

Corporate Office: 3404 Airway Blvd. Amarillo TX 79118 Central Texas: 9855 FM 847 Dublin TX 76446 New Mexico: 203 East Main Street Artesia NM 88210

October 25, 2024

TCEQ Office of the Chief Clerk, MC-105 Attn: Ellie Guerra PO Box 13087 Austin, TX 78711-3087

Re: Golden Star Heifer Ranch – Permit No. WQ0005387000. TCEQ Docket No. 2023-1586-AGR, Bosque County, Texas.

Dear Ms. Guerra,

Enclosed please find the New Individual Permit Amendment application, including all revisions for the above-mentioned facility. If you have any questions or require any additional information, please do not hesitate to contact me.

Respectfully Submitted,

n Malle

Jourdan Mullin Enviro-Ag Engineering, Inc.

PHONE: 800-753-6525

30 TAC 321, SUBCHAPTER B APPLICATION, POLLUTION PREVENTION PLAN & CNMP

Golden Star Heifer Ranch New Individual Permit Application

Prepared For: Peter & Nova Schouten 3728 CR 229 Hico, TX 76457

May 9, 2022

Prepared By:





TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ELECTRONIC WAIVER REQUEST FOR A CONCENTRATED ANIMAL FEEDING OPERATION (CAFO)

A Large CAFO, as defined in the CAFO rules at 30 TAC 321.32(14)(A), must request a waiver from e-reporting requirements codified in 40 Code of Federal Regulations §127.15 OR be required to submit CAFO annual reports electronically.

Are you requesting a waiver from e-reporting requirements?

 \boxtimes Yes, Indicate the type of waiver below.

⊠ Temporary Waiver

□ Permanent Waiver (available to facilities and entities owned or operated by members of religious communities that choose not to use certain modern technologies (e.g., computers, electricity))

 \Box No, you must submit your application electronically through TCEQ ePermits system (STEERS) at <u>https://www3.tceq.texas.gov/steers/index.cfm</u>. Check <u>How to Apply through STEERS</u>.

If an electronic waiver request is granted, the Applicant(s) seeking authorization, or an authorized permittee(s) may continue to submit CAFO annual reports to TCEQ in a paper format.

Note:

- An approved waiver is not transferrable.
- Each Owner or Operator must request his own waiver.
- Temporary waiver will not extend beyond five years. However, permittees may re-apply for a new temporary waiver, if needed.

State Only CAFOs are exempt from this requirement.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDIVIDUAL PERMIT APPLICATION FOR A CONCENTRATED ANIMAL FEEDING OPERATION (CAFO)

If you have questions about completing this form, please contact the Applications Review and Processing Team at 512-239-4671.

SECTION 1. APPLICATION FEE

Minor Amendment - \$150.00 Renewal - \$315.00 New or Major Amendment - \$350.00

Mailed	Check/Money Order Number:	
	Check/Money Order Amount:	
	Name Printed on Check:	
EPAY	Voucher Number: <u>576920 & 576921</u>	
	Copy of Payment Voucher enclosed?	Yes 🛛

SECTION 2. TYPE OF APPLICATION

А.	Coverage:	State Only \Box	TPDES 🛛	
B.	Media Type:	Water Quality 🛛	Air and Water Quality	\boxtimes
C.	Application 7	'ype: New 🛛	Major Amendment \Box	

Renewal \Box Minor Amendment \Box

- **D**. For amendments, describe the proposed changes:
- **E.** For existing permits:

What is the permit number? What is the EPA I.D. Number? TX

SECTION 3. FACILITY OWNER (APPLICANT) INFORMATION

- A. What is the legal name of the facility owner? Peter Henry & Nova Darlene Schouten
- **B.** If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN <u>601479512</u>; CN601479520
- **C.** What is the contact information for the owner? Mailing Address: <u>3728 CR 229</u> City, State and Zip Code: <u>Hico, TX 76457</u>

TCEQ ePay

Questions or Comments >>

Shopping Carl Selaci Fea Search Transactions Sign Out

Print this voucher for your records. If you are sending the TCEQ hardcopy documents related to this payment, include a copy of this voucher.

Transaction Information	
Voucher Number:	576920
Trace Number:	582EA000491128
Date:	05/09/2022 03:29 PM
Payment Method:	CC - Authorization 000007471G
Voucher Amount:	
Fee Type:	CAFO PERMIT - NEW OR MAJOR AMENDMENT
ePay Actor:	JOURDAN MULLIN
Actor Email:	jmullin@enviroag.com
IP:	108.161.11.143
Payment Contact Information	
Name:	JOURDAN MULLIN
Company:	ENVIRO-AG ENGINEERING INC
Address:	9855 FM 847, DUBLIN, TX 76446
Phone:	254-965-3500
Site Information	
Site Name:	GOLDEN STAR HEIFER RANCH
Site Location:	N SIDE OF HWY 6 ON CR 2495 5.5 MILES E OF HWY 6 & HWY 281 BOSQUE COUNTY
-Customer Information	
Customer Name:	PETER SCHOUTEN
Customer Address:	3728 CR 229, HICO, TX 76457

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TCEQ ePay

Questions or Comments >>

Shopping Cart Select Lee Search Transactions Sign Out

Print this voucher for your records. If you are sending the TCEQ hardcopy documents related to this payment, include a copy of this voucher.

-Transaction Information	
Voucher Number:	576921
Trace Number:	582EA000491128
Date:	05/09/2022 03:29 PM
Payment Method:	CC - Authorization 000007471G
Voucher Amount:	\$50.00
Fee Type:	30 TAC 305.53B WQ NOTIFICATION FEE
ePay Actor:	JOURDAN MULLIN
Actor Email:	jmullin@enviroag.com
IP:	108.161.11.143
Payment Contact Information	
Name:	JOURDAN MULLIN
Company:	ENVIRO-AG ENGINEERING INC
Address:	9855 FM 847, DUBLIN, TX 76446
Phone:	254-965-3500

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https://www3.tceq.texas.gov/epay/index.cfm?fuseaction=receipts.voucher_detail&userid=609353&pmt_id=479405&voucher_num_txt=576921

000006

Phone Number: 254/965-2414 Fax Number: Click here to enter text.

E-mail Address: pschouten@our-town.com

D.	Indicate the typ	pe of customer:				
\boxtimes	Individual				Federal Governm	nent
	Limited Partne	ership			County Governm	nent
	General Partn	ership			State Governme	nt
	Trust				City Governmen	ıt
	Sole Proprieto	orship (D.B.A.)			Other Governme	ent
	Corporation				Other, specify:	lick here to enter text.
	Estate					
E.	If the customer	r type is individua	l, complete Att	achr	nent 1.	
F.	Is this custome	er an independent	entity?			
	🖾 Yes	🗆 No govern	nment, subsidia	ary, e	or part of a large	r corporation
G.	Number of emj ⊠ 0-20	ployees: □ 21-100	□ 101-250		□ 251-500	🗆 501 or higher
ц	For Corporatio	ne and Limited Da	rtnorching			

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: Click here to enter text.

What is the Charter Filing Number issued by the Texas Secretary of State: Click here to enter text.

SECTION 4. CO-APPLICANT INFORMATION

Complete this section only if another person or entity is required to apply as a co-permittee.

A. What is the legal name of the co-applicant?

Click here to enter test.

- **B.** If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN Click here to enter rest.
- **C.** What is the contact information for the co-applicant?

Mailing Address: Click here to enter text.

City, State and Zip Code: Click here to enter text.

Phone Number: Fax Number: Click here to enter text.

E-mail Address: Click here to enter text,

D. Indicate the type of customer:

Individual

□ Limited Partnership

	□ General Pa □ Trust □ Sole Propri	rtnership ietorship (D.B.A.)		County Governmen State Government City Government	nt
	Corporatio	· · · · · · · · · · · · · · · · · · ·		Other Government	Ī
٢] Estate			Other, specify: Cli	there to enter text.
	Federal Gover	nment			
E. I	f the customer	type is individual	, complete Attach	ment 1.	
F. I	s this custome	r an independent (entity?		
0	I Yes	□ No governm	ient, subsidiary, o	r part of a larger co	rporation
	Number of emp	ployees: □ 21-100	□ 101-250	□ 251-500	\Box 501 or higher

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: Click here to entertext.

What is the Charter Filing Number issued by the Texas Secretary of State: Click here to enter text.

SECTION 5. APPLICATION CONTACT INFORMATION

This is the person TCEQ will contact if additional information is needed about this application.

Prefix (Mr., Ms., Miss): <u>Mr.</u> Application Contact First and Last Name: <u>Corey Mullin</u> Title: <u>Consultant</u> Credentials: Click here to enter text. Company Name: <u>Enviro-Ag Engineering, Inc</u> Mailing Address: <u>9855 FM 847</u> City, State and Zip Code: <u>Dublin, TX 76446</u> Phone Number: <u>254/965-3500</u> Fax Number: <u>254/965-8000</u> E-mail Address: <u>cmullin@enviroag.com</u>

SECTION 6. PERMIT CONTACT INFORMATION

Provide two names of individuals that TCEQ can contact during the term of the permit.

