individual applicant pursuant to TWC 26.027(b).

- OWNERSHIP: The applicant must show documentation in the form of current tax records or a deed to demonstrate ownership of the property.

C. APPLICANT'S REPRESENTATIVE:

Please provide the requested information for any technical consultants that have prepared information for the application as well as any other individuals that may represent the applicant during the application process.

D. NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN A WATER QUALITY PERMIT:

After application for an individual permit has been declared administratively complete, the applicant will be required to publish a notice in a local newspaper. The applicant will also be required to publish a second notice indicating the Executive Director's Preliminary Decision after the application is declared technically complete. In addition, the applicant

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must provide a complete copy of the application, technical information packet and all correspondence for inspection by the public at the applicant's place of business and at a public place located within the county.

Bilingual notice may be required for new permit applications, major amendment applications and renewal applications, (not applicable for minor amendment or minor modification applications). If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, triggers a bilingual education program to apply to an entire school district should the requisite alternative language speaking student population exist. However, there may not exist any bilingual-speaking students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and the school either has students enrolled at such a program on-site, or has students who attend such a program at another location in satisfaction of the school's obligation to provide such a program as a member of a triggered district.

If it is determined that a bilingual notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

E. FACILITY:

Please provide the requested information to include a description of the facility location. Give a written location description (**not directions**) of the facility with respect to known or easily identifiable landmarks which can be found on a USGS topographic map, indicating the miles or feet from major intersections or nearby community and indicate any changes in road names for existing permitted facilities. Please provide latitude and longitude information from the nearest edge of the CAFO facilities to the nearest sole source drinking water supply.

2. Technical Information

Each application **must** be accompanied with a completed Technical Information Packet which provides technical information on the manure and wastewater management system utilized at each facility. If certain information cannot be provided in the application, please indicate why (such as delays in laboratory testing, engineer certification, or if the information is not applicable). Technical Information Packets may be obtained from the Land Application Team by calling (512) 239-4710.

3. Certification

An affidavit must be completed by each entity/co-applicant. For example, a facility is owned by two individuals and operates by a trust, each of the two individuals must sign a certification and a trustee, as outlined in the trust, must sign a certification. For a corporation, any corporate representative may sign the certification, so long as the authority to sign has been delegated to that person in accordance with corporate procedures. All

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certifications must bear live signatures, include the title of the individual signing, and be dated.

4. Pre-Application Meeting

For new or major amendment applications, you may consider a pre-application conference with TCEQ permitting staff. During the meeting, staff will be available to discuss your permit application and hopefully eliminate the need for any potential requests for additional information. Please call the TCEQ at (512) 239-4710 to schedule a pre-application meeting.

5. Application Submittal

Submit one original and one copy of the application with the appropriate fee to the TCEQ Registration, Review and Reporting Division, Permits Administrative Review Section, Water Quality Applications Team (MC 161). Also, submit one copy of the application to the appropriate TCEQ Regional Office. If information is submitted at a later date in response to a TCEQ request for further information, please forward a copy of the requested information to the TCEQ regional office as well. Please refer to the technical information packet for further information.

IMPORTANT FOR RENEWALS: For renewal applications, please submit the application 180 days prior to the expiration date of the current permit. **Renewal applications will not be accepted after the expiration date on the permit**. Permittees will be responsible for paying annual fees associated with the permit. All fees must be current before a permit can be issued. Pursuant to 30 TAC Section 305.66, failure to pay fees is good cause for permit denial or revocation. If an applicant has outstanding fees, a proposed permit application will not be considered for approval by the Commission or Executive Director. For account balance information, please contact the Financial Administration Division, Revenue Section, at (512) 239-0354.

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDIVIDUAL PERMIT APPLICATION FOR A CONCENTRATED ANIMAL FEEDING OPERATION

1. Administrative Information:

A. AUTHORIZATION

Coverage: ☐ State Only ☑ TPDES

Application Type: ☐ New ☑ Renewal ☐ Major Amendment ☐ Minor Amendment

Media Type: ☑ Water Quality ☐ Air and Water Quality

For Existing Authorizations

EPA ID No. TX027159

Water Quality Permit Number: WQ03590 Expiration Date: 11/13/03

Air Account Number: _____ Expiration Date: _____

List any other authorizations/permits, existing or pending, which pertain to pollution control activities conducted at this facility.

B. APPLICANT

Owner: Elmer Jack Parks

Co-Applicant(s): _____

Doing Business As or Point of Contact: Lingleville Dairy

Facility Mailing Address: 429 County Road 297 Stephenville, Texas 76401

Billing Mailing Address: 13628 West Farm-to-Market Road 8 Stephenville, Texas 76401

Telephone No: 254/968-3406 Fax No: _____

County: Erath

Check one: ✓ The TCEQ has issued this Customer Reference Number to the applicant: CN 601127798

___ This person has not yet received a Customer Reference Number. A complete Core Data Form (TCEQ-10400) listing the applicant as the customer and this facility as the regulated entity is attached to this application.

For Corporations

☐ Attach a State Comptroller of Texas letter of Certification for Account Status,

Charter Number as recorded with the Secretary of State for Texas _____

State Tax Id Number _____

For General Partnerships, Limited Partnerships, and Limited Liability Companies

☐ Attach Partnership Agreement Papers showing recorded in County where project is located

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☐ Attach Certificate of Existence

For Individuals

Full Legal Name of Applicant(s) Elmer Jack Parks

Assumed Business or Professional Name

Physical Address: 13628 West Farm-to-Market Road 8 Stephenville, Texas 76401

City: Stephenville State: Tx ZIP Code: 76401

Date of Birth July 12, 1931 Sex: Male

State Driver's License or Personal ID #: 009865598

Ownership

☑ Attach copies of tax records or deed

Does the applicant(s) own or lease the land application fields? ☑ Own ☐ Lease

If leased, a copy of the long-term lease agreement must be submitted.

C. APPLICANT'S REPRESENTATIVES

List each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application.

List the following information for individuals or firms authorized to act on behalf of the applicant during the application process:

Name: Norman Mullin Telephone number: 806/353-6123

Company: Enviro-Ag Engineering, Inc. Fax number: 806/353-4132

Address: 3404 Airway Blvd., Amarillo TX 79118

Email Address: norman@enviroag.com

Provide two names of individuals that can be contacted during the permit term:

Name: Elmer Parks Telephone number: 254/968-3406

Company: Lingleville Dairy Fax number: n/a

Address: 13628 West Farm-to-Market Road 8 Stephenville, Texas 76401

Email Address: ejparks@texinet.net

Name: Norman Mullin Telephone number: 806/353-6123

Company: Enviro-Ag Engineering, Inc. Fax number: 806/353-4132

Address: 3404 Airway Blvd., Amarillo TX 79118

Email Address: norman@enviroag.com

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D. Notice of Receipt of Application and Intent to Obtain a Water Quality Permit

1. Public Contact Person

The **"Notice of Receipt of Application and Intent to Obtain a Water Quality Permit"** must identify a person (applicant or applicant's representative) for the public to contact for further information about the permit application.

☑ **Name of Contact to be in the Notice:** Norman Mullin

☑ **Contact Telephone Number:** 806/353-6123
(Area code + number)

2. Publication Information - Publishing the "Notice of Receipt of Application and Intent to Obtain a Water Quality Permit"

The **notice** must be published in a newspaper of general circulation in the county where the facility is (to be)located, and **within 30 days from the date the application is declared administratively complete**. You will be contacted by TCEQ staff on the administrative complete date to inform you that the notice for you to publish has been faxed, e-mailed or sent by express mail (express mail will be at the expense of the applicant).

The person you list below will be contacted by TCEQ staff on the day the application is declared administratively complete to inform them that the notice for publication package has been sent to them. This package will include TCEQ's declaration of completeness, a notice ready for publication, instruction for publishing a notice and a publication affidavit.

Within 10 days after notice is published in the newspaper, return an original newspaper clipping of the notice, which shows publication date and newspaper name, to the Office of the Chief Clerk.

Within 30 days after the notice is published in the newspaper , return an original Affidavit of Publication to the Office of the Chief Clerk. If this affidavit can be completed within 10 days of publication, we encourage you to include it with the newspaper clipping described above.

If the original newspaper clipping and affidavit are not received by the Chief Clerk within 30 days from the date the notice is published, the application will be returned. If the application is renewing the term of the permit, and the application is returned for failure to provide proof of notice publication, **the permit will expire**.

Person responsible for publishing notice in the newspaper:

Name: Norman Mullin

Phone Number: 806/353-6123
(Area code + number)

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Preferred Method of Receiving Notice Package & Instructions:

☑ Fax Number: 806/353-4132
(Area code + number)

☑ E-mail Address: norman@enviroag.com
(Documents are prepared in WordPerfect 8)

☐ Self Addressed/Pre-paid envelope for Overnight Mail or Priority Mail delivery **(A physical address is required -- do not use a Post Office Box).** ***If this is your first option, please make sure you include this pre-paid envelope with your application.***

☑ Other: Certified Mail: Enviro-Ag Engineering, Inc., Attn: Norman Mullin, 3404 Airway Blvd.
Amarillo, Tx 79118
(Please explain. For Example: Place in regular mail. Address to Bob Smith; 10101 N; Park 35 Circle; Austin, Texas 78753).

3. Application Viewing Information

Public facility *(e.g. Public Library, Court House, City Hall)* where the complete application will be available for public viewing and copying. *(Note: This site must be in the county where the proposed activity is or will be located.)*

☑ **Public Building Name:** Stephenville Public Library
☑ **Street Address:** 174 N. Columbia
☑ **City:** Stephenville, Texas
☑ **County:** Erath

(example: Public Library, Room 2101, 2300 Main St., Austin, Texas)

4. Bilingual Notice Requirements:
FOR NEW PERMIT APPLICATIONS, MAJOR AMENDMENT AND RENEWAL APPLICATIONS (Not applicable for minor amendment or minor modification applications.)

1. Is a bilingual program required by the Texas Education Code in the school district where the facility is located?
_____ Yes ✓ No (If No, alternative language notice publication is not required; skip to item 4.)

2. If Yes to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility?
_____ Yes ____ No (IF Yes to questions 1 and 2, alternative language publication is required; If No to question 2, then consider the next question.)

3. If Yes to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location?
_____ Yes ____ No (If Yes to questions 1 and 3, alternative language publication is required; If No to question 3, then consider the next question.)

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4. If Yes to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC §89.1205(g)?
_____ Yes ____ No (If Yes to questions 1 and 4, alternative language publication is required; If No to question 4, alternative language notice publication not required.)

5. If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program?
_____

E. FACILITY

Facility Type: ☑ Dairy-02410 ☐ Beef Cattle-02110 ☐ Swine-02130 ☐ Broiler-02510

☐ Layers-02520 ☐ Sheep/Goats-02140 ☐ Auction-5154 Other_____

Existing Maximum Capacity: 700 Year Operation Began: 1975

Facility Location:

The dairy facility is located on the south side of CR 8 approx. 1/2 mile west of its intersection with FM 8. This intersection is located approx. 1 1/2 mile east of Lingleville, Erath County.

32d 14' 39" N
98d 21' 39" W

Identify the name and distance to the nearest city from the facility 1.5 miles West to Lingleville, Texas

Is facility located on Indian land? ☐ Yes ☑ No

Is any part of the CAFO, excluding land application area located within the protection zone of a sole source drinking water supply? ☐ Yes ☑ No

As required by Texas Water code 5.115, is any permanent school fund land affected by this application? ☐ Yes ☑ No

If Yes, Provide the location and foreseeable impacts and effects this application has on the land(s).

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Provide the name of the individual or entity that owns the land where the production area is located Elmer Jack Parks

Land Application Fields

Will the facility operate a wastewater irrigation system? ☑ Yes ☐ No

Will the facility land apply manure? ☑ Yes ☐ No

Will the facility utilize a contract manure hauler? ☑ Yes ☐ No

How many acres are available for land application? 538 On-site 320 Off-site*

Off-site Land Application

Is off-site land owned, operated, controlled, rented or leased by the applicant? ☑ Yes ☐ No

☐ For off-site land that is not owned by the applicant, attach a land application agreement.

☐ For all off-site land, include the landowners adjacent to the off-site land management units in the adjacent landowner's list (see Technical Information Packet).

*Off-site is considered to be land that is detached from the production area.

2. Technical Information

Refer to the categories below to determine the technical information required for each application type.

NEW, MAJOR AMENDMENT OR RENEWAL

Proposed Maximum Capacity: 700

For Amendments, describe all of the major changes proposed for the facility:

☑ Attach Completed Technical Information Packet. Contact the Land Application Team for the Technical Information Packet form by calling 512-239-4710 or writing to TCEQ, Land Application Team (MC-148), P.O. Box 13087, Austin, Texas 78711-3087.

MINOR AMENDMENT

Provide a description of the proposed changes to the facility or permit. Include the following items if applicable:

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☐ Current Vicinity Map

- ☐ Site Map
- ☐ Manure and Wastewater Management Calculations
- ☐ Water Balance
- ☐ Engineering Designs
- ☐ Current Copy of Tax Records or Deed showing ownership of the land

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3. Certification

Permit No. 03590

I, Elmer Jack Parks (Print or Type Name), Owner/Operator (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign this document and can provide documentation in proof of such authorization upon request.

Signature: Elmer J Parks Date: 7/13/07

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4. Schedule a Pre-Application Meeting (if applicable)

5. Submit Application to:

Registration, Review, and Reporting Division
Please submit the following items
☐ Original Application with attachments
☐ One copy of the application/attachments
☐ Application fee
Minor Amendment - $150.00
Renewal - $315.00
New or Major Amendment - $350.00

Address

Executive Director
Texas Commission On Environmental Quality
Attn: Registration, Review, and Reporting Division
Permits Administrative Review Section (MC 161)
Water Quality Applications Team
P.O. Box 13087
Austin, Texas 78711-3087

Regional Office
Please submit the following item
☐ One copy of the application/attachments

Address
Regional office addresses may be obtained on the TCEQ website at www.tceq.state.tx.us.

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TCEQ USE ONLY:
Application type: _____ Renewal _____ Major Amendment _____ Minor Amendment _____ New
County:_____ Admin Complete Date:_____
Agency Receiving SPIF: _____ Texas Historical Commission _____ U.S. Fish and Wildlife
_____ Texas Parks and Wildlife _____ Army Corps of Engineers

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form is required for all TPDES applications

1. Permittee: Elmer Jack Parks

2. Permit # WQ03590 (NPDES Permit No./EPA ID #) TX0127159

3. Address of the project (location description that includes street/highway, city/vicinity, county)

The dairy facility is located on the south side of CR 8 approx. 1/2 mile west of its intersection with FM 8. This intersection is located approx. 1 1/2 mile east of Lingleville, Erath County.

4. Provide the name, address, telephone and fax number of an individual that can be contacted to answer specific questions about the property.

Name: Norman Mullin Telephone number: 806/353-6123

Company: Enviro-Ag Engineering, Inc. Fax number: 806/353-4132

Street No. 3404 Street name: Airway Street type: Blvd.

City: Amarillo State: Texas ZIP Code: 79118

5. List the county in which the facility is located Erath

6. If the property is publicly owned and the owner is different than the permittee/applicant, please identify the owner

7. Identify the name of the water body (receiving waters) or TCEQ segment number that will receive the discharge
1255 - Upper North Bosque River

8. Please provide a 7.5 minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. (This map is required in addition to the map in the administrative report.)

9. Please provide photographs of any structures 50 years or older on the property

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10. Does your project involve any of the following? Please indicate yes by circling the appropriate letter.

a. Proposed access roads, utility lines, and construction easements
b. Visual effects that could damage or detract from a historic property's integrity
c. Vibration effects during construction, or as a result of project design
d. Additional phases of development that are planned for the future
e. Sealing of caves, fractures, sinkholes, or other karst features
f. Disturbance of vegetation or wetlands

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves or other karst features)

Modification of RCS #1 to a depth of 12 feet

12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances)

The land management units (LMU's) at the facility are or will be planted to Coastal bermuda grass and normal expected farming practices to maintain this crop will be utilized.

The following applies only to applications for New TPDES permits and Major Amendments to TPDES Permits:

13. List construction dates of any buildings or structures on the property

14. Provide a brief history of the property, and name of the architect/builder, if known

The following applies for New, Amended and Renewal TPDES (CAFO) applications:

15. List the total number and capacity (in acre feet) of any retention structures on the property

RCS #1 (11.91 ac-ft) RCS #2 (7.37 ac-ft)

16. How and where (location and number of acres) are wastewater and waste (i.e., manure, sludge) disposal operations accomplished

The applicant has 538 on-site acres and 320 off-site acres (858 total acres) for waste and wastewater application. Wastewater is applied via sprinkler and wheel move irrigation. See attached Figure 1.3a & 1.3b for exact locations of LMU's.

17. List the maximum number of head to be permitted

700

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N
W E
S

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560 FT 0 560 FT 1120 FT 1680 FT

SCALE

000021

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan and Huckabay, Tex. Quadrangles, 1965.

Lingleville Dairy Stephenville Erath County, Texas	7.5-Minute USGS Map SPIF Figure 2	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-8123 FAX (806) 353-4132

N
W E
S

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750 FT 0 750 FT 1500 FT 3000 FT

SCALE

000022

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan, Tex. Quadrangle, 1965.

Lingleville Dairy Stephenville Erath County, Texas	7.5-Minute USGS Map SPIF Figure 1	ENVIRO-AG EAE ENGINEERING, INC. **Enviro-Ag Engineering, Inc.** ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-8123 FAX (806) 353-4132

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
MIGRATORY BIRD MONITORING PROGRAM
711 Stadium Drive, Suite 252
Arlington, Texas 76011
(817) 277-1100

In response to the concerns offered by the Fish and Wildlife Service (FWS) regarding migratory birds and federally listed species for this pending TCEQ TPDES permit, the permittee will implement a voluntary monitoring program to include:

- Perform daily periodic visual monitoring activities of the RCSs (lagoons) in conjunction with pond level observations to include use of these structures by migratory fowl and discourage use by these migratory birds as stop over areas.
- Report to the FWS of any migratory bird kills.
- Report to the FWS, in addition to the TCEQ, all releases of wastewater from the RCSs.

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Erath County Appraisal District

Website information updated as of 5/15/2007 11:55:57 AM

Close | Click Here to Print

Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 119.000, A0332 HENSON ABSALOM;
Property ID:	R000019433	*Property Address:*	CR297 ~ 1610 ~
Geographic ID:	R.0332.00095.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	341,600	303,500	244,000	244,000	184,500
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	341,600	303,500	244,000	244,000	184,500
Agricultural Loss:	-	318,060	280,500	221,000	221,000	161,500
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	23,540	23,000	23,000	23,000	23,000

Building Details

Code/Description	*Square Footage*	*Year Built*

Land Details

Land Code	*Acres*	*Sq Ft*		*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C7	12.000		522,720	0.0	0.0	0.0	42,000	972
E7	107.000		4,660,920	0.0	0.0	0.0	299,600	22,567

Deed History

Sold By	*Volume*	*Page*	*Deed Date*
GOODMAN LEONA ET AL	721	293	1/1/1968

Estimated Taxes

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Code	*Description*	*Tax Rate per $100*	*Tax*
072	ERATH COUNTY	0.31980	75.28

000024

Erath County Appraisal District

Website information updated as of 5/15/2007 11:55:57 AM

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 21.790, A0332 HENSON ABSALOM
Property ID:	R000070530	*Property Address:*	CR392 (OFF) ~ 0 ~
Geographic ID:	R.0332.00045.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	61,010	54,480	43,580	43,580	32,680
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	61,010	54,480	43,580	43,580	32,680
Agricultural Loss:	-	56,220	49,820	38,920	38,920	30,850
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	4,790	4,660	4,660	4,660	1,830

Building Details

Code/Description	*Square Footage*	*Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E7	21.7909	49,172	0.0	0.0	0.0	61,012	4,794

Erath County Appraisal District

Website information updated as of 5/15/2007 11:55:57 AM

Close | Click Here to Print

Identification

Owner Name:	PARKS ELMER J & NORMA B	Legal Description:	Acres: 40.350, A0332 HENSON ABSALOM;
Property ID:	R000059544	Property Address:	CR392 ~ 0 ~
Geographic ID:	R.0332.00042.00.0	Map Number:	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name:	PARKS ELMER J & NORMA B	Ownership Interest Percentage:	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	Base Tax	Unpaid Tax	Addn Fees*	Late Fees	Amount Due
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

*Additional Fees include any applicable penalties and interest, attorney and/or late fees

Valuation

Values by Year		2007	2006	2005	2004	2003
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	113,220	101,050	80,870	80,870	60,700
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	113,220	101,050	80,870	80,870	60,700
Agricultural Loss:	-	104,340	92,410	72,230	72,230	52,060
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	8,880	8,640	8,640	8,640	8,640

Building Details

Code/Description	Square Footage	Year Built

Land Details

Land Code	Acres	Sq Ft	Front Ft	Rear Ft	Depth	Mkt Value	Prd Value
C7	0.340	14,810	0.0	0.0	0.0	1,190	75
E7	40.010	1,742,836	0.0	0.0	0.0	112,028	8,802

Deed History

Sold By	Volume	Page	Deed Date
BOSTICK S R & MARY B	834	609	1/15/1993

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Estimated Taxes

Code	Description	Tax Rate per $100	Tax
072	ERATH COUNTY	0.31980	28.40

000025 A

Erath County Appraisal District

Website information updated as of 5/15/2007 11:55:57 AM

Close | Click Here to Print

Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 65.980, A0332 HENSON ABSALOM;
Property ID:	R000019417	*Property Address:*	CR397 (OFF) ~ 0 ~
Geographic ID:	R.0332.00050.00.0	*Map Number:*	18-14-1

=MAPQUEST.=

Ownership/Exemption Information

Details Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	184,740	164,950	131,960	131,960	98,970
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	184,740	164,950	131,960	131,960	98,970
Agricultural Loss:	-	170,220	150,830	117,840	117,840	84,850
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	14,520	14,120	14,120	14,120	14,120

Building Details

Code/Description *Square Footage* *Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E7	65.980	2,874,089	0.0	0.0	0.0	184,744	14,516

000026

Erath County Appraisal District

Website information updated as of 5/15/2007 11:55:57 AM

Close | Click Here to Print

Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 86.460, A0332 HENSON ABSALOM;, DAIRY BARN OUT
Property ID:	R000019420	*Property Address:*	CR392 ~ 0 ~
Geographic ID:	R.0332.00053.00.0	*Map Number:*	18-14-1

=MAPQUEST.=

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	3,110	3,110	180,950	162,960	159,930
Land:	+	0	0	6,000	6,000	6,000
Production Market:	+	246,990	219,650	173,920	173,920	131,190
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	250,100	222,760	360,870	342,880	297,120
Agricultural Loss:	-	239,990	212,390	166,740	166,740	124,010
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	10,110	10,370	194,130	176,140	173,110

Building Details

Code/Description	*Square Footage*	*Year Built*
DAIRBARN OUT	867	*
STRG BUILDING	48	*
GRAINBN NO	2,225	*
GRAINBN NO	2,225	*

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 163.500, A0332 HENSON ABSALOM;
Property ID:	R000068858	*Property Address:*	CR297 ~ 429 ~
Geographic ID:	R.0332.00236.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	478,800	423,750	342,000	342,000	260,250
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	478,800	423,750	342,000	342,000	260,250
Agricultural Loss:	-	449,970	394,760	313,010	313,010	231,260
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	28,830	28,990	28,990	28,990	28,990

Building Details

Code/Description *Square Footage* *Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C7	30.000	1,306,800	0.0	0.0	0.0	105,000	11,475

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 66.000, A0332 HENSON ABSALOM;HOUSE & SHEDS
Property ID:	R000068860	*Property Address:*	CR297 ~ 1967 ~
Geographic ID:	R.0332.00237.00.0	*Map Number:*	18-14-1

=MAPQUEST.=

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	142,300	132,330	0	0	0
Land:	+	10,000	7,500	0	0	0
Production Market:	+	188,300	167,000	137,000	137,000	104,000
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	340,600	306,830	137,000	137,000	104,000
Agricultural Loss:	-	179,850	158,350	131,460	131,460	98,460
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	160,750	148,480	5,540	5,540	5,540

Building Details

Code/Description	*Square Footage*	*Year Built*
MAIN AREA	1,910	2004*
COVERPORCH	376	*
SCREEN PORCH	272	*
GARAGE ATTACHED	576	*

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 41.750, A0332 HENSON ABSALOM;
Property ID:	R000068862	*Property Address:*	CR297 ~ 0 ~
Geographic ID:	R.0332.00238.00.0	*Map Number:*	18-14-1

=MAPQUEST.=

Ownership/Exemption Information

Details

Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	126,700	111,380	90,500	90,500	69,620
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	126,700	111,380	90,500	90,500	69,620
Agricultural Loss:	-	123,320	107,870	86,990	86,990	66,110
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	3,380	3,510	3,510	3,510	3,510

Building Details

Code/Description *Square Footage* *Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C7	14.000	609,840	0.0	0.0	0.0	49,000	1,134

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 14.630, A0332 HENSON ABSALOM;
Property ID:	R000068865	*Property Address:*	CR297 ~ 0 ~
Geographic ID:	R.0332.00239.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	42,360	37,580	30,260	30,260	22,940
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	42,360	37,580	30,260	30,260	22,940
Agricultural Loss:	-	41,170	36,350	29,030	29,030	21,710
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	1,190	1,230	1,230	1,230	1,230

Building Details

Code/Description	*Square Footage*	*Year Built*

Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C7	2.000	87,120	0.0	0.0	0.0	7,000	162

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 20.030, A0261 FANTHARP HENRY;
Property ID:	R000018614	*Property Address:*	CR413 (OFF) ~ 0 ~
Geographic ID:	R.0261.00093.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	40,060	36,050	20,030	20,030	16,020
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	40,060	36,050	20,030	20,030	16,020
Agricultural Loss:	-	38,440	34,370	18,350	18,350	14,340
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	1,620	1,680	1,680	1,680	1,680

Building Details

Code/Description	*Square Footage*	*Year Built*

Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E10	20.0308	72,507	0.0	0.0	0.0	40,060	1,622

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Identification

Owner Name:	PARKS JACK & NORMA	*Legal Description:*	Acres: 25.720, A0261 FANTHARP HENRY;, BARN & STG
Property ID:	R000042908	*Property Address:*	CR297 (OFF) ~ 0 ~
Geographic ID:	R.0261.00062.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name:	PARKS JACK & NORMA	*Ownership Interest Percentage:*	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	500	500	450	440	420
Land:	+	0	0	0	0	0
Production Market:	+	58,300	50,150	38,720	38,720	30,580
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	58,800	50,650	39,170	39,160	31,000
Agricultural Loss:	-	54,960	46,730	35,300	35,300	27,160
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	3,840	3,920	3,870	3,860	3,840

Building Details

Code/Description	*Square Footage*	*Year Built*
BARN	1,820	*
STRG BUILDING	399	*

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Land Details

000033

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 49.740, A0261 FANTHARP HENRY;
Property ID:	R000042909	*Property Address:*	CR297 ~ 0 ~
Geographic ID:	R.0261.00065.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	89,530	79,580	49,740	49,740	39,790
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	89,530	79,580	49,740	49,740	39,790
Agricultural Loss:	-	85,500	75,400	45,560	45,560	35,610
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	4,030	4,180	4,180	4,180	4,180

Building Details

Code/Description	*Square Footage*	*Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E10+	49.740	2,166,674	0.0	0.0	0.0	89,532	4,029

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 27.980, A0142 CAMPBELL CATHERINE;
Property ID:	R000016828	*Property Address:*	FM8 ~ 0 ~ W
Geographic ID:	R.0142.00190.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	63,510	57,410	36,530	36,530	29,430
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	63,510	57,410	36,530	36,530	29,430
Agricultural Loss:	-	57,350	51,420	30,540	30,540	23,440
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	6,160	5,990	5,990	5,990	5,990

Building Details

Code/Description	*Square Footage*	*Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
P10	5.0302	19,107	0.0	0.0	0.0	17,605	1,107

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Identification

Owner Name:	PARKS JACK & NORMA	*Legal Description:*	Acres: 0.970, A0142 CAMPBELL CATHERINE;
Property ID:	R000042906	*Property Address:*	FM8 ~ 0 ~
Geographic ID:	R.0142.00195.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS JACK & NORMA

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX
76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	2,910	2,720	2,430	2,420	1,940
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	2,910	2,720	2,430	2,420	1,940
Agricultural Loss:	-	2,830	2,640	2,350	2,340	1,860
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	80	80	80	80	80

Building Details

Code/Description	*Square Footage*	*Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
P10+	0.970	42,253	0.0	0.0	0.0	2,910	79

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 17.330, A0142 CAMPBELL CATHERINE;, HOUSE
Property ID:	R000016853	*Property Address:*	FM8 ~ 0 ~ W
Geographic ID:	R.0142.00275.00.0	*Map Number:*	18-14-1

Ownership/Exemption Information

Details

Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	81,060	75,920	73,000	65,730	64,570
Land:	+	10,000	7,500	6,000	6,000	6,000
Production Market:	+	35,660	32,190	19,730	19,730	15,860
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	126,720	115,610	98,730	91,460	86,430
Agricultural Loss:	-	33,940	30,430	17,970	17,970	14,100
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	92,780	85,180	80,760	73,490	72,330

Building Details

Code/Description	*Square Footage*	*Year Built*
MAIN AREA	1,708	1963*
GARAGE ATTACHED	525	*
COVERPORCH	128	*

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 12.540, A0261 FANTHARP HENRY;
Property ID:	R000018603	*Property Address:*	CR297 (OFF) ~ 0 ~
Geographic ID:	R.0261.00020.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name:	PARKS ELMER J & NORMA B	*Ownership Interest Percentage:*	1.000
Mailing Address:	13628 W FM8 STEPHENVILLE, TX 76401-9748		
Exemptions Granted:	n/a		

Unpaid Taxes

Proposed payment date: 7/26/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	41,380	35,110	31,350	31,350	25,080
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	41,380	35,110	31,350	31,350	25,080
Agricultural Loss:	-	40,360	34,060	30,300	30,300	24,030
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	1,020	1,050	1,050	1,050	1,050

Building Details

Code/Description	*Square Footage*	*Year Built*

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Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C10	12.5405	46,242	0.0	0.0	0.0	41,382	1,016

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 63.590, A0332 HENSON ABSALOM;
Property ID:	R000068855	*Property Address:*	FM8 ~ 13628 ~ W
Geographic ID:	R.0332.00234.00.0	*Map Number:*	18-14-1

MAPQUEST.

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	178,050	158,980	127,180	127,180	95,380
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	178,050	158,980	127,180	127,180	95,380
Agricultural Loss:	-	172,900	153,640	121,840	121,840	90,040
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	5,150	5,340	5,340	5,340	5,340

Building Details

Code/Description	*Square Footage*	*Year Built*

Land Details

Land Code	*Acres*	*Sq Ft*		*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E7	63.590		2,769,980	0.0	0.0	0.0	178,052	5,151

Deed History

Sold By	*Volume*	*Page*	*Deed Date*
WYLIE JOHN JR & MARY J	546	912	6/17/1986

Estimated Taxes

Code	*Description*	*Tax Rate per $100*	*Tax*
072	ERATH COUNTY	0.31980	16.47
909	LINGLEVILLE ISD	1.37080	70.60
APR	APPRAISAL DISTRICT	n/a	n/a
MTD	MIDDLE TRINITY WATER	0.01500	0.77
RER	ERATH ROAD & BRIDGE	0.11540	5.94
	Total Estimation:	1.82100	93.78

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000039

Erath County Appraisal District

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Identification

Owner Name: PARKS ELMER J & NORMA B

Legal Description: Acres: 29.180, A0851 WHITACRE W B;

Property ID: R000026975

Property Address: CR416 ~ 0 ~

Geographic ID: R.0851.00030.00.0

Map Number: 19-14-3

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	Base Tax	Unpaid Tax	Addn Fees*	Late Fees	Amount Due
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

*Additional Fees include any applicable penalties and interest, attorney and/or late fees

Valuation

Values by Year		2007	2006	2005	2004	2003
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	58,360	52,520	29,180	29,180	23,340
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	58,360	52,520	29,180	29,180	23,340
Agricultural Loss:	-	52,520	46,820	23,480	23,480	17,640
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	5,840	5,700	5,700	5,700	5,700

Building Details

Code/Description	Square Footage	Year Built

Land Details

Land Code	Acres	Sq Ft		Front Ft	Rear Ft	Depth	Mkt Value	Prd Value
E10	29.180		1,271,081	0.0	0.0	0.0	58,360	5,839

Deed History

Sold By	Volume	Page	Deed Date

Estimated Taxes

Code	Description	Tax Rate per $100	Tax
072	ERATH COUNTY	0.31980	18.68
909	LINGLEVILLE ISD	1.37080	80.05
APR	APPRAISAL DISTRICT	n/a	n/a
MTD	MIDDLE TRINITY WATER	0.01500	0.88
RER	ERATH ROAD & BRIDGE	0.11540	6.74
	Total Estimation:	1.82100	106.35

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Identification

Owner Name: PARKS ELMER J & NORMA B

Legal Description: Acres: 3.900, A0794 THORNTON E H;

Property ID: R000026302

Property Address: CR413 ~ 0 ~

Geographic ID: R.0794.00040.00.0

Map Number: 19-14-3

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	Base Tax	Unpaid Tax	Addn Fees*	Late Fees	Amount Due
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		2007	2006	2005	2004	2003
Improvements:	+	0	0	0	0	0
Land:	+	0	0	0	0	0
Production Market:	+	7,800	7,020	3,900	3,900	3,120
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	7,800	7,020	3,900	3,900	3,120
Agricultural Loss:	-	7,480	6,690	3,570	3,570	2,790
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	320	330	330	330	330

Building Details

Code/Description	Square Footage	Year Built

Land Details

Land Code	Acres	Sq Ft	Front Ft	Rear Ft	Depth	Mkt Value	Prd Value
E10	3.900	169,884	0.0	0.0	0.0	7,800	316

Deed History

Sold By	Volume	Page	Deed Date
NO GRANTOR	612	317	1/1/1968

Estimated Taxes

Code	Description	Tax Rate per $100	Tax
072	ERATH COUNTY	0.31980	1.02
909	LINGLEVILLE ISD	1.37080	4.39
APR	APPRAISAL DISTRICT	n/a	n/a
MTD	MIDDLE TRINITY WATER	0.01500	0.05
RER	ERATH ROAD & BRIDGE	0.11540	0.37
	Total Estimation:	1.82100	5.83

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 98.840, A0332 HENSON ABSALOM;, & SHEDS
Property ID:	R000019520	*Property Address:*	CR413 ~ 2272 ~
Geographic ID:	R.0332.00450.00.0	*Map Number:*	19-14-3

=MAPQUEST.=

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	10,590	10,590	10,590	10,590	10,100
Land:	+	0	0	0	0	0
Production Market:	+	283,750	252,100	202,680	202,680	153,260
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	294,340	262,690	213,270	213,270	163,360
Agricultural Loss:	-	268,790	237,300	187,880	187,880	138,460
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	25,550	25,390	25,390	25,390	24,900

Building Details

Code/Description	*Square Footage*	*Year Built*
SHED	3,600	1988*

Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
C7	10.000	435,600	0.0	0.0	0.0	35,000	810
E7	88.840	3,869,870	0.0	0.0	0.0	248,752	14,146

Deed History

Sold By	*Volume*	*Page*	*Deed Date*
PARKS TABITHA	721	293	6/16/1987

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Estimated Taxes

Code	*Description*	*Tax Rate per $100*	*Tax*

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Erath County Appraisal District

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 141.600, A0332 HENSON ABSALOM;, SHEDS & BARNS
Property ID:	R000019476	*Property Address:*	FM8 ~ 13628 ~ W
Geographic ID:	R.0332.00230.00.0	*Map Number:*	18-14-1

MAPQUEST

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	22,030	22,030	24,080	24,080	22,950
Land:	+	0	0	0	0	0
Production Market:	+	421,980	376,500	298,200	298,200	229,300
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	444,010	398,530	322,280	322,280	252,250
Agricultural Loss:	-	408,060	362,160	283,860	283,860	214,960
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	35,950	36,370	38,420	38,420	37,290

Building Details

Code/Description	*Square Footage*	*Year Built*
SHED	600	*
SHED ATTACHED	100	*
HAYBARN	8,000	*
3SIDE SHED	660	*
STRG BUILDING	200	2005*

Land Details

Land Code	*Acres*	*Sq Ft*		*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
P7	15.000		653,400	0.0	0.0	0.0	67,500	1,950
E7	126.600		5,514,696	0.0	0.0	0.0	354,480	11,970

Deed History

Sold By	*Volume*	*Page*	*Deed Date*

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Erath County Appraisal District

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Identification

Owner Name:	PARKS ELMER J & NORMA B	*Legal Description:*	Acres: 12.710, A0332 HENSON ABSALOM
Property ID:	R000019474	*Property Address:*	CR416 (OFF) ~ 0 ~
Geographic ID:	R.0332.00215.00.0	*Map Number:*	19-14-3

=MAPQUEST.=

Ownership/Exemption Information

Details

Name: PARKS ELMER J & NORMA B

Ownership Interest Percentage: 1.000

Mailing Address: 13628 W FM8
STEPHENVILLE, TX 76401-9748

Exemptions Granted: n/a

Unpaid Taxes

Proposed payment date: 7/24/2007

Taxing Detail	*Base Tax*	*Unpaid Tax*	*Addn Fees**	*Late Fees*	*Amount Due*
Total Amount Due:	0.00	0.00	0.00	0.00	**0.00**

**Additional Fees include any applicable penalties and interest, attorney and/or late fees*

Valuation

Values by Year		***2007***	***2006***	***2005***	***2004***	***2003***
Improvements:	+	0	0	11,310	11,310	10,770
Land:	+	0	0	0	0	0
Production Market:	+	35,590	31,780	25,420	25,420	19,060
Personal:	+	0	0	0	0	0
Mineral:	+	0	0	0	0	0
Total Market:	=	35,590	31,780	36,730	36,730	29,830
Agricultural Loss:	-	34,560	30,710	24,350	24,350	17,990
Homestead Cap Loss:	-	0	0	0	0	0
Total Assessed:	=	1,030	1,070	12,380	12,380	11,840

Building Details

Code/Description	*Square Footage*	*Year Built*

Land Details

Land Code	*Acres*	*Sq Ft*	*Front Ft*	*Rear Ft*	*Depth*	*Mkt Value*	*Prd Value*
E7	12.710	553,648	0.0	0.0	0.0	35,588	1,030

Deed History

Sold By	*Volume*	*Page*	*Deed Date*
MUSGRAVE DORIS	628	118	4/5/1984

Estimated Taxes

Code	*Description*	*Tax Rate per $100*	*Tax*
072	ERATH COUNTY	0.31980	3.29
909	LINGLEVILLE ISD	1.37080	14.12
APR	APPRAISAL DISTRICT	n/a	n/a
MTD	MIDDLE TRINITY WATER	0.01500	0.15
RER	ERATH ROAD & BRIDGE	0.11540	1.19
	Total Estimation:	1.82100	18.75

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TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*
Renewal of TPDES permit # 03590

2. Attachments ☑ Yes ☐ No

Describe Any Attachments: *(ex: Title V Application, Waste Transporter Application, etc.)*
Sub B, Technical Information Packet and supporting documentation

3. Customer Reference Number-*if issued*
CN 601127798 *(9 digits)*

4. Regulated Entity Reference Number-*if issued*
RN 102091873 *(9 digits)*

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following: ☐ Owner ☐ Operator ☑ Owner and Operator
☐ Occupational Licensee ☐ Volunteer Cleanup Applicant ☐ Other: _____

TCEQ Use Only ☐ Superfund ☐ PST ☐ Respondent

6. General Customer Information
☐ New Customer ☐ Change to Customer Information ☐ Change in Regulated Entity Ownership ☑ No Change*
*If "No Change" and Section I is complete, skip to Section III - Regulated Entity Information.

7. Type of Customer: ☐ Individual ☐ Sole Proprietorship - D.B.A. ☐ Partnership ☐ Corporation
☐ Federal Government ☐ State Government ☐ County Government ☐ City Government
☐ Other Government _____ ☐ Other _____

8. Customer Name *(If an individual, please print last name first)* *If new name, enter previous name:*

9. Mailing Address: _____

City	State	ZIP	ZIP + 4

10. Country Mailing Information *if outside USA*

11. E-Mail Address *if applicable*

12. Telephone Number	13. Extension or Code	14. Fax Number *if applicable*
( ) -		( ) -

15. Federal Tax ID *(9 digits)*	16. State Franchise Tax ID Number *if applicable*	17. DUNS Number *if applicable (9 digits)*

18. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

19. Independently Owned and Operated?
☐ YES ☐ NO

SECTION III: Regulated Entity Information

20. General Regulated Entity Information
☐ New Regulated Entity ☐ Change to Regulated Entity Information ☑ No Change*
*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*

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22. Street Address:			
(No P.O. Boxes)			
City	State	ZIP	ZIP + 4
23. Mailing Address			
City	State	ZIP	ZIP + 4
24. E-Mail Address:			
25. Telephone Number ( ) -	**26. Extension or Code**	**27. Fax Number** *if applicable* ( ) -	

28. Primary SIC Code *(4 digits)*	**29. Secondary SIC Code** *(4 digits)*	**30. Primary NAICS Code** *(5 or 6 digits)*	**31. Secondary NAICS Code** *(5 or 6 digits)*

32. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County:

34. Description of Physical Location

35. Nearest City	**State**	**Nearest ZIP**

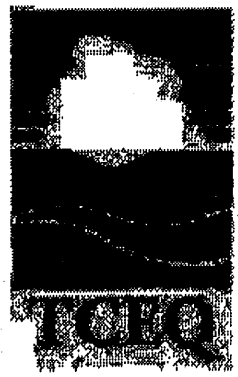
36. Latitude (N)			**37. Longitude (W)**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "unknown."*

☐ Animal Feeding Operation	☐ Petroleum Storage Tank	☐ Water Rights
☐ Title V – Air	☐ Wastewater Permit	☐ _____
☐ Industrial & Hazardous Waste	☐ Water Districts	☐ _____
☐ Municipal Solid Waste	☐ Water Utilities	☐ Unknown
☐ New Source Review - Air	☐ Licensing - TYPE(s) _____	

SECTION IV: Preparer Information

39. Name Corey Mullin		**40. Title** Consultant
41. Telephone Number (254) 445 - 2200	**42. Extension or Code**	**43. Fax Number** *if applicable* (254) 445 - 3252
44. E-Mail Address: cmullin@enviroag.com		SEP 2 8 2007



Technical Information Packet

for

Concentrated Animal Feeding Operations (CAFOs)

Facility Name Lingleville Dairy

Facility TCEQ Water Quality Number (if assigned) WQ03590

Date Prepared Revised August 2007

TCEQ-00760 (11/1/04)

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Complete the following summary pages and attach all backup materials. If a CNMP is used for backup material, indicate the appropriate section that addresses each requirement. Only include the CNMP components necessary as part of the TCEQ regulations. If the facility is located in a major sole source impairment zone, special requirements and additional information may be required.