A. Prefix (Mr., Ms., Miss): <u>Mr.</u>

TCEQ -00728 Individual Permit Application for a Concentrated Animal Feeding Operation (07/20/2019) Page 4

Permit Contact First and Last Name: <u>Corey Mullin</u> Title: <u>Consultant</u> Credentials: Checkhere to enter text. Company Name: <u>Enviro-Ag Engineering, Inc.</u> Mailing Address: <u>9855 FM 847</u> City, State and Zip Code: <u>Dublin, TX 76446</u> Phone Number: <u>254/965-3500</u> Fax Number: <u>254/965-8000</u> E-mail Address: <u>cmullin@enviroag.com</u>

B. Prefix (Mr., Ms., Miss): Mr.

Permit Contact First and Last Name: <u>Peter Schouten</u>

Title: Owner Credentials: Check deterto enter real.

Company Name: Golden Star Heifer Ranch

Mailing Address: 3728 CR 229

City, State and Zip Code: <u>Hico, TX 76457</u>

Phone Number: <u>254/965-2414</u> Fax Number: Click here to enter taxt._E-mail Address:

pschouten@our-town.com

SECTION 7. ANNUAL BILLING CONTACT INFORMATION

Please identify the individual for receiving the annual fee invoices.

Is the billing contact and contact information the same as the Owner or the Co-Applicant identified in Section 3) or Section 4) above?

☑ Yes, specify which applicant on the line below and go to Section 8)

Owner, Peter & Nova Schouten

 \Box No, complete this section

Prefix (Mr., Ms., Miss): Children to enter level

First and Last Name: Click bene to enter boar.

Title: Click here to enter tox. Credentials: Click here to enter text.

Company Name:_Click have to enter text.

Mailing Address: Click how to enter text.

City, State and Zip Code: Check here to enter cost.

Phone Number: Click here to only text. Fax Number: Click here to enter text_E-mail

Address: Cheis here forender fest,

SECTION 8. LANDOWNER INFORMATION

A. Landowner where the production area is or will be located

Landowner Name: Peter & Nova Schouten

B. Landowner of the land management units (LMUs)

Landowner Name: Peter & Nova Schouten

SECTION 9. PUBLIC NOTICE INFORMATION

A. Individual responsible for publishing the notices in the newspaper

Prefix (Mr., Ms., Miss): Mrs. First and Last Name: Jourdan Mullin

Title: Consultant Credentials: Click here to enter test.

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: <u>9855 FM 847</u>

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000 E-mail Address:

jmullin@enviroag.com

B. Method for receiving the notice package for the Notice of Receipt and Intent

- E-mail: jmullin@enviroag.com
- **Fax Number:** Click here to enter text.
- 🛛 Regular Mail:

Mailing Address: <u>9855 FM 847</u>

City, State and Zip Code: Dublin, TX 76446

C. Contact person to be listed in the notice

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Peter Schouten

Title: Owner Credentials: Click here to enter text.

Company Name: <u>Golden Star Heifer Ranch</u>

Phone Number: 254/965-2414

D. Public viewing location

If the facility is located in more than one county, a public viewing location for each county must be provided.

Public Building Name: <u>Bosque County Extension Office</u>

Physical Address of Building: <u>104 S. Fuller St.</u>

City: Meridian County: Bosque

Phone Number: <u>254/435-6231</u>

E. Bilingual Notice Requirement

For new, major amendment, and renewal applications. This information can be obtained by contacting the bilingual/ESL coordinator at the nearest elementary or middle school.

1. Is a bilingual education program required by the Texas Education Code at the

nearest elementary or middle school to the facility or proposed facility?

Yes □ No ⊠

(**If No**, alternative language notice publication is not required; skip to Section 10. Regulated Entity (Site) Information.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

Yes 🗆 🛛 No 🗆

3. Do the students at these schools attend a bilingual education program at another location?

Yes 🗆 🛛 No 🗆

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

Yes 🗆 🛛 No 🗆

5. If the answer is yes to 1, 2, 3, or 4, public notice in an alternative language is required. Which language is required by the bilingual program? Click here to enter text.

SECTION 10. REGULATED ENTITY (SITE) INFORMATION

A. Site Name as known by the local community: Golden Star Heifer Ranch

- **B.** If this is an existing permitted site, provide the Regulated Entity Number (RN) issued to this site? RN Click here to enter text.
- **C.** Site Address/Location:

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete Item 1.

If the site does not have a physical address, provide a location description in Item 2. Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Item 1: Physical Address of Project or Site:

Street Number and Name: Clibbek here to enter text.

City, State and Zip Code: Click here to enter text.

Item 2: Site Location Description:

Location description: <u>The facility is located on the North side of State Highway 6 on</u> <u>County Road 2495 which is approximately 5.5 miles East of the intersection of State</u> <u>Highway 6 and US Highway 281, Bosque County, Texas</u> City where the site is located or, if not in a city, what is the nearest city: <u>Hico</u>

- Zip Code where the site is located: <u>76457</u>
- **D.** County or counties if more than 1: <u>Bosque</u>
- E. Latitude: <u>31 58' 59.46"N</u> Longitude: <u>97 56' 59.08"W</u>
- F. Animal Type:
 - ⊠ Dairy-0241
 - □ Beef Cattle- 0211
 - □ Swine-0213
 - □ Broiler-0251
 - □ Laying Hens-0252

- □ Sheep/Goats-0214
- □ Auction-5154
- □ Other, specify: Click here to enter text.
- G. Existing Maximum Number of Animals: 0

Proposed Maximum Number of Animals: 2,000 (non-milking)

H. What is the total LMU acreage? <u>43</u>

SECTION 11. MISCELLANEOUS INFORMATION

- **B.** Is the facility located on Indian Country Lands? Yes □ No ⊠ If yes, do not submit this application. You must obtain authorization through EPA Region 6.
- C. Is the production area located within the protection zone of a sole source drinking water supply? Yes □ No ⊠
- **D.** Is any permanent school fund land affected by this application? Yes \Box No \boxtimes

If yes, provide the location and foreseeable impacts and effects this application has on the land(s). Click here to enter text.

E. Delinquent Fees and Penalties:

Do you owe fees to the TCEQ?	Yes 🗆	No 🛛
Do you owe any penalties to the TCEQ?	Yes 🗆	No 🖾

If you answered yes to either of the above questions, provide the amount owed, the type of fee or penalty, and an identifying number. Click here to enter text.

SECTION 12. AFFECTED LANDOWNER INFORMATION

This section must be completed if the application type is new or major amendment. If the application type is renewal or minor amendment, skip to Section 13.

A. Landowner map. Attach a landowner map or drawing, with scale, that includes the

following. Each landowner should be designated by a letter or number on both the list and the map.

- The applicant's property boundaries, including onsite and offsite LMUs; and
- The property boundaries of all landowners within 500 feet of the applicant's property.
- **B.** Landowner list. Attach a separate list of the landowners' names and mailing addresses. The list must be cross-referenced to the landowners map.
- C. Landowner list media. Indicate the format of the landowners list.
 - □ Read/Writeable CD
 - \boxtimes 4 sets of mailing labels
- **D.** Landowner data source. Provide the source of the landowners' names and mailing addresses.

Bosque County Appraisal District

SECTION 13. ATTACHMENTS

A. All applications

- Supplemental Permit Information Form, if required by instructions on that form
- Current copy of tax records or deed showing ownership of the land
- Lease agreement, if LMUs are not owned by the applicant or co-applicant
- B. New, Major amendment, or Renewal
 - Completed Technical Information Packet (TCEQ-00760).

C. Minor Amendment

Attach the following items if applicable:

- Current vicinity map, site map, runoff control map, and LMU map
- RCS design calculations
- Nutrient Management Plan or Land application rate calculations
- Other technical documents affected by the proposed amendment

SIGNATURE PAGE

If co-applicants are required, each co-applicant must submit an original, separate signature page.

Permit Number: Click here to enter text.

Applicant: Peter Henry Schouten

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 knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code

§305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory Name: <u>Peter Henry Schouten</u>

Title: Owner meleteny Defen Date: 5-3-22 Signature: SUBSCRIBED AND SWORN to before me by the said Peres School on 202 this day of Man 20 Z T 2074 day of Och My commission expires on the COREY LYNN MULLIN ID #126609838 Seamission Expires Notary Public October 08, 2024 County, Texas

SIGNATURE PAGE

If co-applicants are required, each co-applicant must submit an original, separate signature page.

Applicant: Nova Darlene Schouten

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 knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code

§305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory Name: Nova Darlene Schouten

Title: <u>Owner</u>

Signature: Ava Darban Schruten Date: 5-3-22 SUBSCRIBED AND SWORN to before me by the said Nava Schooler on 22 Mari this day of _, 20.24 _day of_____ My commission expires on the YNN MULLIN Notary Public 26609838 Commission Explres October 08, 2024

County, Texas

Attachment 1 Individual Information

Complete this attachment if the facility owner or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., Miss): <u>Mr.</u> Full Legal Name, including middle name: <u>Peter Henry Schouten</u> Driver's License or State Identification Number: <u>DL #11005776</u> State that Issued the License or Identification Number: <u>Texas</u> Date of Birth: <u>05/26/1944</u> Mailing Address: <u>3728 CR 229</u> City, State and Zip Code: <u>Hico, TX 76457</u> Phone Number: <u>254/965-2414</u> Fax Number: <u>n/a</u> E-mail Address: pschouten@our-town.com

For TCEQ Use Only
Customer Number ______
Regulated Entity Number ______
Permit Number ______

Attachment 1 Individual Information

Complete this attachment if the facility owner or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., Miss): <u>Mrs.</u> Full Legal Name, including middle name: <u>Nova Darlene Schouten</u> Driver's License or State Identification Number: <u>DL#01609856</u> State that Issued the License or Identification Number: <u>Texas</u> Date of Birth: <u>08/18/1943</u> Mailing Address: <u>3728 CR 229</u> City, State and Zip Code: <u>Hico, TX 76457</u> Phone Number: <u>254/965-2414</u> Fax Number: <u>n/a</u> E-mail Address: <u>pschouten@our-town.com</u>

For TCEQ Use Only
Customer Number ______
Regulated Entity Number ______
Permit Number ______

		TCLQ ODL OTTLI		
Application type:	9 Renewal	Major Amendment	Minor Amendment	9 New
County:		Admin Complete Date:		
Agency Receiving	SPIF: O Texas	Historical Commission	O U.S. Fish and Wil	dlife
	🛛 Te	xas Parks and Wildlife	Army Corps of E	ngineers

TCEQ USE ONLY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form is required for all TPDES applications

- 1. Applicant: Peter Henry & Nova Darlene Schouten
- 2. Permit Number: Click here to enter text. EPA ID Number: Click here to enter text.
- 3. Address of the project (location description that includes street/highway, city/vicinity, and county). <u>The facility is located on the North side of State Highway 6 on County Road 2495</u> which is approximately 5.5 miles East of the intersection of State Highway 6 and US Highway 281, Bosque County, Texas.
- 4. Provide the name, address, telephone and fax number of an individual that can be contacted to answer specific questions about the property.

First and Last Name: Corey Mullin

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: <u>9855 FM 847</u>

City, State, and Zip Code: Dublin, TX 76446

Phone Number: <u>254/965-3500</u> Fax Number: <u>254/965-8000</u>

- 5. County where the facility is located: <u>Bosque</u>
- 6. If the property is publicly owned and the owner is different than the permittee/applicant, please identify the owner. n/a
- 7. Identify the name of the water body (receiving waters) and TCEQ segment number that will receive the discharge. <u>North Bosque River in Segment No. 1226 of the Brazos River Basin</u>
- 8. 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. Provide photographs of any structures 50 years or older on the property.
- 10. Does your project involve any of the following? Select all that apply.
 - D Proposed access roads, utility lines, and construction easements
 - □ Visual effects that could damage or detract from a historic property's integrity
 - □ Vibration effects during construction or as a result of project design
 - □ Additional phases of development that are planned for the future
 - □ Sealing of caves, fractures, sinkholes, or other karst features
 - 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): <u>No construction is proposed.</u>

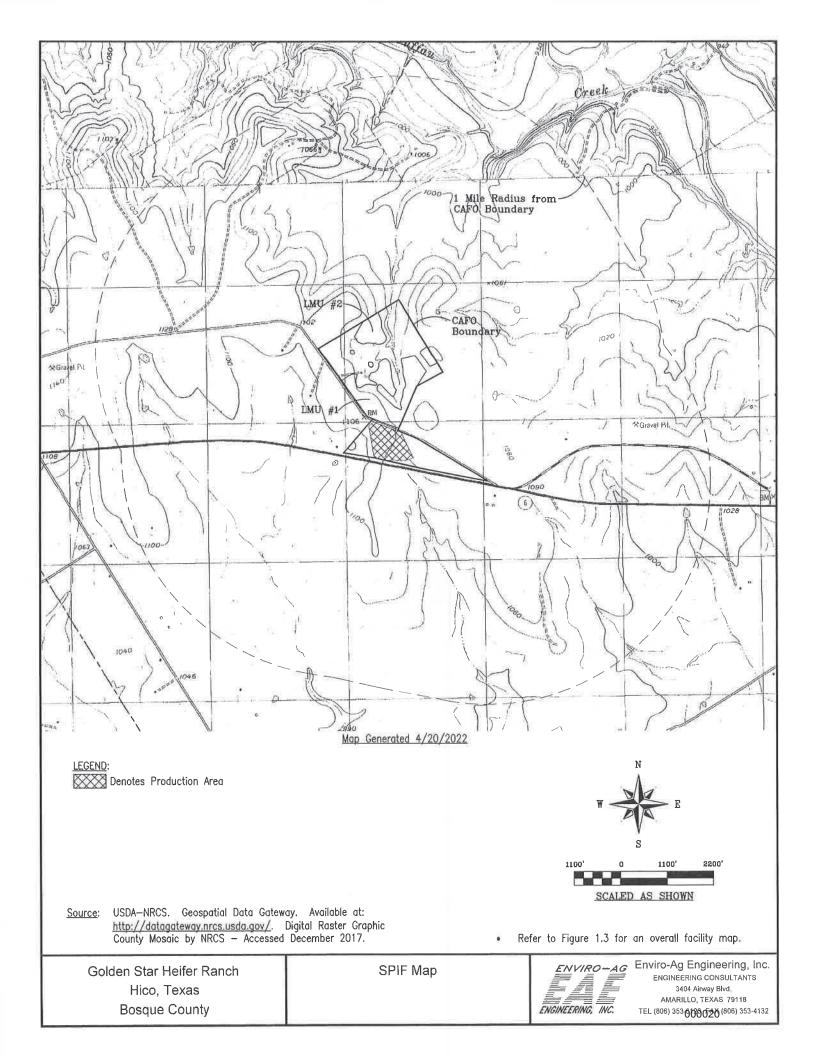
12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances): <u>The Land Management Units (LMUs) at the facility are planted in Bermuda grass and normal</u> <u>expected farming practices to maintain the crops will be utilized.</u>

The following applies to New TPDES and Major Amendment to TPDES Permits:

- 13. List construction dates of any buildings or structures on the property: <u>Parlor constructed in</u> <u>1986 by Ricky Sparkman</u>
- 14. Provide a brief history of the property, and name of the architect/builder, if known: <u>The</u> <u>property was utilized as a family stock farm until 1986</u>. It was then converted into a family dairy farming facility in 1992.

The following applies to New, Amended and Renewal TPDES applications:

- 15. List each Retention Control Structure and its required capacity (Acre Feet). <u>RCS #1 16.85</u> <u>ac-ft</u>
- 16. Provide the location and number of acres where wastewater and manure are land applied: <u>The facility has 43 acres available for waste and wastewater application.</u> See attached <u>Figure 1.3 for exact locations of LMUS.</u>
- 17. List the maximum number of head to be permitted. 2.000