I. POLLUTANT SOURCES AND MANAGEMENT

A. Potential Pollutant Sources.

☑ Manure/Litter	☑ Sludge	☑ Wastewater
☑ Dust	☑ Silage stockpiles	☑ Fuel storage tanks
☑ Pesticides/Herbicides	☑ Lubricants	☑ Dead animals
☑ Manure stockpiles	☐ Compost	☑ Vehicle traffic
☐ Feathers	☑ Feed/Bedding	☑ Other Parlor Chemicals

B. For each potential pollutant source, provide the management practices utilized. Attach additional pages, if necessary.

POTENTIAL POLLUTANT SOURCE	BEST MANAGEMENT PRACTICE
See Attached	

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Facility Name Lingleville Dairy

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I. POLLUTANT SOURCES AND MANAGEMENT

B. For each potential pollutant source, provide the management practices utilized.

Note: A Best Management Practice, as defined in 30 TAC §321.32 (7), is the schedule of activities, prohibitions of practices, maintenance procedures, and other management and conservation practices to prevent or reduce the pollution of water in the state. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge, land application, or drainage from raw material storage. The following practices should be updated in the on-site PPP as changes to facility operating procedures occur. Employee training should be provided upon development & implementation of any BMP.

Potential Pollutant Sources:	Potential Best Management Practices (BMPs)
Manure, Sludge, Stockpiles, Bedding & Feed Waste	Temporary (< 30 days) & Permanent Storage (>30 days) Store in drainage area of the RCS - OR - If not located within drainage area, berm area to contain runoff from a 25-year, 10-day rainfall event. Annually sample manure/manure stockpiles for nutrient concentrations. Manure & Sludge -Land application according to NUP/NMP Regular pen maintenance (scraping & drainage)
Dust - Vehicle Traffic	Control speeds around the facility. Reduce travel on unpaved facility roads, or manage dust by sprinkling road with water and/or a suppressant on an as needed basis. Utilize paving products and/or gravel to manage dust on facility roads.
Dust - Feed Handling/Processing	Utilize dust abatement measures for feed handling equipment, Utilize choke feeding when handling feed ingredients & Utilize feed ingredients, such as moisture or other additives, to manage dust.
Feedstuff/Silage Stockpiles	Contain leachate in an earthen berm or in the RCS Maintain 100-foot buffer for all irrigation wells or 150-foot buffer for all supply wells Minimize feed spoilage & utilize plastic covers or roofed areas for storage when applicable.
Lubricants/Pesticides/Herbicides/Parlor Chemicals	Store under roof Handle and dispose according to label directions
Fuel Tanks	Provide secondary containment Prevent overfills/spills
Wastewater	Store in properly sized and designed RCS Land application according to NUP/NMP Land application will not occur during periods of saturation or frozen conditions (except in the event of imminent overflow) Annually sample for nutrient concentrations Maintain liner and capacity certifications Maintain adequate capacity as determined by the pond marker schematic
Dead Animals	Disposed by a third-party rendering service Collected within 24 hours of death and disposed within three days of death
	SEP 28 2007

II. RETENTION CONTROL STRUCTURE DESIGN

A. Design Summary

Design Standards, Characteristic and Values Sources used

☐ NRCS
☑ ASAE
☑ Other Midwest Plan Service, permitee

Total Number of Animals: 700 Open Lot 700 Building	
Hours per Day: 22 Open Lot 2 Building	
Average Liveweight, lbs/hd	1,400
Volatile Solids removed by separator system	60% (settling efficiency)
Volatile Solids Loading Rate lbs/day • 1000 ft^3	No Treatment Required
Spilled Drinking water, gal/day	Included in clean up water
Water for Clean up, gal/day	15 gal/head/day
Water for Manure Removal, gal/day	Included in clean up water
Recycled Wastewater, gal/day	n/a

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B. Wastewater Runoff. Design rainfall event 11.8 inches

❒ 25 year, 24 hour ❒ SPAW

❒ 25 year, 10 day ❒ Other_____

Drainage Area Number 1

	DRAINAGE AREA (ACRES)	SCS CURVE NUMBER	RUNOFF DEPTH (INCHES)	RUNOFF VOLUME (ACRE-FEET)
Open Lots/Pens	8.5	90	10.6	7.48
Other Area Between Pens And Control Structures (specify ground cover type)	2.0	85	9.9	1.65
Roof Area Runoff Flowing Into Control Structure	0.5	100	11.8	0.49
Surface Area Of Control Structure	3.0	100	11.8	2.95
Totals	14			12.58

Drainage Area Number 2

	DRAINAGE AREA (ACRES)	SCS CURVE NUMBER	RUNOFF DEPTH (INCHES)	RUNOFF VOLUME (ACRE-FEET)
Open Lots/Pens	4.0	90	10.6	3.52
Other Area Between Pens And Control Structures (specify ground cover type)	1.0	85	9.9	0.83
Roof Area Runoff Flowing Into Control Structure	0.0	100	11.8	0
Surface Area Of Control Structure	1.1	100	11.8	1.08
Totals	6.10			5.43

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C. RCS Volume Allocations.

Volume Allocations for RCSs (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	12.58	0.97	n/a	3.30	2.76	19.60	11.91
2	5.43	n/a	n/a	0.88	0.76	7.07	7.37

Please indicate which RCSs are in-series n/a

D. RCS Hydrologic Connection.

RCS No.	Construction Date	Type of Hydrologic Connection Certification
1	1995	Liner by EAE 2007
2	1994	Liner by EAE 2007
Settling Basin	1995	Liner by EAE 2007

E. Playa Lakes.
Are any playa lakes used for RCSs? ☐ YES ☒ NO

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III. MANURE, LITTER AND WASTEWATER HANDLING

A. Manure, litter and wastewater usage.

	Wastewater	Sludge	Solids
Method	☑ Land Application ☐ Total Evaporation ☑ Other Third party fields	☑ Land Application ☑ Transfer to other persons ☑ Other Third party fields	☑ Land Application ☑ Transfer to other persons ☐ Composting ☑ Other Third party fields
Land Application Location	☑ Onsite ☑ Offsite ☐ Not applicable	☑ Onsite ☑ Offsite ☐ Not applicable	☑ Onsite ☑ Offsite ☐ Not applicable
Composting Location			☐ Onsite ☑ Composting Facility ☐ Not applicable

B. Land Application Summary.

LMU #	Acreage	Proposed Crop(s)	Estimated Yield Goal(s)	Estimated Application Rate (ac-ft/ac/yr or tons/ac/yr)
		See Attached		

Wastewater production, ac-in/yr: 412.8
Estimated Wastewater application, ac-in/yr: 207 (NMP)

Manure/litter production, tons/yr: 2,555
Estimated manure/litter application, tons/yr: 3809.4 (NMP)
Estimated manure/litter transferred to other persons, tons/yr 0 this year

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B. Land Application Summary

LMU #	Acreage	Proposed Crops	Estimated Yields	Estimated Application Rates (ac-ft/ac/yr or tons/ac/y	
1	13	Coastal/Wheat	Coastal 4cut/ SG 10 ton/ac	3.51	ac-ft/ac/yr
2a	19	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
2b	44	Coastal	Coastal 3 cut + Grazing	27.20	tons/ac/yr
3	100	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
4a	13	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
4b	23	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
4c	9	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
5a	33	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
5b	63	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
6a	34	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
6b	50	Coastal	Coastal Grazing 1 AU/2 ac	11.10	tons/ac/yr
7a	55	Coastal	Coastal 3 cut + Grazing	4.62	ac-ft/ac/yr
7b	34	Coastal	Coastal 3 cut + Grazing	4.62	ac-ft/ac/yr
7c	18	Coastal	Coastal 3 cut + Grazing	4.62	ac-ft/ac/yr
8	30	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
9a	34	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
9b	77	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
10a	35	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
10b	40	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
11a	36	Coastal	Coastal 3 cut + Grazing	33.50	tons/ac/yr
11b	21	Coastal	Coastal 3 cut + Grazing	27.20	tons/ac/yr
12a	20	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
12b	38	Coastal	Coastal 2 cut (establish)	14.60	tons/ac/yr
13	19	Coastal/Wheat	Coastal 4 cut/SG 10 ton/ac	27.60	tons/ac/yr

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Type of Irrigation Equipment:

☑ Center Pivot System ☑ Wheel Roll
☐ Walking Big Gun ☐ Flood Irrigation
☐ Stationary Big Gun ☐ Other_____

Dewatering capability (gal/min) pivot 300, wheel 250

Will land applied solids be incorporated? ☐ Yes ☑ No
Method of incorporation?_____
Duration between application and incorporation?_____

C. Floodplain Information.

Is any part of the production area within a 100-year floodplain? ☐ Yes ☑ No
If YES, describe management practices to protect the sites.

Is land application or temporary storage of solids in a 100-year floodplain or near a water course? ☑ Yes ☐ No
If YES, describe management practices.

Land application according to NMP in section 4. No land application during periods of inundation.

D. Soil Limitations:

Soil Types	Limiting Characteristics	Best Management Practice
Bu	Flooding	Land application not to exceed agronomic rates and soil infiltration rates.
DIC, MfB	Seepage	Land application not to exceed agronomic rates and soil infiltration rates.
PcC, Pd	Droughty	Maintain soil moisture, Maintain cover crop
PcC, Pd	Depth to Bedrock	Land application not to exceed agronomic rates and soil infiltration rates.
PcC, Pd	Depth to Hard Bedrock	Land application not to exceed agronomic rates and soil infiltration rates.
WaA, WkA	Slow water Movement	Land application not to exceed agronomic rates and soil infiltration rates.
WaA, WkA	Depth to saturated zone	Land application not to exceed agronomic rates and soil infiltration rates.
WaA, WkA	Percs slowly	Land application not to exceed agronomic rates and soil infiltration rates.

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E. Well Protection

Well ID Number	Well Type	Producing or Non-Producing	Open, Cased, or Capped	Protective Measure
1	Domestic	Producing	Cased	150-ft Buffer
2	Domestic	Producing	Cased	150-ft Buffer
3	Domestic	Producing	Cased	Additional BMPs
4	Domestic	Producing	Cased	150-ft Buffer
5	Domestic	Producing	Cased	150-ft Buffer
6	Domestic	Producing	Cased	150-ft Buffer
7	Domestic	Producing	Cased	150-ft Buffer
8	Domestic	Producing	Cased	150-ft Buffer
9	Domestic	Producing	Cased	150-ft Buffer
10	Domestic	Producing	Cased	150-ft Buffer
11	Domestic	Producing	Cased	150-ft Buffer
12	Domestic	Domestic	Cased	150-ft Buffer
13	Domestic	Domestic	Cased	150-ft Buffer
14	Domestic	Domestic	Cased	150-ft Buffer
15	Domestic	Domestic	Cased	150-ft Buffer

IV. ATTACHMENTS

A. Maps
   1. Site map
   2. Land Management Unit map
   3. Vicinity map
   4. Original United States Geological Survey 7.5 minute quadrangle map
   5. 100 year floodplain map
   6. Runoff Control map
   7. Natural Resource Conservation Service (NRCS) Soil Survey Map

B. Adjacent landowner list & map

C. Professional Certifications
   1. Recharge Feature Certification Statement and Supporting Documents
   2. RCS Design Calculations (Water Nutr, Animal Waste Management (AWM), or equivalent)
   3. RCS Constructed Capacity (if constructed)
   4. RCS Hydrologic Connection Certifications (if constructed)

D. Land Application
   1. Nutrient Management Plan
   2. Nutrient Utilization Plan (NUP) (if required) If the NUP is already approved, include the approval letter.
   3. Contract Hauler Agreement (if required)
   4. Copy of Previous Year's Annual Soil Sampling Analyses

E. Pollution Prevention Plan signature page

F. Air Standard Permit Documentation (if required)
   1. Air Standard Permit Summary
   2. Area Land Use map
   3. Odor control plan
   4. Written consent letters

G. Groundwater Monitoring (if required)
   1. Groundwater Monitoring Plan
   2. Groundwater Monitoring analyses

SEP 28 2007

POLLUTION PREVENTION PLAN SIGNATURE PAGE

- The permittee shall document to the pollution prevention plan, as soon as possible, any planned physical alterations or additions to the permitted facility. The permittee must insure that any change or facility expansion will not result in a discharge in violation of the provisions of the Individual Permit or will require an amendment to the existing permit in force at the time of modification. The person(s) authorized to do this is:

Name: Elmer Jack Parks
Address: 429 County Road 297
City: Stephenville, Texas
State: Texas ZIP: 76401 -
Telephone: 254/968-3406

Name:
Address:
City:
State: ZIP: -
Telephone:

Name:
Address:
City:
State: ZIP: -
Telephone:

Name:
Address:
City:
State: ZIP: -
Telephone:

- The plan must be signed by the operator or other signatory authority and retained on-site.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

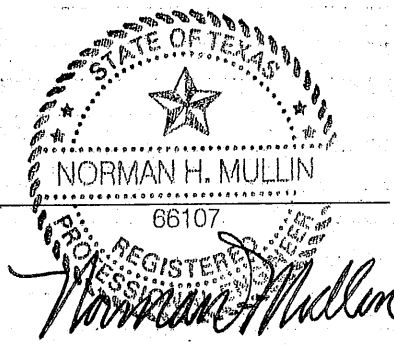
Authorized Signature: Elmer J Parks Title: Owner

Facility Name Lingleville Dairy

SEP 28 2007

RECHARGE FEATURE CERTIFICATION STATEMENT

I certify that potential recharge features, as defined in 30 Texas Administrative Code 321, Subchapter B, [✓] EXIST [ ] DO NOT EXIST on properties utilized in this application. All information presented on this page and the attached supporting documents is true and accurate to the best of my knowledge.

Certification Signature 

Seal and Date 9/25/07

SEP 28 2007

Facility Name Lingleville Dairy

TCEQ-00760 (11/1/04)

AIR STANDARD PERMIT SUMMARY

A. Buffer Distances- the distance between permanent odor sources and any occupied residence or business structure, school (including associated recreational areas), place of worship, or public park.

Radius (mile)	Number of Occupied Structures
0 - ¼	
¼ - ½	
½ - 1	

B. Air Standard Permit Requirements- Use the following table to determine requirements based on the minimum buffer distance. Indicate the AFO status and Option by placing a checkmark in the corresponding gray area.

	AFO Status and Proposed Action		Option 1*		Option 2*
	Construction of an AFO which started or plans to start operations after August 19, 1998		1/2 mile buffer		1/4 mile buffer and an odor control plan
	Expansion of an AFO which started operations after August 19, 1998.		1/2 mile buffer		1/4 mile buffer and an odor control plan
	Continued Operation of an AFO which was in operation on or before August 19, 1998.		1/4 mile buffer		odor control plan
	Expansion or modification of an AFO which was in operation on or before August 19, 1998.		1/4 mile buffer		odor control plan

*A written letter of consent from an affected landowner may be used in lieu of meeting the buffer distances specified.

Facility Name _____

SEP 2 8 2007

ADJACENT LANDOWNERS LIST

Name HAROLD FRITTS
Number on Map A
Address 5157 CR392
Address STEPHENVILLE TX 76401

Name PACKS COW PALACE LTD
Number on Map B
Address 186 PR 1001
Address STEPHENVILLE TX 76401

Name D R SIMS
Number on Map C
Address 199 CR562
Address STEPHENVILLE TX 76401

Name JAM DOT FAMILY LIMITED PARTNERSHIP
Number on Map D
Address 15523 W FM8
Address STEPHENVILLE TX 76401

Name LARRY D & LINDA BURKS
Number on Map E
Address 241 HIGH RIDGE DR
Address MCKINNEY TX 75071

Name R P & TRACEY WILSON
Number on Map F
Address P O BOX 200
Address LINGLEVILLE TX 76461

Name RONALD W & LINDA JEAN GILES
Number on Map G
Address P O BOX 1344
Address STEPHENVILLE TX 76401

Name TIMOTHY G SMITH
Number on Map H
Address P O BOX 1617
Address STEPHENVILLE TX 76401

Name SERCY R BOSTICK
Number on Map I
Address 4516 CR 392
Address STEPHENVILLE TX 76401

Name JOHAN G & SONYA KOKE
Number on Map J
Address 553 CR506
Address DUBLIN TX 76446

Name TRIPLE DUTCH DAIRY
Number on Map K
Address 9583 S PLEASANT GROVE DRIVE
Address INVERNESS FL 34452

Name SUSAN JANETTE WEEMS
Number on Map L
Address 473 CR538
Address STEPHENVILLE TX 76401

Name PHILLIP E & BECKY SCHULZE
Number on Map M
Address P O BOX 2082
Address STEPHENVILLE TX 76401

Name ELDON L DUCKWORTH
Number on Map N
Address 18071 W FM 8
Address STEPHENVILLE TX 76401

Name BRAD ALLEN
Number on Map O
Address P O BOX 953
Address STEPHENVILLE TX 76401

Name NATHAN BURGER & AMANDA BLAKLEY
Number on Map P
Address 2235 CR413
Address STEPHENVILLE TX 76401

Please identify where you obtained the landowner information.

ERATH COUNTY APPRAISAL DISTRICT, SEPTEMBER 2007

SEP 28 2007

Facility Name Lingleville Dairy

000061

ADJACENT LANDOWNERS LIST

Name LEE ROY & JOAN HAHNFELD
Number on Map Q
Address 1620 WESTERN AVE
Address FT WORTH TX 76107

Name ROBERT DAVID & MARY KAY SHERMAN
Number on Map R
Address 2763 CR416
Address STEPHENVILLE TX 76401

Name LEON & BOBBIE GRIFFIN
Number on Map S
Address 2938 CR415
Address STEPHENVILLE TX 76401

Name JIMMIE NEAL & SHELLY RAY FAIR
Number on Map Y
Address 152836 W FM8
Address STEPHENVILLE TX 76401

Name ELMER J & NORMA B PARKS
Number on Map U
Address 13628 W FM 8
Address STEPHENVILLE TX 76401

Name BRUCE STEVEN TERRILL JR
Number on Map V
Address 5735 HOLLY HILLS CIRCEL
Address DALLAS TX 75231

Name BETTY JO HALLMAN
Number on Map W
Address 1211 ROSS LN
Address GRANBURY TX 76049

Name ROBERT E WILCOXON
Number on Map X
Address 14266 W FM8
Address STEPHENVILLE TX 76401

Name
Number on Map
Address
Address

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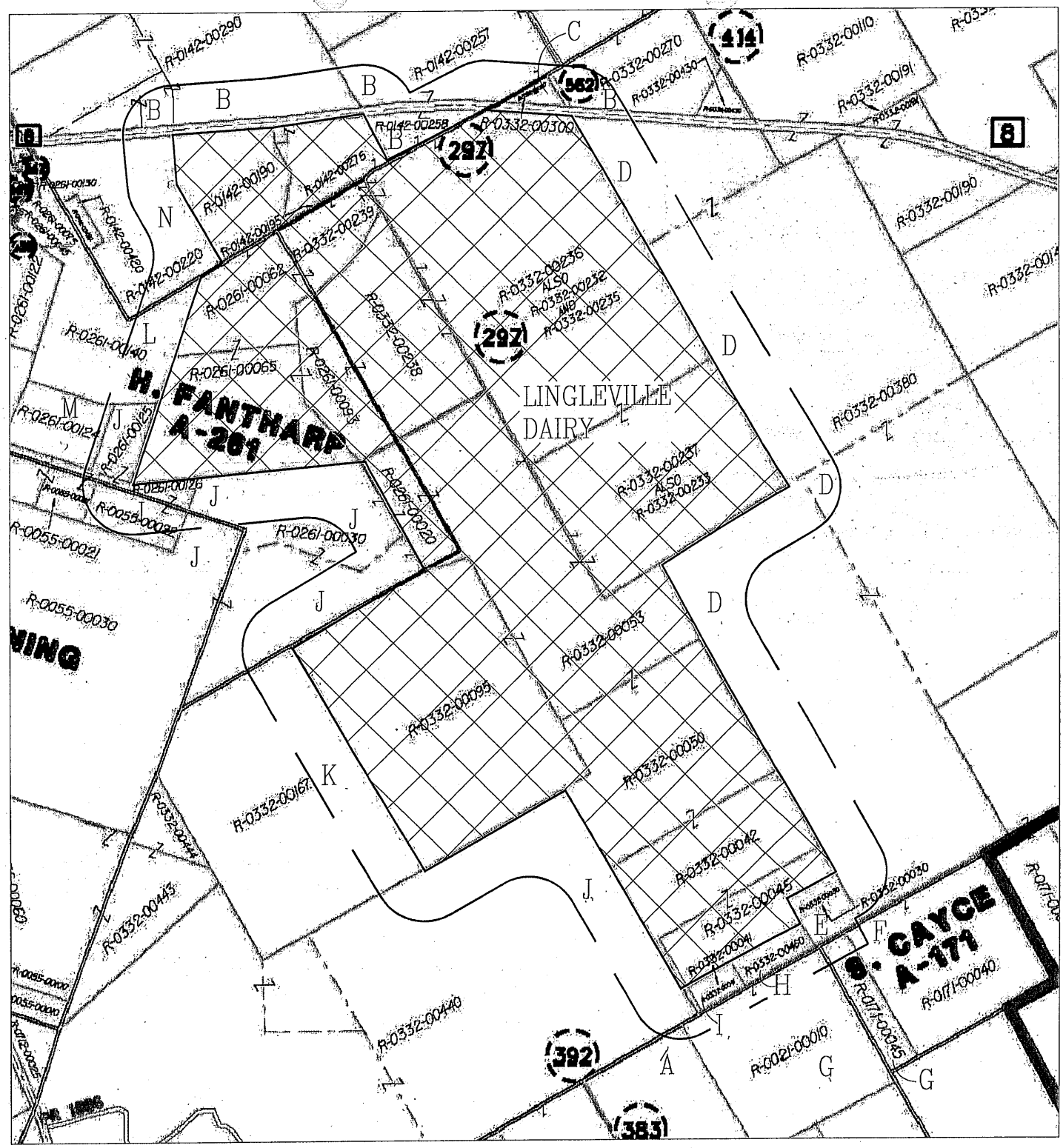
Please identify where you obtained the landowner information.

ERATH COUNTY APPRAISAL DISTRICT, SEPTEMBER 2007

SEP 28 2007

Facility Name Lingleville Dairy



SEP 28 2007

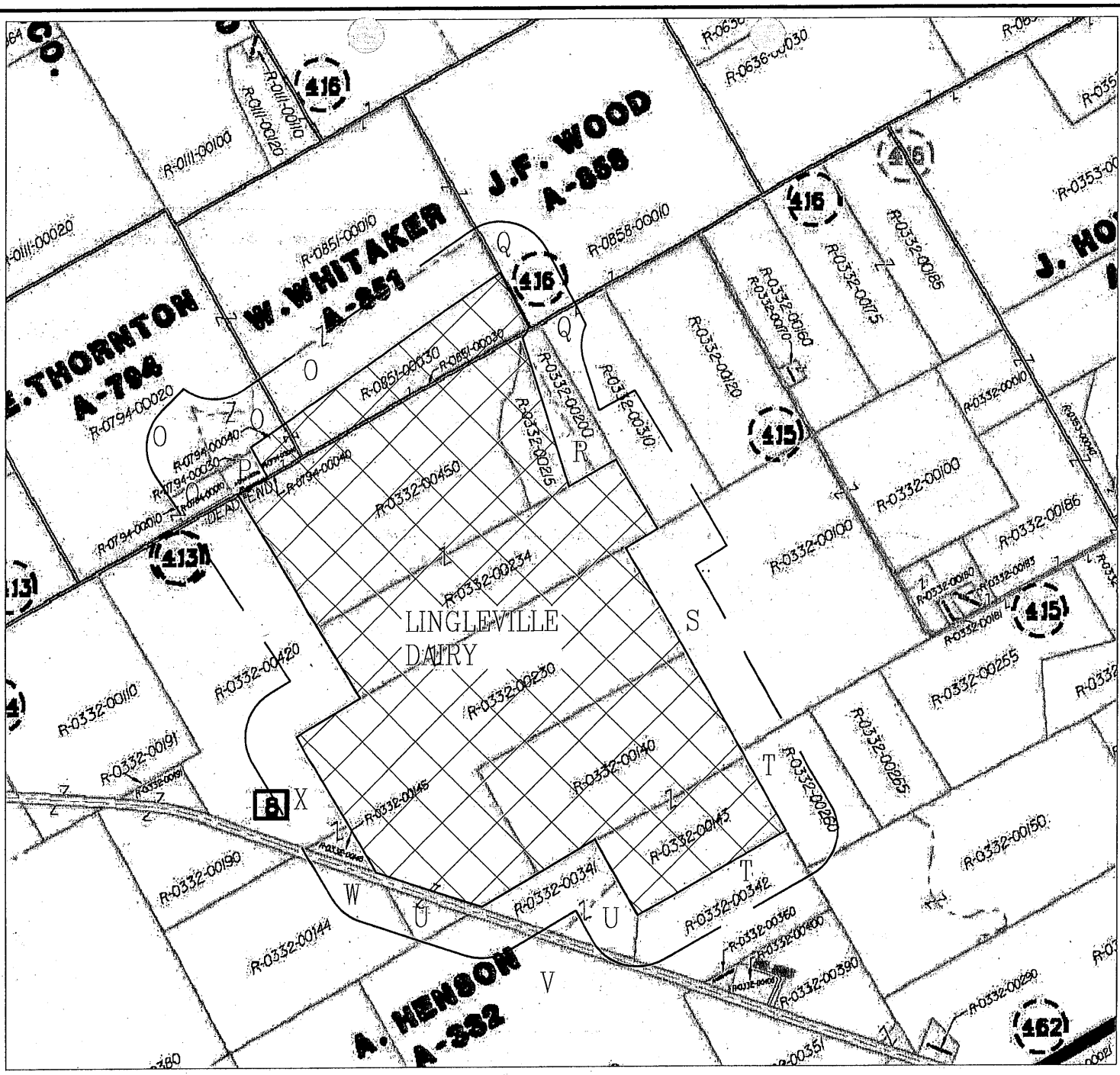
N
W E
S

NO SCALE

Source: Erath County Appraisal District, Sept. 2007

000063

Lingleville Dairy Stephenville Erath County, Texas	Adjacent Landowners Map Attachement B Page 1	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



SEP 28 2007

N
W E
S
NO SCALE

Source: Erath County Appraisal District, Sept. 2007

000064

Lingleville Dairy Stephenville Erath County, Texas	Adjacent Landowners Map Attachement B Page 2	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

SECTION 1 FACILITY MAPS

Figure 1.1 - Vicinity Map
Figure 1.1, Vicinity Map, is a general highway map generated in ArcView GIS using Digital Line Graph Transportation data from WebGIS.com (retrieved 2002) and major highway and county information from ESRI Data & Maps (copyright 1999). The location of the facility is depicted on the map.

Figure 1.2 - USGS Quadrangle Map
Figure 1.2, entitled Scaled USGS Map is a seamless, high-quality copy of the USGS quadrangle that shows the boundaries of land owned, operated, or controlled by Lingleville Dairy and used as part of the concentrated animal feeding operation; and all springs, lakes, or ponds located on-site and within 1 mile of the property boundary.

Figures 1.3a-b - Site Plan
Figures 1.3a-b, Site Plan, is a scaled drawing of the property depicting the locations of the following information:

- Existing Retention Control Structures (RCSs)
- Land Management Units
- Wells
- Buffer Zones

Figure 1.4 – Runoff Control Map
Figure 1.4 is a scaled drawing of the production area showing the Open Lots, Parlor, RCSs, Settling basin, calf areas, drainage area boundaries and flow directions.

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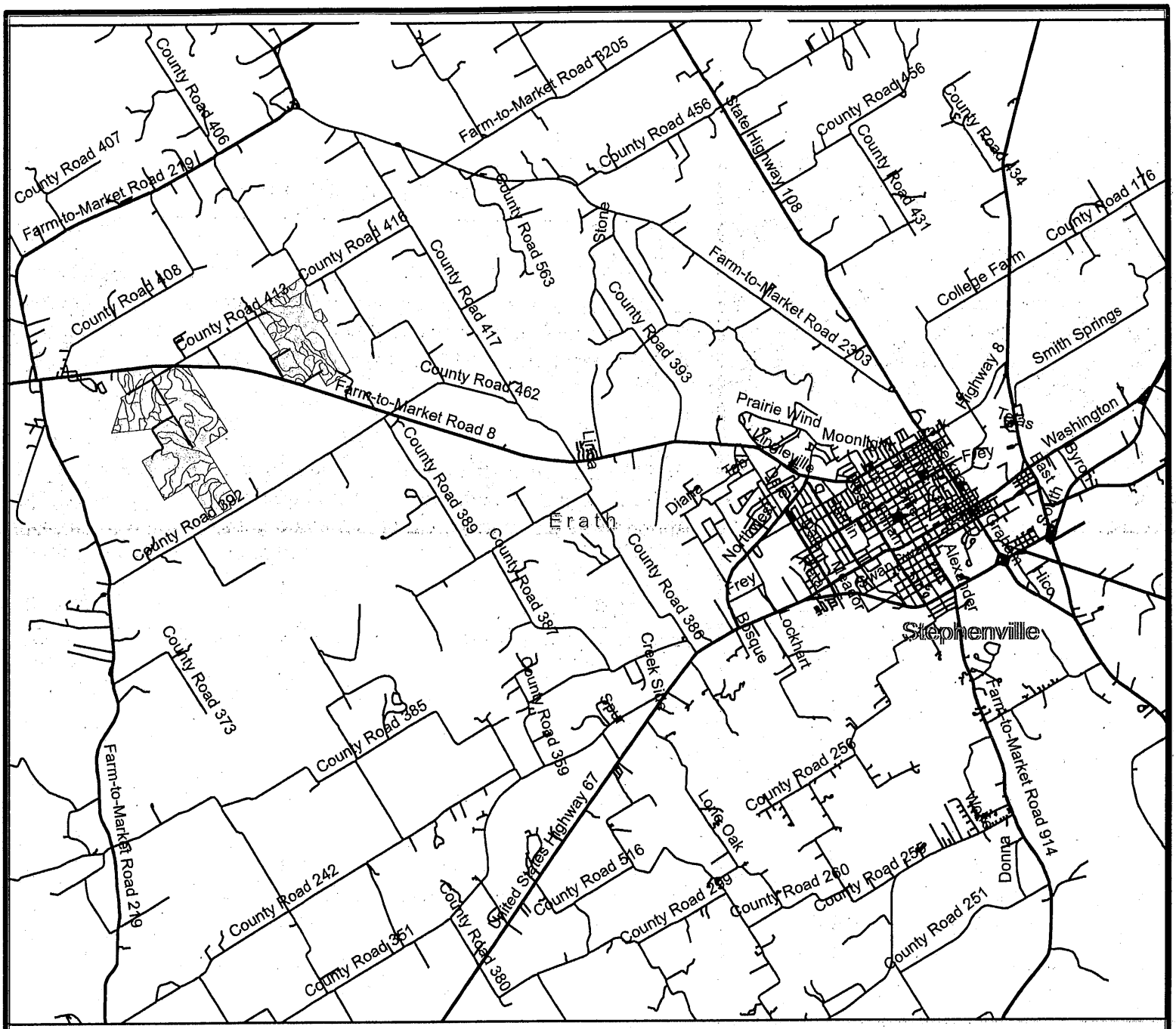

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SEP 2 8 2007

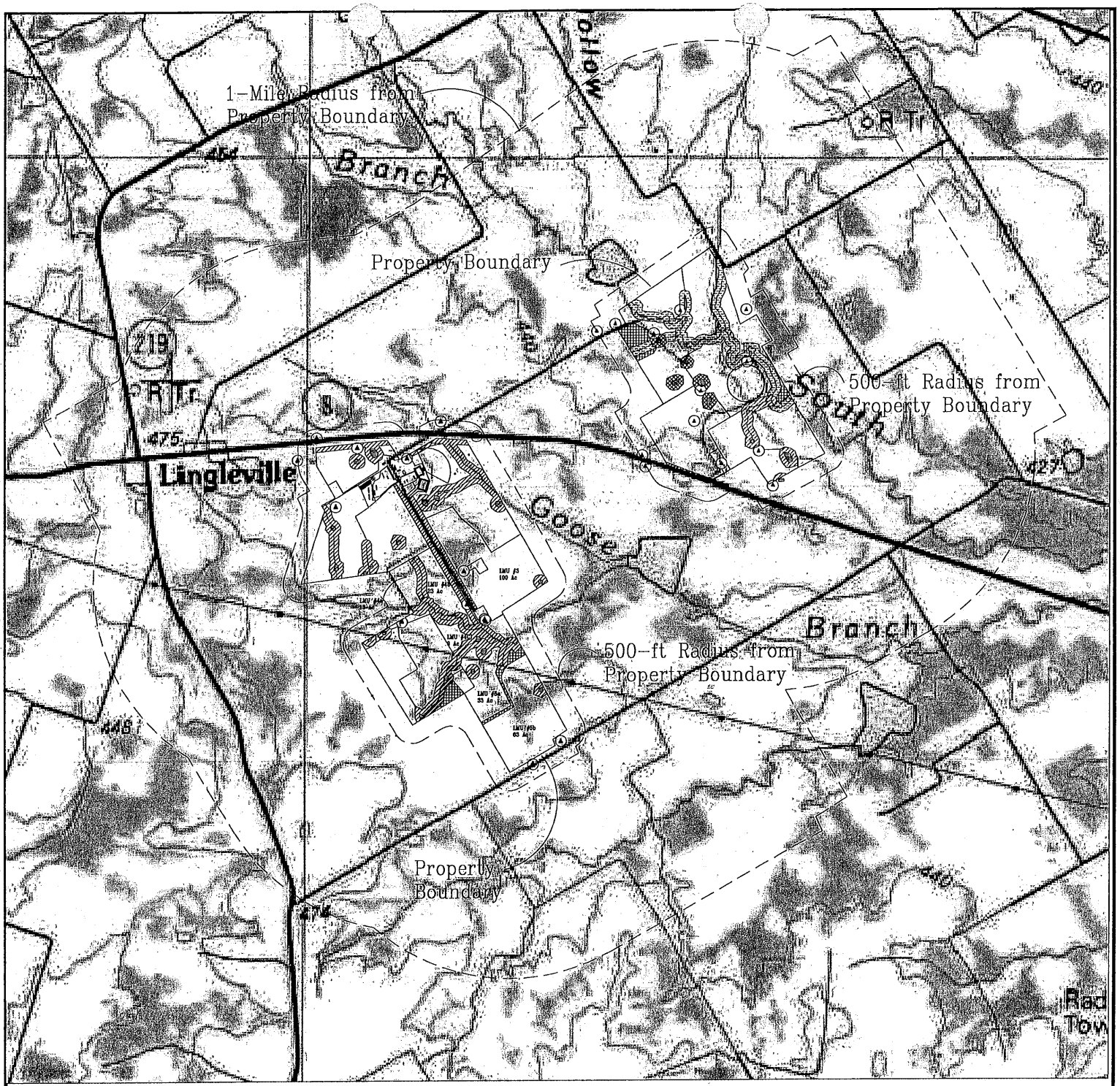
Legend

- Major Roads
- Erath County Roads
- Lingleville Dairy

0 0.5 1 2 3 4 Miles

000066

Lingleville Dairy Lingleville, Texas Erath County	Vicinity Map Figure 1.1	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. Amarillo, Texas 79118 806-353-6123; FAX 806-353-4132



Legend:

- Denotes Leak Detection Well (to be plugged)
- Denotes Water Well
- Denotes Water Well With 150-ft Buffer
- Denotes Buffered Areas

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan and Huckabay, Tex. Quadrangles, 1965.

N
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SEP 28 2007

1/2-MI 0 1/2-MI 1-MI

SCALE

000067

Lingleville Dairy Stephenville Erath County, Texas	Scaled USGS Map Figure 1.2 Page 3	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

Legend:

- Denotes Leak Detection Well (to be plugged)
- Denotes Water Well
- Denotes Water Well With 150-ft Buffer
- Denotes 133-ft Buffer
- Denotes Fresh Water Pond
- Denotes Wooded Areas

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan, Tex. Quadrangle, 1965.

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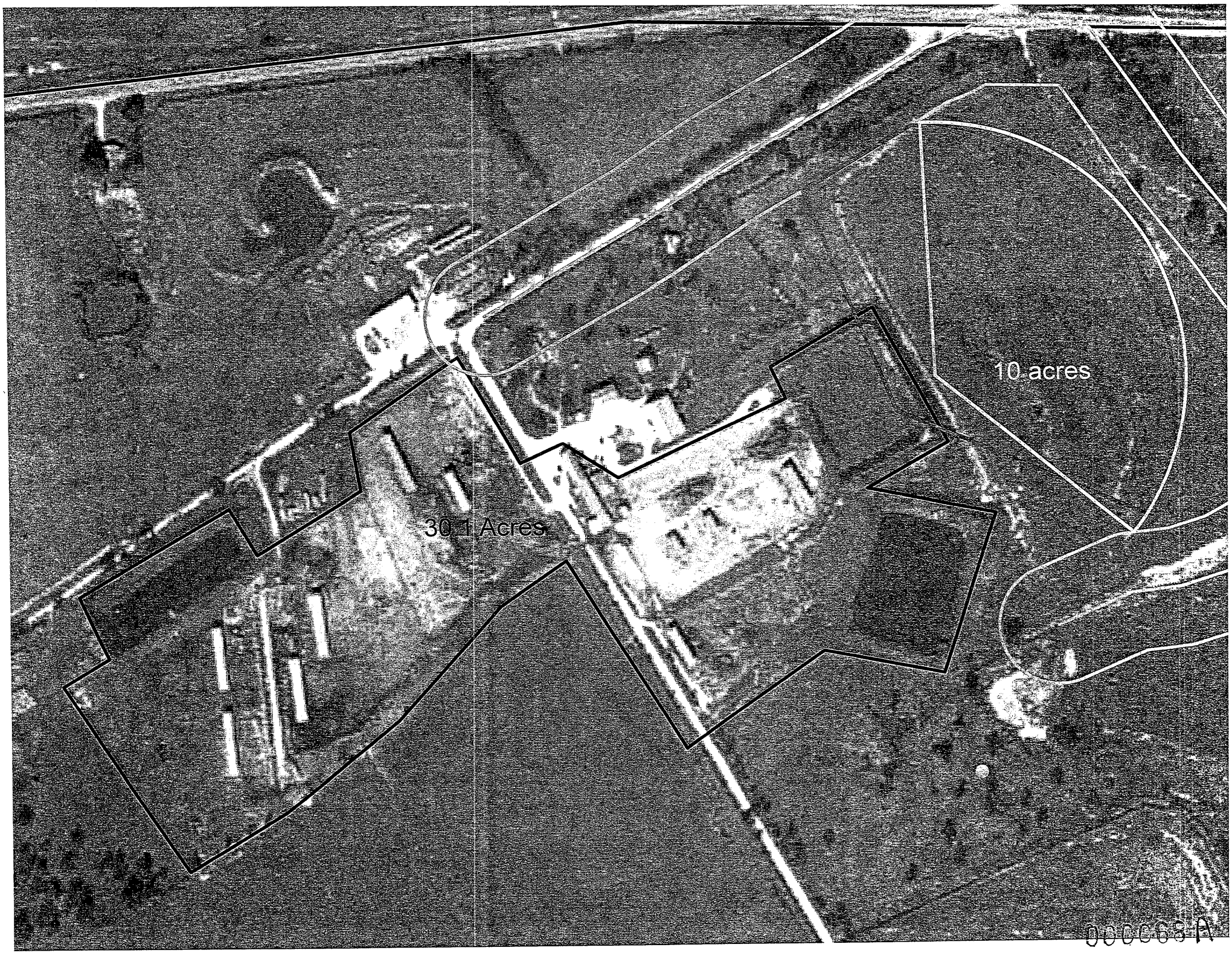
SEP 28 2007

750 FT 0 750 FT 1500 FT 3000 FT

SCALE

000068

Lingleville Dairy Stephenville Erath County, Texas	Site Map Figure 1.3a Page 4	ENVIRO-AG ENGINEERING, INC. **Enviro-Ag Engineering, Inc.** ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132


10 acres
30.1 Acres

Legend:

- Denotes Water Well With 150-ft Buffer
- Denotes 125-ft Buffer
- Denotes 130-ft Buffer
- Denotes 133-ft Buffer
- Denotes 140-ft Buffer
- Denotes Fresh Water Pond
- Denotes Wooded Areas

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan and Huckabay, Tex. Quadrangles, 1965.