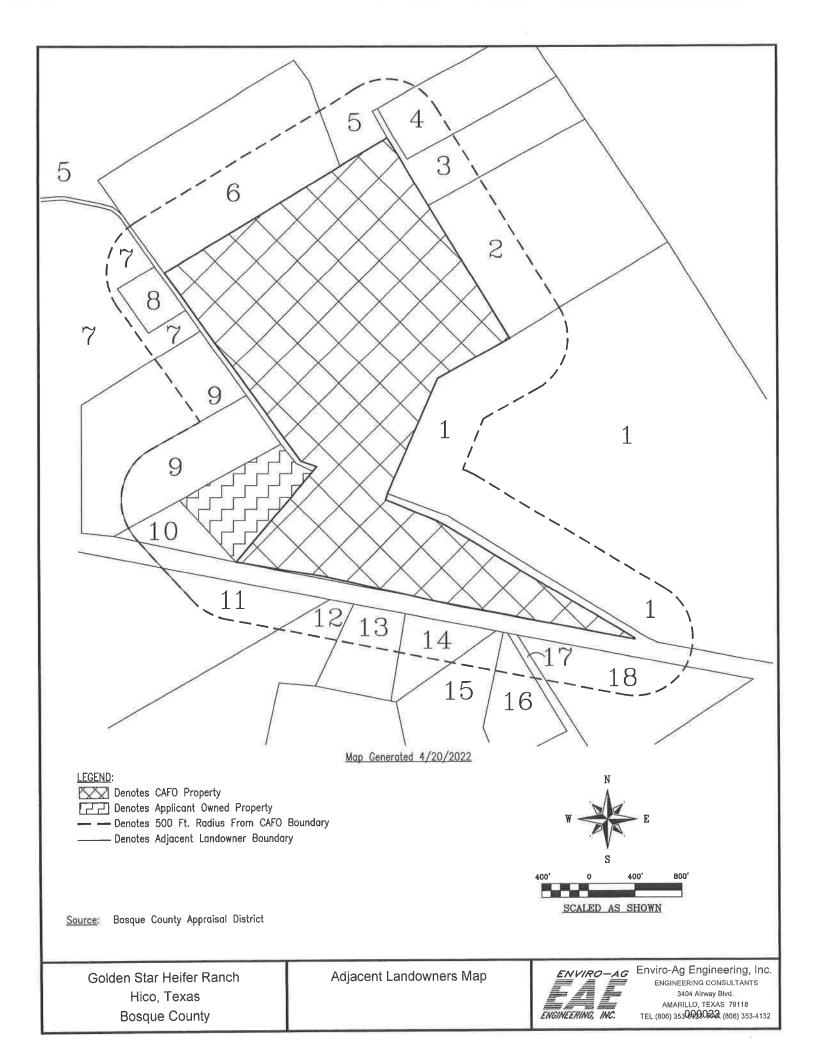
ADJACENT LANDOWNERS LIST

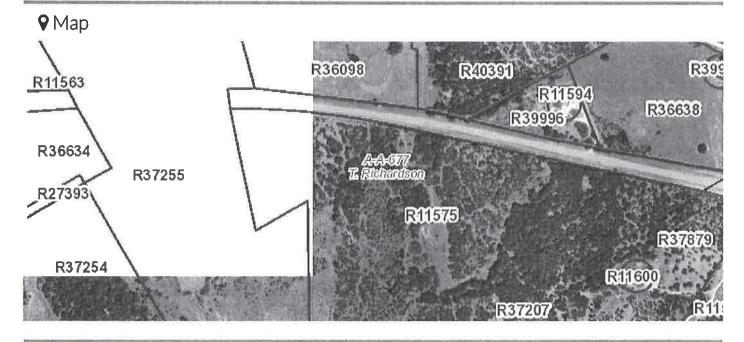
Name BC Dayton	Name Corey & Jourdan Mullin
Number on Map 1	Number on Map <u>10</u>
Address PO Box 409	Address 9855 FM 847
Address Hico, TX 76457	Address Dublin, TX 76446
Address <u>HICO, IX /045/</u>	Address <u>Dubin, 1A 70440</u>
Name Jeffery D Shull	Name Rance Dendy
Number on Map 2	Number on Map 11
Address 540 Harrison, LN	Address PO Box 21
Address Hurst, TX 76053	Address Iredell, TX 76649
Address <u>Hurst, 1A 70053</u>	Address <u>freden, 1X /0049</u>
Name Michael Mochmer	Name Crystal D Stiles
Number on Map 3	Number on Map <u>12</u>
Address 512 CR 2495	Address PO Box 541
Address <u>Hico, TX 76457</u>	Address <u>Hico, TX 76457</u>
Name Domonic Boden	Name Pablo Torres
Number on Map 4	Number on Map 13
Address 514 CR 2495	Address PO Box 541
Address <u>Hico, TX 76457</u>	Address <u>Hico, TX 76457</u>
Name Morning Star Family, LP	Name Clifford M & Laura L Norris
Name worming star Fainity, 15	Number on Map <u>14</u>
Number on Map 5	Number on Map 14
Address <u>3628 Beverly Dr.</u>	Address <u>16443 Hwy 6</u>
Address Dallas, TX 75205	Address <u>Hico, TX 76457</u>
Numera Mitcher 9. Claused Mitcards and and	Name Don & Carol Cleveland
Name Walter & Carol Weatherington	
Number on <u>Map 6</u>	Number on Map <u>15</u>
Address 548 CR 2495	Address 3524 Fountain Way
Address <u>Hico, TX 76457</u>	Address Granbury, TX 76049
Name Jody E Littleton	Name <u>Hanju Yang</u>
Number on Map_7	Number on Map <u>16</u>
Address PO Box 306	Address PO Box 540
Address Hico, TX 76457	Address Hico, TX 76457
Name <u>Trish Littleton</u>	Name Harold P & Pamela A Gervais
Number on Map <u>8</u>	Number on Map <u>17</u>
Address PO Box 221	Address PO Box 540
Address Hico, TX 76457	Address Hico, TX 76457
Name Linds 0 Alexander 7 and Alexi 7	Name Jim D Karels
Name Linda & Alexander Zuran, Alesi-Zuran	
Number on Map 9	Number on Map <u>18</u>
Address 220 Via Vincent	Address <u>16303 Hwy 6</u>
Address Whitney, TX 76692	Address Hico, TX 76457

Please identify where you obtained the landowner information.

Bosque County Appraisal District; April, 2022

Facility Name Golden Star Heifer Ranch





Property Details	
Account	
Property ID:	R11599
Legal Description:	ABST A0675 RIDDLE, W M Acres:18.8700
Geographic ID:	11599
Agent:	
Туре:	R - REAL PROPERTY
Location	
Address:	HWY 6 HICO 76457
Map ID:	
Neighborhood CD:	UNASSIGNED
Owner	
Owner ID:	38910
Name:	SCHOUTEN, PETE & NOVA
Mailing Address:	3728 CR 229 HICO, TX 76457-3519
% Ownership:	100.0%
Exemptions:	For privacy reasons not all exemptions are shown online.

Property Values

Improvement Homesite Value:	\$0
Improvement Non-Homesite Value:	\$9,416
Land Homesite Value:	\$0
Land Non-Homesite Value:	\$0
Agricultural Market Valuation:	\$131,607
Market Value:	\$141,023
Ag Use Value:	\$1,589
Appraised Value:	\$141,023
Homestead Cap Loss: 😧	\$0
Assessed Value:	\$11,005

VALUES DISPLAYED ARE 2021 CERTIFIED VALUES.

Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

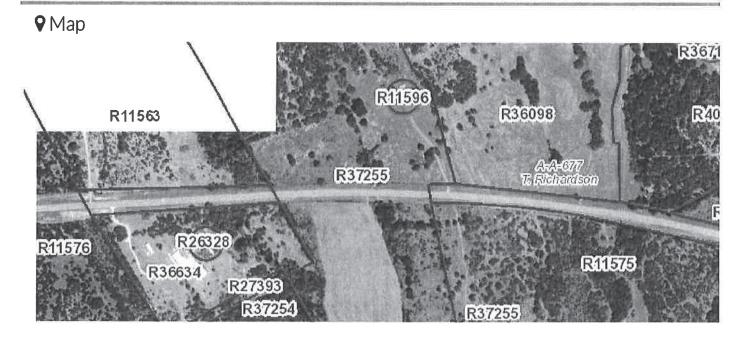
140

Entity	Description	Tax Rate		rket Ta Ilue	axable Value	Estima	ited Tax	Freeze Ceiling
1	BOSQUE COUNTY	0.462800	\$141,	023 \$	11,005	\$50).93	
1	BOSQUE COUNTY HOSPITAL	0.133000	\$141,	023 \$	11,005	\$14	1.64	
1	ESD	0.038300	\$141,0	023 \$	11,005	\$4	1.21	
1	CONS GROUNDWATER	0.008500	\$141,0	023 \$	11,005	\$C).94	
4	HICO ISD	1.110300	\$141,0	023 \$	11,005	\$122	2,19	
Total 1	fax Rate: 1.752900							
Estima	ated Taxes With Exemptions:	\$192.91						
Estima	ated Taxes Without Exemption	ns: \$2,471.99						
Pro	ated Taxes Without Exemption Operty Improvement - E Area: 0.00sqft Value: \$9,	Building						
Pro	operty Improvement - E	Building				Year Bu	uilt	SQFT
Pro	operty Improvement - E Area: 0.00sqft Value: \$9, Description	Building 416	NG CLAS	S				
Pro Living Type SHED	operty Improvement - E Area: 0.00sqft Value: \$9, Description	Building 416 Class CD	NG CLAS	S				
Pro Living Type SHED	operty Improvement - E Area: 0.00sqft Value: \$9, Description 1 SHED 1	Building 416 Class CD NO BUILDI	NG CLAS Acreage	S Sq		19	80 4 Market	

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2022	N/A	N/A	N/A	N/A	N/A	N/A
2021	\$9,416	\$131,607	\$1,589	\$141,023	\$0	\$11,005
2020	\$0	\$73,658	\$1,547	\$73,658	\$0	\$1,547
2019	\$0	\$69,959	\$1,434	\$69,959	\$0	\$1,434
2018	\$0	\$69,685	\$1,396	\$69,685	\$0	\$1,396
2017	\$0	\$57,123	\$1,396	\$57,123	\$0	\$1,396
2016	\$0	\$57,123	\$1,434	\$57,123	\$0	\$1,434
2015	\$0	\$57,123	\$1,434	\$57,123	\$0	\$1,434
2014	\$0	\$57,123	\$0	\$57,123	\$0	\$57,123
2013	\$0	\$57,123	\$1,434	\$57,123	\$0	\$1,434
2012	\$0	\$63,205	\$1,434	\$63,205	\$0	\$1,434
2011	\$0	\$63,210	\$1,430	\$63,210	\$0	\$1,430

Property Deed History							
Deed Date	Туре	Description	Grantor	Grantee	Volume	Page	Number
8/24/2001	1	AD		SCHOUTEN, PETE & NOVA	486	391	



R36638
ABST A0677 RICHARDSON, J Acres:35.9760
36638
R - REAL PROPERTY
HWY 6 HICO 76457
UNASSIGNED
38910
SCHOUTEN, PETE & NOVA
3728 CR 229 HICO, TX 76457-3519
100.0%
For privacy reasons not all exemptions are shown online.

Property Values

Improvement Homesite Value:	\$0
Improvement Non-Homesite Value:	\$67,562
Land Homesite Value:	\$0
Land Non-Homesite Value:	\$0
Agricultural Market Valuation:	\$228,103
Market Value:	\$295,665
Ag Use Value:	\$3,030
Appraised Value:	\$295,665
Homestead Cap Loss: 😧	\$0

Assessed Value:

\$70,592

VALUES DISPLAYED ARE 2021 CERTIFIED VALUES.