N W E S

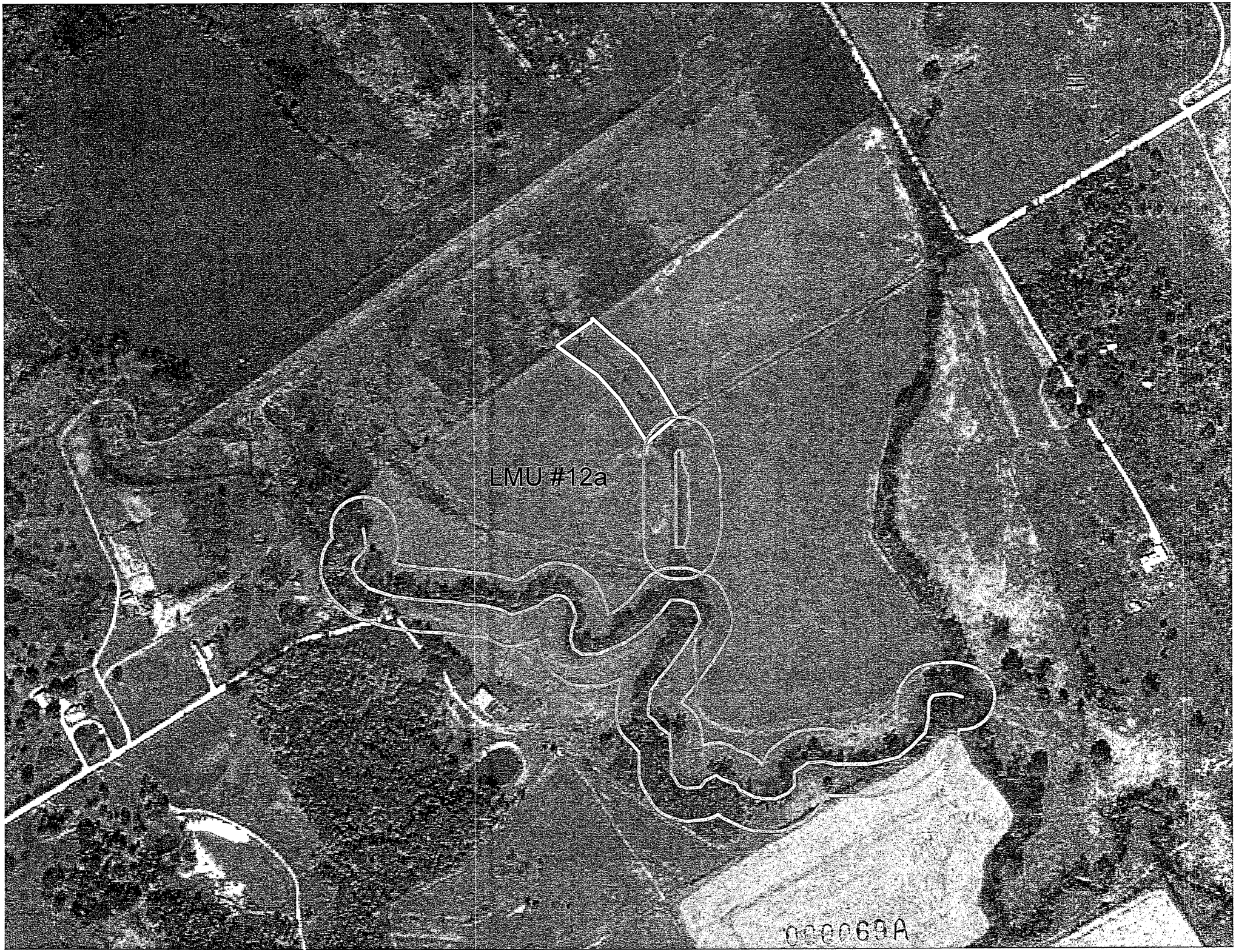
SEP 28 2007

560 FT 0 560 FT 1120 FT 1680 FT

SCALE

000069

Lingleville Dairy Stephenville Erath County, Texas	Site Map Figure 1.3b Page 5	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132


LMU #12a
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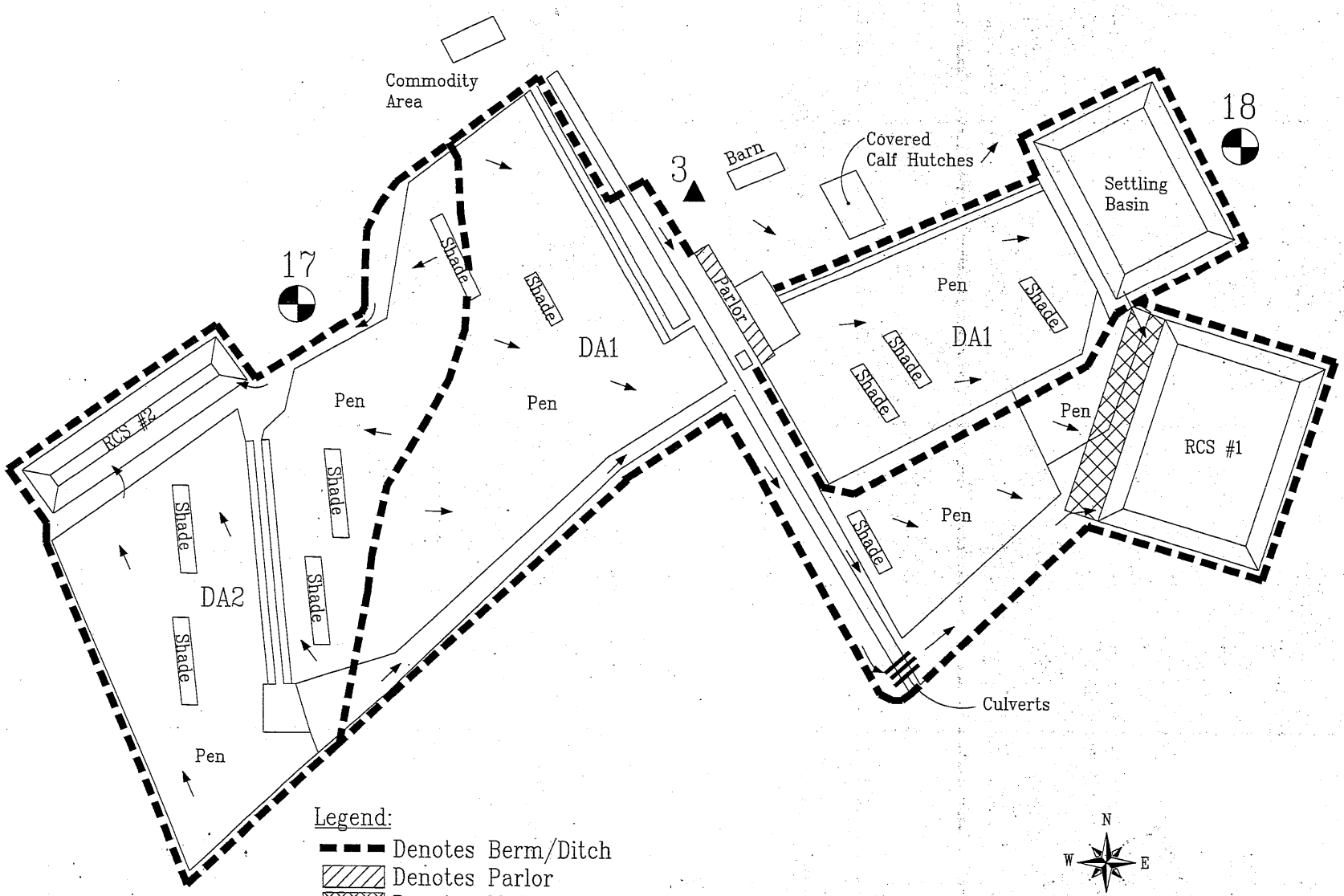

SEP 28 2007

040070

Runoff Control:
Drainage is depicted by arrows shown on maps. The drainage will be directed to the RCS via ditches, berms or underground pipe.

Lingleville Dairy Stephenville Erath County	Proposed Runoff Control Map Figure 1.4 Page 6	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-8123 FAX (806) 353-4132

SECTION 2 CALCULATIONS AND SPECIFICATIONS

Facility Overview/Compliance Schedule

The existing facility consists of open lots, a milking parlor, settling basin and two retention control structures to confine 700 head of dairy cows. The RCSs have been certified as meeting TCEQ requirements for soil liner. Figure 2.1, Manure & Wastewater Flow Chart, shows the waste handling procedures and storage practices at the dairy.

RCS design calculations are provided for the capacity requirement to contain rainfall runoff from the 25-year, 10-day rainfall margin of safety in accordance with 30 TAC §321.42(c) (1). The required capacity will be achieved by modifying RCS #1. Construction will be completed within 180 days of issuance of the permit providing availability of construction equipment and favorable weather conditions.

2.1 Manure Production

Table 2.1, As-Excreted Manure Characteristics Existing Dairy Facility, is included as an estimate of the annual manure and nutrient production for the facility. The manure and nutrient production for the facility was calculated using ASABE Standards (ADAE D384.2 MAR05, Table 1.b – Section 3). The totals in Table 2.1 represent estimated as-excreted manure and nutrient values for the maximum head count shown in the application. **This data is intended for planning and design purposes and is not to be used for whole-farm nutrient mass balance calculations.**

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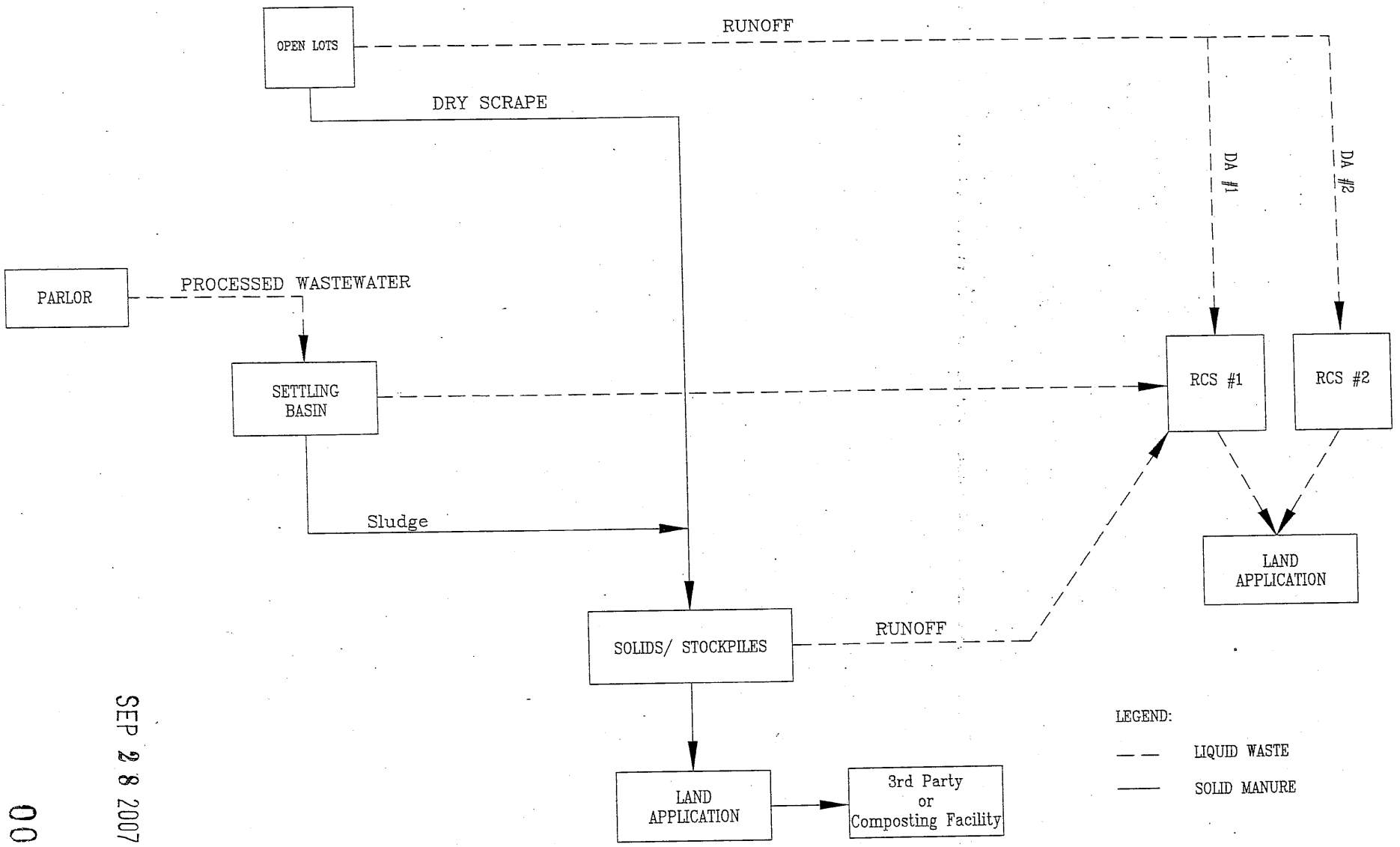

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Lingleville Dairy
Stephenville
Erath County, Texas

Proposed Manure & Wastewater Flow Chart
Figure 2.1
Page 8

ENVIRO-AG ENGINEERING, INC.
Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

ESTIMATED AS-EXCRETED MANURE CHARACTERISTICS
for an EXISTING DAIRY FACILITY

Table 2.1

ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Lingleville Dairy
LOCATION: Erath County, Texas
DATE: September-07

MANURE EXCRETION (a)	EXISTING PERMIT		
	Milkers in Parlor	Milkers in Pens	Total
1. Maximum Number of Animals Confined (head):	700	700	700
1a. Live Animal Weight (lb):	1,400	1,400	n/a
2. Confinement period, hrs/hd/day	2	22	n/a
3. Percent of time in Confinement	8%	92%	n/a
4. Total Manure Production, lbs/day (c)	8,750	n/a	8,750
5. Total Solids Production, lbs/day	1,167	12,833	14,000
6. Manure Production, tons/year ©	213	2,342	2,555
7. Volatile Solids Production, lbs/day	992	n/a	992
8. Total Nitrogen Production, lbs/day	58	635	693
9. Total Phosphorus, P2O5 lbs/day (b)	23	250	273
10. Total Potassium, K2O lbs/day (b)	16	177	193

NOTES:

(a) - Manure and nutrient production calculated using ASABE Standards (ASAE D384.2 MAR05), Table 1.b - Section 3 for Holstein dairy cows.

(b) - The ASABE standard give P and K in the elemental forms. Convert to P2O5 by multiplying by 2.29 and to K2O by multiplying by 1.2.

(c) - These manure forms become dry manure in the open lots.

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2.2 Process Generated Wastewater Volume

Process generated wastewater is wash water used in the milking parlor to remove manure. This wastewater is directed into a settling basin and then to RCS #1 for storage. The daily volume of process wastewater (including wet manure from milking parlor) generated is estimated to be 15 gallons per head (based on site-specific data). The design storage volume in the RCS for process generated wastewater is 30 days and is calculated in Table 2.2a.

2.3 25-Year, 10-Day Rainfall Storage Volume

In accordance with 30 TAC §321.42(c) (1), the RCSs are designed to maintain a margin of safety to contain the runoff and direct precipitation from the 25-year, 10-day storm event for this location (11.8 inches of rainfall). Drainage area runoff volumes are calculated using the SCS method with curve numbers (CN) selected based on soil type and land use. The pen area runoff was calculated using a CN of 90, the pond area was calculated using a CN of 100, and the adjacent areas were calculated using a CN of 85. Stormwater runoff from areas outside the control facility is directed away from the RCS with berms and ditches. Tables 2.2a-b shows the required storage volume for RCS #1 and #2, respectively

2.4 Sludge Accumulation Volume

A volume allowance for sludge storage is calculated for five years in each RCS. The sludge volume is estimated as 25% of the calculated 25-year, 10-day storm volume from the confinement pens plus the sludge accumulation from the parlor. The sludge volume calculations are shown in Tables 2.2 a-b. Settling basins with an estimated efficiency of 60% (Midwest Plan Service) is used to reduce the amount of solids entering RCS #1.

2.5 Water Balance Model

Tables 2.3a-b, Water Balance Model, estimates the inflows and withdrawals from all RCSs, including runoff, direct rainfall, process generated wastewater, evaporation, and irrigation withdrawal, based on crop demand, in accordance with 30 TAC §321.38(e)(7)(B). The water balance model provides an estimate of the wastewater that may be available for irrigation based on average precipitation and evaporation data. Actual pond withdrawal amounts will vary with changing weather conditions. An additional system design volume is included in the RCS to provide flexibility in managing RCS levels.

2.6 RCS Management Plan

An RCS Management Plan developed by a licensed Texas professional engineer will be implemented to incorporate the margin of safety, as specified in 30 TAC §321.42(g) and will include the elements specified in §321.42(g) (1)-(6). The plan will be maintained in the PPP.

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REQUIRED STORAGE VOLUMES FOR RUNOFF RETENTION CONTROL STRUCTURE

Table 2.2a

ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO:	Lingleville Dairy
LOCATION:	Erath County, Texas
DATE:	September-07

RUNOFF and STORAGE REQUIREMENT

PROCESS GENERATED WASTE/WASTEWATER

Parlor Wash Water (a):	(gal/head/day)	15
No. of Head in Parlor:		700
Volume of Process Water:	(gal/day)	10,500
Design Storage Period:	(days)	30
Process Water Volume:	(ac-ft)	0.97

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	8.50	90
Adjacent Areas:	2.00	85
Roof/Concrete Area:	0.50	100
RCS #1 and SB Surface Areas:	3.00	100
Total Drainage Area:	14.00	
25-year, 10-day rainfall:	(inches)	11.8

Runoff Volume Determination (b):	(inches)	(ac-ft)
Pen Area:	10.6	7.48
Adjacent Areas:	9.9	1.65
Roof Area:	11.8	0.49
RCS #1 and SB Surface Areas:	11.8	2.95
Rainfall Volume:	(ac-ft)	12.58

SLUDGE VOLUME

Dry Manure Produced in Parlor:	(lb/day)	1,166.7
Settling Basin Efficiency (%) (c):		60%
Adjusted Dry Manure Production:	(lb/day)	467
Sludge Accumulation Rate (d):	(cuft/lb)	0.073
Sludge Accumulation Period:	(years)	5
Sludge Volume from Parlor:	(ac-ft)	1.43

TOTAL RCS VOLUME REQUIRED

Process Water Volume:	(ac-ft)	0.97
Total Sludge Volume for 5 years (e):	(ac-ft)	3.30
Rainfall Volume:	(ac-ft)	12.58
Additional from Water Balance:(f)	(ac-ft)	2.76

Total Required RCS Volume:	**(ac-ft)**	**19.60**

NOTES:

(a) Based on site-specific data from Lingleville Dairy.

(b) Using SCS method:

Where:

S = (1000/CN) - 10

Q = ((I - 0.2S)^2)/(I + 0.8S)

S = Potential maximum retention after runoff beg

Q = Runoff (in)

I = 25-year, 10-Day rainfall (in)

CN = Curve Number from SCS 210-VI-TR-55, 2nd Edition, June 1986

(c) Estimate from Section 702, Midwest Plan Service Structures and Environment Handbook, Rev. 1987from converting from RCS to SB

(d) Sludge accumulation rate taken from Table 10-4, USDA-NRCS Agricultural Waste Management Field Handbook.

(e) Includes sludge accumulation from pen runoff, estimated at 25% of the runoff from the pen area, based on EAE experience and TCEQ Guidance Document.

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9/13/2007

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REQUIRED STORAGE VOLUMES FOR RUNOFF RETENTION CONTROL STRUCTURE

Table 2.2b

ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO:	Lingleville Dairy
LOCATION:	Erath County, Texas
DATE:	September-07

RUNOFF and STORAGE REQUIREMENT

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	4.00	90
Adjacent Areas:	1.00	85
Roof Area:	0.00	100
RCS Surface Area:	1.10	100
Total Drainage Area:	6.10	

25-year, 10-day rainfall:	(inches)	11.8

Runoff Volume Determination (a):	(inches)	(ac-ft)
Pen Area:	10.6	3.52
Adjacent Areas:	9.9	0.83
Roof Area:	11.8	0.00
RCS Surface Area:	11.8	1.08
Rainfall Volume:	(ac-ft)	5.43

TOTAL RCS VOLUME REQUIRED

Total Sludge Volume for 5 years (b):	(ac-ft)	0.88
Rainfall Volume:	(ac-ft)	5.43
Additional from Water Balance:(c)	(ac-ft)	0.76

Total Required RCS Volume:	**(ac-ft)**	**7.07**

NOTES:

(a) Using SCS method:
Where:
S = (1000/CN) - 10
Q = ((I - 0.2S)^2)/(I + 0.8S)
S = Potential maximum retention after runoff begins(in)
Q = Runoff (in)
I = 25-year, 10-Day rainfall (in)
CN = Curve Number from SCS 210-VI-TR-55,
2nd Edition, June 1986

(b) Sludge accumulation from pen runoff, estimated at 25% of the runoff from the pen area, based on EAE experience and TCEQ Guidance Document.

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WATER BALANCE MODEL
DA #1
Table 2.3a

ENVIRO-AG ENGINEERING, INC.

NAME: Lingleville Dairy
LOCATION: Erath County, Texas
DATE: Sep-07

HYDROLOGIC CHARACTERISTICS

Pen Area (acres):	8.50
Adjacent Areas (acres):	2.00
Roof Area (acres):	0.50
Total RCS Surface Area (acres):	3.00
Irrigated Area (acres) (15):	120
Cropping scheme (14):	Bermudagrass w/ Winter Cover
Effective Evaporation Surface Area (acres):	2.55

RCS VOLUME SUMMARY DATA

25-Year, 10-Day Rainfall Volume (ac-ft):	12.58
Process Generated Wastewater Volume (ac-ft):	0.97
Sludge Accumulation Volume (ac-ft):	3.30
Additional volume from water balance:(13)	2.76
Total Required Capacity (ac-ft):	19.60

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS				RCS STORAGE SUMMARY			
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
MONTH	Average Precipitation (inches)	Runoff from Pen Area (inches)	Runoff from Adjacent Areas (inches)	Process Inflow (ac-ft)	Total Inflow (ac-ft)	Rainfall Runoff from Irrig. Area (inches)	Effect. Rainfall on Irrig. Area (inches)	Consumptive Use (inches)	Net Crop Demand (ac-ft)	Monthly Evaporation (inches)	Estimated Pond Evaporation (ac-ft)	Average Monthly Crop Withdrawal (ac-ft)	Normal Monthly Storage Volume (ac-ft)
												start value —>	4.3
JAN	1.5	0.2	0.1	1.0	1.6	0.0	1.5	2.1	5.7	2.3	0.5	1.1	4.3
FEB	2.0	0.4	0.2	0.9	1.8	0.0	1.9	2.5	5.3	2.7	0.6	1.2	4.3
MAR	2.0	0.5	0.2	1.0	1.9	0.0	2.0	4.1	20.8	4.3	0.9	1.0	4.3
APR	2.9	1.0	0.5	1.0	2.6	0.2	2.7	5.0	22.9	5.2	1.1	1.5	4.3
MAY	4.2	2.0	1.3	1.0	3.9	0.7	3.5	5.7	21.8	5.2	1.1	2.8	4.3
JUN	3.3	1.3	0.7	1.0	2.9	0.3	3.0	6.8	38.6	7.0	1.5	1.4	4.3
JUL	2.1	0.5	0.2	1.0	2.0	0.0	2.1	7.7	55.7	8.4	1.8	0.3	4.3
AUG	2.2	0.6	0.3	1.0	2.1	0.1	2.2	7.6	53.9	7.7	1.6	0.5	4.3
SEP	2.9	1.0	0.6	1.0	2.6	0.2	2.7	5.8	30.5	5.9	1.3	1.4	4.3
OCT	3.2	1.2	0.7	1.0	2.9	0.3	2.9	4.3	13.8	4.8	1.0	1.9	4.3
NOV	2.0	0.4	0.2	1.0	1.9	0.0	2.0	2.8	8.5	3.3	0.7	1.2	4.3
DEC	1.7	0.3	0.1	1.0	1.7	0.0	1.7	2.2	5.6	2.5	0.5	1.2	4.3
TOTALS	30.1	9.5	4.9	11.8	28.1	1.9	28.2	56.5	283.1	59.3	12.6	15.5	

NOTES:
(1) Average precipitation taken from the Texas Water Development Board, Erath County, Quad 509, retrieved 7/2007.
(2) Runoff from pen area, adjacent areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number. (Ref. USDA-SCS, Texas Engineering Technical Note No. 210-18-TX3, Figure 1, March 1983).
(3) Process Inflow is calculated from process generated wastewater, Table 2.2a.
(4) Total Inflow is calculated as that volume of rainfall that falls on the RCS, runoff from the RCS drainage area, and process water that enters the RCS.
(5) Runoff from irrigated areas calculated using SCS Curve Number Method adjusted from 1 to 30 day Curve Number. (Ref. USDA SCS, Texas Engineering Technical Note No. 210-18-TX3, Figure 1, March 1983)
(6) Effective monthly rainfall on the irrigated area is taken as the difference between Column (5) and Column (1).
(7) Consumptive Use values for Grass taken from Table 25, Borrelli, et al., 1998. Mean Crop Consumptive Use and Free-Water Evaporation for Texas, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. (Table 25.-ET crop for Turfgrass with Kcb = 0.75 (inches per month - Stephenville))
(8) Net Crop Demand = ((Consumptive Use(7) - Effective Rainfall(6))/12) x Irrigated Area.
(9) Average monthly lake surface evaporation taken from the Texas Water Development Board, Erath County, Quad 509, retrieved 7/2007.
(10) Estimated evaporation is taken as (Evap/12) x (Effective RCS Surface Area).
(11) Actual Withdrawal from the pond not to exceed Net Crop Demand. (No consideration given for nutrient demand of crop)
(12) Storage volume in the pond at the end of the month. The storage calculated in this column should not encroach in the volume reserved for the 25-year, 10-day rainfall event.
(13) Extra volume requirement requested by TCEQ in letter dated June 29, 2006, in addition to criteria in 30 TAC 321.38(e)(7)(B).
(14) The winter cover crop may be a small grain variety such as wheat, ryegrass, oats or triticale.
(15) Represents irrigatible LMU acreage from NMP/NUP.

SEP 28 2007

WATER BALANCE MODEL
DA #2
Table 2.2b
ENVIRO-AG ENGINEERING, INC.

NAME: Lingleville Dairy
LOCATION: Erath County, Texas
DATE: Sep-07

HYDROLOGIC CHARACTERISTICS

Pen Area (acres):	4.00
Adjacent Areas (acres):	1.00
Roof Area (acres):	0.00
Total RCS Surface Area (acres):	1.10
Irrigated Area (acres) (15):	120
Cropping scheme (14):	Bermudagrass w/ Winter Cover
Effective Evaporation Surface Area (acres):	0.94

RCS VOLUME SUMMARY DATA

25-Year, 10-Day Rainfall Volume (ac-ft):	5.43
Process Generated Wastewater Volume (ac-ft):	0.00
Sludge Accumulation Volume (ac-ft):	0.88
Additional volume from water balance (13):	0.76
Total Required Capacity (ac-ft):	7.07

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS				RCS STORAGE SUMMARY			
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
MONTH	Average Precipitation (inches)	Runoff from Pen Area (inches)	Runoff from Adjacent Areas (inches)	Process Inflow (ac-ft)	Total Inflow (ac-ft)	Rainfall Runoff from Irrig. Area (inches)	Effect. Rainfall on Irrig. Area (inches)	Consumptive Use (inches)	Net Crop Demand (ac-ft)	Monthly Evaporation (inches)	Estimated Pond Evaporation (ac-ft)	Average Monthly Crop Withdrawal (ac-ft)	Normal Monthly Storage Volume (ac-ft)
												start value →	0.9
JAN	1.5	0.2	0.1	0.0	0.2	0.0	1.5	2.1	5.7	2.3	0.2	0.0	0.9
FEB	2.0	0.4	0.2	0.0	0.3	0.0	1.9	2.5	5.3	2.7	0.2	0.1	0.9
MAR	2.0	0.5	0.2	0.0	0.4	0.0	2.0	4.1	20.8	4.3	0.3	0.0	0.9
APR	2.9	1.0	0.5	0.0	0.6	0.2	2.7	5.0	22.9	5.2	0.4	0.2	0.9
MAY	4.2	2.0	1.3	0.0	1.2	0.7	3.5	5.7	21.8	5.2	0.4	0.8	0.9
JUN	3.3	1.3	0.7	0.0	0.8	0.3	3.0	6.8	38.6	7.0	0.5	0.2	0.9
JUL	2.1	0.5	0.2	0.0	0.4	0.0	2.1	7.7	55.7	8.4	0.4	0.0	0.9
AUG	2.2	0.6	0.3	0.0	0.4	0.1	2.2	7.6	53.9	7.7	0.4	0.0	0.9
SEP	2.9	1.0	0.6	0.0	0.7	0.2	2.7	5.8	30.5	5.9	0.5	0.2	0.9
OCT	3.2	1.2	0.7	0.0	0.8	0.3	2.9	4.3	13.8	4.8	0.4	0.4	0.9
NOV	2.0	0.4	0.2	0.0	0.3	0.0	2.0	2.8	8.5	3.3	0.3	0.1	0.9
DEC	1.7	0.3	0.1	0.0	0.3	0.0	1.7	2.2	5.6	2.5	0.2	0.1	0.9
TOTALS	30.1	9.5	4.9	0.0	6.3	1.9	28.2	56.5	283.1	59.3	4.2	2.1	

NOTES:
(1) Average precipitation taken from the Texas Water Development Board, Erath County, Quad 509, retrieved 7/2007.
(2) Runoff from pen area, adjacent areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number. (Ref. USDA-SCS, Texas Engineering Technical Note No. 210-18-TX3, Figure 1, March 1983).
(3) Process Inflow is calculated from process generated wastewater, Table 2.2b.
(4) Total Inflow is calculated as that volume of rainfall that falls on the RCS, runoff from the RCS drainage area, and process water that enters the RCS.
(5) Runoff from irrigated areas calculated using SCS Curve Number Method adjusted from 1 to 30 day Curve Number. (Ref. USDA SCS, Texas Engineering Technical Note No. 210-18-TX3, Figure 1, March 1983)
(6) Effective monthly rainfall on the irrigated area is taken as the difference between Column (5) and Column (1).
(7) Consumptive Use values for Grass taken from Table 25, Borrelli, et al., 1998. Mean Crop Consumptive Use and Free-Water Evaporation for Texas, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. (Table 25.-ET crop for Turfgrass with Kcb = 0.75 (inches per month - Stephenville))
(8) Net Crop Demand = ((Consumptive Use(7) - Effective Rainfall(6))/12) x Irrigated Area.
(9) Average monthly lake surface evaporation taken from the Texas Water Development Board, Erath County, Quad 509, retrieved 7/2007.
(10) Estimated evaporation is taken as (Evap/12) x (Effective RCS Surface Area).
(11) Actual Withdrawal from the pond not to exceed Net Crop Demand. (No consideration given for nutrient demand of crop)
(12) Storage volume in the pond at the end of the month. The storage calculated in this column should not encroach in the volume reserved for the 25-year, 10-day rainfall event.
(13) Extra volume requirement requested by TCEQ in letter dated June 29, 2006, in addition to criteria in 30 TAC 321.38(e)(7)(B).
(14) The winter cover crop may be a small grain variety such as wheat, ryegrass, oats or triticale.
(15) Represents irrigatible LMU acreage from NMP/NUP.

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000078

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER
9/26/07

SECTION 3 FACILITY INFORMATION

3.1 Required Certifications

RCS #1, #2 and settling pond have been certified by a licensed Texas professional engineer as meeting the liner requirements of the TCEQ (liner certifications attached).

New capacity certifications will be issued upon completion of RCS #1 modification and will be maintained in the PPP. RCS modifications of new construction will be completed within 180 days of issuance of the permit providing availability of construction equipment and favorable weather conditions.

3.2 100-Year Flood Plain Evaluation

The facility and property boundaries have been overlain on a FEMA 100-year flood plain map, Figures 3.1a-b. None of the production area is located within the 100 year flood plain.

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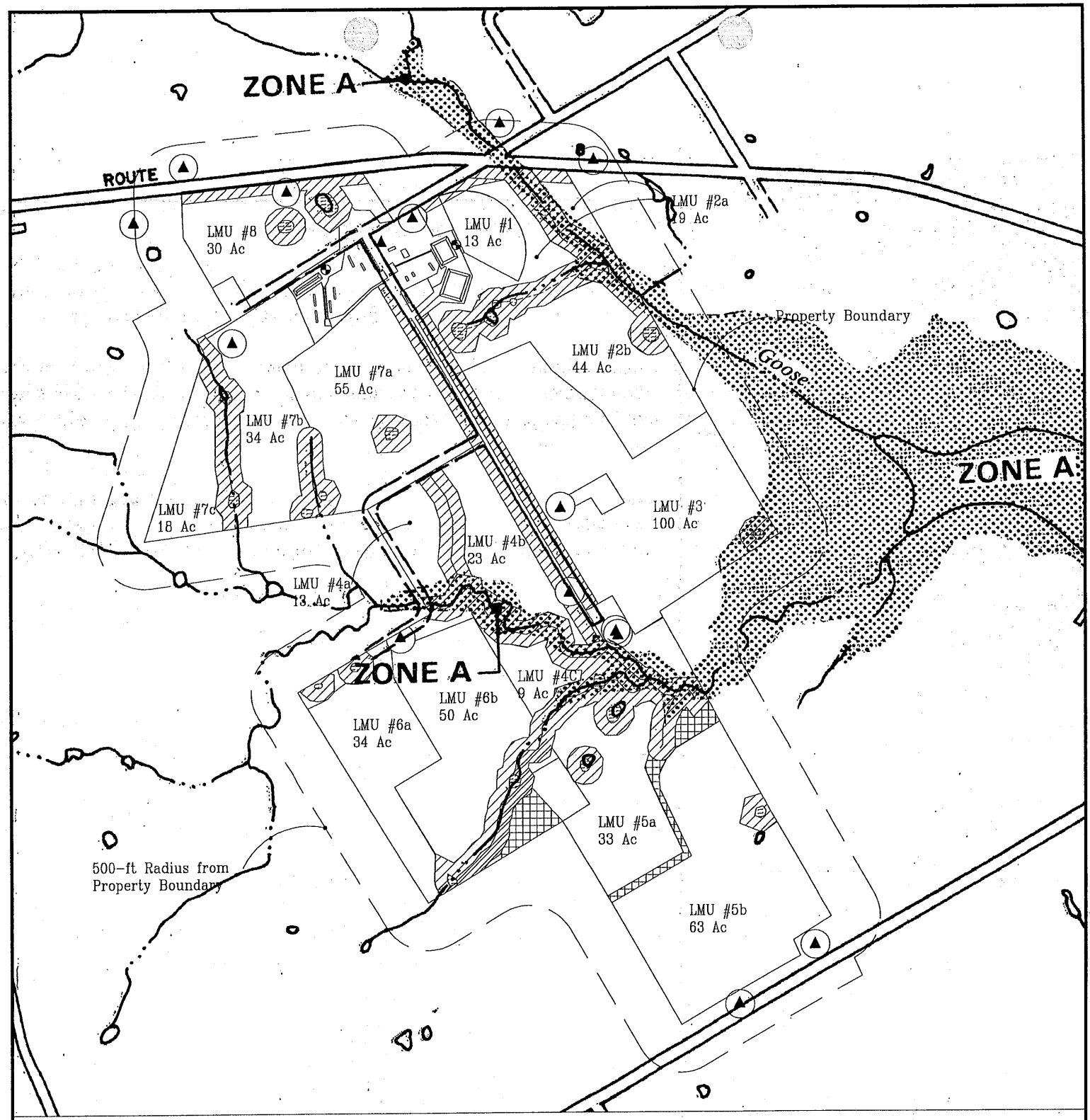

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750 FT 0 750 FT 1500 FT 3000 FT

SCALE

000080

Lingleville Dairy Stephenville Erath County, Texas	FEMA Flood Map Figure 3.1a Page 16	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

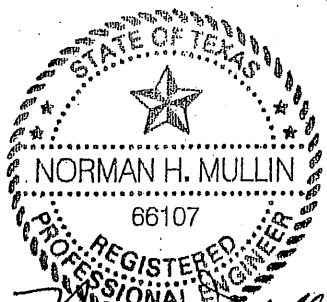
ENVIRO-AG
EAE
ENGINEERING

CAPACITY CERTIFICATION
RCS #2
LINGLEVILLE DAIRY
ERATH COUNTY, TEXAS

A capacity survey on RCS #2 was conducted in July 2007 by Enviro-Ag Engineering, Inc. The capacity was calculated to be:

7.37 acre-feet*

Respectfully submitted,



Norman Mullin 9/27/07

Norman H. Mullin, P.E.