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Report Taxing Jurisdiction

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling				
1	BOSQUE COUNTY	0.462800	\$295,665	\$70,592	\$326.70					
1	BOSQUE COUNTY HOSPITAL	0.133000	\$295,665	\$70,592	\$93.89					
1	ESD	0.038300	\$295,665	\$70,592	\$27.04					
1	CONS GROUNDWATER	0.008500	\$295,665	\$70,592	\$6.00					
4	HICO ISD	1.110300	\$295,665	\$70,592	\$783.78					
Total ⁻	Total Tax Rate: 1,752900									

Estimated Taxes With Exemptions: \$1,237.41

Estimated Taxes Without Exemptions: \$5,182.71

Property Improvement - Building

Living Area: 0.00sqft Value: \$63,412

Туре	Description	Class CD	Year Built	SQFT				
BARN 1M	BARN 1M	NO BUILDING CLASS	1960	2,496.00				
SHED 1	SHED 1	NO BUILDING CLASS	1960	3,840.00				
SHED 2	SHED 2	NO BUILDING CLASS	1960	4,200.00				
SHED 1	SHED 1	NO BUILDING CLASS	1960	3,200.00				
SHED 1	SHED 1	NO BUILDING CLASS	1960	2,800.00				
SHED 1	SHED 1	NO BUILDING CLASS	1960	2,800.00				
SHED 2	SHED 2	NO BUILDING CLASS	1990	4,000.00				
SHED 1	SHED 1	NO BUILDING CLASS	1990	672.00				
Living Area: 0.00sqft Value: \$0								
Living Area: 0.00sqft Value: \$0								
Living Area: 0.00sqft Value: \$0								

Living Area: 0.00sqft Value: \$0

Property Land

Туре	Description	Acreage	Sqft		Eff Depth	Market Value	Prod. Value
20RT2	D1 - QUALIFIED AG LAND - EA1430 Note: This property is valued with one or more properties as part of a larger tract.	35.976	1,567,114.56	0.00	0.00	\$228,103	\$3,030

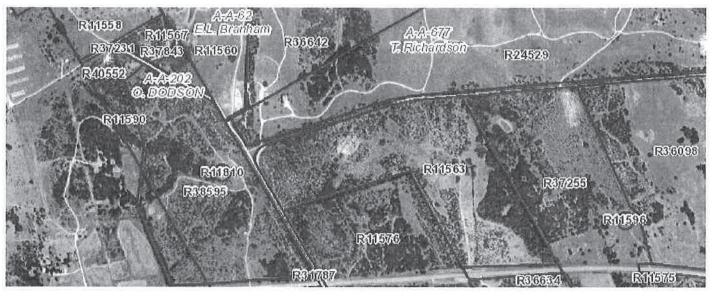
Property Roll Value History

Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
N/A	N/A	N/A	N/A	N/A	N/A
\$67,562	\$228,103	\$3,030	\$295,665	\$0	\$70,592
\$54,737	\$127,665	\$2,950	\$182,402	\$0	\$57,687
\$54,737	\$121,253	\$2,734	\$175,990	\$0	\$57,471
\$54,737	\$137,598	\$3,033	\$192,335	\$0	\$57,770
\$52,371	\$124,072	\$3,033	\$176,443	\$0	\$55,404
\$52,371	\$124,072	\$3,115	\$176,443	\$0	\$55,486
\$52,371	\$124,072	\$3,115	\$176,443	\$0	\$55,486
\$51,395	\$127,100	\$0	\$178,495	\$0	\$178,495
	N/A \$67,562 \$54,737 \$54,737 \$54,737 \$52,371 \$52,371 \$52,371	N/AN/A\$67,562\$228,103\$54,737\$127,665\$54,737\$121,253\$54,737\$121,253\$54,737\$137,598\$52,371\$124,072\$52,371\$124,072\$52,371\$124,072\$52,371\$124,072	N/AN/AN/A\$67,562\$228,103\$3,030\$54,737\$127,665\$2,950\$54,737\$121,253\$2,734\$54,737\$137,598\$3,033\$52,371\$124,072\$3,033\$52,371\$124,072\$3,115\$52,371\$124,072\$3,115	N/AN/AN/AN/A\$67,562\$228,103\$3,030\$295,665\$54,737\$127,665\$2,950\$182,402\$54,737\$121,253\$2,734\$175,990\$54,737\$137,598\$3,033\$192,335\$52,371\$124,072\$3,033\$176,443\$52,371\$124,072\$3,115\$176,443\$52,371\$124,072\$3,115\$176,443\$52,371\$124,072\$3,115\$176,443	N/A N/A N/A N/A N/A N/A \$67,562 \$228,103 \$3,030 \$295,665 \$0 \$54,737 \$127,665 \$2,950 \$182,402 \$0 \$54,737 \$121,253 \$2,734 \$175,990 \$0 \$54,737 \$137,598 \$3,033 \$192,335 \$0 \$52,371 \$124,072 \$3,033 \$176,443 \$0 \$52,371 \$124,072 \$3,115 \$176,443 \$0 \$52,371 \$124,072 \$3,115 \$176,443 \$0

Property Deed History

Deed Date	Туре	Description	Grantor	Grantee	Volume	Page Number
8/24/2001	1	AD		SCHOUTEN, PETE & NOVA	486	391

♀Мар



Property Details	
Account	
Property ID:	R11549
Legal Description:	ABST A0677 RICHARDSON, J Acres:110.1270
Geographic ID:	11549
Agent:	18
Туре:	R - REAL PROPERTY
Location	
Address:	CR 2495 HICO 76457
Map ID:	
Neighborhood CD:	UNASSIGNED
Owner	
Owner ID:	38910
Name:	SCHOUTEN, PETE & NOVA
Mailing Address:	3728 CR 229 HICO, TX 76457-3519
% Ownership:	100.0%
Exemptions:	For privacy reasons not all exemptions are shown online.

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Property Values

Improvement Homesite Value:	\$0
Improvement Non-Homesite Value:	\$0
Land Homesite Value:	\$0
Land Non-Homesite Value:	\$0
Agricultural Market Valuation:	\$587,950
Market Value:	\$587,950
Ag Use Value:	\$9,573
Appraised Value:	\$587,950
Homestead Cap Loss: 😧	\$0

Assessed Value:

VALUES DISPLAYED ARE 2021 CERTIFIED VALUES.

Information provided for research purposes only. Legal descriptions and acreage amounts are for appraisal district use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
1	BOSQUE COUNTY	0.462800	\$587,950	\$9,573	\$44.30	
1	BOSQUE COUNTY HOSPITAL	0.133000	\$587,950	\$9,573	\$12.73	
1	ESD	0.038300	\$587,950	\$9,573	\$3.67	
1	CONS GROUNDWATER	0.008500	\$587,950	\$9,573	\$0.81	
4	HICO ISD	1.110300	\$587,950	\$9,573	\$106.29	

Total Tax Rate: 1.752900

Estimated Taxes With Exemptions: \$167.81

Estimated Taxes Without Exemptions: \$10,306.18

Property Land

Туре	Description	Acreage	Sqft	Eff	Eff	Market	Prod.	
				Front	Depth	Value	Value	
20P1	D1 - QUALIFIED AG LAND - EA1430 Note: This property is valued with one or more properties as part of a larger tract.	20.087	874,989.72	0.00	0.00	\$65,090	\$1,989	
20RT2	D1 - QUALIFIED AG LAND - EA1430 Note: This property is valued with one or more properties as part of a larger tract.	82.04	3,573,662.40	0.00	0.00	\$487,065	\$6,910	
16RT2	D1 - QUALIFIED AG LAND - EA1430 Note: This property is valued with one or more properties as part of a larger tract.	8	348,480.00	0.00	0.00	\$35,795	\$674	

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed	
2022	N/A	N/A	N/A	N/A	N/A	N/A	
2021	\$0	\$587,950	\$9,573	\$587,950	\$0	\$9,573	
2020	\$0	\$365,806	\$9,311	\$365,806	\$0	\$9,311	
2019	\$0	\$339,036	\$8,671	\$339,036	\$0	\$8,671	
2018	\$0	\$337,526	\$8,431	\$337,526	\$0	\$8,431	
2017	\$0	\$296,030	\$8,451	\$296,030	\$0	\$8,451	
2016	\$0	\$296,030	\$8,771	\$296,030	\$0	\$8,771	
2015	\$0	\$296,030	\$8,751	\$296,030	\$0	\$8,751	
2014	\$0	\$296,030	\$0	\$296,030	\$0	\$296,030	
2013	\$0	\$296,030	\$8,751	\$296,030	\$0	\$8,751	
2012	\$0	\$313,070	\$8,651	\$313,070	\$0	\$8,651	
2011	\$0	\$313,070	\$8,660	\$313,070	\$0	\$8,660	

Property Deed History							
Deed Date	Туре	Description	Grantor	Grantee	Volume	Page	Number
8/24/2001	1	AD		SCHOUTEN, PETE & NOVA	486	391	

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CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS)

Submit this Form with your Individual Permit Application (TCEQ - 000728)

Name of Site: <u>Golden Star Heifer Ranch</u> TCEQ Permit Number, if assigned: WQ000 Date Prepared: <u>April 2022</u>

TCEQ-00760 Technical Information Packet for CAFOs (Rev. 04/20/2020)

Page000036

SECTION 1. POLLUTANT SOURCES MANAGEMENT

For each potential pollutant source listed in the table below, provide the management practices utilized or enter "Not Applicable". Management practices should address the collection, storage and final disposition of each potential pollutant source. You may attach your list.