*- (2-feet of dry freeboard)

(Supporting Documentation Attached)

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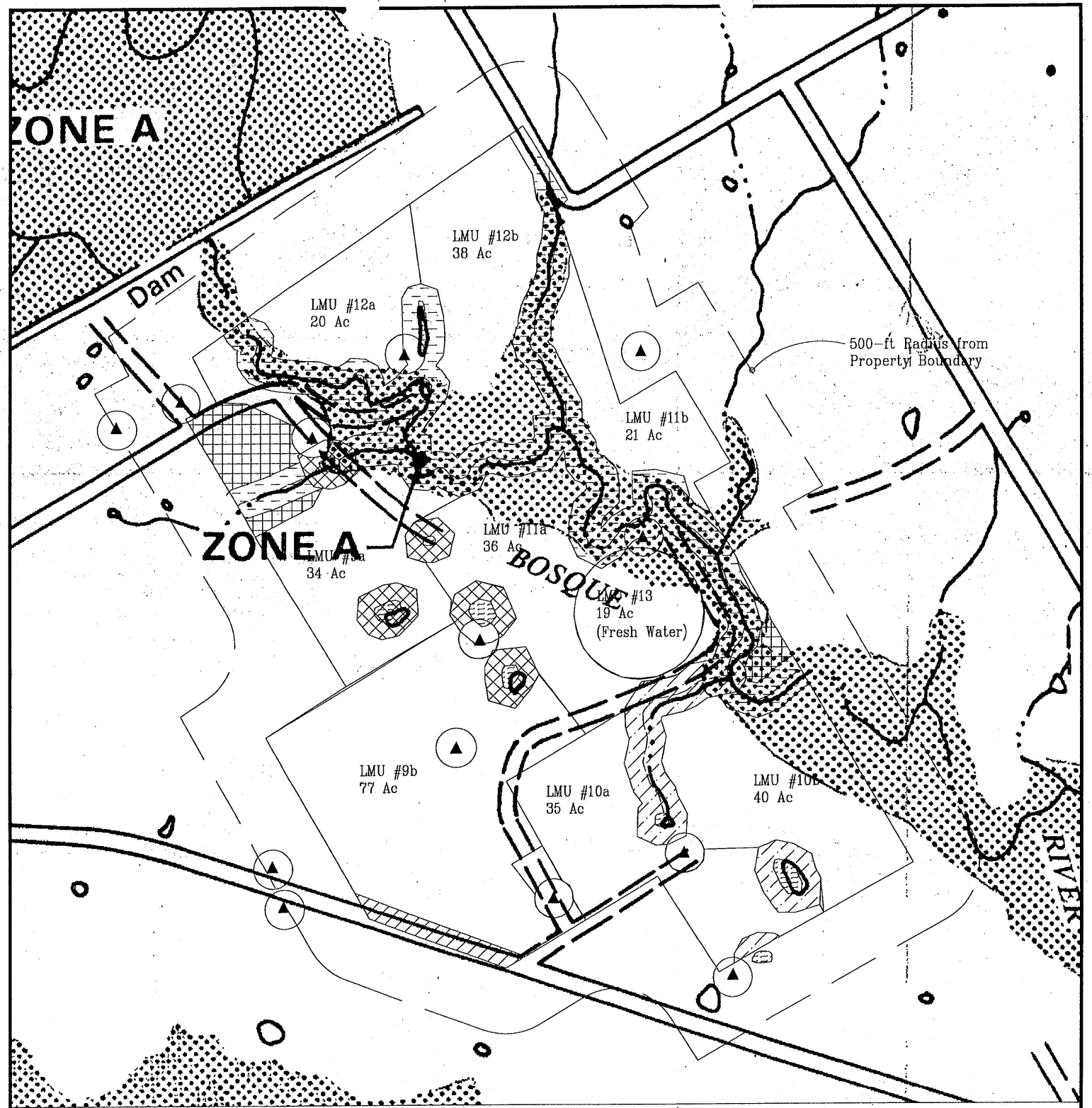
www.enviroag.com



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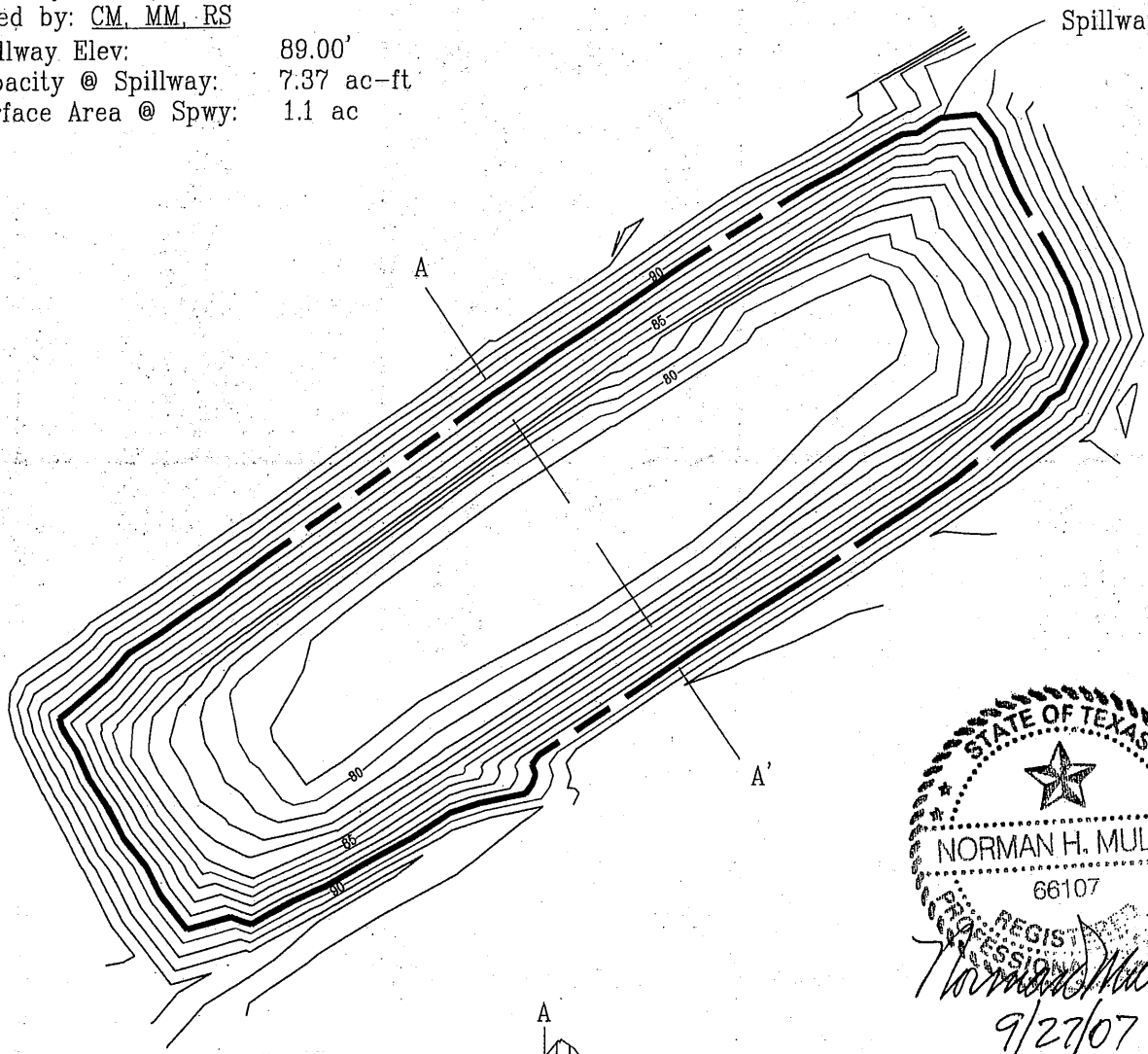
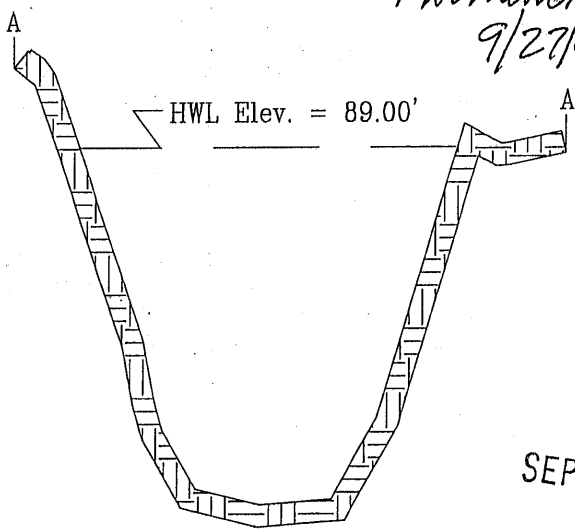
Lingleville Dairy Stephenville Erath County, Texas	Offsite FEMA Flood Map Figure 3.1b Page 17	ENVIRO-AG ENGINEERING, INC. **Enviro-Ag Engineering, Inc.** ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

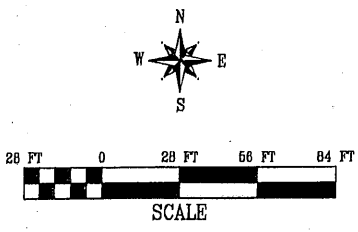
RCS #2 Volume Data
Date Surveyed: July 2007
Surveyed by: CM, MM, RS

Spillway Elev:	89.00'
Capacity @ Spillway:	7.37 ac-ft
Surface Area @ Spwy:	1.1 ac



STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER
9/27/07





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Lingleville Dairy Stephenville Erath County, Texas	RCS #2 Capacity Certification Plan and Profile July 2007	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

ENVIRO-AG
EAE
ENGINEERING

CAPACITY CERTIFICATION
RCS #1
LINGLEVILLE DAIRY
ERATH COUNTY, TEXAS

A capacity survey on RCS #1 was conducted in July 2007 by Enviro-Ag Engineering, Inc. The capacity was calculated to be:

11.91 acre-feet*

Respectfully submitted,

9/27/07

Norman H. Mullin, P.E.

*- (2-feet of dry freeboard)

(Supporting Documentation Attached)

SEP 28 2007

000083

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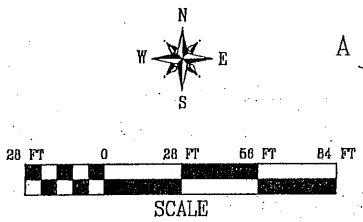
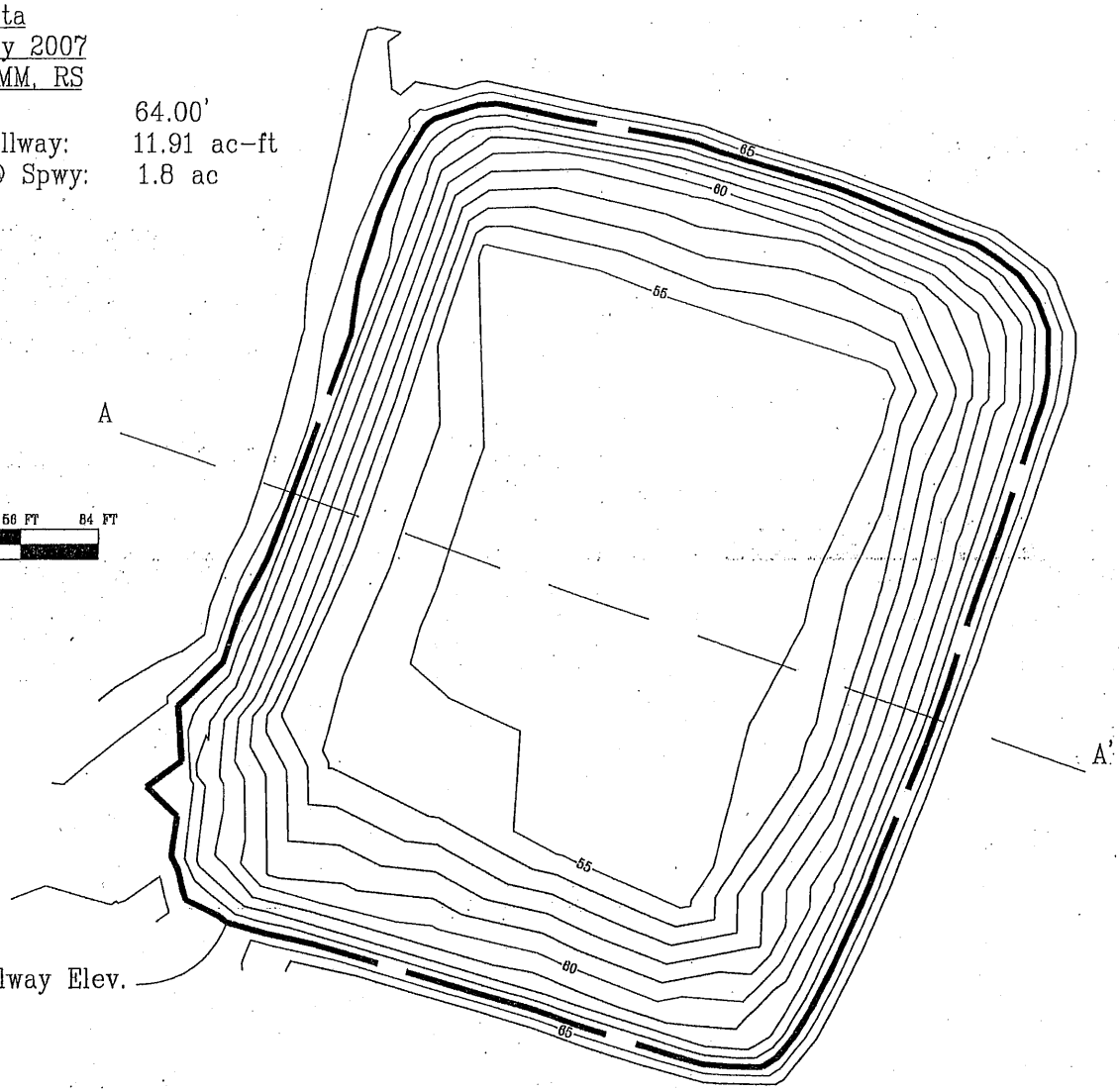
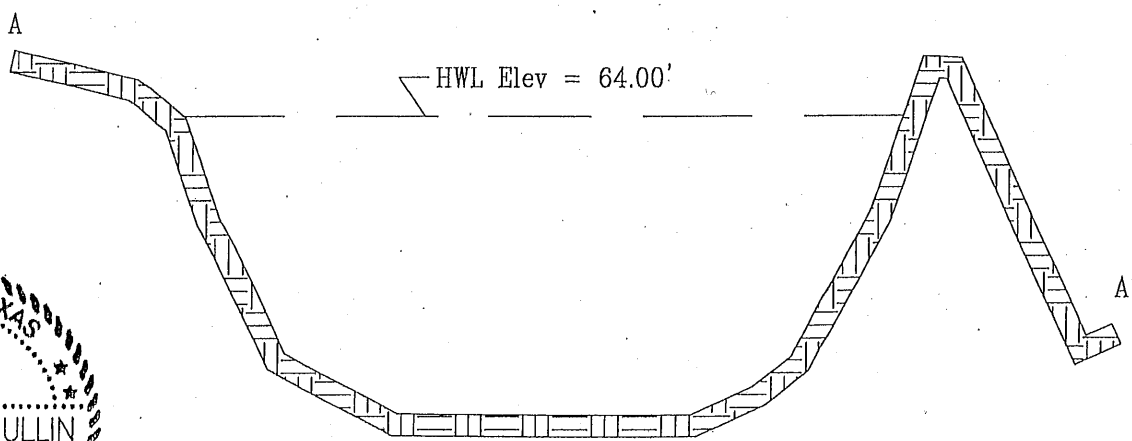
www.enviroag.com

RCS #1 Volume Data
Date Surveyed: July 2007
Surveyed by: CM, MM, RS

Spillway Elev:	64.00'
Capacity @ Spillway:	11.91 ac-ft
Surface Area @ Spwy:	1.8 ac







Cross-Section A - A'
No Scale

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER

Norman Mullin 9/27/07

SEP 28 2007

000083A

Lingleville Dairy Stephenville Erath County, Texas	RCS #1 Capacity Certification Plan and Profile July 2007	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

ENVIRO-AG ENGINEERING

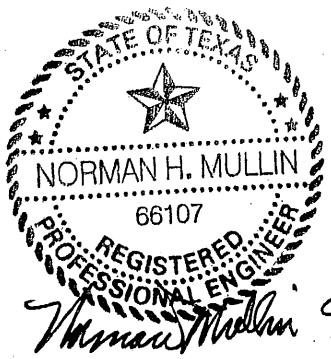
SETTLING BASIN LINER CERTIFICATION
Lingleville Dairy
Erath County, Texas

In August 2007, a liner core sample was collected from the Settling Basin at Lingleville Dairy by Corey Mullin representing Enviro-Ag Engineering, Inc.. The sample was collected to verify a minimum liner thickness of 12 inches and then submitted for permeability determination (ASTM D5084). Results of the permeability tests are as follows:

- Settling Basin #1 1.8 x 10E-08 cm/sec

Based on the above permeability test result, the existing liner in the Settling Basin meets the requirements of the TCEQ allowable seepage rates for runoff control structures (18 inches of liner material having 1.0 x 10E-07 cm/sec hydraulic conductivity or its equivalent).

Respectfully submitted,



9/25/07

Norman H. Mullin, P.E.
Registration #66107

(Supporting Documentation Attached)

SEP 28 2007

000084

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CALCULATION OF SPECIFIC DISCHARGE
TCEQ REQUIREMENTS vs. INSTALLED SOIL LINER

SITE: **Lingleville Dairy** ENGINEER: **NHM**
LOCATION: **Erath County, TX** DATE: **Sept 2007**
STRUCTURE: **Settleing Basin**

This worksheet calculates the specific discharge through a soil liner based on the measured thickness of the installed clay liner and the results of permeability testing. The calculated specific discharge of the installed liner is then compared to a calculated specific discharge of a theoretical pond of comparable depth lined with 18 inches of 1 x 10-7 homogeneous clay material.

	Hydraulic Conductivity Results of Core Samples			TCEQ Benchmark
	SB #1			
1. Water Depth, feet	4	0	0	4
2. Liner Thickness, inches	12.0	0.0	0.0	18.0
3. Hydraulic Conductivity, cm/sec	1.80E-08	0.00E+00	0.00E+00	1.00E-07
4. Calculated specific discharge, v'				
a.) feet per day	0.000255	#DIV/0!	#DIV/0!	0.001039
b.) feet per year	0.093	#DIV/0!	#DIV/0!	0.379

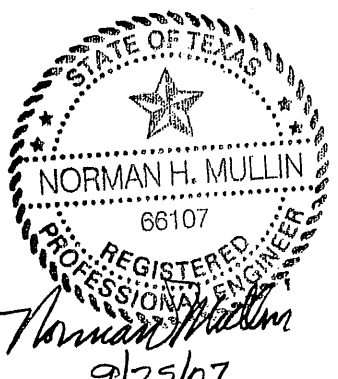
NOTES:

(1) Water depth of the pond in feet.
(2) Soil liner thickness in inches.
(3) Hydaulic conductivity of the core sample(s) as determined by flexible wall permeameter in cm/sec (Ref: ASTM D 5084).
(4) The specific discharge is estimated for the collected samples and for the TCEQ benchmark.

The following equation is used:

$$v' = k (H + d) / d$$

where: v' = Specific Discharge of area representative of core sample, feet/day
d = Measure Liner Thickness at core sample location, feet
k = Hydaulic Conductivity of liner based on core sample testing, feet/day
H = Maximum Water Depth, feet



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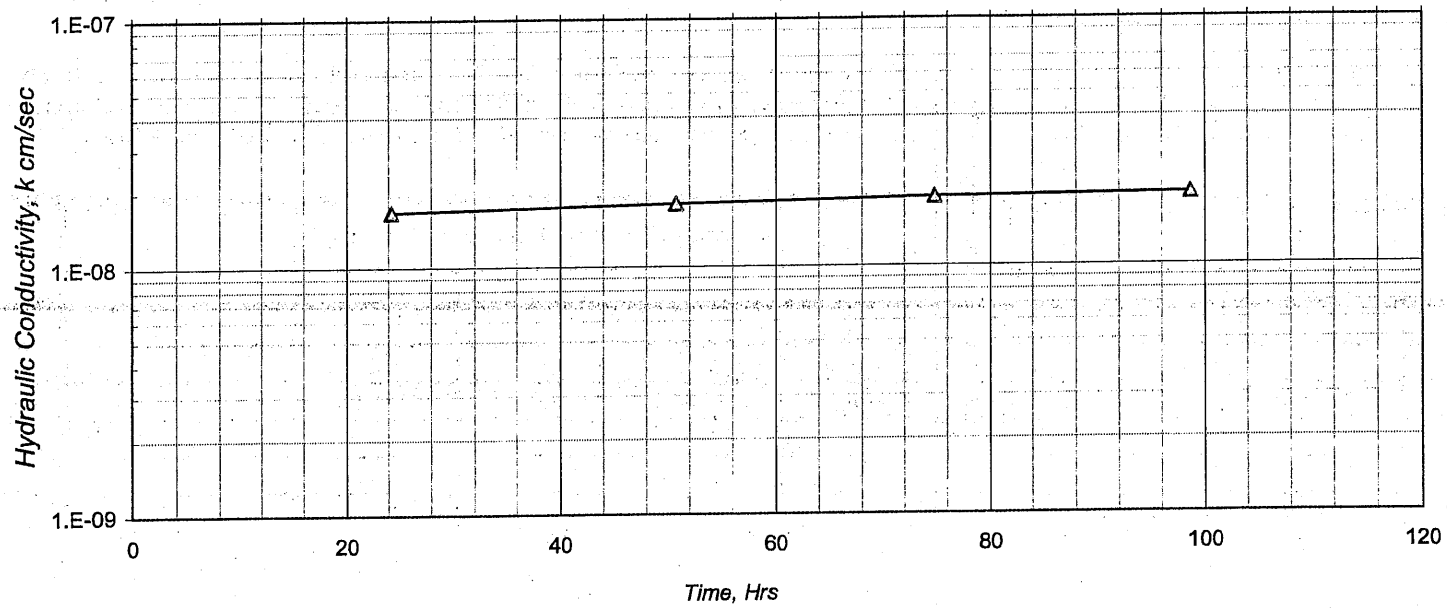
HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Lingleville Dairy	**07-07-16**	**2-040**
Sample ID:	**Sample Location:**	**Report Date:**
3	**Settling Basin # 1**	**September 18, 2007**

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	Settling Basin # 1	
	INITIAL	FINAL
HEIGHT, in.	2.4	2.4
DIAMETER, in.	2.7	2.7
WATER CONTENT, %	17.8	20.9
DRY DENSITY, pcf	108	107
SATURATION, %	87	100
(Specific Gravity assumed as 2.69)		
SAMPLE COLOR	Brown	
SAMPLE CONSISTENCY	Sandy Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	1.7E-08
2	50.8	1.8E-08
3	74.9	1.9E-08
4	98.8	1.9E-08

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AVERAGE LAST 4 : **1.8E-08**

000086

COMMENTS:
Tap water used as permeant.

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By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

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RCS #1 LINER CERTIFICATION
Lingleville Dairy
Erath County, Texas

In August 2007, a liner core sample was collected from runoff control structure (RCS) #1 at Lingleville Dairy by Corey Mullin representing Enviro-Ag Engineering, Inc.. The sample was collected to verify a minimum liner thickness of 12 inches and then submitted for permeability determination (ASTM D5084). Results of the permeability tests are as follows:

- RCS #1-1 3.8 x 10E-09 cm/sec

Based on the above permeability test result, the liner in RCS #1 meets the requirements of the TCEQ allowable seepage rates for runoff control structures (18 inches of liner material having 1.0 x 10E-07 cm/sec hydraulic conductivity or its equivalent).

Note: This RCS will require modification to contain the 25-yr, 10-day storm event.

Respectfully submitted,

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER

Norman H. Mullin 9/25/07

Norman H. Mullin, P.E.
Registration #66107

(Supporting Documentation Attached)

SEP 28 2007

000087

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www.enviroag.com

CALCULATION OF SPECIFIC DISCHARGE
TCEQ REQUIREMENTS vs. INSTALLED SOIL LINER

SITE: **Lingleville Dairy** ENGINEER: **NHM**
LOCATION: **Erath County, TX** DATE: **Sept 2007**
STRUCTURE: **RCS #1**

This worksheet calculates the specific discharge through a soil liner based on the measured thickness of the installed clay liner and the results of permeability testing. The calculated specific discharge of the installed liner is then compared to a calculated specific discharge of a theoretical pond of comparable depth lined with 18 inches of 1 x 10-7 homogeneous clay material.

	Hydraulic Conductivity Results of Core Samples			TCEQ Benchmark
	RCS #1-1			
1. Water Depth, feet	14	0	0	14
2. Liner Thickness, inches	12.0	0.0	0.0	18.0
3. Hydraulic Conductivity, cm/sec	3.80E-09	0.00E+00	0.00E+00	1.00E-07
4. Calculated specific discharge, v'				
a.) feet per day	0.000162	#DIV/0!	#DIV/0!	0.002929
b.) feet per year	0.059	#DIV/0!	#DIV/0!	1.069

NOTES:

(1) Water depth of the pond in feet.
(2) Soil liner thickness in inches.
(3) Hydaulic conductivity of the core sample(s) as determined by flexible wall permeameter in cm/sec (Ref: ASTM D 5084).
(4) The specific discharge is estimated for the collected samples and for the TCEQ benchmark.

The following equation is used:

$$v' = k (H + d) / d$$

where: v' = Specific Discharge of area representative of core sample, feet/day
d = Measure Liner Thickness at core sample location, feet
k = Hydaulic Conductivity of liner based on core sample testing, feet/day
H = Maximum Water Depth, feet

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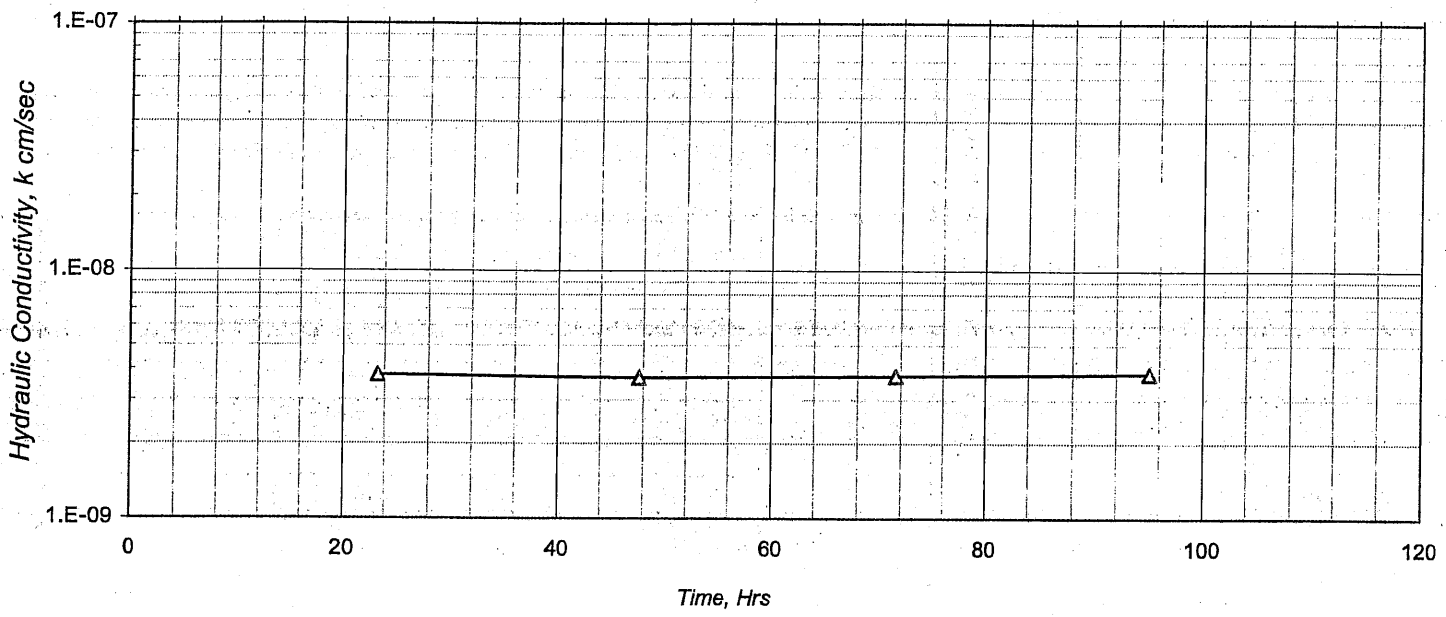
HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Lingleville Dairy	**07-07-16**	**15-009**
Sample ID:	**Sample Location:**	**Report Date:**
1	**RCS # 1 - 1**	**September 18, 2007**

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS # 1 - 1	
	INITIAL	FINAL
HEIGHT, in.	2.0	2.0
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	26.3	27.3
DRY DENSITY, pcf	100	99
SATURATION, %	100	101
(Specific Gravity assumed as 2.75)		
SAMPLE COLOR	Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	4 - 4
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	23.4	3.8E-09
2	47.6	3.7E-09
3	71.6	3.7E-09
4	95.1	3.8E-09

AVERAGE LAST 4 : **3.8E-09**

SEP 2 8 2007

000089

COMMENTS:

Tap water used as permeant.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering Inc. By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

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RCS #2 LINER CERTIFICATION
Lingleville Dairy
Erath County, Texas

In August 2007, a liner core sample was collected from runoff control structure (RCS) #2 at Lingleville Dairy by Corey Mullin representing Enviro-Ag Engineering, Inc.. The sample was collected to verify a minimum liner thickness of 12 inches and then submitted for permeability determination (ASTM D5084). Results of the permeability tests are as follows:

- RCS #2-1 3.7 x 10E-08 cm/sec

Based on the above permeability test result, the existing liner in RCS #2 meets the requirements of the TCEQ allowable seepage rates for runoff control structures (18 inches of liner material having 1.0 x 10E-07 cm/sec hydraulic conductivity or its equivalent).

Respectfully submitted,

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER

9/25/07

Norman H. Mullin, P.E.
Registration #66107

(Supporting Documentation Attached)

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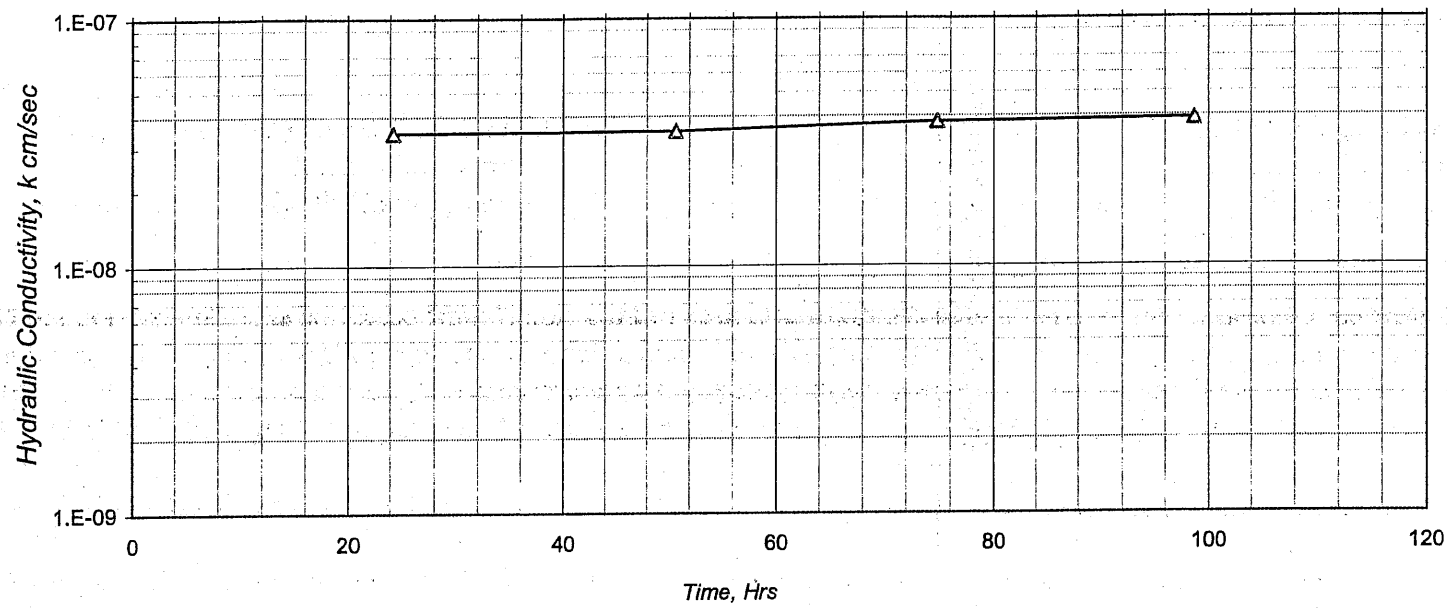
HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Lingleville Dairy	07-07-16	1-039
Sample ID:	**Sample Location:**	**Report Date:**
2	RCS # 2 - 1	September 18, 2007

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS # 2 - 1	
	INITIAL	FINAL
HEIGHT, in.	3.0	3.0
DIAMETER, in.	2.7	2.7
WATER CONTENT, %	13.2	16.4
DRY DENSITY, pcf	115	115
SATURATION, %	80	99
(Specific Gravity assumed as 2.65)		
SAMPLE COLOR	Brown	
SAMPLE CONSISTENCY	Sandy Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	2 - 3
IN / OUT RATIO:	0.89

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	3.4E-08
2	50.8	3.5E-08
3	74.9	3.8E-08
4	98.8	3.9E-08

AVERAGE LAST 4 : **3.7E-08**

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These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering Inc.
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CALCULATION OF SPECIFIC DISCHARGE
TCEQ REQUIREMENTS vs. INSTALLED SOIL LINER

SITE: **Lingleville Dairy** ENGINEER: **NHM**
LOCATION: **Erath County, TX** DATE: **Sept 2007**
STRUCTURE: **RCS #2**

This worksheet calculates the specific discharge through a soil liner based on the measured thickness of the installed clay liner and the results of permeability testing. The calculated specific discharge of the installed liner is then compared to a calculated specific discharge of a theoretical pond of comparable depth lined with 18 inches of 1 x 10-7 homogeneous clay material.

	Hydraulic Conductivity Results of Core Samples			TCEQ Benchmark
	RCS #2-1			
1. Water Depth, feet	14	0	0	14
2. Liner Thickness, inches	12.0	0.0	0.0	18.0
3. Hydraulic Conductivity, cm/sec	3.70E-08	0.00E+00	0.00E+00	1.00E-07
4. Calculated specific discharge, v'				
a.) feet per day	0.001573	#DIV/0!	#DIV/0!	0.002929
b.) feet per year	0.574	#DIV/0!	#DIV/0!	1.069

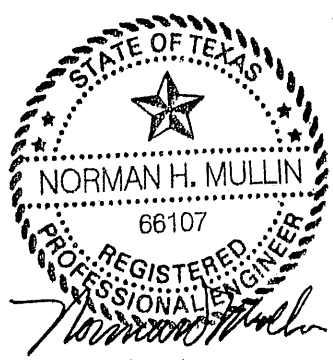
NOTES:

(1) Water depth of the pond in feet.
(2) Soil liner thickness in inches.
(3) Hydaulic conductivity of the core sample(s) as determined by flexible wall permeameter in cm/sec (Ref: ASTM D 5084).
(4) The specific discharge is estimated for the collected samples and for the TCEQ benchmark.

The following equation is used:

$$v' = k (H + d) / d$$

where: v' = Specific Discharge of area representative of core sample, feet/day
d = Measure Liner Thickness at core sample location, feet
k = Hydaulic Conductivity of liner based on core sample testing, feet/day
H = Maximum Water Depth, feet



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SECTION 4 WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN

4.1 Nutrient Utilization

Agronomic application of dairy wastes enhances soil productivity and provides the crop and forage growth with needed nutrients for optimum growth and vigor. Land application of manure and wastewater will be performed according to a Nutrient Management Plan (NMP) in accordance with NRCS Codes 590 and 633. The NMP for crop year 2007-2008 is attached.

4.2 Waste Handling Procedures

The dairy shall operate under the provisions of 30 TAC §321.42, which describes certain waste management and disposal requirements for individual water quality permits for dairy concentrated animal feeding operations (CAFOs) when an operation is located in a major sole-source impairment zone. Waste disposal options include:

- Beneficial use outside the watershed
- Disposed in permitted landfills outside the watershed
- Delivered to a composting facility approved by the Executive Director
- Other beneficial use approved by the Executive Director
- Applied on-site in accordance with a certified NRCS Code 590/633 NMP or NUP, as dictated by annual soil test results
- Provided to third parties

Lingleville Dairy requests access to third-party fields to be operated in accordance with 30 TAC §321.42(j) (1)-(4). Third-party written contracts between Lingleville Dairy and the third party recipient will be maintained in the PPP. These contracts will confirm that the third party recipient will allow manure, wastewater and slurry from the facility to be beneficially applied at rates based on the soil test phosphorus in accordance with applicable requirements of 30 TAC §321.36 and §321.40.

Per the requirements of 30 TAC §321.42(s), a Texas State Soil and Water Conservation Board (TSSWCB) certified Comprehensive Nutrient Management Plan (CNMP) has been completed for this facility.

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Insert Nutrient Utilization Plan (NUP) following this page.

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Waste Utilization and Nutrient Management Plan

Lingleville Dairy
429 CR 297
Stephenville, TX
2524/968-3406

TCEQ Permit Number:
WQ03590

Owner
Elmer Jack Parks
13628 W FM 8
Stephenville, TX
254/968-3406

Operator
Elmer Jack Parks

Type of Waste Plan:
Other AFO-CAFO Waste Plan
located in Erath County

Prepared By:

(Signature)
Corey Mullin
Consultant
Certificate Number = TX20171
Expiration Date = December 31, 2008
Enviro-Ag Engineering
19677 US HWY 377
Dublin, TX 76446
254/445-2200

This plan is based on:
590 -633 Plan V 4.0_1

9/27/07 11:30 AM

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Executive Summary:

LMUs have been re-numbered since the soil samples used in this plan were collected. Soil sampling will be conducted according to the new map in 2007-2008. The following table correlates the sample results to the new numbering system:

New ID	Old ID
LMU 1	LMU 1
LMU 2a	LMU 1a
LMU 2b	LMU 1a
LMU 3	LMU 2
LMU 4a	LMU 3
LMU 4b	LMU 3
LMU 4c	LMU 3
LMU 5a	LMU 4
LMU 5b	LMU 4
LMU 6a	LMU 5
LMU 6b	LMU 5
LMU 7a	LMU 6
LMU 7b	LMU 6
LMU 7c	LMU 6
LMU 8	LMU 7
LMU 9a	LMU 10
LMU 9b	LMU 9
LMU 10a	LMU 8
LMU 10b	LMU 8
LMU 11a	LMU 9
LMU 11b	LMU 11
LMU 12a	LMU 11
LMU 12b	LMU 11
LMU 13	LMU 9

The offsite acreage's soil sample results were taken from the 2006 results; no application of manure or wastewater has been or will be applied until the re-issuance of the permit.

LMUs 3, 5a, 5b, 8, 10a, 10b, 11a and 11b will be established to Tifton Bermudagrass in the spring following the issuance of the individual permit.

Maximum nutrient application rates shown in Tables 5 and 9 are not to be exceeded during the crop year. Supplemental nutrients will be necessary to achieve the desired yields. Commercial N application shall be split such that individual application events do not exceed 100lbs/ac N.

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Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY: Permit #: WQ03590

This Nutrient Management Plan has fields that meet NMP and/or NUP requirements.

All application rates contained in this document are based on the most current soil and waste analyses. This NMP will be updated upon the next soil analyses to reflect current conditions.

The LMUs for this facility has been redesignated. Attached is a "cross reference" document to illustrate soil analyses as it pertains to the lmu designations in this document.

All applications of commercial fertilizer should take into account nutrient levels in the 6-24 inch soil profile.

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Erath** County (see attached topo map and plan map for location.) The purpose of this plan is to outline the details of the land application of the effluent and solids produced by this operation. When the plan is fully implemented, it should minimize the effects of the land application of animal wastes on the soil, water, air, plant, and animal resources in and around the application area. This plan, when applied, will meet the requirements of the Natural Resources Conservation Service Waste Utilization Standard and Nutrient Management Standard.

The plan is for the year of **2007** and will remain in effect until revision based on new soil or manure analysis or crop change (yield or crop) result in a new P-Index rating or plan classification (NMP-NUP). The waste has been stored in a **Dairy Lagoon** . Approximately **700** head will be confined with the average weight of **1400** pounds. The animals will be confined **24** hours per day for **365** days per year.

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Values in Table 1 may be based on actual analysis or "book" values during the initial planning to determine land application rates for the initial plan. When "book" values are used, they will be from NRCS, Texas Cooperative Extension or averages from other TX testing lab sources. Site specific data will be used as soon as feasible after production begins. Manure and/or effluent will be tested at least annually or in the year of application if it is stored for more than one year. If the actual values are more than 10% higher or lower than the estimated values, this plan will need to be revised accordingly.

Application of waste products may be made up to the Maximum Rate given in Table 2 or 2a as applicable. Table 2 applies to those that are subject to Nutrient Management Plan (NMP) requirements while Table 2a applies when subject to Nutrient Utilization Plan (NUP) requirements. Current requirements for both the NMP and NUP are given in the headers of the tables. Table 2a has a criteria involving the distance to a named stream when the Soil Test P Level is above 200 ppm in arid areas as well as special requirements when the site is in a TMDL watershed designated by TCEQ. For various P Index Ratings, the maximum rates in Table 2 are based on crop requirements, whereas the maximum rates in Table 2a are based on crop removal rates. County avg. rainfall information can be found in the TX Agronomy Technical Note 15, Phosphorus Assessment Tool for Texas, located in the eFOTG at the address given in the section entitled **"Collecting Soil Samples for Analyses"**.

CROP REMOVAL RATES:

Crop Removal Rates of nitrogen (N), phosphorus (P), and potassium (K) in pounds per acre are given in Table 3 for the crop and yield planned for each field. This Table is included for information only, and should be used during the planning process to compare planned or maximum application rates to crop removal. Crop removal rates may be based on actual analysis of harvested material or default values in the database. P build-up will occur at higher rates when crop removal rates are exceeded..

SOLIDS APPLICATION:

The maximum solids application rates are given in Table 4 along with the current soil test P level, maximum P_2O_5 application rate, maximum tons per acre of solids and the total tons of solids per field that can be applied to each field. The maximum tons of solids that can be utilized on the fields planned is indicated in the box near the lower left corner of Table 4. When the total application acres of the fields are adequate to allow all of the solids to be applied, "Adequate" will be indicated below the tonnage in this box. If "Not Adequate" is indicated, then the lower box will indicate the tons of solids that must be utilized off-site unless more fields/acres are added. This plan is valid only if the application of waste to the crops listed does not exceed the per acre rates by more than 10%. If the yield of a crop does not meet the expected goal, the application rate should be adjusted the following year.

The estimated amounts of N, P_2O_5, and K_2O contained in the solids are provided in Table 5 for the maximum application rate. Supplemental N and K_2O will be applied to achieve the yield goals in Table 4 when recommended by the soil test and the maximum rate of the solids does not meet the crop needs. When the maximum application rate is applied and Table 5 indicates additional commercial nutrients, they **must** be applied to fields as indicated. **NOTE:** If additional nitrogen is recommended, the producer should consider collecting soil samples from the 6 - 36 inch layer to see if there is any additional deep nitrogen available. Additional deep nitrogen within the root zone of the crop can be substituted for supplemental commercial nitrogen, and should be included in the soil test N ppm entry.

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In situations where more land is available than is needed to utilize the maximum application rate on each field, the application rates in Table 6 have been reduced to the level that does not exceed the amount of solids produced. Table 7 indicates the amount of nutrients provided and, if needed, the supplemental nutrients which **must** be applied when the application is based on these rates. The amounts of supplemental nutrients in Table 7 are based on the actual amount of waste available rather than the **maximum** rate that **"could"** be applied.

The second line from the bottom of Table 6 on the right has a box that will be **"YES"** or **"NO"**. When the reduced rates use all solids to be produced in a year, this box will be **"Yes"**. If the percentages are too low, it will be **"No"**. If **"No"**, either more acreage is needed on which to apply the solids or the solids will need to be transported off-site. The amount is located on the bottom line on the extreme right of the page.

Actual application will be based on the quantities produced, as well as, current manure analyses. **Application at the MAXIMUM rates shown in Table 4 will result in a more rapid build-up of phosphorus than if applied at lower rates. A different percentage may be used as long as the rate does not exceed the maximum shown in Table 4 for the field and the proper amount of supplemental nutrients are applied. Applying a lower rate to the fields with higher soil test P levels will slow down the P buildup and extend their land application life. Phosphorus will also build up more rapidly on pastureland than on hayland or cropland, since very few nutrients are actually removed by grazing animals.**

The solids may be applied to the same acreage every year according to Table 2 or 2a. The annual rates in both Table 4 and 6 may be doubled not to exceed the 2X the annual nitrogen requirement or nitrogen removal rate, as applicable. When the full biennial rate has been used, no additional phosphorus fertilizer or animal wastes may be applied in the alternate year. A column in both tables indicates whether the rates given are Annual Rates (A) or Biennial Rates (B). Rates given are based on Table 2 or 2a as applicable. Annual application rate for fields in a TMDL area with a Soil Test P level equal to or greater than 500 ppm or any field in a TMDL area with P Index Rating of Very High is 0.5 annual crop removal rate.

EFFLUENT APPLICATION:

The maximum effluent application rates are given in Table 8 for each field. This table provides the current soil test P level, maximum P_2O_5 application rate, effluent either in gallons per acre or acre inches per acre and the amount of effluent that can be applied per field. The maximum amount of effluent that can be utilized on the fields planned is indicated in a box near the lower left corner of Table 8. When the total application acres are adequate to allow all of the effluent to be applied, "Adequate" will be indicated below this box. If "Not Adequate" is indicated, then the lower box will indicate the amount of effluent that must be utilized off-site unless more field acres are added.

The estimated amounts of N, P, and K contained in the effluent are provided in Table 9 for the maximum application rate indicated in Table 8. Supplemental N and K_2O will be applied to achieve the yield goals when recommended by the soil test and the maximum rates of the effluent do not meet the crop requirements. **NOTE:** If additional nitrogen is recommended, the producer should consider collecting soil samples from the 6 - 36 inch layer to see if there is any additional deep nitrogen available. Additional deep nitrogen within the root zone of the crop can be substituted for supplemental commercial nitrogen.

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In situations where more land is available than is needed to utilize the maximum application rate on each field, the application rates in Table 10 have been reduced to the level that does not exceed the amount of effluent produced. Table 11 indicates the amount of nutrients provided and, if needed, the supplemental nutrients which **must** be applied when application is made based on the rates in Table 10. These amounts of supplemental nutrients in Table 11 are based on the planned amount of effluent available rather than the **maximum** rate that "**could**" be applied.

The bottom line on the right of Table 10 has a box that will be "**YES**" or "**NO**". When the reduced rates uses all effluent to be produced in a year, this box will be "**Yes**". If the percentages are too low, it will be "**No**". If "**No**" is indicated, either more acreage is needed on which to apply the effluent or the effluent will need to be transported off-site.

Actual application will be based on the quantities produced, as well as, current manure analyses. **Application at the MAXIMUM rates shown in Table 8 will result in a more rapid build-up of phosphorus than if applied at lower rates. A different percentage may be used as long as the rate does not exceed the maximum shown in Table 8 for the field and the proper amount of supplemental nutrients are applied. Applying a lower rate to fields with higher soil test P levels will slow down the P buildup and extend their land application life. Phosphorus will also build up more rapidly on pastureland than on hayland or cropland, since very few nutrients are actually removed by grazing animals.**

The effluent may be applied to the same acreage every year according to Table 2 or 2a. The annual rates in both Table 8 and 10 may be doubled not to exceed the 2X the annual nitrogen requirement or nitrogen removal rate, as applicable, when the full biennial rate has been used, no additional phosphorus fertilizer or animal wastes may be applied in the alternate year. A column in both tables indicates whether the rates given are Annual Rates (A) or Biennial Rates (B). Rates given are based on Table 2 or 2a as applicable. Annual application rate for fields in a TMDL area with a Soil Test P level equal to or greater than 500 ppm or any field in a TMDL area with P Index Rating of Very High is 0.5 annual crop removal rate.

Maximum Hourly Application Rate - The maximum hourly application rate is determined by the texture of the soil layer with the lowest permeability within the upper 24 inches of the of the predominant soil in each field. The hourly application rate must be low enough to avoid runoff and/or ponding. For effluent with 0.5% solids or less, **DO NOT** exceed the rates shown in Table 1 of the attached Job Sheet titled, *"Waste Utilization, Determining Effluent Application Rates"*. If the effluent contains more than 0.5% solids, those values must be reduced by the appropriate amount shown in Table 2 of the attached *"Waste Utilization, Determining Effluent Application Rates"* Job Sheet.

Maximum One-Time Application Rate - The maximum amount of effluent that can be applied to a given field at any one-time is the amount that will bring the top 24 inches of the soil to 100% field capacity. This amount is determined by subtracting the amount of water stored in the soil (estimated by feel and appearance method) from the available water holding capacity (AWC) of the soil. The available water holding capacity of the top 24 inches of the predominant soil of each field receiving effluent and the texture of the most restrictive layer in the upper 24 inches are given in Table 12.

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To determine any one-time application amount, the current percent of field capacity (FC) of the upper 24 inches of the predominant soil in the field should be estimated using the guidance in Table 3 of the attached Job Sheet, *"Waste Utilization, Determining Effluent Application Rates, rev 4/06"*. Additional information on estimating soil moisture can be found in the NRCS Program Aid 1619, *"Estimating Soil Moisture by Feel and Appearance"*, or from the University of Nebraska Extension publication No. G84-690-A by the same name. Both of these publications have pictures of various soils at different percentages of field capacity to be used as a guide to estimating soil moisture. Once the current percent of FC is estimated, it is subtracted from the AWC amount in Table 12 for the given field and the difference is the maximum application for those soil conditions on that day. Remember, the maximum hourly application and the maximum one time application rates are only estimates to be used as a guide.

Solids/Effluent Land Application: - Land application of solids and/or effluent should be made at appropriate times to meet crop needs, but can be made at any time as long as the total annual (or biennial) rate, maximum hourly rate, and the maximum one time application rates are not exceeded. Effluent should be surface applied uniformly. No runoff or ponding should occur during application thus frequent observations should be made. Neither effluent or solids will be applied to slopes >8% with a runoff curve >80, or steeper than 16% slope with a runoff curve of 70 or greater, unless the application is part of an erosion control plan. Waste will not be spread at night, during rainfall events, or on frozen or saturated soils if a potential risk for runoff exists. Waste will not be applied to frequently flooded soils during months when the soils typically flood. If frequently flooded soil occur on any potential application field see attached, "Water Features Table", for months when flooding is expected. Solids should be applied with a manure spreader as uniformly as feasible. Surface applications with trucks should only be made when soil conditions are favorable in order to minimize soil compaction.

Managing Runoff -
A minimum 100 ft. setback or vegetated buffer (Filter Strip, Field Border, Riparian Forested Buffer, etc.) will be established and maintained between the application area and all surface water bodies, sink holes, and watercourses as designated on Soil Survey sheets or USGS topographic maps. A minimum application distance from private and public will be 150 ft. and 500 ft. respectively. A minimum application distance from water wells used exclusively for agricultural irrigation will be 100 ft. Table 9 provides a summary of the setbacks and out areas of each field.

Managing Leaching -
When soils with sandy, loamy sand, or gravelly surface textures have a Nitrogen Leaching Index score of >2 appropriate measures will be used to minimize the potential of leaching. These measures will include, split applications of waste, and may include double cropping, or cover crops, and irrigation water management (on fields that receive supplemental or full irrigation).

MORTALITY MANAGEMENT:
All mortality will be disposed of properly within 3 days according to the Texas Commission on Environmental Quality (TCEQ) rules. The preferred method for disposal of routine mortality is by a rendering plant. Before planning this method, contact the facility or its representative to be informed of special handling procedures, equipment needs, scheduling requirements, etc. Maintain a list of contact phone numbers so information will be readily available following a catastrophic die-off. Verify that local companies which have previously picked up and/or rendered dead animals are still doing so. A number of rendering companies across the state have stopped dead animal pick up service, and others have raised their fees significantly. Periodically review the availability and cost of rendering so that the plan can be modified if necessary. This can be an excellent option if mortality can be loaded and transported while still fresh or the mortality can be refrigerated until loaded and transported.

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Disposal in a landfill may be an option in some locations. Before planning this option, the closest commercial, regional, county, or municipal landfill should be contacted to determine if the landfill has a permit which would allow acceptance of dead animals (swine, sheep, cattle, etc.). Also ask if there are any restrictions on type and volume of animal mortality that will be accepted at the facility. Landfill fees and transport, offloading, and handling procedures should be discussed with landfill managers and documented for reference when needed. The landfill is not a viable option if the producer does not own or have access to a vehicle capable of transporting mortality quickly in an emergency situation. After a catastrophic die-off is not a good time to find out that a driver and truck to transport mortality will not be available for several weeks **(MAKE ARRANGEMENTS NOW, NOT AFTER THE ANIMALS ARE DEAD).**

On-farm disposal of catastrophic mortality may be considered if site conditions permit. On-farm methods include burial, composting, and incineration. Incinerators and composters are excellent options for routine mortality but usually do not have the capacity to handle mortality volumes associated with catastrophic events. Composting and incineration should not be relied on for catastrophic mortality handling without a documented evaluation of worst anticipated mortality condition (number, type, and weight of animals), and the anticipated capacity of the system (i.e., lb./hr. incineration rate, hrs/day of operation). NRCS Mortality Facility Standard 316 will be used for all mortality management.

See the attached soil interpretation, ENG - Animal Mortality Disposal (Catastrophic) Trench, to make a preliminary assessment of the limitations of the soils on this farm for burial of catastrophic mortality. The attached TX NRCS Technical Guidance, Catastrophic Animal Mortality Management (Burial Method) should be used as a guide to overcome minor limitations and as design criteria for the construction of burial pits for catastrophic mortality. Mortality burial sites shall be located outside the 100 -year floodplain. Mortality burial will not be less than 200 feet from a well, spring, or water course. A FIELD INVESTIGATION BY A QUALIFIED PROFESSIONAL SHOULD BE MADE BEFORE AN AREA IS USED FOR A BURIAL SITE FOR CATASTROPHIC MORTALITY EVENTS. **The TCEQ Industrial and Hazardous Waste Permits Section, MC-130, must be contacted before burial of catastrophic mortality.**

TCEQ
Industrial and Hazardous Waste Permits Section, MC-130
PO Box 13087
Austin, TX 78711-3087
Phone: 512-239-2334 Fax: 512-239-6383

Air Quality:

The following steps should be taken when spreading effluent or solids to reduce problems associated with odor.
1. Avoid spreading effluent or solids when wind will blow odors toward populated areas.
2. Avoid spreading effluent or solids immediately before weekends or holidays, if people are likely to be engaged in nearby outdoor activities.
3. Avoid spreading effluent or solids near heavily traveled highways.
4. Make applications in the morning when the air is warming, rather than in the late afternoon.
5. All materials will be handled in a manner to minimize the generation of particulate matter, odors, and greenhouse gas emissions.

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EFFLUENT AND SOLIDS STORAGE & TESTING: Permit #: WQ03590

Effluent and solids will be stored in facilities designed, constructed, and maintained according to USDA NRCS Standards and specifications.

Effluent and solids sampling is needed to get a better idea of the nutrients actually being applied. Effluent and/or solids samples will be collected at least annually, or in the year of its use if waste is typically stored for more than 1 year. The samples will be submitted immediately to a lab for testing. If sent to Texas A&M soil lab or SFASU Soil Testing Lab for analysis, use the "plant and forage analysis" form and note the type of operation. Request that the manure be analyzed for percent dry matter, solids, total nitrogen, total phosphorus, and total potassium. Further information on collecting effluent and manure samples for analysis can be found in the TCE publication No. L-5175, *"Managing Crop Nutrients Through Soil, Manure and Effluent Testing"*. **TCEQ sampling rules and testing requirements will be followed on permitted sites.**

COLLECTING SOIL SAMPLES FOR ANALYSIS:

Collect a composite sample for each field (or area of similar soils and management not more than 40 acres in size) comprised of 10 - 15 randomly selected cores. Each core should represent 0 - 6 inches below the surface except for when injection has been done over 6" in depth, then the core should represent the 3-9" layer. Thoroughly mix each set of core samples, and select about a pint of the mixture as the sample for analysis. Label each sample for the field that it represents. Request that the samples be analyzed for nitrate nitrogen, plant-available phosphorus, potassium, sodium, magnesium, calcium, sulfur, boron, conductivity; and pH. Also note on the samples that they are from an effluent or solids application area. **TCEQ sampling rules and testing requirements will be followed on permitted sites.** A weighted average of 0-2 and 2-6 inch layers will be used for calculations on permitted sites.

Further information on collecting soil samples can be found on the TCE Form D-494, p 2, TCE Publication No. L-1793, and TCEQ RG-408. Additional NRCS guidance and requirements can be found in the Nutrient Management (590) standard located in the Texas electronic Field Office Technical Guide (eFOTG) at:

http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=TX

Click the county desired.
Click Section IV in the left column under eFOTG
Type: 590 in the Search Menu above eFOTG and click: **GO**
Click on the desired item under Nutrient Management in the left column

SOIL ANALYSIS:

A soil analysis will be completed for all areas to be used for all effluent or solids application areas. The soil test analysis method will be **Mehlich III with inductively coupled plasma (ICP)**. The area will be tested and analyzed at least annually to monitor P build up.

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RECORD KEEPING: Permit #: WQ03590

Detailed records should be maintained by the producer for all application of animal waste to land owned and operated by the producer. Records should include date, time, location, amount of application, weather conditions, estimated wind speed and direction, etc. A rain gauge should be in place at the application site and accurate records of rainfall should be maintained at the site. All records must be kept for at least 5 years. **TCEQ requirements will be followed on permitted sites.**

Records should also be kept showing amounts of litter given or sold to others. **A copy of the effluent analysis and/or solids analysis and a Waste Utilization Guidelines Sheet should be given to anyone who will use either the effluent or solids off-site. If they routinely use animal wastes for fertilizer, they should be directed to the local Soil and Water Conservation District or NRCS office to develop a Waste Utilization and Nutrient Management Plan for their land.**

This portion may be completed by producer, if desired or recorded elsewhere.

Record of waste leaving the farm or used as feed. **Estimated Annual Excess**

Date	Amount	Hauler or Recipient

Excess Remaining | May be continued on additional sheets

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Waste Utilization and Nutrient Management Plan

OPERATION AND MAINTENANCE: Permit #: WQ03590

Application equipment should be maintained in good working order and it should be calibrated annually so that the desired rate and amount of effluent and solids will be applied.

Information on calibrating manure spreaders can be found in the TCE publication No. L-5175, *"Managing Crop Nutrients Through Soil, Manure and Effluent Testing"*. Information on calibrating big gun sprinklers can be found in the Arkansas Extension publication, *"Calibrating Stationary Big Gun Sprinklers for Manure Application"*. For information on calibrating tank spreaders, traveling guns, and additional information on other manure spreading equipment, see Nebraska Extension publication No. G95-1267-A, *"Manure Applicator Calibration"*. Observe and follow manufacturer's recommended maintenance schedules for all equipment and facilities involved in the waste management system. For information on lagoon functions, refer to TCE publication E9, *"Proper Lagoon Management"*.

Any changes in this system should be discussed with the local Soil and Water Conservation District, USDA Natural Resources Conservation Service, or other qualified professional prior to their implementation.

Plan Prepared by: **Corey Mullin** Date: **9/25/2007**

Plan Approved by: Date: 9/25/07

Producer Signature: Jack Parks Date: 9/25/07

The producer's signature indicates that this plan has been discussed with him/her.
If this plan is not signed by the producer, indicate how the plan was provided to the producer.

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PI Index by Field

Printed on: 9/27/07 11:35 AM

This plan is based on: 590 -633 Plan V 4.0

Permit #: WQ03590

Client Name: Lingleville Dairy

Planner: Corey Mullin

Date: 9/27/2007

Location: Erath

Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P_2O_5 Appl Rate	Organic P_2O_5 Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
1	Coastal Hay 4 cut, SG mod graze	2.5%	74	8	0	6	0	0.5	5	2	0	21.5	Medium	9/18/06
2a	Coastal Hay 3 cut, SG mod graze	2.5%	74	8	0	3	0	4	5	2	0	22	Medium	9/18/06
2b	Coastal Hay 3 cut, SG mod graze	6.6%	74	8	0	3	0	4	5	4	0	24	High	9/18/06
3	Coastal 2 Cut Hay	3.2%	61	8	0	1.5	0	4	5	1	0	19.5	Medium	9/18/06
4a	Coastal Hay 3 cut, SG mod graze	3.8%	74	4	0	3	0	4	5	2	0	18	Medium	9/18/06
4b	Coastal Hay 3 cut, SG mod graze	4.4%	61	4	0	3	0	4	5	2	0	18	Medium	9/18/06
4c	Coastal Hay 3 cut, SG mod graze	1.8%	61	4	0	3	0	4	5	1	0	17	Medium	9/18/06
5a	Coastal 2 Cut Hay	4.3%	61	8	0	1.5	0	4	5	2	0	20.5	Medium	9/18/06
5b	Coastal 2 Cut Hay	4.9%	74	8	0	1.5	0	4	5	4	0	22.5	Medium	9/18/06
6a	Coastal Hay 3 cut, SG mod graze	2.5%	61	4	0	3	0	4	5	1	0	17	Medium	9/18/06
6b	Coastal Grazing 1 AU/2 ac	6.6%	61	4	0	3	0	4	5	2	0	18	Medium	9/18/06
7a	Coastal Hay 3 cut, SG mod graze	3.8%	74	8	0	3	0	0.5	5	2	0	18.5	Medium	9/18/06
7b	Coastal Hay 3 cut, SG mod graze	2.5%	74	8	0	3	0	0.5	5	2	0	18.5	Medium	9/18/06
7c	Coastal Hay 3 cut, SG mod graze	2.5%	74	8	0	3	0	0.5	5	2	0	18.5	Medium	9/18/06
8	Coastal 2 Cut Hay	3.8%	74	8	0	1.5	0	4	5	2	0	20.5	Medium	9/18/06
9a	Coastal Hay 3 cut, SG mod graze	3.8%	74	4	0	3	0	4	5	2	0	18	Medium	9/18/06
9b	Coastal Hay 3 cut, SG mod graze	5.6%	61	8	0	3	0	4	5	2	0	22	Medium	9/18/06
10a	Coastal 2 Cut Hay	7.2%	74	8	0	1.5	0	4	5	4	0	22.5	Medium	9/18/06
10b	Coastal 2 Cut Hay	6.8%	74	8	0	1.5	0	4	5	4	0	22.5	Medium	9/18/06
11a	Coastal Hay 3 cut, SG mod graze	1.9%	74	8	0	3	0	4	5	1	0	21	Medium	9/18/06
11b	Coastal Hay 3 cut, SG mod graze	4.3%	74	8	0	3	0	4	5	4	0	24	High	9/18/06
12a	Coastal 2 Cut Hay	8.1%	80	4	0	3	0	4	5	8	0	25.5	High	9/18/06
12b	Coastal 2 Cut Hay	4.5%	74	4	0	3	0	4	5	4	0	21.5	Medium	9/18/06
13	Coastal Hay 4 cut, SG mod graze	1.9%	80	8	0	3	0	4	5	2	0	22	Medium	9/18/06

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Waste Utilization and Nutrient Management Plan

Table 1 - Estimated Effluent and Solids Quantities Produced Permit #: WQ03590

Avg. Number of Animals	Type of Waste
700	Dairy Lagoon
	Dairy Solids

Contact the local Soil and Water Conservation District or USDA Natural Resources Conservation Service office if the total number of animals change by more than 10% so your plan can be revised.

Estimated Acre Inches of Effluent to be Available Annually* **211**

Estimated Tons Solids to be Land Applied Annually (on or off site)* **3,807.7**

*From engineering design.

Estimated Nutrient Availabilty Effluent

	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch	
N	919	0.16	4.4	**
P2O5	1,754	0.31	8.3	
K2O	17,519	3.05	82.9	

** Effluent Values Based on Analysis dated: August 3, 2007

Estimated Nutrient Availabilty Solids

	pounds / yr	pounds / ton	
N	52,326	13.7	**
P2O5	48,212	12.7	
K2O	55,863	14.7	

** Solids Values Based on Analysis dated: August 3, 2007

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Default values were used on all fields for plant removal of nutrients and yield levels.

TABLE 2. A Nutrient Management Plan (NMP) is required where Soil Test P Level [1/] is:

- **less than 200 ppm statewide or**
- **or < 350 ppm in arid areas 2/ with a named stream > one mile.**

P – Index Rating	Maximum TMDL Annual P Application Rate [5/]	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	Annual Nitrogen (N) Requirement	Annual Nitrogen (N) Requirement	2.0 Times Annual N Requirement
Medium	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual N Requirement
High	1.5 Times Annual Crop P Requirement [3/]	1.5 Times Annual Crop P Requirement [3/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement
Very High	1.0 Times Annual Crop P Requirement [3/]	1.0 Times Annual Crop P Requirement [3/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement

TABLE 2a. A Nutrient Utilization Plan (NUP) is required by TCEQ where Soil Test P Level [1/] is:

- **equal to or greater than 200 ppm in non-arid areas [2/] or**
- **equal to or greater than 350 ppm in arid areas [2/] with a named stream greater than one mile or**
- **equal to or greater than 200 ppm in arid areas [2/] with a named stream less than one mile.**

P – Index Rating	Maximum TMDL Annual P Application Rate [5/]	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	1.0 Times Annual Crop P Removal [4/]	Annual N Crop Removal	2.0 Times Annual N Removal
Medium	1.0 Times Annual Crop P Removal [4/]	1.5 Times Annual Crop P Removal [4/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal
High	1.0 Times Annual Crop P Removal [4/]	1.0 Times Annual Crop P Removal [4/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal
Very High or soil test P [1/] => 500 ppm in nutrient impaired TMDL areas.[5/]	0.5 Times Annual Crop P Removal [4/]	0.5 Times Annual Crop P Removal [4/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal

Footnotes Applicable to both Tables

1/ Soil test P will be Mehlich III by inductively coupled plasma (ICP).

2/ Non-arid areas, counties receiving => 25 inches annual rainfall, will use the 200 ppm P level while arid areas, counties receiving < 25 inches of annual rainfall, will use the 350 ppm P level. See map in TX Agronomy Technical Note 15, Phosphorus Assessment Tool for Texas, for county designations.

3/ Not to exceed the annual nitrogen requirement rate.

4/ Not to exceed the annual nitrogen removal rate.

5/ TMDL watersheds are designated by Texas Commission on Environmental Quality (TCEQ).

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Waste Utilization and Nutrient Management Plan

Table 3 - Crop Removal Rates (For Information Only) Permit #: WQ03590

LMU or Field No.	Acres	Crop and P Index Level	TCEQ Plan Type	Actual Crop Analysis or Default	Total Est. N Removal lbs/Ac/Yr	Total Est. P_2O_5 Removal lbs/Ac/Yr	Total Est. K_2O Removal lbs/Ac/Yr
1	13.0	Coastal Hay 4 cut, SG mod graze M	NMP	Default	357	108	318
2a	19.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
2b	44.0	Coastal Hay 3 cut, SG mod graze H	NMP	Default	319	96	284
3	100.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
4a	13.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
4b	23.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
4c	9.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
5a	33.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
5b	63.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
6a	34.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
6b	50.0	Coastal Grazing 1 AU/2 ac M	NMP	Default	169	39	151
7a	55.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
7b	34.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
7c	18.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
8	30.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
9a	34.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
9b	77.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
10a	35.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
10b	40.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
11a	36.0	Coastal Hay 3 cut, SG mod graze M	NMP	Default	319	96	284
11b	21.0	Coastal Hay 3 cut, SG mod graze H	NMP	Default	319	96	284
12a	20.0	Coastal 2 Cut Hay H	NMP	Default	169	39	151
12b	38.0	Coastal 2 Cut Hay M	NMP	Default	169	39	151
13	19.0	Coastal Hay 4 cut, SG mod graze M	NMP	Default	357	108	318

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NOTE: When crops are used for grazing, only a portion of the nutrients used by the crop are removed from the field in the live weight gain of the livestock, the remainder is returned to the land in manure and urine. The book "Southern Forages" estimates the N, P, & K removed in 100 pounds live weight gain as follows: **2.5 lbs N, 0.68 lbs P, 0.15 lbs K**

Waste Utilization and Nutrient Management Plan

Table 4 - Maximum Solids Application per Field Permit #: WQ03590

Est. Solids Produced Annually (wet tons)	LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P2O5 lbs/acre	Annual/Biennial	Maximum Solids Allowable Tons/Acre	Maximum Allowable Application Per field (Tons)
3,808	1							
	2a	19.0	Coastal Hay 3 cut, SG mod graze M	33	424	A	33.5	
	2b	44.0	Coastal Hay 3 cut, SG mod graze H	17	345	A	27.2	
	3	100.0	Coastal 2 Cut Hay M	69	184	A	14.6	
	4a	13.0	Coastal Hay 3 cut, SG mod graze M	142	424	A	33.5	435
	4b	23.0	Coastal Hay 3 cut, SG mod graze M	30	424	A	33.5	770
	4c	9.0	Coastal Hay 3 cut, SG mod graze M	35	424	A	33.5	301
	5a	33.0	Coastal 2 Cut Hay M	106	184	A	14.6	
	5b	63.0	Coastal 2 Cut Hay M	107	184	A	14.6	
	6a	34.0	Coastal Hay 3 cut, SG mod graze M	135	424	A	33.5	1138
	6b	50.0	Coastal Grazing 1 AU/2 ac M	28	140	A	11.1	553
	7a							
	7b							
	7c							
	8	30.0	Coastal 2 Cut Hay M	155	184	A	14.6	
	9a	34.0	Coastal Hay 3 cut, SG mod graze M	37	424	A	33.5	1138
	9b	77.0	Coastal Hay 3 cut, SG mod graze M	68	424	A	33.5	2577
	10a	35.0	Coastal 2 Cut Hay M	92	184	A	14.6	
	10b	40.0	Coastal 2 Cut Hay M	92	184	A	14.6	
	11a	36.0	Coastal Hay 3 cut, SG mod graze M	68	424	A	33.5	1205
	11b	21.0	Coastal Hay 3 cut, SG mod graze H	39	345	A	27.2	572
	12a	20.0	Coastal 2 Cut Hay H	39	184	A	14.6	291
Total Solids Application Acres	12b	38.0	Coastal 2 Cut Hay M	39	184	A	14.6	553
738	13	19.0	Coastal Hay 4 cut, SG mod graze M	68	350	A	27.6	525
Application Allowable on-site (tons)								
10059.5								
Adequate								
Solids to be used off site (tons)								
0.0								

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End of Table 4

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Waste Utilization and Nutrient Management Plan

Table 5 - Nutrients Applied/Needs at Maximum Solids Rates Permit #: WQ03590

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
2a							0
2b							0
3							0
4a	460	424	491	0	0	0	0
4b	460	424	491	0	0	0	0
4c	460	424	491	0	0	0	0
5a							0
5b							0
6a	460	424	491	0	0	0	0
6b	152	140	162	45	0	0	0
7a							
7b							
7c							
8							0
9a	460	424	491	0	0	0	0
9b	460	424	491	0	0	0	0
10a							0
10b							0
11a	460	424	491	0	0	0	0
11b	374	345	400	50	0	0	0
12a	200	184	214	0	0	10	0
12b	200	184	214	0	0	10	0
13	380	350	406	145	0	0	0

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Waste Utilization and Nutrient Management Plan

Table 6 - Planned Solids Application Rates

Permit #: WQ03590

LMU or Field No.	Double crop	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Max Rate tons/ac	% of Maximum to apply	Planned Solids tons/ac	Planned Solids per field (tons)
1									
2a		19.0	Coastal Hay 3 cut, SG mod graze M	33	A	33.5	0	0.0	0.0
2b		44.0	Coastal Hay 3 cut, SG mod graze H	17	A	27.2	0	0.0	0.0
3		100.0	Coastal 2 Cut Hay M	69	A	14.6	0	0.0	0.0
4a		13.0	Coastal Hay 3 cut, SG mod graze M	142	A	33.5	35	11.7	152.3
4b		23.0	Coastal Hay 3 cut, SG mod graze M	30	A	33.5	35	11.7	269.5
4c		9.0	Coastal Hay 3 cut, SG mod graze M	35	A	33.5	30	10.0	90.4
5a		33.0	Coastal 2 Cut Hay M	106	A	14.6	0	0.0	0.0
5b		63.0	Coastal 2 Cut Hay M	107	A	14.6	0	0.0	0.0
6a		34.0	Coastal Hay 3 cut, SG mod graze M	135	A	33.5	30	10.0	341.4
6b		50.0	Coastal Grazing 1 AU/2 ac M	28	A	11.1	90	10.0	497.6
7a									
7b									
7c									
8		30.0	Coastal 2 Cut Hay M	155	A	14.6	0	0.0	0.0
9a		34.0	Coastal Hay 3 cut, SG mod graze M	37	A	33.5	30	10.0	341.4
9b		77.0	Coastal Hay 3 cut, SG mod graze M	68	A	33.5	30	10.0	773.2
10a		35.0	Coastal 2 Cut Hay M	92	A	14.6	0	0.0	0.0
10b		40.0	Coastal 2 Cut Hay M	92	A	14.6	0	0.0	0.0
11a		36.0	Coastal Hay 3 cut, SG mod graze M	68	A	33.5	30	10.0	361.5
11b		21.0	Coastal Hay 3 cut, SG mod graze H	39	A	27.2	37	10.0	210.6
12a		20.0	Coastal 2 Cut Hay H	39	A	14.6	69	10.0	200.8
12b		38.0	Coastal 2 Cut Hay M	39	A	14.6	69	10.0	381.6
13		19.0	Coastal Hay 4 cut, SG mod graze M	68	A	27.6	36	10.0	189.1
Acres		738.0							3809.4
3808			Tons of wet solids produced Annually				Will the planned per acre application rates use all of the Solids?		YES
0			Tons to be used off-site at Max. rates				Tons to be used off-site at planned rates		0

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000112

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at Planned Solids Rates

Permit #: WQ03590

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
2a	0	0	0	450	155	145	0
2b	0	0	0	455	190	235	0
3	0	0	0	190	0	225	0
4a	161	148	172	285	0	55	0
4b	161	148	172	295	15	30	0
4c	138	127	147	320	25	20	0
5a	0	0	0	185	0	225	0
5b	0	0	0	190	0	225	0
6a	138	127	147	320	0	50	0
6b	137	126	146	60	0	0	0
7a							
7b							
7c							
8	0	0	0	170	0	225	0
9a	138	127	147	295	20	135	0
9b	138	127	147	290	0	0	0
10a	0	0	0	165	0	225	0
10b	0	0	0	165	0	225	0
11a	138	127	147	290	0	0	0
11b	138	127	147	285	15	0	0
12a	138	127	147	25	0	80	0
12b	138	127	147	25	0	80	0
13	137	126	146	390	0	15	0

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Waste Utilization and Nutrient Management Plan

Table 8 - Maximum Effluent Application Per Field Permit #: WQ03590

Est. Available Effluent (ac inches)	LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P_2O_5 (lbs/acre)	Annual/Biennial	Maximum Effluent Allowable (ac in/ac)	Maximum Effluent Allowable / Field (ac in)
211	1	13.0		Coastal Hay 4 cut, SG mod graze M	143	350	A	42.1	547
Source:	2a								
	2b								
	3								
Dairy Lagoon	4a								
	4b								
	4c								
	5a								
	5b								
	6a								
	6b								
	7a	55.0		Coastal Hay 3 cut, SG mod graze M	128	460	A	55.4	
	7b	34.0		Coastal Hay 3 cut, SG mod graze M	60	460	A	55.4	1884
	7c	18.0		Coastal Hay 3 cut, SG mod graze M	50	460	A	55.4	997
	8								
	9a								
	9b								
	10a								
	10b								
	11a								
	11b								
Total Effluent Application Acres	12a								
	12b								
	13								
120									
Maximum Effluent Application Allowable On-Site (ac in)									
3428									
Adequate									
Effluent to be used Off-Site (ac in)									
0									

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End of Table 8

000114

Waste Utilization and Nutrient Management Plan

Table 9 - Nutrients Applied/Needed at Maximum Effluent Rates Permit #: WQ03590

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	183	350	3492	355	0	0	0
2a							
2b							
3							
4a							
4b							
4c							
5a							
5b							
6a							
6b							
7a							0
7b	241	460	4595	215	0	0	0
7c	241	460	4595	205	0	0	0
8							
9a							
9b							
10a							
10b							
11a							
11b							
12a							
12b							
13							

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Waste Utilization and Nutrient Management Plan

Table 10 - Planned Effluent Application Rates Permit #: WQ03590

LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Maximum Effluent (ac in/ac)	% of Maximum to apply	Planned Effluent (ac in/ac)	Planned Effluent / field (Ac. In)
1	13.0		Coastal Hay 4 cut, SG mod graze M	143	A	42.1	**4.8**	2	26
2a									
2b									
3									
4a									
4b									
4c									
5a									
5b									
6a									
6b									
7a	55.0		Coastal Hay 3 cut, SG mod graze M	128	A	55.4	**0.0**	0	0
7b	34.0		Coastal Hay 3 cut, SG mod graze M	60	A	55.4	**5.0**	2.8	95
7c	18.0		Coastal Hay 3 cut, SG mod graze M	50	A	55.4	**10.0**	5.5	99
8									
9a									
9b									
10a									
10b									
11a									
11b									
12a									
12b									
13									
Acres	**120.0**					**Will the planned application rates use all of the Effluent?**			**220** **YES**

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Waste Utilization and Nutrient Management Plan

Table 11 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #: WQ03590

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	9	17	166	530	0	0	0
2a							
2b							
3							
4a							
4b							
4c							
5a							
5b							
6a							
6b							
7a	0	0	0	435	0	70	0
7b	12	23	230	440	70	0	0
7c	24	46	459	420	70	0	0
8							
9a							
9b							
10a							
10b							
11a							
11b							
12a							
12b							
13							

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Table 12 - Available Water Capacity to 24 inches(or less) of predominant soil in fields receiving effluent and Texture of the most restrictive soil layer in the upper 24 inches

Permit #: WQ03590

LMU / Field #	AWC (inches)	Restrictive Texture
1	3.46	Fine Sandy Loam
2a		
2b		
3		
4a		
4b		
4c		
5a		
5b		
6a		
6b		
7a	3.46	Fine Sandy Loam
7b	3.455	Fine Sandy Loam
7c	3.46	Fine Sandy Loam
8		
9a		
9b		
10a		
10b		
11a		
11b		
12a		
12b		
13		

LMU / Field #	AWC (inches)	Restrictive Texture

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Table 13 - Non Application Areas by Field Permit #: WQ03590

FS = 393-Filter Strip; **FB** = 386-Field Border, **RFB** = 391-Riparian Forest Buffer; **OLEA** = Other Land Excluded Ar

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded
1	0.0	0.0	0.0	0.0	
2a	0.0	0.0	0.0	0.0	
2b	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	
4a	0.0	0.0	0.0	0.0	
4b	0.0	0.0	0.0	0.0	
4c	0.0	0.0	0.0	0.0	
5a	0.0	0.0	0.0	0.0	
5b	0.0	0.0	0.0	0.0	
6a	0.0	0.0	0.0	0.0	
6b	0.0	0.0	0.0	0.0	
7a	0.0	0.0	0.0	0.0	
7b	0.0	0.0	0.0	0.0	
7c	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	
9a	0.0	0.0	0.0	0.0	
9b	0.0	0.0	0.0	0.0	
10a	0.0	0.0	0.0	0.0	
10b	0.0	0.0	0.0	0.0	
11a	0.0	0.0	0.0	0.0	
11b	0.0	0.0	0.0	0.0	
12a	0.0	0.0	0.0	0.0	
12b	0.0	0.0	0.0	0.0	
13	0.0	0.0	0.0	0.0	

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded

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See Application Map for location of buffers

Totals	0.0	0.0	0.0	0.0	0.0

Total 590-633 application acres: 858.0

Total 590-633 Field Acres: 858.0

000119

Waste Utilization and Nutrient Management Data Entries

General Data

Date :	9/27/2007
Farmer Name :	Lingleville Dairy
County in which the Land is located :	Erath
Type of Waste Plan :	Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients? Yes or No :	yes
Is any field PERMITTED by TCEQ? Yes or No :	Yes
Permit # :	WQ03590

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year :	2007
Are you receiving waste from another producer?	No
Number of animals :	700
Approximate Weight :	1400
Days per year in confinement :	365
Hours per day confined :	24
ACRE FEET of effluent to be irrigated* :	17.6
Estimated annual gallons of effluent to be irrigated/applied annually :	5729494
For effluent, do you want application rates shown in gallons or acre inches? :	acre inches
Estimated Tons Solids to be Land Applied Annually (on or off site)* :	2555
Is this the first Year of the AFO-CAFO Operation? :	No

Analysis Information

Effluent Information

Date of Analysis:	8/3/2007
Manure Source:	Dairy Lagoon
Nitrogen % From Analysis:	0.0024
Phosphorus % From Analysis:	0.0016
Potassium % From Analysis:	0.0305
Moisture % From Analysis:	99.8

Manure / Solids Information

Date of Analysis:	8/3/2007
Manure Source:	Dairy Solids
Nitrogen % From Analysis:	1.28
Phosphorus % From Analysis:	0.412
Potassium % From Analysis:	0.911
Moisture % From Analysis:	32.9
What will be Applied to Fields on this Farm?	Both Effluent and Solids
Is this Farm part of an AFO-CAFO?	No

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Field and Buffer Entries

Permit #: WQ03590

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Plan is based on: 590 -633 Plan V 4.0

FS = 393-Filter Strip, FB = 386-Field Border, RFB = 391-Riparian Forest Buffer, OLEA = Other Land Exclusion Areas or non-application areas (i.e. headquarters, freq. flooded areas, wooded areas, water bodies, etc)

NOTE: Field Border (FB) is expressed in ACRES on this spreadsheet, but as LINEAR FEET on the CPO.