Potential Pollutant Source	Best Management Practices
Manure and Manure Stockpiles	See Attached BMPs
Wastewater	See Attached BMPs
Sludge	See Attached BMPs
Compost	See Attached BMPs
Feed and Bedding	See Attached BMPs
Silage stockpiles	See Attached BMPs
Dead animals	See Attached BMPs
Dust	See Attached BMPs
Lubricants	See Attached BMPs
Pesticides	See Attached BMPs
Bulk cleaning chemicals	N/A
Inorganic fertilizers	N/A
Fuel storage tanks	See Attached BMPs
Other, specify: Click here to enter text,	N/A

Table 1: Potential Polluta	nt Sources and Best	Management Practices
-----------------------------------	---------------------	----------------------

SECTION 2. RETENTION CONTROL STRUCTURE DESIGN

A. Design Summary

- 1) Design Standards, Characteristic, and Values Sources Used
 - □ Natural Resource Conservation Service
 - 🖾 American Society of Agricultural and Biological Engineers
 - □ Other; specify: Click bere to enter text.

I. POLLUTANT SOURCES AND MANAGEMENT

Potential Pollutant Sources:

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

<u>Note</u>: 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 Best Management Practices (BMPs)

rotomar romann boaroosi	
Manure, Sludge, Stockpiles, Slurry,	Temporary (< 30 days) & Permanent Storage (>30 days)
Bedding, Feed Waste & Compost	Store in drainage area of the RCS - OR -
	If not located within drainage area, berm area to contain runoff.
	Annually sample manure/manure stockpiles/compost/slurry for nutrient
	concentrations.
	Manure, Sludge, Slurry and/or Compost -Land application on-site or to third-
	party fields.
	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.
	Utilize dust abatement measures for feed handling equipment, Utilize choke
	feeding when handling feed ingredients & Utilize feed ingredients, such as
Dust - Feed Handling/Processing	moisture or other additives, to manage dust.
Feedstuff/Silage Stockpiles	Contain leachate in an earthen berm or in the RCS
	Minimize feed spoilage & utilize plastic covers or roofed areas for storage
	when applicable.
Lubricants/Pesticides/Herbicides	Store under roof
	Handle and dispose according to label directions
Fuel Tanks	Provide secondary containment
	Prevent overfills/spills
Wastewater	Store in 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 or composted on-site
	Collected within 24 hours of death and disposed within three days of death

- 2) Total Number of Animals: In Open Lots: 2,000 In Buildings: 0
- 3) Animal Housing Location, hours/day: Open Lots: <u>24</u> Buildings: <u>0</u>
- 4) Average Liveweight, pounds per head: est. 970 lbs Revised 10/12/22
- 5) Volatile Solids Removed by Separator System: N/A
- 6) Volatile Solids Loading Rate, lbs/day/1000 ft³: N/A
- Spilled Drinking Water, gallons/day: 7) <u>N/A</u> Water for Cleanup, gallons/day: 8) N/A
- 9) Water for Manure Removal, gallons/day: N/A
- 10) Recycled Wastewater, gallons/day: N/A

В. Wastewater Runoff

1

- 1) Design Rainfall Amount, inches: 12.2
- 2) Design Rainfall Event:
 - 25-year, 24 hour
 - Soil Plant Air and Water (SPAW) Field and Pond Hydrology Model
 - 25-year, 10 day X
 - Other; specify: Click here to enter text.

C. **Retention Control Structure(s) (RCS) Volume Allocations**

RCS Design Process Minimum Sludge Water Required Rainfall Generated Name Treatment Accumulation Balance Capacity Capacity Event Wastewater Volume Runoff 14.24 0.00 0.00 0.23 2.38 16.85 20.47

Table 2. RCS Volume Allocations (Acre-Feet)

Indicate which RCSs are in-series: N/A

Actual

D. RCS Liner or Lack of Hydrologic Connection Certification

RCS Name	Construction Date	Type of Hydrologic Connection
		Certification
RCS #1	1996/2010 modified	Liner Cert. – Norman Mullin, P.E., 2010
Settling Basin #1	Unknown	Liner Cert. – Norman Mullin, P.E., 2010

Table 3: RCS Hydrologic Connection

E. Playa Lakes

Are any playa lakes used for RCSs? Yes \Box No \boxtimes

SECTION 3. MANURE, SLUDGE, AND WASTEWATER HANDLING

A. Manure:

- 1) Use or Disposal Method:
 - ☑ Land Application to LMUs
 - \boxtimes Transfer to other persons
 - ☑ Third Party Fields
 - □ Other; specify: Click here to enter text.
- 2) Land Application Location:
 - ⊠ Onsite ⊠ Offsite □ Not Applicable
- 3) Composting Location:
 - \square Onsite \square Offsite \square Not Applicable

B. Sludge:

- 1) Use or Disposal Method:
 - ☑ Land Application to LMUs
 - ☑ Transfer to other persons
 - ☑ Third Party Fields
 - □ Other; specify: Click here to enter text.
- 2) Land Application Location:
 - \square Onsite \square Offsite \square Not Applicable

C. Wastewater:

- 1) Use or Disposal Method:
 - ☑ Land Application to LMUs
 - □ Total Evaporation
 - □ Third Party Fields
 - □ **Other; specify:** Click here to enter text.
- 2) Land Application Location:
 - \square Onsite \square Offsite \square Not Applicable

D. Land Application Summary from the Nutrient Management Plan

For each Land Management Unit (LMU), provide the name, acre, crops/yield goals and application rates on Table 4 below. Add rows if needed or attach additional pages.

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac- ft/Ac/Year OR Tons/Ac/Year)
1	35	Coastal Graze 1 AU/1 ac; SG mod graze M	0.367 ac-ft/ac/yr
2	8	Coastal Graze 1 AU/1 ac; SG mod graze M	19.9 tons/ac/yr

Table 4: Land Management Unit Summary from the Current NMP

- 1) Wastewater production, ac-in/year: 255.48 ac-in/yr (Table 2.3, Col. 4)
- 2) Estimated Wastewater application, ac-in/year: <u>141.12 ac-in/yr (Table 2.3, Col. 10)</u>
- 3) Manure production, tons/year: <u>2,993 tons/yr (Table 2.1)</u> Revised 10/12/22
- 4) Estimated manure application, tons/year: <u>113.87 tons/yr (NMP) Revised 10/12/22</u>
- 5) Estimated manure transferred to other persons, tons/year: <u>2,879.30 tons/yr (NMP)</u> <u>Revised 10/12/22</u>

E. Floodplain Information

1) Is any part of the production area within a 100-year floodplain? Yes \Box No \boxtimes

If YES, describe management practices to protect the sites. Click here to enter text.

2) Is land application or temporary storage of manure in a 100-year floodplain or near a water course? Yes ⊠ No □

<u>Creek on the property</u>. No land application is proposed in this area and required buffer zones will be maintained.

F. Soil Limitations

Soil Types	Limiting Characteristics	Best Management Practices
HwD3	Depth to Soft Bedrock	 Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils.
PmC	Droughty Depth to Bedrock	 Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils. Maintain clay liners in RCS.

Table 5: Soil Limiting Characteristics and Best Management Practices

G. Well Protection

Table 6: Water Well Status and Protective Measures

Well ID	Well Type	Producing or Non-	Open, Cased,	Protective
Number		Producing	or Capped	Measures
1	Domestic	Producing	Cased	Maintain 150-ft buffer

SECTION 4. AIR AUTHORIZATION SUMMARY

A. Type of Air Authorization

- Air Standard Permit in 30 TAC § 321.43
- □ Permit By Rule in 30 TAC Chapter 106 Subchapter F
- □ Individual Air Quality Permit

If Air Standard Permit is selected, then complete Sections B and C below.

B. Indicate the AFO Status and Buffer Option.

- Operation started after August 19, 1998:
 ½ mile buffer*
 - \square ¹/₄ mile buffer* and an odor control plan
- Operation started on or before August 19, 1998:
 - □ ¼ mile buffer*
 - \boxtimes odor control plan

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

C. Odor Receptors

Identify the number of occupied residences or business structures, schools (including associated recreational areas), places of worship, or public parks located within the following distances from permanent odor sources as defined in 30 TAC §321.32(43):

0 - ¼ mile: 5 (1 applicant owned)

¼ - ½ mile: <u>7</u>

½ - 1 mile: <u>19</u>

SECTION 5. 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 (if applicable)
- 6) Runoff Control Map
- 7) Natural Resource Conservation Service (NRCS) Soil Survey Map

B. Professional Certifications

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

C. Land Application

- 1) Nutrient Management Plan
- 2) Nutrient Utilization Plan. If the NUP is already approved, include the approval letter.
- 3) Copy of Annual Soil Sampling Analyses (used for the NMP that was submitted with the application)

Copy of Annual Manure and Wastewater Analyses (used for the NMP that was 4) submitted with the application

Air Standard Permit Documentation (if required) D.

- Area Land Use Map, 1)
- 2)
- Odor Control Plan, if applicable Written Consent Letters, if applicable 3)

Groundwater Monitoring (if required) Ε.

- Groundwater Monitoring Plan 1)
- Groundwater Monitoring Analyses 2)

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LIST	OF TABLESii
1.0	FACILITY MAPS1
2.0	CALCULATIONS & SPECIFICATIONS
3.0	FACILITY INFORMATION
4.0	WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN
5.0	RECHARGE FEATURE CERTIFICATION
6.0	SURFACE WATER & TMDL ASSESSMENT
7.0	AIR STANDARD PERMIT REQUIREMENTS

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1.0 FACILITY MAPS

1.1 Vicinity Map

Figure 1.1, Vicinity Map, is a general highway map generated in AutoCAD using Tiger Primary and Secondary roads data from geospatial Data Gateway at http://datagateway.nrcs.usda.gov/ (retrieved 2013). The location of the facility is depicted on the map.

1.2 USGS Quadrangle Map

Figure 1.2, entitled 7.5-Minute USGS Map is a seamless, high-quality copy of the 7.5-minute USGS quadrangle map (Spring Creek Gap, TX, quadrangle) that shows the boundaries of land owned, operated, or controlled by Pete & Nova Schouten 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.

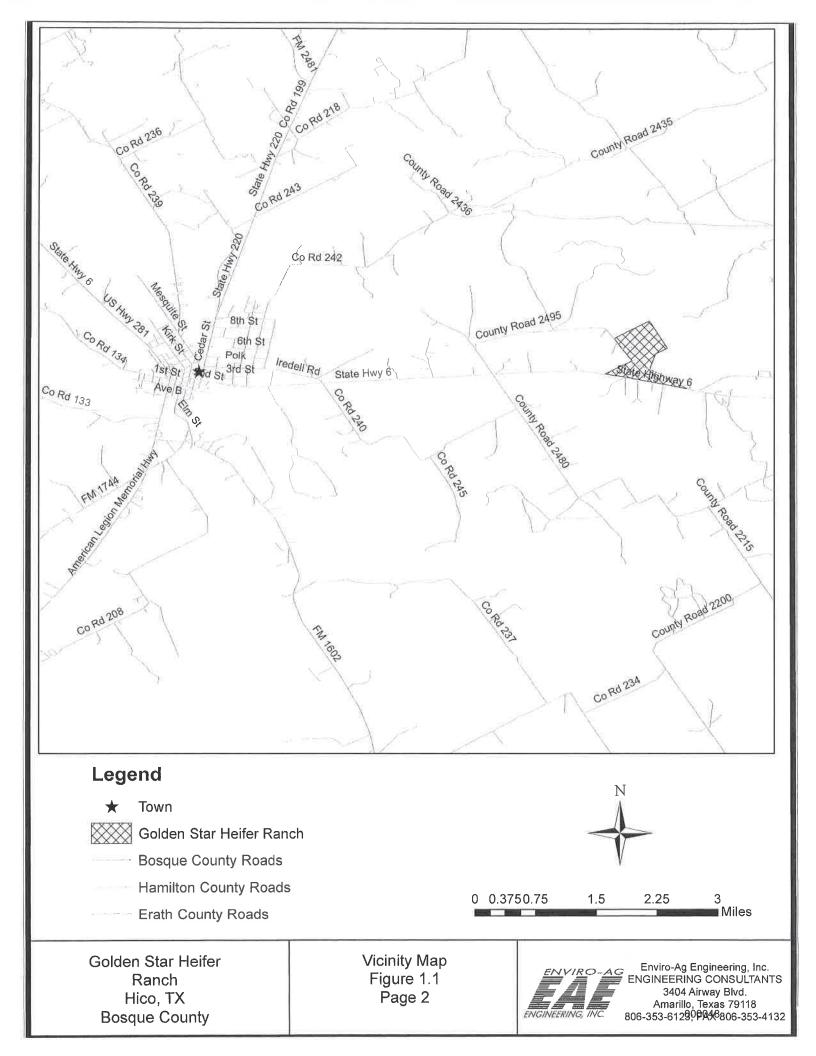
1.3 Site Map

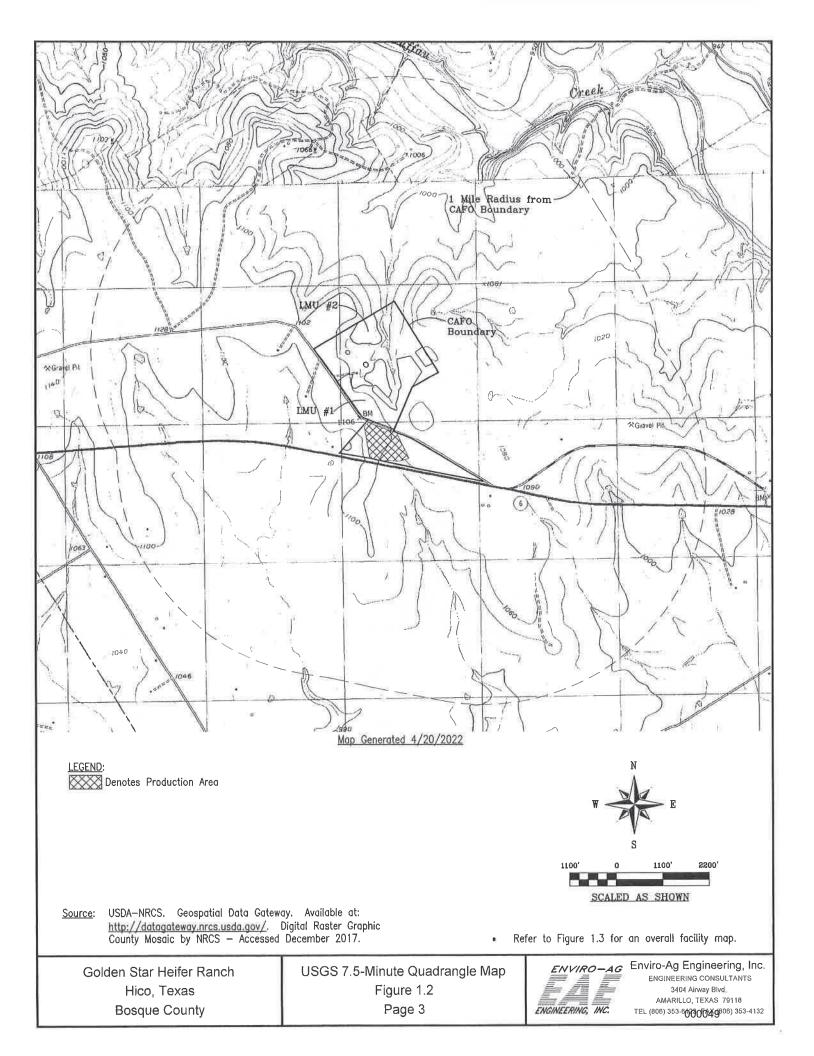
Figure 1.3, Site Plan, is a scaled drawing of the entire property to be permitted showing the locations of the following information:

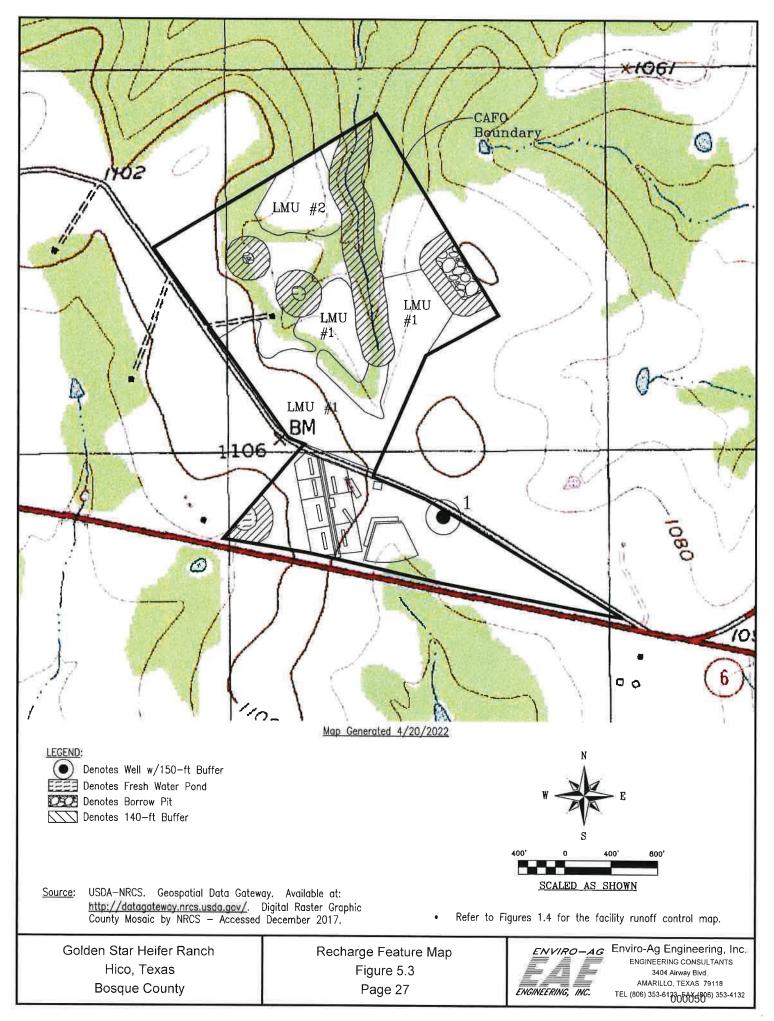
- Pens/Open Lots
- Barns
- Retention Control Structures
- Land Management Units
- Buffer zones
- Well
- Freshwater Ponds
- Berms/Diversions
- Manure/Compost Storage Areas
- Borrow Pit