Field No.	Total LMU or Field Acres	FS	FB	RFB	OLEA	Total Buffer Acres	Actual Application Acres	
1	13	0	0	0	0	0.0	13.0	
2a	19	0	0	0	0	0.0	19.0	
2b	44	0	0	0	0	0.0	44.0	
3	100	0	0	0	0	0.0	100.0	
4a	13	0	0	0	0	0.0	13.0	
4b	23	0	0	0	0	0.0	23.0	
4c	9	0	0	0	0	0.0	9.0	
5a	33	0	0	0	0	0.0	33.0	
5b	63	0	0	0	0	0.0	63.0	
6a	34	0	0	0	0	0.0	34.0	
6b	50	0	0	0	0	0.0	50.0	
7a	55	0	0	0	0	0.0	55.0	
7b	34	0	0	0	0	0.0	34.0	
7c	18	0	0	0	0	0.0	18.0	
8	30	0	0	0	0	0.0	30.0	
9a	34	0	0	0	0	0.0	34.0	
9b	77	0	0	0	0	0.0	77.0	
10a	35	0	0	0	0	0.0	35.0	
10b	40	0	0	0	0	0.0	40.0	
11a	36	0	0	0	0	0.0	36.0	
11b	21	0	0	0	0	0.0	21.0	
12a	20	0	0	0	0	0.0	20.0	
12b	38	0	0	0	0	0.0	38.0	
13	19	0	0	0	0	0.0	19.0	

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Soil Test, Crop Information and Plant Analysis Data Entries

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Soil Test Analysis				This column only for Dry Poultry	LMU or Field #	Appl. Area Acres	Crop/Land-Use and P Index Runoff Potential VL - L; M; H; or VH	E = Effluent S = Solids	Plant Analysis (Y / N)	Plant Analysis & Yield (optional) Use Only When Crop Removal is Required			
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)							% N	% P	% K	Yield Air Dry Production (lbs/ac/yr)
11	143	749			1	13.0	Coastal Hay 4 cut, SG mod graze M	E	N				
6	33	213			2a	19.0	Coastal Hay 3 cut, SG mod graze M	S	N				
2	17	126			2b	44.0	Coastal Hay 3 cut, SG mod graze H	S	N				
5	69	144			3	100.0	Coastal 2 Cut Hay M	S	N				
7	142	135			4a	13.0	Coastal Hay 3 cut, SG mod graze M	S	N				
2	30	159			4b	23.0	Coastal Hay 3 cut, SG mod graze M	S	N				
2	35	193			4c	9.0	Coastal Hay 3 cut, SG mod graze M	S	N				
7	106	175			5a	33.0	Coastal 2 Cut Hay M	S	N				
6	107	161			5b	63.0	Coastal 2 Cut Hay M	S	N				
1	135	164			6a	34.0	Coastal Hay 3 cut, SG mod graze M	S	N				
2	28	122			6b	50.0	Coastal Grazing 1 AU/2 ac M	S	N				
12	128	286			7a	55.0	Coastal Hay 3 cut, SG mod graze M	E	N				
3	60	252			7b	34.0	Coastal Hay 3 cut, SG mod graze M	E	N				
8	50	170			7c	18.0	Coastal Hay 3 cut, SG mod graze M	E	N				
14	155	221			8	30.0	Coastal 2 Cut Hay M	S	N				
13	37	80			9a	34.0	Coastal Hay 3 cut, SG mod graze M	S	N				
17	68	238			9b	77.0	Coastal Hay 3 cut, SG mod graze M	S	N				
18	92	133			10a	35.0	Coastal 2 Cut Hay M	S	N				
18	92	133			10b	40.0	Coastal 2 Cut Hay M	S	N				
17	68	238			11a	36.0	Coastal Hay 3 cut, SG mod graze M	S	N				
18	39	229			11b	21.0	Coastal Hay 3 cut, SG mod graze H	S	N				
18	39	229			12a	20.0	Coastal 2 Cut Hay H	S	N				
18	39	229			12b	38.0	Coastal 2 Cut Hay M	S	N				
17	68	238			13	19.0	Coastal Hay 4 cut, SG mod graze M	S	N				

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221000

Solids Application Rate Entries

Solids - Set the Planned Application Rates

Permit #: V

3808		"Wet tons" of solids produced Annually				Will the planned rates use all of the Tons to be used off-site at plann	
LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Crop P_2O_5 Req.	Annual or Biennial Application Cycle	Maximum Solids Allowable Tons/Ac	Enter % of Maximum Planned to Apply
1							
2a	19.0	Coastal Hay 3 cut, SG mod graze M	33	230	Annual	33.5	0.0
2b	44.0	Coastal Hay 3 cut, SG mod graze H	17	230	Annual	27.2	0.0
3	100.0	Coastal 2 Cut Hay M	69	125	Annual	14.6	0.0
4a	13.0	Coastal Hay 3 cut, SG mod graze M	142	230	Annual	33.5	35.0
4b	23.0	Coastal Hay 3 cut, SG mod graze M	30	230	Annual	33.5	35.0
4c	9.0	Coastal Hay 3 cut, SG mod graze M	35	230	Annual	33.5	30.0
5a	33.0	Coastal 2 Cut Hay M	106	125	Annual	14.6	0.0
5b	63.0	Coastal 2 Cut Hay M	107	125	Annual	14.6	0.0
6a	34.0	Coastal Hay 3 cut, SG mod graze M	135	230	Annual	33.5	30.0
6b	50.0	Coastal Grazing 1 AU/2 ac M	28	70	Annual	11.1	90.0
7a							
7b							
7c							
8	30.0	Coastal 2 Cut Hay M	155	125	Annual	14.6	0.0
9a	34.0	Coastal Hay 3 cut, SG mod graze M	37	230	Annual	33.5	30.0
9b	77.0	Coastal Hay 3 cut, SG mod graze M	68	230	Annual	33.5	30.0
10a	35.0	Coastal 2 Cut Hay M	92	125	Annual	14.6	0.0
10b	40.0	Coastal 2 Cut Hay M	92	125	Annual	14.6	0.0
11a	36.0	Coastal Hay 3 cut, SG mod graze M	68	230	Annual	33.5	30.0
11b	21.0	Coastal Hay 3 cut, SG mod graze H	39	230	Annual	27.2	36.8
12a	20.0	Coastal 2 Cut Hay H	39	125	Annual	14.6	69.0
12b	38.0	Coastal 2 Cut Hay M	39	125	Annual	14.6	69.0
13	19.0	Coastal Hay 4 cut, SG mod graze M	68	175	Annual	27.6	36.0

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Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit #: WQ03590

5729494	Gallons of Effluent to be used annually	Will the planned rates use all of the effluent?
211	Acre inches of Effluent to be used annually	

LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P (ppm)	Crop P_2O_5 Req.	Max Annual lbs. P_2O_5 / Acre	Annual or Biennial Application Cycle	Max Effluent Allowable (ac in/ac)	Enter % of Maximum Planned to Apply	Planned Effluent (ac in/ac)
1	13.0	Coastal Hay 4 cut, SG mod graze M	143	175	350	Annual	42.1	4.8	2
2a									
2b									
3									
4a									
4b									
4c									
5a									
5b									
6a									
6b									
7a	55.0	Coastal Hay 3 cut, SG mod graze M	128	230	460	Annual	55.4	0.0	0
7b	34.0	Coastal Hay 3 cut, SG mod graze M	60	230	460	Annual	55.4	5.0	2.8
7c	18.0	Coastal Hay 3 cut, SG mod graze M	50	230	460	Annual	55.4	10.0	5.5
8									
9a									
9b									
10a									
10b									
11a									
11b									
12a									
12b									
13									

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Total Effluent This Page

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Plan is based on: 590 -633 Plan V 4.0

Effluent Application Rate Entries

Yes
Planned Effluent per field (acre inches)
26
0
95
99
220

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E/S	LMU # Old	LMU # New	Acres	offsite/ onsite	Soil test	Soil test LMU #	Soil test P	NMP P	Apply this year?
E	1	1	13	onsite	T	1	143	143	yes
S	1a	2a	19	onsite	T	2	33	33	no
S	1a	2b	44	onsite	T	2b	17	17	no
S	2	3	100	onsite	T	3	69	69	no
S	3	4a	13	onsite	T	4	142	142	yes
S	3	4b	23	onsite	T	4b	30	30	yes
S	3	4c	9	onsite	T	4c	35	35	yes
S	4	5a	33	onsite	T	5a	107	106	no
S	4	5b	63	onsite	T	5	106	107	no
S	5	6a	34	onsite	T	6	135	135	yes
S	5	6b	50	onsite	T	6b	28	28	yes
E	6	7a	55	onsite	T	7	128	128	no
E	6	7b	34	onsite	T	7b	60	60	yes
E	6	7c	18	onsite	T	7c	50	50	yes
S	7	8	30	onsite	T	8	155	155	no
S	10	9a	34	offsite			X	37	yes
S	9	9b	77	offsite			X	68	yes
S	8	10a	35	offsite	T	10?	39	92	no
S	8	10b	40	offsite				92	no
S	9	11a	36	offsite			X	68	yes
S	11	11b	21	offsite			X	39	yes
S	11	12a	20	offsite			X	39	yes
S	11	12b	38	offsite			X	39	yes
S	9	13	19	offsite			X	68	yes

SOIL TEST SUMMARY
PROVIDED BY PERMIT STAFF —

- SHOWS PROBLEMS WITH SOIL TEST DATA PROVIDED
- P-INDEX ON EACH FIELD SO NEED SOIL TEST TO VERIFY
- LMUs & #'S NEED TO MATCH
- MUST HAVE SOIL TEST DATA IF PLAN TO APPLY
- LAB ANALYSIS AND NMP NEED TO MATCH

000125 A

Available Water Capacity Entries

Printed on: 9/27/07 11:31 AM Plan is based on: 590 -633 Plan V 4.0 Permit #: WQ03590

LMU or Fields receiving Effluent	Texture of the soil layer within the upper 24 inches of the soil profile that has the lowest permeability (Don't Abbreviate)	Depth of First Layer (inches)		AWC of First Layer (in/in)		Depth of Second Layer (inches)		AWC of Second Layer (in/in)		Depth of Third Layer (inches)		AWC of Third Layer (in/in)		Depth of Fourth Layer (inches)		AWC of Fourth Layer (in/in)		Available Water Holding Capacity (AWC) of the upper 24 inches of the soil profile (Inches)
EXAMPLE ENTRIES		0	3	0.12	0.2	3	14	0.16	0.21	14	18	0.08	0.12	18	24	0	0	
		Enter Data for the top 24" only																
1	Fine Sandy Loam	0	4	0.12	0.16	4	28	0.12	0.17	28				0				3.46
7a	Fine Sandy Loam	0	4	0.12	0.16	4	28	0.12	0.17	28				0				3.46
7b	Fine Sandy Loam	0	5	0.12	0.16	5	40	0.12	0.17	40				0				3.46
7c	Fine Sandy Loam	0	4	0.12	0.16	4	28	0.12	0.17	28				0				3.46

SEP 28 2007

000126

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20426 - 20427
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 7C

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20426	LMU 7C	0 - 6	5.9		0.10	No	1.6	8	14	50	170	15	27	942	136	21					
20427	LMU 7C	6 - 24	8.0		0.22	Hi	0.7	3	16	5	118	16	86	4882	239	28					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
20426	LMU 7C	BERMUDAGRASS HAY	10 tons				370	0	55		25			0		0	
20427	LMU 7C																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
6	0	7	74	18	1
27	0	1	91	7	0

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20426

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20427

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 20426

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001127

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

Todd D. Whatley

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20424 - 20425
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 7B

METHOD USED:

			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20424	LMU 7B	0 - 6	6.5		0.12	No	1.6	3	5	60	252	15	27	1007	175	22					
20425	LMU 7B	6 - 24	7.6		0.28	Hi	1.0	1	5	5	257	18	97	4621	324	28					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
20424	LMU 7B	BERMUDAGRASS HAY	10 tons				390	0	0		25			0		0	
20425	LMU 7B																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
7	0	9	70	20	1
27	0	2	87	10	0

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20424

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20425

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 20424

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

000128

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20422 - 20423
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 6B

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20422	LMU 6B	0 - 6	5.9		0.07	No	1.3	2	4	28	122	15	27	601	106	26					
20423	LMU 6B	6 - 24	7.4		0.12	Lo	0.5	1	5	7	90	14	76	1297	171	30					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
20422	LMU 6B	BERMUDAGRASS HAY	10 tons				390	75	150		25			0		0	
20423	LMU 6B																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
4	0	7	70	20	3
8	0	3	78	17	2

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20422

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20423

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 20422

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001129

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

09/27/2007 10:44 am

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20420 - 20421
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 4C

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20420	LMU 4C	0 - 6	6.2		0.08	No	1.2	2	4	35	193	16	29	864	139	22					
20421	LMU 4C	6 - 24	7.2		0.12	Lo	0.4	1	5	8	233	14	76	1473	250	35					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
20420	LMU 4C	BERMUDAGRASS HAY	10 tons				390	50	0		20			0		0	
20421	LMU 4C																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
6	0	8	71	19	2
10	0	6	72	20	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20420

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20421

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 20420

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001130

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20418 - 20419
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 4B

METHOD USED:

Lab Number	Sample ID	Sample Depth	Soil pH (2:1 Water-Soil)	Buffer pH	Sol. Salts mmho/cm (2:1 Water-Soil)	Excess Lime	% Organic Matter (Mod. WB)	Nitrate-Nitrogen ppm (Cd Reduction)	Nitrate-Nitrogen lb. N/A (Cd Reduction)	Phosphorus ppm P (Mehlich 3 ICP)	Potassium ppm K (Ammonium Acetate)	Sulfur ppm (Ammonium Acetate)	Sulfur lb. S/A (Ammonium Acetate)	Calcium ppm Ca (Ammonium Acetate)	Magnesium ppm Mg (Ammonium Acetate)	Sodium ppm Na (Ammonium Acetate)	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20418	LMU 4B	0 - 6	6.2		0.07	No	1.2	2	4	30	159	15	27	747	130	21					
20419	LMU 4B	6 - 24	7.3		0.13	No	0.5	1	5	4	247	13	70	1707	330	37					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to: 6.0	6.5	7.0	N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
20418	LMU 4B	BERMUDAGRASS HAY	10 tons				390	65	80		25			0		0	
20419	LMU 4B																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
5	0	8	70	20	2
12	0	5	71	23	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20418

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20418

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001131

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	20416 - 20417
INVOICE NO:	104679
DATE RECEIVED:	9/18/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS DAIRY **FIELD IDENTIFICATION:** LMU 2B

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
20416	LMU 2B	0 - 6	5.7		0.06	No	1.8	2	4	17	126	14	25	722	109	19					
20417	LMU 2B	6 - 24	6.3		0.06	No	0.5	<1	<5	4	178	16	86	1380	369	24					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
20416	LMU 2B	BERMUDAGRASS HAY	10 tons				395	90	145		25			0		0	
20417	LMU 2B																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
5	0	7	73	18	2
11	0	4	65	29	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 20416

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P2O5) or potash (K2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 20416

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001132

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	19844 - 19845
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 8

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19844	LMU 8	0 - 6	7.1		0.25	Lo	2.0	8	14	155	221	18	32	2180	269	36					
19845	LMU 8	6 - 24	7.6		0.27	Lo	0.8	9	49	14	176	32	173	3006	351	48					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19844	LMU 8	BERMUDAGRASS HAY	4 tons				95	0	0		0			0		0	
19845	LMU 8																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
14	0	4	79	16	1
19	0	2	81	16	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19844

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P2O5) or potash (K2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19844, 19845

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19844

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001133

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

09/27/2007 10:48 am

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	19842 - 19843
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 7

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Soil Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19842	LMU 7	0 - 6	6.6		0.16	Lo	2.6	12	22	128	286	15	27	1437	174	19					
19843	LMU 7	6 - 24	7.4		0.15	No	1.1	3	16	45	248	15	81	2215	402	23					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19842	LMU 7	BERMUDAGRASS HAY	4 tons				120	0	0		0			0		0	
19843	LMU 7																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
9	0	8	76	15	1
15	0	4	73	22	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19842

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19842

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19842

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001134

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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LAB NO:	19840 - 19841
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 6

METHOD USED:

Lab Number	Sample ID	Sample Depth	Soil pH (2:1 Water-Soil)	Buffer pH	Sol. Salts mmho/cm (2:1 Water-Soil)	Excess Lime	% Organic Matter (Mod. WB)	Nitrate-Nitrogen ppm (Cd Reduction)	Nitrate-Nitrogen lb. N/A (Cd Reduction)	Phosphorus ppm P (Mehlich 3 ICP)	Potassium ppm K (Ammonium Acetate)	Sulfur ppm (Ammonium Acetate)	Sulfur lb. S/A (Ammonium Acetate)	Calcium ppm Ca (Ammonium Acetate)	Magnesium ppm Mg (Ammonium Acetate)	Sodium ppm Na (Ammonium Acetate)	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19840	LMU 6	0 - 6	7.2		0.12	Lo	1.9	1	2	135	164	17	31	1411	168	24					
19841	LMU 6	6 - 24	7.4		0.09	No	0.7	<1	<5	13	187	13	70	1813	381	43					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to: 6.0	6.5	7.0	N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
19840	LMU 6	BERMUDAGRASS HAY	4 tons				160	0	25		0			0		0	
19841	LMU 6																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
9	0	5	79	16	1
13	0	4	70	25	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19840

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19840

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19840

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001135

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

Todd D. Whatley

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

Servi-Tech Laboratories
www.servitechlabs.com

6921 S. Bell
Amarillo, TX 79109
800.557.7509
806.677.0093
Fax 806.677.0329

LAB NO:	19838 - 19839
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 5A

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate										
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19838	LMU 5A	0 - 6	7.5		0.12	Lo	1.7	6	11	107	161	13	23	1459	128	19					
19839	LMU 5A	6 - 24	7.1		0.12	No	0.6	2	11	16	231	16	86	1447	274	27					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19838	LMU 5A	BERMUDAGRASS HAY	4 tons				140	0	25		0			0		0	
19839	LMU 5A																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
9	0	5	82	12	1
10	0	6	71	22	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19838

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P2O5) or potash (K2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19838

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19838

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001136

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

Todd D. Whatley

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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Amarillo, TX 79109
800.557.7509
806.677.0093
Fax 806.677.0329

LAB NO:	19836 - 19837
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 5

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19836	LMU 5	0 - 6	7.5		0.14	Lo	1.9	7	13	106	175	16	29	1524	152	22					
19837	LMU 5	6 - 24	7.0		0.08	No	0.6	1	5	14	283	17	92	1414	303	31					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19836	LMU 5	FORAGE SORG. SILAGE	10 tons				70	0	0		0			0		0	
19837	LMU 5																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
9	0	5	81	13	1
10	0	7	68	24	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19836

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19836

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001137

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

Todd D. Whatley

09/27/2007 10:49 am

SOIL ANALYSIS REPORT

CLIENT:	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118
6224	

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Amarillo, TX 79109
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806.677.0093
Fax 806.677.0329

LAB NO:	19834 - 19835
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 4

METHOD USED: 2:1 Water-Soil | 2:1 Water-Soil | Mod. WB | Cd Reduction | Mehlich 3 ICP | Ammonium Acetate

Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19834	LMU 4	0 - 6	6.9		0.13	No	1.9	4	7	142	135	15	27	1065	97	20					
19835	LMU 4	6 - 24	6.5		<0.05	No	0.6	<1	<5	11	195	13	70	1177	258	40					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to: 6.0	6.5	7.0	N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
19834	LMU 4	BERMUDAGRASS HAY	4 tons				155	0	35		0			0		0	
19835	LMU 4																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
7	0	5	81	12	1
9	0	6	68	25	2

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19834

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P2O5) or potash (K2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19834

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001138

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

Todd D. Whatley

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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800.557.7509
806.677.0093
Fax 806.677.0329

LAB NO:	19832 - 19833
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 3

METHOD USED:

Lab Number	Sample ID	Sample Depth	2:1 Water-Soil: Soil pH	Buffer pH	2:1 Water-Soil: Soil Salts mmho/cm	Excess Lime	Mod. WB: % Organic Matter	Cd Reduction: Nitrate-Nitrogen ppm	Cd Reduction: Nitrate-Nitrogen lb. N/A	Mehlich 3 ICP: Phosphorus ppm P	Ammonium Acetate: Potassium ppm K	Ammonium Acetate: Sulfur ppm	Ammonium Acetate: Sulfur lb. S/A	Ammonium Acetate: Calcium ppm Ca	Ammonium Acetate: Magnesium ppm Mg	Ammonium Acetate: Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19832	LMU 3	0 - 6	6.5		0.09	No	2.0	5	9	69	144	17	31	1064	141	24					
19833	LMU 3	6 - 24	7.2		0.10	No	0.7	2	11	16	111	15	81	1246	236	37					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to: 6.0	6.5	7.0	N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
19832	LMU 3	BERMUDAGRASS HAY	4 tons				140	0	30		0			0		0	
19833	LMU 3																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
7	0	5	76	17	1
9	0	3	72	23	2

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19832

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19832

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

0001139

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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6921 S. Bell
Amarillo, TX 79109
800.557.7509
806.677.0093
Fax 806.677.0329

LAB NO:	19830 - 19831
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 2

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	Nitrate-Nitrogen lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	Sulfur lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19830	LMU 2	0 - 6	6.5		0.09	No	1.7	6	11	33	213	15	27	945	151	27					
19831	LMU 2	6 - 24	8.1		0.16	Lo	0.6	<1	<5	9	207	15	81	2689	305	47					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19830	LMU 2	BERMUDAGRASS HAY	4 tons				150	35	0		0			0		0	
19831	LMU 2																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
7	0	8	71	19	2
17	0	3	80	15	1

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19830

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P_2O_5) or potash (K_2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19831

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19830

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

000140

Analyses are representative of the samples submitted. Samples are retained 30 days after report of analysis. Explanations of soil analysis terms are available upon request.

Reviewed and Approved By: Todd Whatley, QA Officer

SOIL ANALYSIS REPORT

CLIENT: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118

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6921 S. Bell
Amarillo, TX 79109
800.557.7509
806.677.0093
Fax 806.677.0329

LAB NO:	19828 - 19829
INVOICE NO:	104637
DATE RECEIVED:	9/10/2007
DATE REPORTED:	9/27/2007

SOIL ANALYSIS RESULTS FOR: PARKS **FIELD IDENTIFICATION:** LMU 1

METHOD USED:			2:1 Water-Soil		2:1 Water-Soil		Mod. WB	Cd Reduction		Mehlich 3 ICP	Ammonium Acetate									
Lab Number	Sample ID	Sample Depth	Soil pH	Buffer pH	Sol. Salts mmho/cm	Excess Lime	% Organic Matter	Nitrate-Nitrogen ppm	lb. N/A	Phosphorus ppm P	Potassium ppm K	Sulfur ppm	lb. S/A	Calcium ppm Ca	Magnesium ppm Mg	Sodium ppm Na	Zinc ppm Zn	Iron ppm Fe	Manganese ppm Mn	Copper ppm Cu	Boron ppm B
19828	LMU 1	0 - 6	8.2		0.27	Hi	1.8	11	20	143	749	22	40	2362	316	98					
19829	LMU 1	6 - 24	8.3		0.32	Hi	0.8	2	11	16	246	32	173	4126	431	122					

FERTILIZER RECOMMENDATIONS: POUNDS ACTUAL NUTRIENT PER ACRE

Lab Number	Sample ID	Crop To Be Grown	Yield Goal	Lime, ECC Tons/A to raise pH to:			N	P2O5	K2O	Zn	S	Mn	Cu	MgO	B	Ca	Cl
				6.0	6.5	7.0											
19828	LMU 1	BERMUDAGRASS HAY	4 tons				130	0	0		0			0		0	
19829	LMU 1																

Cation Exchange Capacity

CEC	%H	%K	%Ca	%Mg	%Na
17	0	11	70	16	3
25	0	2	81	14	2

SPECIAL COMMENTS AND SUGGESTIONS:

Lab Number(s): 19828

IMPROVED BERMUDAGRASS: Split nitrogen (N) applications through the summer. Make the first N application prior to vigorous growth in late April or early May. Make other application(s) after each cutting or grazing period. Phosphate (P2O5) or potash (K2O) may be blended with one of the N applications and top dressed on established stands.

Lab Number(s): 19828, 19829

CEC calculated by cation summation may overestimate true CEC and underestimate exchangeable sodium percentage (ESP) in soils containing excess lime.

Lab Number(s): 19828

NITROGEN RECOMMENDATION: Subsoil nitrate sample(s) used in making the N recommendation.

SEP 28 2007

000141

Analyses are representative of the samples submitted — Samples are retained 30 days after report of analysis — Explanations of soil analysis terms are available upon request

Reviewed and Approved By: Todd Whatley, QA Officer

Texas Cooperative EXTENSION
The Texas A&M University System

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
345 Heep Center, 2474 TAMU
College Station, TX 77843-2474
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
Lowther
PO Box 78
Dublin, TX 76446

Sample received on: 9/18/2006
Printed on: 9/22/2006
Area Represented: not provided

Erath County Jack Park's
Laboratory Number: 194193
Customer Sample ID: 495 LMU#10 0-6
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (NON-IRRIGATED, 3 HAY CUTTINGS)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	7.5	(5.8)	-	Slightly Alkaline	
Conductivity	213	(-)	umho/cm	None	
Nitrate-N	18	(-)	ppm		60 lbs N/acre
Phosphorus	39	(50)	ppm		25 lbs P2O5/acre
Potassium	229	(160)	ppm		0 lbs K20/acre
Calcium	5,289	(180)	ppm		0 lbs Ca/acre
Magnesium	288	(50)	ppm		0 lbs Mg/acre
Sulfur	17	(13)	ppm		0 lbs S/acre
Sodium	131	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each of the 2nd and 3rd hay cuttings.

SEP 28 2007

(BB)

000142

Texas Cooperative EXTENSION
The Texas A&M University System

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
345 Heep Center, 2474 TAMU
College Station, TX 77843-2474
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
Lowther
PO Box 78
Dublin, TX 76446

Sample received on: 9/18/2006
Printed on: 9/22/2006
Area Represented: not provided

Erath County Jack Parks
Laboratory Number: 194191
Customer Sample ID: 496 LMU# 10 6-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (NON-IRRIGATED, 3 HAY CUTTINGS)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	7.3	(5.8)	-	Slightly Alkaline	
Conductivity	162	(-)	umho/cm	None	
Nitrate-N	7	(-)	ppm		85 lbs N/acre
Phosphorus	18	(50)	ppm		80 lbs P2O5/acre
Potassium	185	(160)	ppm		0 lbs K20/acre
Calcium	2,802	(180)	ppm		0 lbs Ca/acre
Magnesium	320	(50)	ppm		0 lbs Mg/acre
Sulfur	16	(13)	ppm		0 lbs S/acre
Sodium	148	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each of the 2nd and 3rd hay cuttings.

SEP 28 2007

000143 (89)

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6921 S. Bell • Amarillo, TX 79109
www.servitechlabs.com

Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No: **1528**

LABORATORY ANALYSIS REPORT

Report Date: 08/17/2007 11:10 am

Send To: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118		Steve Harrold Laboratory Manager
Client Name:	PARKS	**Invoice No:**	400531
Sample ID:	RCS 2		
Date Received:	08/03/2007		

	Analysis results		lbs/acre-in	meq/L
NUTRIENTS				
Nitrogen				
Total Nitrogen	24	mg/L	5	
Organic Nitrogen	23	mg/L	5	
Ammonia Nitrogen	<5	mg/L	0	0
Nitrate+Nitrite Nitrogen	<1	mg/L	0	0
Major and Secondary Nutrients				
Phosphorus	16	mg/L		
Phosphorus as P2O5	40	mg/L	8	
Potassium	305	mg/L		7.8
Potassium as K2O	370	mg/L	84	
OTHER PROPERTIES				
Moisture	99.8	%		
Total Solids	0.2	%	453	
Organic Matter	<0.1	%	0	
Ash	<0.1	%	0	
C:N Ratio	24.2	ratio		

* Assumes 24% of organic nitrogen available during first crop year after application. Assumes 100% of ammonia and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

SEP 28 2007

000144

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Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No.: 1527

LABORATORY ANALYSIS REPORT

Report Date: 08/17/2007 11:10 am

Send To: 6224	ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118	Steve Harrold Laboratory Manager
Results For: PARKS **Sample ID:** MANURE **Date Received:** 08/03/2007	**Invoice No:** 400531	

		Analysis (dry basis)	Analysis (as rec'd)	Total content, lbs per ton (as rec'd)	Estimated available first year*, lbs per ton (as rec'd)
NUTRIENTS					
Nitrogen					
Total Nitrogen	%	1.28	0.859	17.2	7.0
Organic Nitrogen	%	1.26	0.847	16.9	7.0
Ammonium Nitrogen	%	0.003	0.002	<0.1	0.0
Nitrate+Nitrite Nitrogen	%	0.01	0.01	0.2	0.2
Major and Secondary Nutrients					
Phosphorus	%	0.412	0.276		
Phosphorus as P2O5	%	0.942	0.632	12.6	11.4
Potassium	%	0.911	0.611		
Potassium as K2O	%	1.09	0.732	14.6	14.6
OTHER PROPERTIES					
Moisture	%		32.9		
Total Solids	%		67.1	1342	
Organic Matter	%	27.7	18.6	372	
Ash	%	72.3	48.5	970	
C:N Ratio	ratio	12.6	12.6		

* Assumes 41% of organic nitrogen available during first crop year after application. Assumes 100% of ammonia and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

NITROGEN: All of the ammonium and nitrate nitrogen plus a portion of the organic nitrogen are considered available during the growing season following application. If manure is broadcast on the soil surface and not incorporated shortly, about 1/4 to 1/3 of the urea and ammonium nitrogen may be lost through volatilization.

CARBON:NITROGEN - Nitrogen immobilization may occur if the carbon:nitrogen ratio is 30 or greater. Immobilization causes nitrogen deficiency if large amounts of organic materials are incorporated just prior to crop planting.

SEP 28 2007

000145

SECTION 5 RECHARGE FEATURE CERTIFICATION

CERTIFICATION

I certify that potential Recharge Features in the form of artificial penetrations and natural features exist on property utilized under this application as defined in 30 TAC §321.32(46). The protective measures in the form of best management practices identified in this report, when implemented, are designed to avoid adverse impacts to these features and associated groundwater formations.

All information presented on this page and in the following supporting documents is true and accurate to the best of my knowledge.

Norman Mullin 9/26/07

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

SEP 28 2007

5.1 General

This recharge feature certification report was authorized by Mr. Jack Parks of Lingleville Dairy. The findings and recommendations contained herein were compiled by Mr. Corey Mullin and Mr. Norman Mullin, P.E., of Enviro-Ag Engineering, Inc. with supporting documentation provided by GeoSearch, an environmental database research firm in Austin, Texas. The subject property under evaluation is included within the jurisdiction of the Middle Trinity Ground Water Conservation District.

5.2 Purpose of Report

Lingleville Dairy is applying for a renewal of current TPDES #03590 under 30 TAC, Chapter 321, Subchapter B, Concentrated Animal Feeding Operations. The purpose of this report is to determine if the subject property has any natural or artificial features, either on or beneath the ground surface, which would provide a significant pathway for effluent or solids from the facility into the underlying aquifer. At a minimum, the records and/or maps of the following entities/agencies were reviewed to locate any artificial recharge features: A) Texas Railroad Commission, B) local water district, C) Texas Water Development Board, D) TCEQ, E) Natural Resource Conservation Service (NRCS), F) current land owners and G) on-site inspection. The TCEQ Regulatory Guidance RG-433 was utilized in identifying recharge features and in recommending best management practices.

5.3 Property Under Evaluation

The property under evaluation consists of approximately 1243 acres in Erath County, Texas

5.4 Definition of Waste Production

The existing RCSs have been certified as meeting TCEQ requirements for soil liner (30 TAC §321.38(g) (3) (A)). Proposed modification of RCS #1 will be necessary to accommodate the headcount increase and the 25-year, 10-day rainfall storage requirement. Liner certification will be issued after the construction is complete.

The generation of process wastewater at this dairy begins with the use of fresh water to clean manure from the milking parlor. Wastewater from the milking parlor is directed to a settling basin then to RCS #1 for storage and beneficial land application. Rain falling on the open lots comes into contact with the manure layer and absorbs some of the excreted nutrients present in manure. This wastewater flows from the open lots into the RCSs. Manure solids accumulated in the open confinement lots are collected and either beneficially applied on-site or hauled off-site by a waste transporter.

5.5 Definition of Recharge Feature

For the purpose of this report, the definition of "Recharge Feature" shall be: *"Those natural or artificial features either on or beneath the ground surface at the site under evaluation that provide or create a significant hydrologic connection between the ground surface and the underlying groundwater within an aquifer. Significant artificial features include, but are not limited to, wells and excavation or material pits. Significant natural hydrologic connections include, but are not limited to: faults, fractures, sinkholes or other macro pores that allow direct surface infiltration; a permeable or shallow soil material that overlies and aquifer; exposed*

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geologic formations that are identified as an aquifer; or a water course bisecting an aquifer." (30 TAC §321.32(46))

The TCEQ Regulatory Guidance RG-433 further defines a "recharge feature" as: *"A natural or artificial feature either on or beneath the ground surface that provides or creates a significant hydrologic connection (or pathway) between the ground surface and the underlying groundwater within an aquifer."*

The guidance document also defines a "significant pathway" as: *A significant pathway between the land surface and the subsurface has the ability to transmit waste, wastewater, or precipitation mixed with waste to groundwater. The wastewater may impact the groundwater quality within an aquifer or migrate laterally to discharge as seeps that may impact surface water quality. Recharge features with significant pathways include geomorphologic, geologic, soil, and artificial features. Agricultural practices may also enhance existing recharge features.*

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EVALUATION OF NATURAL FEATURES

5.6 Geomorphologic/Geologic Features

The Windthorst-Duffau and Nimrod-Selden soil associations in this area of Erath County are immediately underlain by Quaternary alluvium (floodplain deposits), the Cretaceous Glen Rose Formation and Cretaceous Paluxy Formation as shown in Figure 5.1, Geologic Atlas.

Forming the upper unit of the Trinity Group, the Paluxy Formation consists of up to 400 feet of predominantly fine to coarse-grained sand interbedded with clay and shale. Underlying the Paluxy, the Glen Rose Formation forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. Paluxy and Glen Rose bedrock underlie much of the site. Limiting application rates of wastewater and manure will protect these features from adverse impacts.

The basal unit of the Trinity Group consists of the Twin Mountains and Travis Peak formations, which are laterally separated by a facies change. To the north, the Twin Mountains Formation consists mainly of medium- to coarse-grained sands, silty clays, and conglomerates (Ashworth, 1995).

A water well driller's log for a domestic well drilled in 1979 on the site indicates the subsurface geology to consist of top soil, blue shale and sand from 0 to 238 feet below the surface followed by red blue clay and gravel from 238 to 345 feet below the surface with a total well depth of 345 feet.

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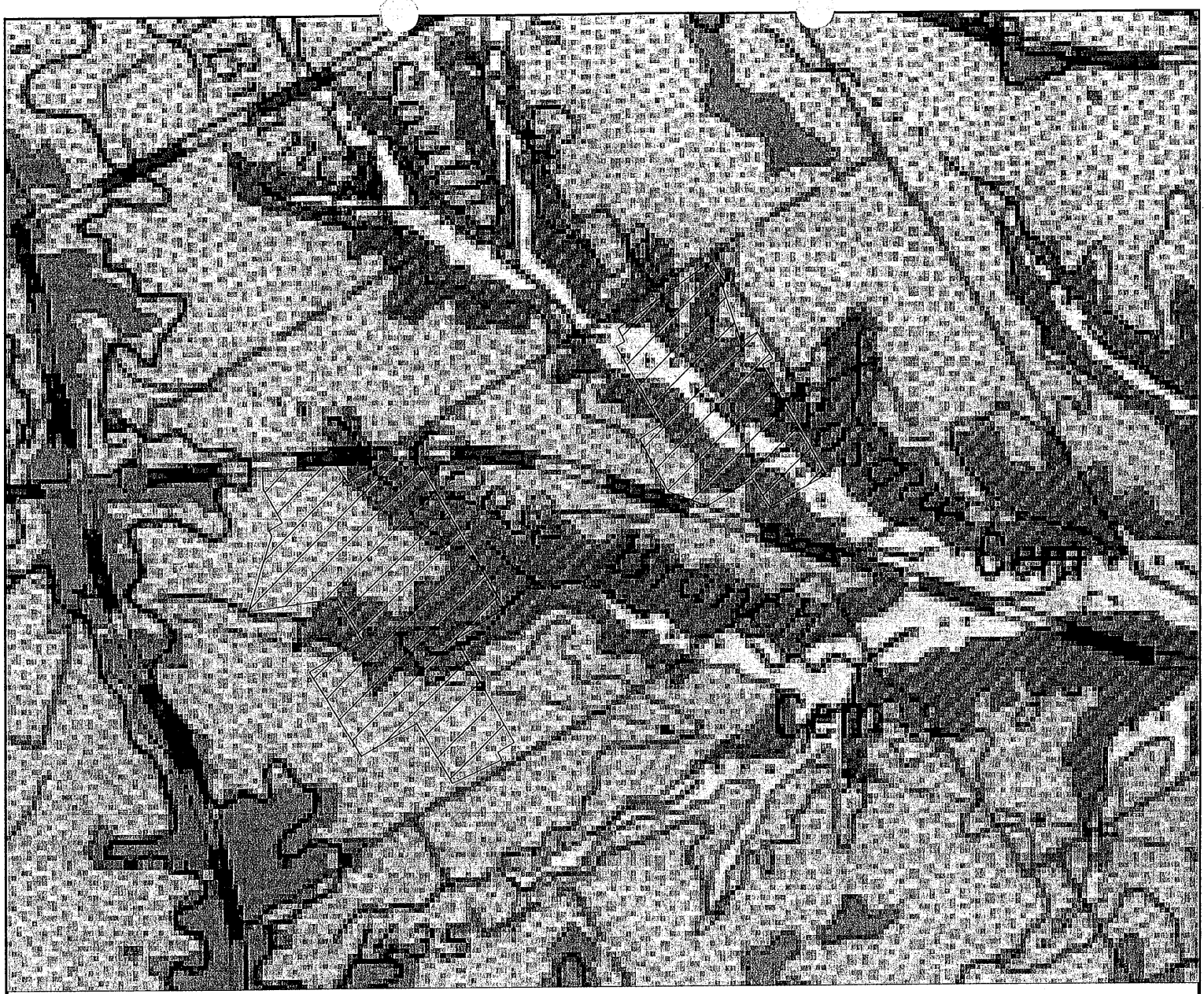

Legend:
Qal – Alluvium
Kpa – Paluxy Formation
Kgr – Glen Rose Formation

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NO SCALE

Source: Geologic Atlas of Texas, Abilene Sheet, 1972.

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Lingleville Dairy Stephenville Erath County, Texas	Geologic Atlas of Texas Figure 5.1 Page 24	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

5.6.1 Outcrops/Stream Interception

Inspection of the CAFO property and review of the USGS topographic and NRCS maps identified the Goose Branch Creek and South Branch Creek located on the subject properties. These areas (creeks) shall be protected by vegetative buffers. The buffer zones from these areas are shown in Figures 5.3a-b (Recharge Feature Maps).

5.6.2 Excessive Slopes

No slopes of greater than 8 percent on the property will receive manure solids and/or wastewater.

5.6.3 Other Natural Conduits

The historical survey identified rock/gravel outcrops and wet spots. Waste will be applied at agronomic rates to protect these areas. No faults, fractured sediments, caves, sinkholes, solution cavities, vugs or concentrated or extensive animal burrowing were observed during an on-site visit, nor are any identified on the geologic atlas, soil surveys or USGS maps.

5.6.4 Surface Water

The "waters in the state" designation is based on Enviro-Ag Engineering, Inc., site inspections, the permittee's knowledge of the property and the USDA-FSA aerial photograph (2006). The buffer zones and LMU boundaries in Figure 6.1 located in Section 6 were sent to the TCEQ for approval on July 12, 2007.

5.7 Aquifer

The Trinity aquifer consists of early Cretaceous age formations of the Trinity Group where they occur in a band extending through the central part of the state in all or parts of 55 counties, from the Red River in North Texas to the Hill Country of South-Central Texas.

Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy, Glen Rose, and Twin Mountains-Travis Peak. Updip, where the Glen Rose thins or is missing, the Paluxy and Twin Mountains coalesce to form the Antlers Formation. The Antlers consists of up to 900 feet of sand and gravel, with clay beds in the middle section. Water from the Antlers is mainly used for irrigation in the outcrop area of North and Central Texas (Ashworth and Hopkins, 1995).

The aquifer is underlain and confined by low-permeability rocks that range in age from Precambrian to Jurassic. Where the aquifer does not crop out, it is confined above by the Walnut Formation in most of the area.

Recharge to the Trinity aquifer is generally as precipitation that falls on aquifer outcrop areas and as seepage from streams and ponds where the head gradient is downward. In the Hill Country, water might flow laterally into the Trinity aquifer from the adjacent Edwards-Trinity aquifer. The aquifer discharges by evapotranspiration, spring discharge, diffuse lateral or upward leakage into shallower aquifers, and withdrawals from wells (USGS, 2003). Land application at agronomic rates and maintaining permanent cover crops will protect the feature from adverse impacts associated with this operation.

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5.8 Soil Features

Soil mapping units included in this section for the production area and land application areas were taken from the electronic NRCS soil survey for Erath County. Soils descriptions are included in the supporting documentation and were taken from the most current version of the NRCS electronic soil information database for Erath County as obtained from the NRCS Soil Data Mart. The soil mapping units descriptions presented correspond to the soils mapped in Figures 5.2a-b, NRCS Soils Map (soildatamart.nrcs.usda.gov).

5.8.1 Production Area

Soils underlying the ponds and production areas are predominately of the Hassee (WkA) and Windthorst (WoB, WoB2 and WsC2) series. The RCSs have been certified as meeting TCEQ liner requirements. Best management practices pertaining to surface drainage, surface compaction and manure management within the open lot confinement area will be followed. Pen surfaces will be maintained to minimize ponding of stormwater.

5.8.2 Land Application Areas

Soils underlying the land application areas are primarily of the Bunyan (Bu), Duffau (DfB, DfC DlC, DuC2 and DuD3), Lewisville (LeC), Purves (PcC and Pd), Selden (SdC), Hassee (WaA and WkA) and Windthorst (WoB, WoB2, WoC, WsC2 and WsD3) series. The application of wastewater and/or manure will be performed at agronomic rates according to a NMP. No pooling or ponding is anticipated due to application by sprinkler irrigation.

Table 5.1 is a summary of the estimated physical properties of the soils in the subject area, obtained from the NRCS Soil Data Mart.

Table 5.1: Estimated Soil Properties

Soil Series & Map ID	Slope (%)	HSG	Depth (in)	USDA Soil Texture	Permeability / Infiltration Rate (in/hr)	Available Water Capacity (in/in of soil)
Bosque: Bo	-	B	0-5 5-50	Loam	0.6-2.0 0.6-2.0	0.15-0.20 0.15-0.20
Bunyan: Bu	-	B	0-10 10-46	Fine Sandy Loam	2.0-6.0 0.6-2.0	0.11-0.15 0.15-0.19
Duffau: DfB	1-3	B	0-10 10-60	Fine Sandy Loam	2.0-6.0 0.6-2.0	0.11-0.15 0.12-0.19
Duffau: DfC	3-5	B	0-10 10-70	Fine Sandy Loam	2.0-6.0 0.6-2.0	0.11-0.15 0.12-0.19
Duffau: DlC	0-5	B	0-14 14-60	Loamy Fine Sand	2.0-6.0 0.6-2.0	0.07-0.11 0.12-0.19
Duffau: DuC2	2-5	B	0-5 5-60	Loamy Sand	2.0-6.0 0.6-2.0	0.11-0.15 0.12-0.19
Duffau: DuD3	2-8	B	0-2 2-60	Loamy Sand	2.0-6.0 0.6-2.0	0.11-0.15 0.12-0.19

Lewisville: LeC	3-5	B	0-14 14-45	Clay Loam	0.6-2.0 0.6-2.0	0.16-0.20 0.14-0.18
Nimrod: NdC	0-5	B	0-4 4-27	Fine Sand	6.0-20.0 6.0-20.0	0.05-0.10 0.05-0.11
Purves: PcC	3-5	D	0-16 16-20	Clay	0.20-0.6 0.06-2.0	0.12-0.18 -
Purves: Pd	-	D	0-14 14-20	Complex	0.20-0.6 0.06-2.0	0.08-0.15 -
Dugout: Pd	-	D	0-18 18-24	Complex	0.20-0.6 0.06-2.0	0.07-0.16 -
Selden: SdC	1-5	C	0-10 10-62	Fine Sand	2.0-6.0 0.20-0.6	0.05-0.09 0.12-0.17
Hassee: WaA	0-1	D	0-11 11-50	Fine Sandy Loam	0.6-2.0 0.001-0.06	0.11-0.17 0.12-0.18
Hassee: WkA	0-2	D	0-18 18-55	Fine Sandy Loam	0.6-2.0 0.001-0.06	0.11-0.17 0.12-0.18
Windthorst: WoB	1-3	C	0-8 8-34	Fine Sandy Loam	0.6-2.0 0.20-0.6	0.12-0.16 0.12-0.17
Windthorst: WoB2	1-3	C	0-5 5-40	Fine Sandy Loam	0.6-2.0 0.20-0.6	0.12-0.16 0.12-0.17
Windthorst: WoC	3-5	C	0-8 8-40	Fine Sandy Loam	0.6-2.0 0.20-0.6	0.12-0.16 0.12-0.17
Windthorst: WsC2	3-5	C	0-4 4-28	Clay Loam	0.6-2.0 0.20-0.6	0.12-0.16 0.12-0.17
Windthorst: WsD3	1-8	C	0-3 3-30	Clay Loam	0.6-2.0 0.20-0.6	0.12-0.16 0.12-0.17

The predominant soil series within each LMU are identified in Table 5.2. All soils at the site that have been identified by NRCS as being at high risk for various limitations are presented in Table 5.3. Best management practices will be implemented, as appropriate, based on physical and economic conditions on soils with limiting conditions.

Table 5.2: Predominant Soil Types Used in NMP Development

LMU ID	Major Soil Type
1,2,4,10	Windthorst (WsD3)
3,5,6,9	Duffau (DuC2)
7	Windthorst (WsC2)
8,11	Windthorst (WoB2)
12	Hassee (WkA)
13	Hassee (WaA)

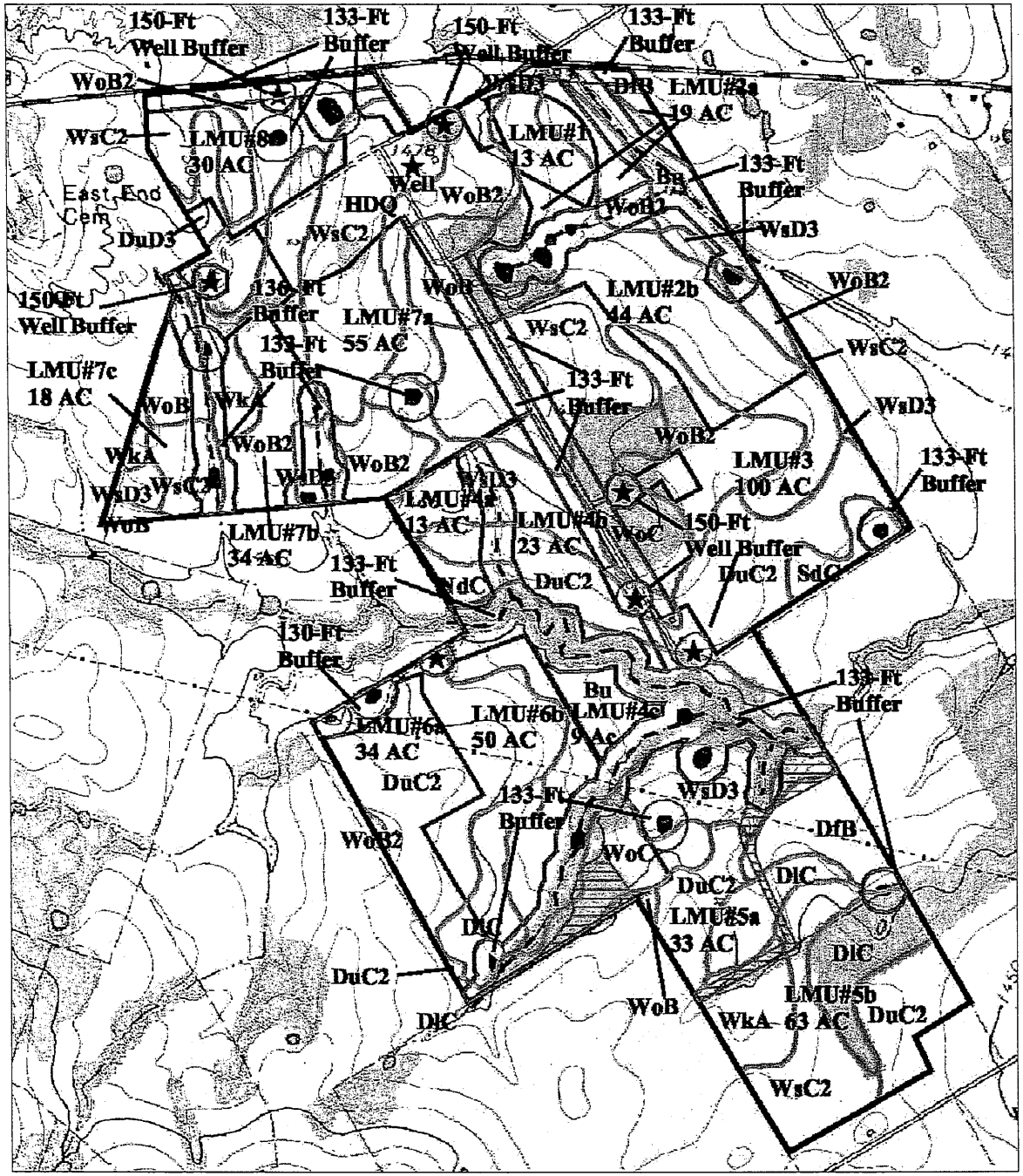
Table 5.3: Potential Soil Limitations for Land Application

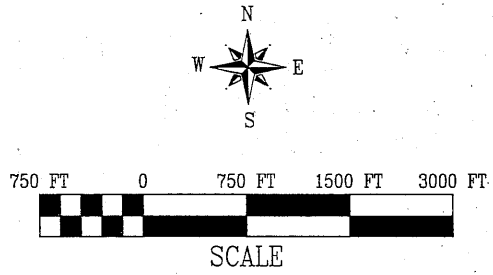
Soil Series & Map ID	Potential Soil Limitations	Best Management Practices
Bunyan: Bu	Flooding	-Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) -No land application to inundated soils
Purves: PcC	Droughty Depth to bedrock Depth to hard bedrock	-Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) -Maintain soil moisture to promote crop growth -Maintain cover crop in LMUs -No land application to inundated soils
Purves-Dugout: Pd	Droughty Depth to bedrock Depth to hard bedrock Large stones	-Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) -Maintain soil moisture to promote crop growth -Maintain cover crop in LMUs -No land application to inundated soils
Hassee: WaA, WkA	Slow water movement Depth to saturated zone Percs slowly	-Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) -No land application to inundated soils

5.8.3 Erosion

Figures 5.2a-b shows the soils classified by NRCS as Highly Erodible Land (HEL). LMUs will be protected with typical conservation farming practices within the standards of the NRCS. The following methods will be used to control/prevent erosion of exposed soils in the production area:

- Seeding/Sprigging with forage or cover crops of exposed areas,
- Construction of terraces and berms (shortening the length and steepness of slopes),
- Covering erosive areas with road surfacing materials,
- Tillage practices,
- Maintaining a cover of plants or crop residue.





Soil Unit Name and Symbol Legend:

Bu – Bunyan fine sandy loam, occasionally flooded
DfB – Duffau fine sandy loam, 1 to 3 percent slopes
DlC – Duffau loamy fine sand, 0 to 5 percent slopes
DuC2 – Duffau soils, 2 to 5 percent slopes
DuD3 – Duffau soils, 2 to 8 percent slopes, eroded
NdC – Nimrod fine sand, 0 to 5 percent slopes
SdC – Selden find sand – 1 to 5 percent slopes, HEL
WkA – Hassee fine sandy loam, 0 to 2 percent slopes
WoB – Windthorst fine sandy loam, 1 to 3 percent slopes
WoB2 – Windthorst fine sandy loam, 1 to 3 percent slopes
WoC – Windthorst fine sandy loam, 3 to 5 percent slopes
WsC2 – Windthorst soils, 3 to 5 percent slopes, eroded
WsD3 – Windthorst soils, 1 to 8 percent slopes, eroded
HEL – Highly erodible land

Source:
USDA–NRCS Soil Data Mart for Erath County

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Lingleville Dairy
Stephenville
Erath County

NRCS Soils Map
Figure 5.2a
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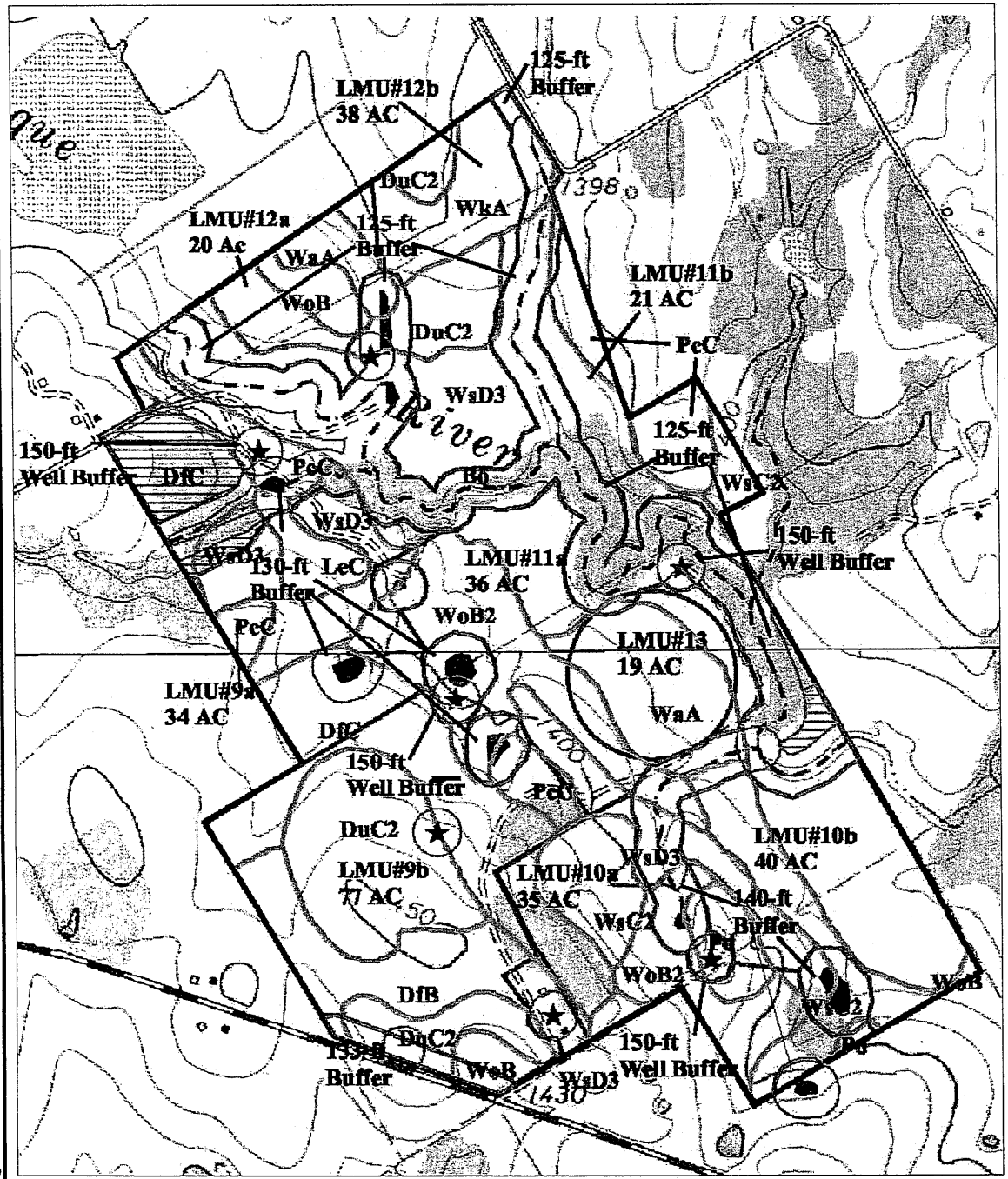

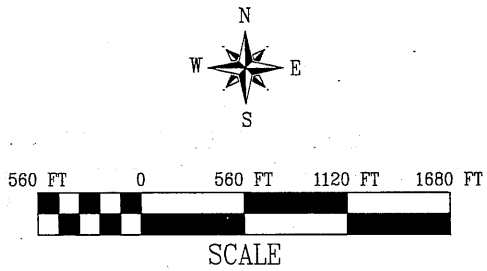

Soil Unit Name and Symbol Legend:

Bo – Bosque loam, occasionally flooded
Bu – Bunyan fine sandy loam, occasionally flooded
DfB – Duffau fine sandy loam, 1 to 3 percent slopes
DfC – Duffau fine sandy loam, 3 to 5 percent slopes
DuC2 – Duffau soils, 2 to 5 percent slopes
LeC – Lewisville clay loam, 3 to 5 percent slopes
PcC – Purves clay, 3 to 5 percent slopes, HEL
Pd – Purves–Dugout complex
WaA – Hassee fine sandy loam, 0 to 1 percent slopes
WkA – Hassee fine sandy loam, 0 to 2 percent slopes
WoB – Windthorst fine sandy loam, 1 to 3 percent slopes
WoB2 – Windthorst fine sandy loam, 1 to 3 percent slopes
WsC2 – Windthorst soils, 3 to 5 percent slopes, eroded
WsD3 – Windthorst soils, 1 to 8 percent slopes, eroded
HEL – Highly erodible land

Source:

USDA–NRCS Soil Data Mart for Erath County

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NRCS Soils Map
Figure 5.2b
Page 31

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ARTIFICIAL FEATURES

5.9 Railroad Commission Records

A search of the RRC database files was performed by Geosearch and a search of the online RRC map viewer was conducted. No proposed locations or existing penetrations for oil and gas were identified on the subject property. Railroad Commission database information is included as an attachment to this document.

5.10 Middle Trinity Ground Water Conservation District Records

The Middle Trinity Groundwater Conservation District (GCD) is a newly formed groundwater conservation district and is still in the process of compiling existing well information; therefore, no data is available at this time. Should an abandoned penetration be encountered anywhere on the subject property at any time, the penetration will be marked, inspected and properly sealed to prevent a potential impact to the underlying aquifer. Appropriate well plugging reports shall be submitted as required to the Texas Department of Licensing and Regulation (TDLR), and will be maintained in the on-site PPP.

5.11 GeoSearch

According to GeoSearch they have performed a thorough and diligent search of all wells recorded with the TWDB and TCEQ. All mapped locations are based on information obtained from the TWDB and the TCEQ. Although GeoSearch performs quality assurance and quality control on all research projects, they recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the water well driller. Many water well schedules may have never been submitted to the regulatory authority by the water well driller and, thus may explain the possible unaccountability of private drilled wells. It is uncertain if the databases provide 100% of the existing well locations within the area of review. Therefore, GeoSearch cannot guarantee the accuracy of the data or well location(s) of those maps and records maintained by Texas' regulatory authorities.

Wells registered with TWDB and TCEQ that could be correlated with on-site wells are included on Figures 5.3a-b.

5.12 TWDB Water Information Integration & Dissemination (WIID)

The TWDB WIID online database was reviewed for artificial penetrations. The database revealed five water wells registered with the TWDB as being located on or within 500-feet of the subject property. These wells are shown on Table 5.4 (if they could be correlated during the on-site inspection).

5.13 Natural Resource Conservation Service

The historical NRCS Soil Survey of Erath County (1973) was reviewed for locations of potential recharge features.

5.14 Former Land Owners

Mr. James Parks, Mr. Herald Parks, Mr. Osker Hammit, Mr. Vanerbur, Mr. S.R. Bostick and Mr. John Whylie were all former land owners. All but Mr. Bostick are deceased. Mr. Bostick confirmed the location of one water well. Mr. Jack Parks the current landowner was contacted

regarding the presence of any potential artificial recharge features on the property. Mr. Parks confirmed the locations of 16 water wells.

5.15 On-Site Inspection

The property has been inspected both on the ground and by historical mapping. All known water wells were documented on the property during the on-site inspection and are shown on Figures 5.3a-b. Continuous inspections of the excavated areas during the proposed expansion of the RCSs shall be conducted. Should any open well or test hole be encountered during construction, it will be marked, reported to the Engineer and properly plugged (30 TAC §321.34(f) (3) (A) (ii)). Well plugging reports shall be submitted as required to the Texas Department of Licensing and Regulation (Well Drillers Board), and will be maintained in the on-site PPP.

All well data listed in Table 5.4 is based on information received from the TCEQ and TWDB files, on-site inspection, and interviews of persons knowledgeable of the property. The map number corresponds to the location shown in Figures 5.3a-b. The well identification number corresponds to the database number or drilling report number used by the TCEQ or TWDB Commission. The location of the known active, abandoned, and inactive water wells on and within 500 feet of the property boundary are shown in Figures 5.3a-b.

Table 5.4: Well Information

Map Number	Status	BMPs
1	Producing	Maintain 150-ft buffer for supply wells
2	Producing	Maintain 150-ft buffer for supply wells
3	Producing	The facility will submit a well buffer exception prepared by a licensed Texas professional engineer or licensed Texas geoscientist to include measures specified in §321.40 (g) and specified by the TCEQ Water Quality Assessment Team. The exception request to the buffer zone will outline protective measures for each well.
4	Producing	Maintain 150-ft buffer for supply wells
5	Producing	Maintain 150-ft buffer for supply wells
6	Producing	Maintain 150-ft buffer for supply wells
7	Producing	Maintain 150-ft buffer for supply wells
8	Producing	Maintain 150-ft buffer for supply wells
9	Producing	Maintain 150-ft buffer for supply wells
10	Producing	Maintain 150-ft buffer for supply wells

Map Number	Status	BMPs
11	Producing	Maintain 150-ft buffer for supply wells
12	Producing	Maintain 150-ft buffer for supply wells
13	Producing	Maintain 150-ft buffer for supply wells
14	Producing	Maintain 150-ft buffer for supply wells
15	Producing	Maintain 150-ft buffer for supply wells
16	Producing	Maintain 150-ft buffer for supply wells

Note: A copy of the well log for the on-site well is attached.

Any abandoned wells or other recharge features encountered shall be properly addressed in an updated recharge feature evaluation/certification to prevent possible point source contamination of the groundwater.

No public water supply wells are located within 500 feet of the property boundary. All off-site wells within the required buffer distances required by this authorization are shown with their appropriate buffers. Wells outside the required buffer distances are shown for reference only.

All irrigation systems or water distribution systems into which any type of chemical or foreign substance, such as wastewater, is distributed into the water pumped from the well are required by 16 TAC §76 to install an in-line, automatic quick-closing check valve capable of preventing pollution of groundwater.

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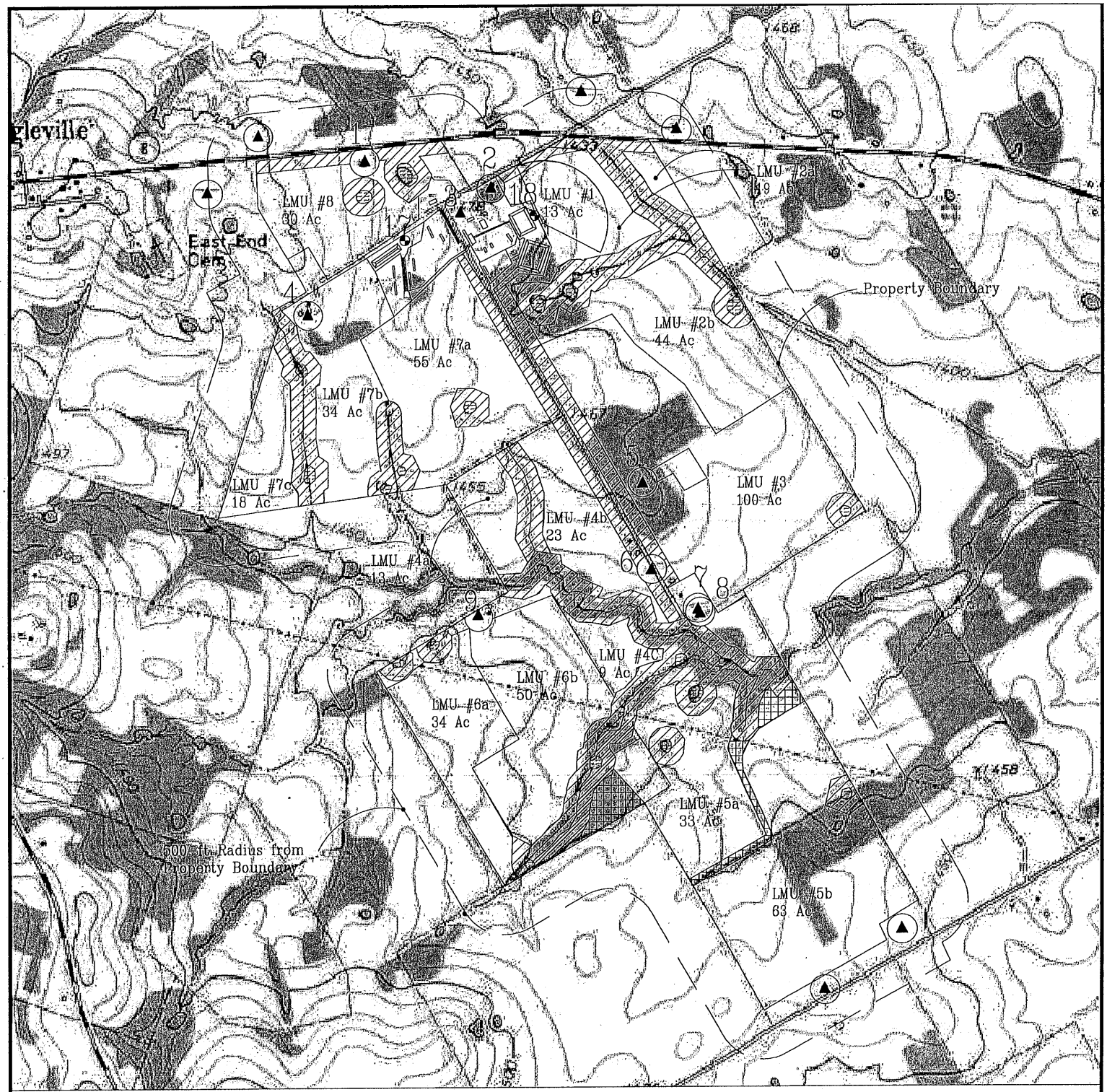

Legend:

- Denotes Leak Detection Well (to be plugged)
- Denotes Water Well
- Denotes Water Well With 150-ft Buffer
- Denotes 133-ft Buffer
- Denotes Fresh Water Pond
- Denotes Wooded Areas

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750 FT 0 750 FT 1500 FT 3000 FT

SCALE

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan, Tex. Quadrangle, 1965.

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Lingleville Dairy Stephenville Erath County, Texas	Recharge Features Map Figure 5.3a Page 35	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

Legend:

- Denotes Water Well With 150-ft Buffer
- Denotes 125-ft Buffer
- Denotes 130-ft Buffer
- Denotes 133-ft Buffer
- Denotes 140-ft Buffer
- Denotes Fresh Water Pond
- Denotes Wooded Areas

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan and Huckabay, Tex. Quadrangles, 1965.

N W E S

560 FT 0 560 FT 1120 FT 1680 FT

SCALE

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Lingleville Dairy Stephenville Erath County, Texas	Recharge Features Map Figure 5.3b Page 36	ENVIRO-AG ENGINEERING, INC. **Enviro-Ag Engineering, Inc.** ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

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SUPPORTING DOCUMENTATION

- USDA Soil Descriptions & Limitations
- Historical Soils Map
- RRC Map
- Water District Well Location Map (if available)
- On-site Well Logs (if available)
- Well Buffer Exemption Request(s)

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Map Unit Text

Erath County, Texas

Map unit: Bu - Bunyan fine sandy loam, occasionally flooded

Text kind/Category: Nontechnical description/AGR

Map Unit Bu, Component BUNYAN is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 2W dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE BUNYAN SERIES CONSISTS OF DEEP, WELL DRAINED, NEARLY LEVEL SOILS OF THE BOTTOMLANDS. THE SOIL FORMED IN STRATIFIED LOAMY ALLUVIUM. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS LIGHT BROWNISH GRAY FINE SANDY LOAM ABOUT 10 INCHES THICK. BELOW THE SURFACE LAYER AND TO A DEPTH OF 16 INCHES IS VERY DARK GRAYISH BROWN CLAY LOAM. THE NEXT LAYER IS GRAYISH BROWN TO PALE BROWN SANDY CLAY LOAM ABOUT 30 INCHES THICK. THE NEXT LAYER IS GRAY CLAY LOAM THAT EXTENDS TO 62 INCHES DEPTH.

Map unit: DfB - Duffau fine sandy loam, 1 to 3 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit DfB, Component DUFFAU is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 2E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE DUFFAU SERIES CONSISTS OF VERY DEEP, WELL DRAINED, NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN SANDY AND LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 10 INCHES THICK AND IS DARK GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. THE SUBSOIL IS YELLOWISH RED SANDY CLAY LOAM 60 INCHES THICK. THE SUBSTRATA, BELOW 70 INCHES DEPTH, IS REDDISH YELLOW SANDY CLAY LOAM.

Map unit: DfC - Duffau fine sandy loam, 3 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit DfC, Component DUFFAU is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE DUFFAU SERIES CONSISTS OF VERY DEEP, WELL DRAINED, NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN SANDY AND LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 10 INCHES THICK AND IS DARK GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. THE SUBSOIL IS YELLOWISH RED SANDY CLAY LOAM 60 INCHES THICK. THE SUBSTRATA, BELOW 70 INCHES DEPTH, IS REDDISH YELLOW SANDY CLAY LOAM.

Map unit: DlC - Duffau loamy fine sand, 0 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit DlC, Component DUFFAU is >60 - inches thick. Permeability is MODERATE and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

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Map Unit Text

Erath County, Texas

Map unit: DlC - Duffau loamy fine sand, 0 to 5 percent slopes

Text kind/Category: Nontechnical description/SOI

THE DUFFAU SERIES CONSISTS OF VERY DEEP, WELL DRAINED, NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN SANDY AND LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 10 INCHES THICK AND IS DARK GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. THE SUBSOIL IS YELLOWISH RED SANDY CLAY LOAM 60 INCHES THICK. THE SUBSTRATA, BELOW 70 INCHES DEPTH, IS REDDISH YELLOW SANDY CLAY LOAM.

Map unit: DuC2 - Duffau soils, 2 to 5 percent slopes, eroded

Text kind/Category: Nontechnical description/AGR

Map Unit DuC2, Component DUFFAU is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE DUFFAU SERIES CONSISTS OF VERY DEEP, WELL DRAINED, NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN SANDY AND LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 10 INCHES THICK AND IS DARK GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. THE SUBSOIL IS YELLOWISH RED SANDY CLAY LOAM 60 INCHES THICK. THE SUBSTRATA, BELOW 70 INCHES DEPTH, IS REDDISH YELLOW SANDY CLAY LOAM.

Map unit: DuD3 - Duffau soils, 2 to 8 percent slopes, severely eroded

Text kind/Category: Nontechnical description/AGR

Map Unit DuD3, Component DUFFAU is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 6E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE DUFFAU SERIES CONSISTS OF VERY DEEP, WELL DRAINED, NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN SANDY AND LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 10 INCHES THICK AND IS DARK GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. THE SUBSOIL IS YELLOWISH RED SANDY CLAY LOAM 60 INCHES THICK. THE SUBSTRATA, BELOW 70 INCHES DEPTH, IS REDDISH YELLOW SANDY CLAY LOAM.

Map unit: LeC - Lewisville clay loam, 3 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit LeC, Component LEWISVILLE is >60 - inches thick. Permeability is MODERATE and available water holding capacity is HIGH. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THESE ARE VERY DEEP WELL DRAINED, MODERATELY PERMEABLE CALCAREOUS SOILS. THESE SOILS OCCUPY NEARLY LEVEL TO STRONGLY SLOPING STREAM TERRACES. THE SOIL FORMED IN CALCAREOUS LOAMY ALLUVIAL SEDIMENTS. THESE SOILS HAVE DARK GRAYISH BROWN FRIABLE SILTY CLAY UPPER LAYERS ABOUT 16 INCHES THICK OVER SILTY CLAY LOWER LAYERS THAT ARE GRAYISH BROWN IN THE UPPER PART AND PALE BROWN IN THE LOWER PART. BUT ARE DOMINANTLY ABOUT 2 TO 6 PERCENT.

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Map Unit Text

Erath County, Texas

Map unit: PcC - Purves clay, 3 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit PcC, Component PURVES is 8 - 20 inches thick. Permeability is MODERATELY SLOW and available water holding capacity is VERY LOW. A water table when present is >6 - feet. The soil has a capability subclass of 4E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE PURVES SERIES CONSISTS OF SHALLOW, WELL DRAINED, MODERATELY SLOWLY PERMEABLE, GENTLY SLOPING TO MODERATELY SLOPING UPLAND SOILS. THE SOIL FORMED IN INTERBEDDED LIMESTONE AND CALCAREOUS MARLS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS VERY DARK GRAYISH BROWN CLAY ABOUT 8 INCHES THICK. THE NEXT LAYER IS BROWN CLAY ABOUT 4 INCHES THICK. THE NEXT LOWER LAYER IS BROWN VERY GRAVELLY CLAY ABOUT 2 INCHES THICK. THE SUBSTRATA BELOW 14 INCHES IS LIMESTONE BEDROCK.

Map unit: Pd - Purves-Dugout complex

Text kind/Category: Nontechnical description/AGR

Map Unit Pd, Component DUGOUT is 10 - 20 inches thick. Permeability is MODERATELY SLOW and available water holding capacity is VERY LOW. A water table when present is >6 - feet. The soil has a capability subclass of 4E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/AGR

Map Unit Pd, Component PURVES is 8 - 20 inches thick. Permeability is MODERATELY SLOW and available water holding capacity is VERY LOW. A water table when present is >6 - feet. The soil has a capability subclass of 6S dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE DUGOUT SERIES CONSISTS OF SHALLOW, WELL DRAINED, MODERATELY SLOWLY PERMEABLE SOILS OF UPLANDS. THESE VERY GENTLY SLOPING TO MODERATELY STEEP SOILS FORMED IN ALKALINE LOAMY SEDIMENTS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS LIGHT BROWNISH GRAY GRAVELLY CLAY LOAM 8 INCHES THICK. THE NEXT LAYER IS VERY PALE BROWN GRAVELLY CLAY LOAM. THE SUBSTRATUM, BELOW 18 INCHES, IS STRATIFIED SOFT AND INDURATED LIMESTONE BEDROCK.

Text kind/Category: Nontechnical description/SOI

THE PURVES SERIES CONSISTS OF SHALLOW, WELL DRAINED, GENTLY SLOPING TO STEEP SOILS OF UPLANDS. THE SOIL FORMED IN INTERBEDDED LIMESTONE AND CALCAREOUS MARLS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS VERY DARK GRAYISH BROWN CLAY ABOUT 8 INCHES THICK. THE NEXT LAYER IS BROWN CLAY ABOUT 4 INCHES THICK. THE NEXT LOWER LAYER IS BROWN VERY GRAVELLY CLAY ABOUT 2 INCHES THICK. THE SUBSTRATA BELOW 14 INCHES DEPTH IS LIMESTONE BEDROCK.

Map unit: SdC - Selden fine sand, 1 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit SdC, Component SELDEN is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

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Text kind/Category: Nontechnical description/SOI

THE SELDEN SERIES CONSISTS OF VERY DEEP, MODERATELY WELL DRAINED, GENTLY SLOPING TO MODERATELY SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN LOAMY DEPOSITS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SAND 10 INCHES THICK, AND IS PALE BROWN IN THE PALE BROWN IN THE UPPER PART AND VERY PALE BROWN BELOW. THE SUBSOIL IS SANDY CLAY LOAM 26 INCHES THICK AND IS BROWNISH YELLOW WITH RED AND GRAY MOTTLES IN THE UPPER PART AND MOTTLED YELLOW, GRAY AND RED BELOW. BELOW 36 INCHES IS LIGHT GRAY SANDY CLAY LOAM WITH YELLOW AND RED MOTTLES.

Map Unit Text

Erath County, Texas

Map unit: WaA - Hassee fine sandy loam, 0 to 1 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit WaA, Component WAURIKA (HASSEE) is >60 - inches thick. Permeability is VERY SLOW and available water holding capacity is MODERATE. A water table when present is 0.5 - 1 feet. The soil has a capability subclass of 3W dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE HASSEE SERIES CONSISTS OF VERY DEEP, MODERATELY WELL DRAINED, NEARLY LEVEL TO VERY GENTLY SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN CLAYEY SEDIMENTS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 11 INCHES THICK AND IS BROWN IN THE LOWER PART AND DARK GRAYISH BROWN IN THE LOWER PART. THE SUBSOIL TO 36 INCHES IS CLAY THAT IS GRAYISH BROWN. BELOW 36 INCHES IS GRAYISH BROWN, AND LIGHT BROWNISH GRAY CLAY LOAM.

Map unit: WkA - Hassee fine sandy loam, thick surface, 0 to 2 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit WkA, Component WAURIKA (HASSEE) is >60 - inches thick. Permeability is VERY SLOW and available water holding capacity is MODERATE. A water table when present is 0.5 - 1 feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE HASSEE SERIES CONSISTS OF VERY DEEP, MODERATELY WELL DRAINED, NEARLY LEVEL TO VERY GENTLY SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN CLAYEY SEDIMENTS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS FINE SANDY LOAM 11 INCHES THICK AND IS BROWN IN THE LOWER PART AND DARK GRAYISH BROWN IN THE LOWER PART. THE SUBSOIL TO 36 INCHES IS CLAY THAT IS GRAYISH BROWN. BELOW 36 INCHES IS GRAYISH BROWN, AND LIGHT BROWNISH GRAY CLAY LOAM.

Map unit: WoB - Windthorst fine sandy loam, 1 to 3 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit WoB, Component WINDTHORST is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 2E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE WINDTHORST SERIES CONSTIST OF VERY DEEP, GENTLY SLOPING TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED IN STRATIFIED CLAYEY AND LOAMY MATERIALS. IN A REPRESNETATIVE PROFILE THE SURFACE LAYER IS FINE SANDY LOAM 10 IN. THICK AND IS GRAYISH BROWN IN THE UPPER PART AND LIGHT YELLOWISH BROWN BELOW. THE SUBSOIL IS SANDY CLAY 28 IN. THICK AND IS RED IN THE UPPER PART AND YELLOWISH RED BELOW. THE NEXT LAYER IS MOTTLED SANDY CLAY LOAM 12 INCHES THICK. BELOW 50 INCHES IS LIGHT GRAY SANDY CLAY LOAM THAT GRADES TO WEAKLY CEMENTED PACKSAND.

Map unit: WoB2 - Windthorst fine sandy loam, 1 to 3 percent slopes, eroded

Text kind/Category: Nontechnical description/AGR

Map Unit WoB2, Component WINDTHORST is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

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Map Unit Text

Erath County, Texas

Map unit: WoB2 - Windthorst fine sandy loam, 1 to 3 percent slopes, eroded

Text kind/Category: Nontechnical description/SOI

THE WINDTHORST SERIES CONSTIST OF VERY DEEP, GENTLY SLOPING TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED IN STRATIFIED CLAYEY AND LOAMY MATERIALS. IN A REPRESNETATIVE PROFILE THE SURFACE LAYER IS FINE SANDY LOAM 10 IN. THICK AND IS GRAYISH BROWN IN THE UPPER PART AND LIGHT YELLOWISH BROWN BELOW. THE SUBSOIL IS SANDY CLAY 28 IN. THICK AND IS RED IN THE UPPER PART AND YELLOWISH RED BELOW. THE NEXT LAYER IS MOTTLED SANDY CLAY LOAM 12 INCHES THICK. BELOW 50 INCHES IS LIGHT GRAY SANDY CLAY LOAM THAT GRADES TO WEAKLY CEMENTED PACKSAND.

Map unit: WoC - Windthorst fine sandy loam, 3 to 5 percent slopes

Text kind/Category: Nontechnical description/AGR

Map Unit WoC, Component WINDTHORST is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE WINDTHORST SERIES CONSTIST OF VERY DEEP, GENTLY SLOPING TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED IN STRATIFIED CLAYEY AND LOAMY MATERIALS. IN A REPRESNETATIVE PROFILE THE SURFACE LAYER IS FINE SANDY LOAM 10 IN. THICK AND IS GRAYISH BROWN IN THE UPPER PART AND LIGHT YELLOWISH BROWN BELOW. THE SUBSOIL IS SANDY CLAY 28 IN. THICK AND IS RED IN THE UPPER PART AND YELLOWISH RED BELOW. THE NEXT LAYER IS MOTTLED SANDY CLAY LOAM 12 INCHES THICK. BELOW 50 INCHES IS LIGHT GRAY SANDY CLAY LOAM THAT GRADES TO WEAKLY CEMENTED PACKSAND.

Map unit: WsC2 - Windthorst soils, 3 to 5 percent slopes, eroded

Text kind/Category: Nontechnical description/AGR

Map Unit WsC2, Component WINDTHORST is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 3E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE WINDTHORST SERIES CONSTIST OF VERY DEEP, GENTLY SLOPING TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED IN STRATIFIED CLAYEY AND LOAMY MATERIALS. IN A REPRESNETATIVE PROFILE THE SURFACE LAYER IS FINE SANDY LOAM 10 IN. THICK AND IS GRAYISH BROWN IN THE UPPER PART AND LIGHT YELLOWISH BROWN BELOW. THE SUBSOIL IS SANDY CLAY 28 IN. THICK AND IS RED IN THE UPPER PART AND YELLOWISH RED BELOW. THE NEXT LAYER IS MOTTLED SANDY CLAY LOAM 12 INCHES THICK. BELOW 50 INCHES IS LIGHT GRAY SANDY CLAY LOAM THAT GRADES TO WEAKLY CEMENTED PACKSAND.

Map unit: WsD3 - Windthorst soils, 1 to 8 percent slopes, severely eroded

Text kind/Category: Nontechnical description/AGR

Map Unit WsD3, Component WINDTHORST is >60 - inches thick. Permeability is MODERATELY SLOW and available water holding capacity is MODERATE. A water table when present is >6 - feet. The soil has a capability subclass of 6E dryland and NONE irrigated.

Text kind/Category: Nontechnical description/SOI

THE WINDTHORST SERIES CONSTIST OF VERY DEEP, GENTLY SLOPING TO STRONGLY SLOPING SOILS ON UPLANDS. THE SOIL FORMED IN STRATIFIED CLAYEY AND LOAMY MATERIALS. IN A REPRESNETATIVE PROFILE THE SURFACE LAYER IS FINE SANDY LOAM 10 IN. THICK AND IS GRAYISH BROWN IN THE UPPER PART AND LIGHT YELLOWISH BROWN BELOW. THE SUBSOIL IS SANDY CLAY 28 IN. THICK AND IS RED IN THE UPPER PART AND YELLOWISH RED BELOW. THE NEXT LAYER IS MOTTLED SANDY CLAY LOAM 12 INCHES THICK. BELOW 50 INCHES IS LIGHT GRAY SANDY CLAY LOAM THAT GRADES TO WEAKLY CEMENTED PACKSAND.

Selected Soil Interpretations

Erath County, Texas

Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater *		AWM - Land Application of Dry and Slurry Manure (TX) *		ENG - Sewage Lagoons *	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Pd:							
Purves	37	Very limited		Very limited		Very limited	
		Droughty	1.00	Bedrock	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Droughty	1.00	Slope	0.68
		Large stones on the surface	0.92	Large stones	0.92	Seepage	0.21
		Slow water movement	0.37	Runoff	0.50	Large stones content	0.01
		Too steep for surface application	0.32	Percs slowly	0.38		
Dugout	25	Very limited		Very limited		Very limited	
		Droughty	1.00	Bedrock	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Droughty	1.00	Slope	0.68
		Slow water movement	0.37	Runoff	0.50	Seepage	0.21
		Too steep for surface application	0.32	Percs slowly	0.38		
SdC:							
Selden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.37	Percs slowly	0.38	Slope	0.08
WaA:							
Hassee	80	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Percs slowly	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
				Runoff	0.50		
WkA:							
Hassee	80	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Percs slowly	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.50
				Runoff	0.50		
WoB:							
Windthorst	100	Somewhat limited		Somewhat limited		Not limited	
		Slow water movement	0.37	Percs slowly	0.38		
WoB2:							
Windthorst, eroded	100	Somewhat limited		Somewhat limited		Not limited	
		Slow water movement	0.37	Percs slowly	0.38		

Selected Soil Interpretations

Erath County, Texas

Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater *		AWM - Land Application of Dry and Slurry Manure (TX) *		ENG - Sewage Lagoons *	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WoC:							
Windthorst	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.37	Percs slowly	0.38	Slope	0.32
		Too steep for surface application	0.08				
WsC2:							
Windthorst, eroded	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.37	Percs slowly	0.38	Slope	0.32
		Too steep for surface application	0.08				
WsD3:							
Windthorst, severely eroded	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.37	Percs slowly	0.38	Slope	0.68
		Too steep for surface application	0.32				

Selected Soil Interpretations

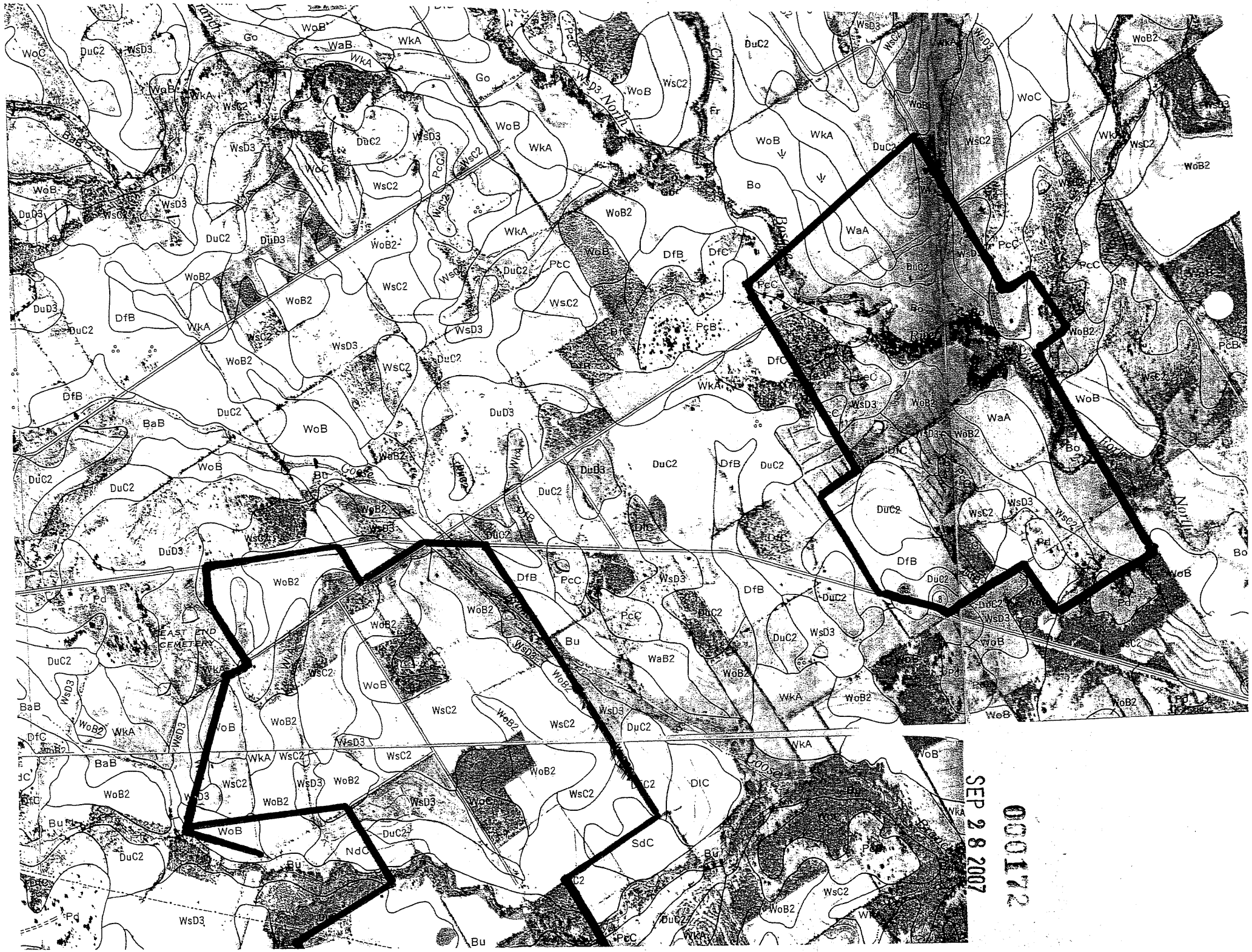
Erath County, Texas

[The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

*This soil interpretation was designed as a "limitation" as opposed to a "suitability". The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation.

Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater *		AWM - Land Application of Dry and Slurry Manure (TX) *		ENG - Sewage Lagoons *	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bu:							
Bunyan	80	Somewhat limited		Very limited		Very limited	
		Flooding	0.60	Flooding	1.00	Flooding	1.00
						Seepage	0.50
DfB:							
Duffau	100	Not limited		Not limited		Somewhat limited	
						Seepage	0.50
DfC:							
Duffau	100	Somewhat limited		Not limited		Somewhat limited	
		Too steep for surface application	0.08			Seepage	0.50
						Slope	0.32
DlC:							
Duffau	100	Not limited		Not limited		Very limited	
						Seepage	1.00
						Slope	0.08
DuC2:							
Duffau, eroded	100	Somewhat limited		Not limited		Somewhat limited	
		Too steep for surface application	0.08			Seepage	0.50
						Slope	0.32
DuD3:							
Duffau, severely eroded	100	Somewhat limited		Not limited		Somewhat limited	
		Too steep for surface application	0.32			Slope	0.68
						Seepage	0.50
LeC:							
Lewisville	100	Somewhat limited		Not limited		Somewhat limited	
		Too steep for surface application	0.08			Seepage	0.50
						Slope	0.32
PcC:							
Purves	100	Very limited		Very limited		Very limited	
		Droughty	1.00	Bedrock	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Droughty	1.00	Slope	0.32
		Slow water movement	0.37	Runoff	0.50	Seepage	0.21
				Percs slowly	0.38		
		Too steep for surface application	0.08				

000171



SEP 28 2007

000172

RAILROAD COMMISSION OF TEXAS
WELL LOCATION DATABASE
MAP LEGEND

State Highway

Interstate Highway

Farm / Ranch Road

State Highway

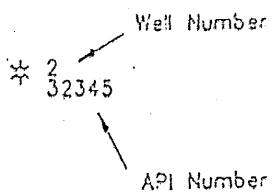
U.S. Highway

Park Road

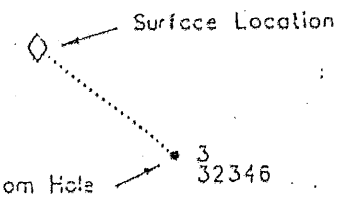
WELL SYMBOLS

- Proposed Location
- Cancelled Location
- Dry Hole
- Oil
- Gas
- Oil / Gas
- Plugged Oil
- Plugged Gas
- Plugged Oil / Gas
- Injection or Disposal
- Storage
- Oil Storage
- Gas Storage
- Radioactive
- Injection or Disposal from Oil
- Injection or Disposal from Gas
- Injection or Disposal from Oil / Gas
- Geothermal
- Brine Mining Injection
- Water Supply
- Water Supply from Oil
- Water Supply from Gas
- Water Supply from Oil / Gas
- Observation
- Observation from Oil
- Observation from Gas
- Observation from Oil / Gas
- Shut-In Oil
- Shut-In Gas
- Core Test (one or more holes)
- Sulfur Test (one or more holes)
- Horizontal Drainhole
- Directional Well Surface Location
- Sidetrack Well Surface Location

VERTICAL WELL



DIRECTIONAL WELL



SEP 2 8 2007

000173

Request Number: R767

SCALE: 1"=2000'

SEP 28 2007

000174

Request Number: R766

SCALE: 1"=2000'

Quads: 3298131, 3298132, 3298124, 3298123

SEP 28 2007

000175

Unlocatable

Please use black ink. Send original copy by certified mail to the Texas Water Commission P.O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

Texas Water Well Drillers Board P. O. Box 13087 Austin, Texas 78711

1) OWNER Jack Parks (Name) Address Rt. 1 Box 94 (Street or RFD) Stephenville (City) Tx (State) 7640 (Zip)

2) LOCATION OF WELL: County Erath 8 miles in W (N.E., S.W., etc.) direction from Stephenville (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form. 1327

☐ Legal description:
Section No. _____ Block No. _____ Township _____
Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____

☒ See attached map. on 31-61-6

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☒ Domestic ☐ Industrial ☐ Monitor ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Injection ☐ Other _____

5) DRILLING METHOD (Check): ☐ Driven ☐ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☒ Air Rotary ☐ Cable Tool ☐ Other _____

6) WELL LOG:
Date Drilling: Started _____ 19__ Completed 7/6 1988

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
0	Surface	380

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 320 ft. to 380 ft.

From (ft.)	To (ft.)	Description and color of formation material
0	5	Topsoil
5	60	Sandy Clay, Sand
60	180	Grey Shale
180	210	Sand
210	280	Blue Sandy Clay
280	310	Gravel
310	350	Red Blue Clay
350	380	Gravel

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4"	N	Steel Slotted	0	380	Sch 4

9) CEMENTING DATA [Rule 319.44(b)]
Cemented from 0 ft. to 100 ft. No. of Sacks Used 10
_____ ft. to _____ ft. No. of Sacks Used _____
Method used Pour
Cemented by Dowell Well Service

10) SURFACE COMPLETION
☒ Specified Surface Slab Installed [Rule 319.44(c)]
☐ Pitless Adapter Used [Rule 319.44(d)]
☐ Approved Alternative Procedure Used [Rule 319.71]

11) WATER LEVEL:
Static level 300 ft. below land surface Date 7/6/88
Artesian flow _____ gpm. Date _____

12) PACKERS: Type Depth

13) TYPE PUMP:
☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder
☐ Other _____
Depth to pump bowls, cylinder, jet, etc., _____ ft

14) WELL TESTS:
Type Test: ☐ Pump ☐ Bailer ☒ Jetted ☐ Estimated
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was a chemical analysis made? ☐ Yes ☒ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 12 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Dowell Well Service (Type or Print) Water Well Driller's License No. 1891

ADDRESS P.O. Box 558 (Street or RFD) Stephenville (City) Tx (State) 76401 (Zip)

(Signed) Mark Dowell (Licensed Water Well Driller) (Signed) _____ (Registered Driller Trainee)

For TWC use only Well No. 31-54-1 Located on map _____

Please attach electric log, chemical analysis, and other pertinent information, if available.

WWD-012 (Rev 01-28-87) TEXAS WATER COMMISSION COPY

No map RD164

SEP 28 2007

Water Well ID: 203851

Deep

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT

For TDWR use only
Well No. 31-46-7D
Located on map yes
Received: C.F.S.

1) OWNER Jack Parks (Name) Address Rt. 1 Box 94 (Street or RFD) Stephenville (City) Tex. (State) 76401 (Zip)

2) LOCATION OF WELL: County Erath, 7 miles in N W (N.E., S.W., etc.) direction from Stephenville (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. _____ Block No. _____ Township _____
Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____

78 ☑ See attached map. map on 31-55-14

3) TYPE OF WORK (Check): ☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☑ Domestic ☐ Industrial ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Other _____

5) DRILLING METHOD (Check): ☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☑ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other _____

6) WELL LOG:

Date drilled 7-2-79

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
6 3/4	Surface 0	365

From (ft.)	To (ft.)	Description and color of formation material
0	5	Sand
5	30	Red Clay
30	220	Shale
220	230	Sand
230	285	Blue Clay
285	310	Gravel
310	350	Red Blue Clay
350	365	Gravel

(Use reverse side if necessary)

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☑ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 325 ft. to 365 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4 ID	N	Steel Slotted	0	365	156

CEMENTING DATA
Cemented from 0 ft. to 325 ft.
Method used poured
Cemented by Dowell Well Service (Company or Individual)

9) WATER LEVEL:
Static level 290 ft. below land surface Date 7-2-79
Artesian flow _____ gpm. Date _____

10) PACKERS: Type Depth

11) TYPE PUMP: ☐ Turbin ☐ Jet ☑ Submersible ☐ Cylinder ☐ Other _____
Depth to pump bowls, cylinder, jet, etc., _____ ft.

12) WELL TESTS: ☐ Type Test: ☐ Pump ☑ Bailer ☐ Jetted ☐ Estimated
Yield: 20 gpm with 25 ft. drawdown after 1 hrs.

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☑ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was a chemical analysis made? ☐ Yes ☑ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

MAR 15 1982

NAME Mark A. Dowell (Type or Print) Water Well Drillers Registration No. 1891

ADDRESS P. O. Box 558 (Street or RFD) Stephenville (City) Tex. (State) 76401 (Zip)

(Signed) Mark Dowell (Water Well Driller) Dowell Well Service (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

SEP 28 2007

*Additional instructions on reverse side.
TDWR-0392

Send original copy by certified mail to the Texas Department of Water Resources P. O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT

For TDWR use only
Well No.
Located on map
Received:

1) OWNER Fomes Parks (Name) Address Rt 1 (Street or RFD) Stephenville (City) Tex (State) 76401 (Zip)

2) LOCATION OF WELL: County Erath 6 miles in W (N.E., S.W., etc.) direction from Stephenville (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form. 59

☐ Legal description:
Section No. Block No. Township
Abstract No. Survey Name
Distance and direction from two intersecting section or survey lines
☐ See attached map.

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Domestic ☐ Industrial ☐ Public Supply ☒ Irrigation ☐ Test Well ☐ Other

5) DRILLING METHOD (Check): ☐ Mud Rotary ☐ Air Hammer ☐ Driven ☐ Bored ☒ Air Rotary ☐ Cable Tool ☐ Jetted ☐ Other

6) WELL LOG:

Date drilled 4-10-79

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
	Surface	
	0	345

From (ft.)	To (ft.)	Description and color of formation material
0	5	Top Soil
5	220	Blue Shale
220	238	Sand
238	280	Red Blue Clay
280	345	Gravel

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other
If Gravel Packed give interval . . . from 305 ft. to 345 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
8 5/8 10	N	steel, perf	0	345	.156

CEMENTING DATA
Cemented from 0 ft. to 305 ft.
Method used poured
Cemented by Dowell Well Service Inc (Company or Individual)

9) WATER LEVEL:
Static level 260 ft. below land surface Date 4-10-79
Artesian flow gpm. Date

10) PACKERS: Type Depth

11) TYPE PUMP:
☐ Turbin ☐ Jet ☒ Submersible ☐ Cylinder ☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

12) WELL TESTS.
☐ Type Test: ☐ Pump ☒ Bailer ☐ Jetted ☐ Estimated
Yield: 15 gpm with 20 ft. drawdown after 1 hrs.

(Use reverse side if necessary)

13) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☒ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Mark A Dowell (Type or Print) Water Well Drillers Registration No. 1891
ADDRESS PO Box 558 (Street or RFD) Stephenville (City) Tex (State) 76401 (Zip)
(Signed) Mark Dowell (Water Well Driller) Dowell Well Service Inc (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.
TDWR-0392

SEP 28 2007

ENVIRO-AG ENGINEERING

RECHARGE FEATURE PROTECTIVE MEASURES
Water Well Buffer Distance Variance Request
Lingleville Dairy
Erath County, Texas

The Recharge Feature Certification provided by Enviro-Ag Engineering, Inc. identified one water well located on the property which does not meet the specified buffer distance. The buffer distance deemed protective of water supply wells is 150 feet from potential contaminant sources (i.e., animal confinement pens) without documentation of additional protective measures which would prevent adverse impacts to the underlying aquifer. Well #3 is located north of the parlor (Refer to Figure 5.3a for location).

Well head protective measures in place for this well (artificial recharge feature) include a concrete surface slab on all wells and located up-gradient from the confinement pens which prevent surface runoff from flowing around the wellhead and well located inside a concrete block wellhouse (photographic documentation attached).

These protective measures (BMPs) in lieu of the buffer distance currently in place at Lingleville Dairy, in my professional opinion, are considered protective of this artificial recharge feature.

Submitted by:

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED PROFESSIONAL ENGINEER

09/25/07

Norman H. Mullin, P.E.
Enviro-Ag Engineering, Inc.

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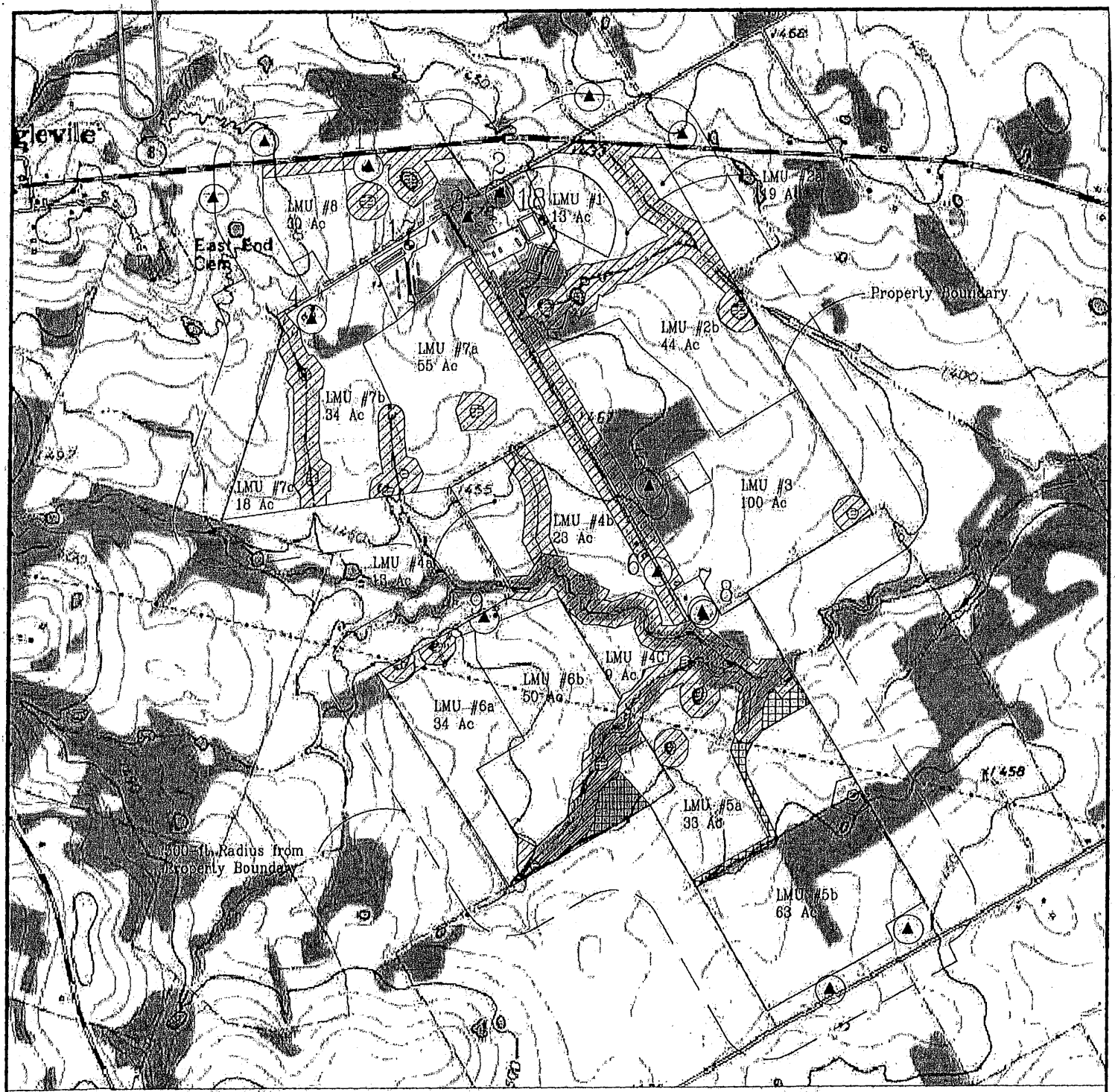
(Figure 5.3a and Photographic Documentation Attached)

000179



Legend:

- Denotes Leak Detection Well (to be plugged)
- Denotes Water Well
- Denotes Water Well With 150-ft Buffer
- Denotes 133-ft Buffer
- Denotes Fresh Water Pond
- Denotes Wooded Areas

Source: TOPO! Software, National Geographic Seamless Topographic Maps on CD-ROM, 2001. Bunyan, Tex. Quadrangle, 1965.

N
W E
S

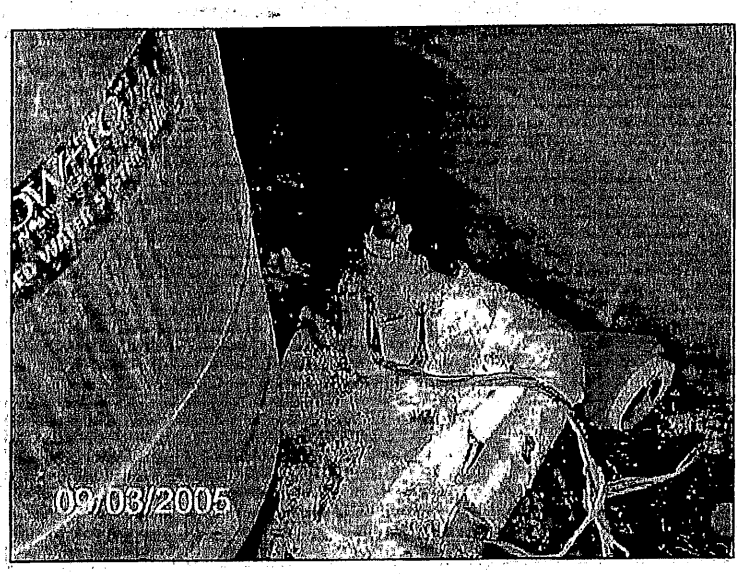
SEP 28 2007

750 FT .0 750 FT 1500 FT 3000 FT

SCALE

000180

Lingleville Dairy Stephenville Erath County, Texas	Recharge Features Map Figure 5.3a Page 35	ENVIRO-AG EAE Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd.



View of Well #3 – BMPs include: steel casing cemented to concrete surface slab located inside a concrete block building. This well is located upgradient of pollutant sources.

000181

Lingleville Dairy Stephenville Erath County, Texas	Well Buffer Exception Request	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

SECTION 6 SURFACE WATER AND TMDL ASSESSMENT

6.1 Surface Water Assessment

Figure 6.1, Aerial Photograph, shows the existing land features, production area, Land Management Unit boundaries, and areas designated as "water in the state," as defined by 30 TAC §321.32(58). Buffer zones between waters in the state and LMUs will be maintained as required in 30 TAC §321.40(h) plus additional filter strips specified by NRCS Code 393, as required in 30 TAC §321.42(w) (2). Based on NRCS Code 393, Appendix 3, Table 1, and LMU slope and soil types, the buffer zones shown in the attached map will be maintained

The "water in the state" designation is based on Enviro-Ag Engineering, Inc., site inspections, the permittee's knowledge of the property and the USDA-FSA aerial photograph (2006). The buffer zones and LMU boundaries in Figure 6.1 were submitted for approval by TCEQ on July 12, 2007.

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Figure 6.1a: Proposed Buffer Map

Lingleville Dairy
Permit No. WQ03590
Date: 9/21/2007

Enviro-Ag Engineering, Inc.
3404 Airway Blvd.
Amarillo, TX 79118
(806)353-6123 FAX: (806)353-4132

Legend

- RCS
- Wooded Area
- Buffers
- Well
- Property Boundary
- LMU's
- Creek
- Pond

Notes:
1. LMU#1 will shut off end gun when irrigating on the North side to maintain the 133' buffer distance
2. All waters-of-the-state buffers were calculated using the field's soil hydrologic group and overall slope.

1320 0 1320 2640 3960 Feet

ENVIRO-AG ENGINEERING, INC.

Figure 6.1b: Proposed Buffer Map

Lingleville Dairy
Permit No. WQ03590
Date: 9/21/2007

Enviro-Ag Engineering, Inc.
3404 Airway Blvd.
Amarillo, TX 79118
(806)353-6123 FAX: (806)353-4132

Legend

- Wooded Area
- Buffers
- Well
- Property Boundary
- LMU's
- Creek
- Pond

Notes:
1. All waters-of-the-state buffers were calculated using the field's soil hydrologic group and overall slope.

990 0 990 1980 Feet

ENVIRO-AG ENGINEERING, INC.

SECTION 7 AIR STANDARD PERMIT REQUIREMENTS

7.1 Permit Requirements

Due to the 700 headcount, the CAFO meets the TCEQ Air Quality Permit-By-Rule (PBR) authorization in 30 TAC §106.161 for facilities that confine less than 1000 head of cattle; therefore an odor control plan is not required. The following is a list of Best Management Practices that may be implemented at the facility to decrease odors.

- Pen surface drainage will be maintained to reduce ponding.
- The manure which collects in the confinement pens over time will be removed on a regular basis (at least once annually) to prevent the manure from building up in the pens.
- Removal of manure and pond solids will be done in favorable wind conditions carrying odors away from nearby receptors. The TCEQ must be notified prior to cleanout.
- Dead animals will be disposed of by a commercial rendering service within 72-hours.

SEP 2 8 2007

Texas Commission on Environmental Quality
TITLE 30 TEXAS ADMINISTRATIVE CODE § 106.161
AIR PERMIT BY RULE (PBR) CHECKLIST
ANIMAL FEEDING OPERATIONS

Electronic Submittal - Only enter the PI-7 confirmation number here [ ] if submitting electronically.

Hard-Copy Submittal - Print and complete the following checklist.

This checklist was developed by the Texas Commission on Environmental Quality (TCEQ) to assist applicants in determining whether an animal feeding operation meets all general and specific requirements of the permit by rule (PBR). If all PBR requirements cannot be met, the facility will not be allowed to operate under the PBR, and an application for a construction permit will be required. This checklist should accompany the Form PI-7, entitled, "Registration for Permits by Rule." Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the question number. **A complete Form PI-7, complete Checklist, and any other supporting documents must be reviewed and approved by the TCEQ prior to beginning construction if the facility is for a caged poultry (egg laying or pullet) operations only.** The PBR forms, tables, checklists and guidance documents are available from the TCEQ, Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

PLEASE CHECK THE MOST APPROPRIATE ANSWER	INFORMATION	YES	NO	N/A
LIVESTOCK				
Are the animal feeding operations designed to feed livestock? *If "YES," answer the Questions 1 - 3 and 9 and no registration is required, but retain this checklist and keep records. If "NO," skip to Question 4.*		✓		

1. If the animal feeding operations designed to feed only one of the following livestock categories, indicate the number below:

Livestock Category	Limits	Number of Actual Livestock
Cattle	1,000	700
Horses and Mules	1,000	
Swine weighing more than 55 pounds	2,500	
Sheep and Goats	10,000	

2. If the animal feeding operations are designed to feed more than one type of livestock, indicate the number of actual livestock, then calculate the equivalent animal sub-totals by multiplying the factor indicated by the number of actual livestock. To calculate the "Total Animal Equivalents," add the equivalent animal sub-totals together.

Livestock Category	Factor	x	Number of Actual Livestock	=	Equivalent Animal Sub-total
Cattle	1.0	MULTIPLY	700	EQUALS	700
Horses and Mules	2.0				
Swine weighing more than 55 pounds	0.4				
Sheep and Goats	0.1				
Total Animal Equivalents			**Total:**		700

Are the total of animal equivalents less than or equal to 1000?	✓		
3. When determining the number of animals above, mothers with nursing young were counted as a single animal while the young were nursing. Once removed from the mother, the young animals were counted as individual animals. Swine weighing 55 pounds or less were not counted when determining the number of animals. Were animals on the pasture not considered as part of the animal feeding operations?	✓		

Texas Commission on Environmental Quality
TITLE 30 TEXAS ADMINISTRATIVE CODE § 106.161
PERMIT BY RULE (PBR) CHECKLIST
ANIMAL FEEDING OPERATIONS

PLEASE CHECK THE MOST APPROPRIATE ANSWER	INFORMATION	YES	NO	N/A
BIRDS AND POULTRY				
4. Is the operation designed to feed no more than 55,000 turkeys or other birds (excluding ducks) concentrated in open lots? *If "YES," list the total number of birds.*	_____ Birds			✓
5. Is the operation designed to feed no more than 5,000 ducks? *If "YES," list the total number of ducks.*	_____ Ducks			✓
6. Are all caged poultry operations designed to feed no more than 30,000 birds? *If "YES," list the total number of birds.*	_____ Birds			✓
7. Do all housed poultry operations use wood shavings (or similar) as litter?				✓
8. If the caged poultry operation is designed to feed more than 30,000 birds and uses a dry manure storage and handling system, then list the total number of birds, the type of birds, and answer next Question. Otherwise, skip to Question 9.	Total Number of Birds: _____ Bird Type: _____			✓
An egg laying or caged pullet operation must be located at least 1/4 mile (1320 feet) from any recreational area, school, residence, or other structure not occupied or used solely by the owner of the operation. *List the distance to the nearest structure or recreational area.*	_____ feet			✓
FEED HANDLING				
9. Are products from the animal feeding operation (including on-site feed handling and feed milling operations) covered under this PBR registration shipped to any off-site location?			✓	

Registration: If the animal feeding operation consists only of livestock or outdoor birds and poultry, no registration is required. Any caged poultry (egg laying or pullet) operations must register and obtain approval prior to construction. All others should complete the checklist and retain records on site to demonstrate compliance with the PBR.

Records: In order to demonstrate compliance with the general and specific requirements for this PBR, animal feeding operations are required to maintain sufficient records to show that all requirements are met at all times. Records should include (but are not limited to) number and type of animals housed; methods and application of dust and odor controls; feed handling amounts and methods; and housekeeping.

Estimate Air Emissions: In general, air emissions estimates are not required during a PBR registration review for animal feeding operations. However, in order to demonstrate compliance with the general requirements for PBRs, animal feeding operation applicants may be asked to estimate air emissions from their animal feeding operations during a PBR review or during an investigation. These estimates can be made by compiling the required records. If sufficient records are maintained on site and requirements are being met, the animal feeding operation and the TCEQ will be able to establish these emission rates if needed.

PRINT SUBMIT

SEP 28 2007

WASTE/WASTEWATER APPLICATION AGREEMENT

Facility: Jack Parks Dairy (Name)
13628 W FM 8 (Address)
Stephenville, Tx. 76401 (City)

Date: 9-27-07

Subject: Wastewater Application to Farmland

This agreement will confirm that for the duration of the above referenced facility's TCEQ waste and wastewater permit, I agree to allow waste/wastewater available from the facility to be transferred and applied to my farmland as I, in my sole discretion, deem to be needed, at agronomic rates.

Is the property under this agreement owned, operated, controlled, rented or leased by the CAFO facility and/or operator?

✓ Yes _____ No

The legal description and acreage of the farmland to be used for wastewater application is as follows: 99 acres of land being 34 acres more or less, being a part of Block 3 of the A. Henson Survey, A-332, and 65 acres, more or less, out of Block F, of the A. Henson Survey. Vol. 863, Pg. 585 of the Deeds Records of Erath County, Tx.

Facility Representative:

Jack Parks
Type or Print Name

Jack Parks
Signature

SUBSCRIBED AND SWORN to before me by the said person on 28 day of September 2007.

JOYCE LUCAS
Notary Public
STATE OF TEXAS
My Commission
Expires 01/25/2010

Joyce Lucas
Notary Public in and for Erath County, Texas.

Farmland Owner:

Bobbie D. Gauntt
Type or Print Name

Bobbie D. Gauntt
Signature

SUBSCRIBED AND SWORN to before me by the said person on 27th day of September 2007.

SUSAN A. CORLEY
NOTARY PUBLIC
STATE OF TEXAS
My Comm. Exp. 7-12-2010

Susan Corley
Notary Public in and for Hood County, Texas.

RECEIVED
SEP 28 2007

SEP 28 2007

000188

ATTACHMENT B

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
H. S. Buddy Garcia, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 12, 2007

Mr. Norman Mullin, P.E.
Enviro-Ag Engineering
3404 Airway Boulevard
Amarillo, Texas 79118

Re: Jack Parks Dairy – Erath County, Texas

Dear Mr. Mullin:

We received the new application for the Jack Parks Dairy on September 28, 2007. In your cover letter, you generally stated that the new application resolves the March 28, 2007 Notice of Deficiency (NOD). Other than this general statement, you did not provide any specificity in your 189 page application on how those old deficiencies were resolved. In fact, the new application creates new deficiencies necessitating yet another NOD.

In our preliminary review of the new application, we have found both administrative and technical deficiencies. The Executive Director will file a status report with the Commission on October 15, 2007. We will include the staff's preliminary list of both administrative and technical deficiencies. Due to the rushed nature of the staff's review, we cannot state that the list of deficiencies is complete and exhaustive.

The staff will be happy to meet with you to discuss the new deficiencies prior to the November 7, 2007 agenda. Please be aware that in doing so, we may be going beyond the Commission's directive. The Commission contemplated that Mr. Parks would respond to the March 28, 2007 NOD. Now, we are in the position where we will in essence, be sending out yet another NOD for this facility. The Commission did not contemplate this course of action but instead wanted to give Mr. Parks a final opportunity to resolve the problems in his old application. Nevertheless, we will work with you to attempt to resolve the new deficiencies in your new application prior to the November 7 agenda.

Sincerely,

L'Oreal Stepney, P.E.
Division Director
Water Quality Division

LWS/SH/jp

Enclosures

cc: Mr. Elmer Jack Parks, Lingleville Dairy, 429 County Road 297, Stephenville, Texas 76401

ADMINISTRATIVE REVIEW DEFICIENCIES IN THE NEW PERMIT APPLICATION

The ED's preliminary review of the new application identified the following administrative deficiencies.

1. The Landowner map and landowner list were revised by Mr. Parks and now have the following deficiencies. See requirements at 30 TAC §§ 305.45(a)(6) and 305.48(2).

    a. Landowners map showed Landowner T, but landowner list did not give name and mailing address.
    b. Landowner list showed Landowner Y, but map did not identify the location of this landowner.

2. The location and road description in the new application are different from the previous application and are not correct (See requirement in 30 TAC 305.45(a)(1)). Road names are different and the direction is different.

TECHNICAL REVIEW DEFICIENCIES IN THE NEW PERMIT APPLICATION

The ED's preliminary review of the new application identified the following technical deficiencies.

Significant Deficiencies in the New Application

1. The drainage areas for RCS #1 and #2 are not consistent with acreage previously provided by the Applicant and estimated by TCEQ staff. The new application uses engineering calculations based on a drainage area of 20.1 acres, but as presented on the site map and in tax records that were provided with the application, the drainage area is at least 30 acres. That dramatically impacts the engineering design calculations and NMP. This discrepancy makes the design storm volume, operating volume, and sludge volume incorrect. Because of the need to revise the acreage will require the planned withdrawal from the RCSs to increase making the current NMP incorrect. See requirement at 30 TAC § 321.36(c). Technical Packet, Page 4.

2. RCS #1 contains 88% of the wastewater pumped for land application, but the only effluent sample provided was from RCS #2 and that is the sample used in the NMP. The NMP is not acceptable without a sample that is representative of the nutrient concentrations in all the effluent land applied. Therefore, a sample from RCS #1 is needed to make sure the ED has a representative sample of the nutrient

concentrations of the effluent being land applied. See requirement at 30 TAC § 305.45(a)(8)(B)(ii).

3. Proposed crops and yield goals are inconsistent with the NMP (See requirement at 30 TAC § 305.45(a)(8)(A)). Technical Packet, Page 6 Attachment.

4. On the Land Application Summary table, the estimated land application rates are based on the maximum application rate not the planned rate. As presented, it is inconsistent with the NMP and the engineering calculations. The estimated land application rate should not exceed what is available. See requirement at 30 TAC § 305.45(a)(8)(B)(i). Technical Packet, Page 6 attachment.

5. The available irrigation equipment consists of a pivot for land management unit (LMU) #1 and a wheel roll system. The ED needs verification that the wheel roll system can cover all LMU acreage shown in LMU #7a, #7b, and #7c. The irregular boundary shapes shown for these LMUs do not fit the rectangular shape that would occur due to the use of a wheel roll system. No other system is indicated in the application other than the pivot on LMU #1. The LMU map needs to show the area watered just like it does for the pivot. If some of the acres cannot be watered using the available equipment, the water balance and NMP are incorrect. See requirement at 30 TAC § 305.45(a)(8)(B)(i). Technical Packet, Page 7.

6. The acreage and location of LMU #1 needs verification. The center of the pivot appears to start inside of RCS #1. Also, buffers, well locations, and configuration of LMU #1 on the Site Map and the Proposed Buffer Map, Figure 6.1 are inconsistent. Some maps show the pivot covering part of the buffered area and others show a portion of the pivot shut off to avoid application in the buffered area. However, all report the same acreage, which is unlikely given their differing areas. The pivot cannot operate over the buffer zone and it needs to be accurately placed on the maps with an accurate representation of the covered acreage. Also, if the end gun is to be cut off the shut off distance needs to be documented in the application and reflected on the map. It is not likely that the shut off of the end gun will exactly match the line on the buffer. See requirements at 30 TAC §§ 305.45(a)(8)(B)(i) and 30 TAC § 321.43(f)(4)(a).

7. The buffered area between LMUs #12a and #12b needs verification. It appears there is an area of the stream that is not properly buffered. No documentation was provided to indicate that this stream is not waters in the state. There are also drainage areas in LMUs #3, #5b, #7a, #7c, #8, #9a, and #9b that need photographic documentation to justify the lack of need for buffering. The addition of the required buffer will change spreadable acreage and affect the NMP

and possibly the engineering calculations. See requirements at 30 TAC §§ 321.34(f)(4)(a) and 30 TAC § 321.42(w).

8. On the Runoff Control Map, the calf hutches are outside the RCS Drainage Area. The application proposes to contain only the design storm event runoff. That potential discharge cannot be authorized since there is no RCS containment for the calf hutches. If left outside the drainage area there can be no discharge of contaminated rainfall runoff and the application will need to be modified to reflect no discharge from this area. See requirements at 30 TAC §§ 321.37(d) and 30 TAC § 321.38(e)(7).

9. A portion of the runoff in drainage area #1 flows into the bar ditch and then under a county road. This is a major design change from what was previously provided by Mr. Parks. The county road ditch is considered water in the state, and as such must be protected from wastewater. There is no verification that the proposed use of the county road culvert and bar ditch appropriately protects waters in the state or that water moving in the bar ditch from above the production area has been accounted for or diverted according to design requirements. With respect to using the county road culvert as a conveyance, there needs to be some verification that the culvert under the road will carry the runoff from a 25-year 10-day storm water event without overtopping the road, or that if the road is overtopped, runoff will not discharge down the road. The ED also needs documentation from Erath County that grants the Applicant a legal right to use the road crossing for this purpose. This production area is upstream from a nutrient and bacteria impaired stream segment. The impacts of resolving this issue will most likely require new engineering calculations and a new NMP. See requirements at 30 TAC §§ 321.38(e)(1) and 30 TAC § 321.38(e)(6).

10. The design assumptions for the engineering calculations do not demonstrate a way for RCS #1 effluent to get to any LMUs other than LMU #1. If this is the case, the Water Balance is not correct and RCS #1 does not have adequate storage for the operating volume. Either the Water Balance should be revised or an explanation as to how RCS #1 effluent can be applied to LMUs #7a, #7b, and #7c as assumed in the water balance. The same issue arises for RCS #2 effluent being land applied on LMU #1 as assumed in the water balance. If all of the RCS #1 effluent can only be applied to LMU #1 and RCS #2 applied only to LMU #7a, #7b, and #7c as it appears in the site plan then the water balance and the NMP are both incorrect. See requirement at 30 TAC § 321.38(e)(7)(B).

11. The application proposes to allow cows to graze on LMUs with filter strips without providing any BMPs to protect the filter strips. Permitting staff has been told that Mr. Parks has fencing on the water courses to keep cattle out but the fencing does not enclose the entire buffer area. To the extent the fences don't

protect the buffers a grazing plan associated with NRCS Practice Standard Code 393 must be provided to support the NMP. See requirement in NRCS Practice Standard Code 393.

12. The phosphorus index (P-Index) Report in the NMP shows LMU #4a and LMU #6a to have soil test phosphorus values in the P-Index that are inconsistent with other application information. See requirement at 30 TAC § 321.36(d)(1).

13. There are inconsistencies in the numbering of the LMUs on the Soil Test Results and in the NMP.

14. If manure or wastewater has planned applications in the NMP to off-site LMUs, soil analyses must be submitted so that the NMP and P-Index can be evaluated. Soil analyses were not included for all the LMUs with planned applications in the NMP. See requirement at 30 TAC § 305.45(a)(8)(B)(ii).

15. Page 8 of the Technical Packet lists 15 wells. Page 33, the Recharge Feature Certification (RFC) lists 16 wells. The Recharge Feature Map shows 18 wells. All of the documents need to reflect the right number of wells and the maps need to accurately show locations. Figure 6.1a, Proposed Buffer Map; a neighboring well on the bottom of LMU #5b is not shown. It is possible that well is close enough that a buffer will be required. See requirement at 30 TAC § 321.34(f)(3).

16. The RFC identifies the two seepage detection wells as wells 17 and 18. These wells are required in the current permit, and will remain in the renewal of the permit application. Therefore, the wells may not be plugged at this time. Please revise the BMPs for these wells to reflect how the underlying groundwater will be protected from the introduction of any contaminants. Additionally, include these wells on Table E in the Technical Information Packet and in Table 5.4--Well Information. See requirement at 30 TAC § 321.34(f)(4)(A).

Other Noted Technical Deficiencies in the New Permit Application

17. Page 5 of 13, Administrative Application, Section A Authorization; the application type marked is incorrect, this is a major amendment not a renewal. See requirement at 30 TAC § 305.62(c)(1).

18. Page 6, Technical Packet; solids application amount is inconsistent with NMP. The difference is small but both documents should be consistent. See requirement at 30 TAC § 321.45(a)(8)(B)(i).

19. Page 6, Technical Packet; wastewater application amount inconsistent with engineering calculations and NMP. The difference is small but should be consistent. See requirement at 30 TAC § 305.45(a)(8)(B)(i).

20. Page 10 of 13, Administrative Application, Section 2 Technical Information; for amendments, the applicant must describe all major changes proposed for the facility. This section was left blank. See requirements at 30 TAC §§ 321.34(d) and 30 TAC § 305.62(b).

21. An improper signature is on the cover page of the NMP, Amy Haschke signed for Corey Mullin. The cover page has to be actually signed by a certified nutrient management specialist responsible for the plan.

22. On the signature page of the NMP, Corey Mullin signed for Elmer Jack Parks and there is no indication how the operator was informed of the contents of the NMP. If the operator does not sign the plan it is a requirement of the NMP to provide a statement indicating how the plan will be reviewed with the operator. The date of Mr. Mullin's signature on the signature page is prior to the date on the rest of the NMP. The signature date should be the same or after the date of the plan.

23. The P-Index Report in the NMP shows LMU #7c to have a slope that appears inconsistent with the USGS topo map provided in the application. See requirement at 30 TAC § 321.36(d)(1).

24. On Page 21 of the RFC, Section 5.4, Definition of Waste Production, has a reference to a headcount increase that is inconsistent with the application.

25. On Page 24 of the RFC, the geology map submitted as figure 5.1 appears to have the offsite property incorrectly mapped. The map needs to be revised and if appropriate the RFC.

26. On Page 25 of the RFC, Section 5.6.2, Excessive Slopes, states that no slopes of greater than 8% on this property will receive manure solids and/or wastewater. The P-Index Report in the NMP states that LMU #12a has a slope of 8.1%. The NMP should be revised so that no application is planned on slopes greater than 8% since that is a NRCS 590 Practice Standard guideline.

27. Please send documents identifying whether water has been found in the seepage detection wells identified as wells #17 and #18. If water has ever been detected in the wells, please identify when the water was detected and submit the test results.