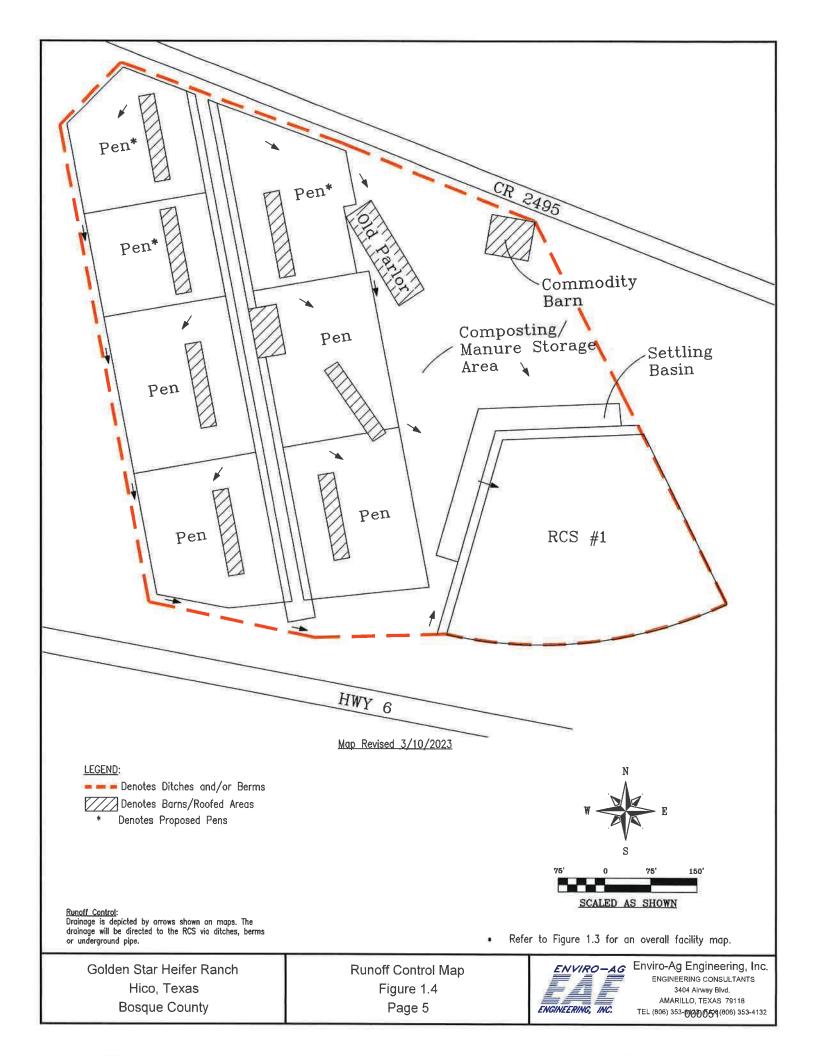
1.4 Runoff Control Map

Figure 1.4 is a scaled drawing of the production area showing the pens, barns, wells, RCSs, permanent manure storage and compost areas, drainage area boundaries and flow directions.









2.0 CALCULATIONS & SPECIFICATIONS

2.1 Facility Overview

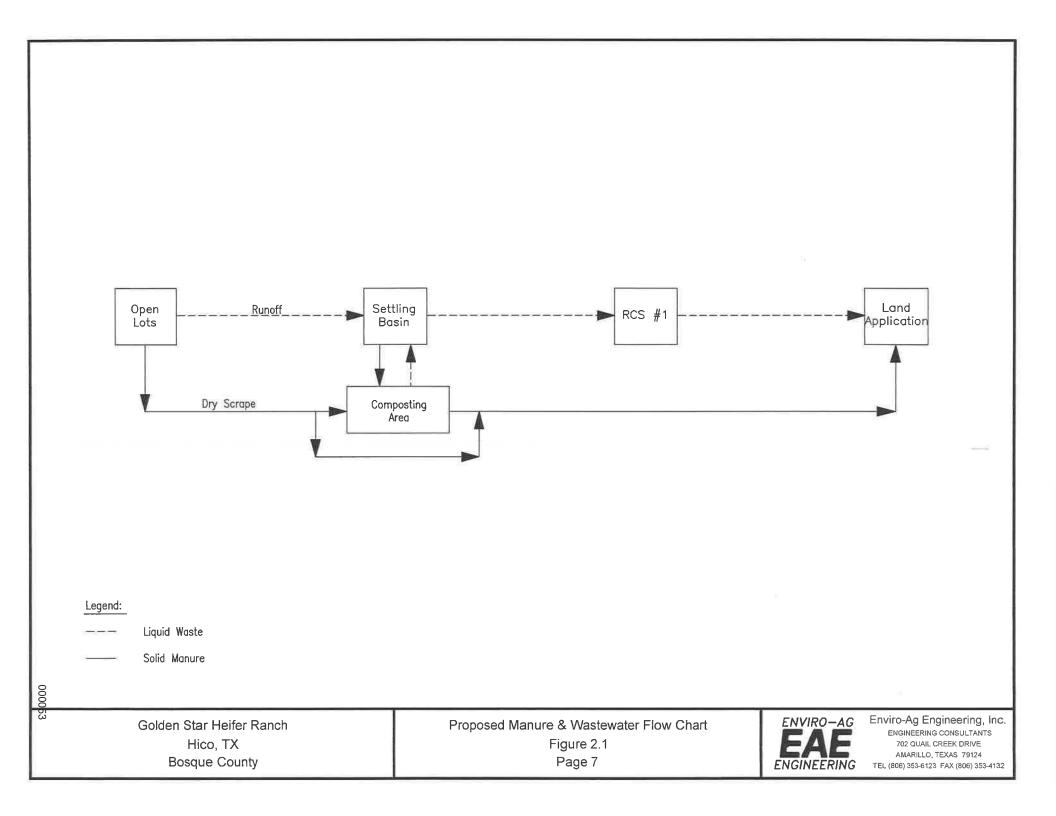
The existing property consists of pens, an old milking parlor, one earthen settling basin and one retention control structure to confine 2,000 head of dairy replacement heifers.

Figure 2.1, Manure & Wastewater Flow Chart, shows the waste handling procedures and storage practices at the facility.

2.2 Manure Production

Table 2.1, As-Excreted Manure Characteristics Existing Dairy Facility, is included as a summary of the annual manure and nutrient production for the facility. The totals in Table 2.1 represent as-excreted manure and nutrient values for the maximum head count shown in the application.

Note: This data is intended for planning and design purposes and is not to be used for whole-farm nutrient mass balance calculations.



ESTIMATED MANURE PRODUCTION for a DAIRY FACILITY

Table 2.1

ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO:	Golden Star Heifer Ranch
LOCATION:	Hico, TX
DATE:	Revised 10/12/2022

	MANURE PRODUCTION CRITERIA (a)	
FACILITY TOTAL	Heifers	Total
1. Maximum Number of Animals Confined (head):	2,000	2,000
2. Confinement period, hrs/hd/day	24	24
3. Percent of time in Confinement	100%	100
4. Total Manure Production, lbs/day	166,000	166,000
5. Total Solids Production, lbs/day	16,400	16,400
5. Manure Production, tons/year	2,993	2,993
7. Volatile Solids Production, lbs/day	14,200	14,200
3. Total Nitrogen Production, lbs/day	1,000	1,000
P. Total Phosphorus, P2O5 lbs/day (b)	302	302
0. Total Potassium, K2O lbs/day (b)	792	792

NOTES:

 (a) - Manure and nutrient production values are taken from American Society of Agricultural and Biological Engineers Data: (ASABE D384.2 MAR05_R2010) Manure Production and Characteristics, Table 1.b - Section 3. Production values given in terms of lb/day-animal (wet-basis).

(b) - The ASAE Manure Production and Characteristics Tables give P and K in the elemental forms. Convert to P2O5 by multiplying by 2.29 and to K2O by multiplying by 1.2.

2.3 25-Year, 10-Day Rainfall Storage Volume

In accordance with 30 TAC §321.42(c)(1), RCS #1 is 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, which is 12.2 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 and compost area were calculated using a CN of 90, the pond area was calculated using a CN of 100, and the adjacent areas were calculated a CN of 85. Roofed/concrete areas were calculated using a CN of 100. Runon from areas outside the control facility is directed away from the RCSs. Table 2.2 shows the calculated storage volume required for the rainfall runoff from a 25-year, 10-day storm.

2.4 Sludge Accumulation Volume

A 1-year sludge accumulation volume is included in each retention pond. The sludge volume in the runoff ponds is estimated using the USDA/Agricultural Field Waste Handbook (Kansas Part 651.1082, Suggested Procedures for Sediment Volume Estimation). The required sludge accumulation volume calculations are shown in Table 2.2.

2.5 Water Balance Model

Table 2.3, Water Balance Model, estimates the inflows and withdrawals from RCS #1 including runoff, direct rainfall, process-generated wastewater, evaporation, and irrigation withdrawal based on crop demand in accordance with 30 TAC §321.38(e)(7)(C). Actual pond withdrawal amounts will vary with changing weather conditions. An additional volume is included in the RCS to provide flexibility in managing RCS levels.

2.6 RCS Management Plan

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

REQUIRED STORAGE VOLUMES for RETENTION CONTROL STRUCTURES **Table 2.2** ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO:	
LOCATION:	
DATE:	

Golden Star Heifer Ranch Hico, TX May-22

RCS #1 - RUNOFF POND REQUIREMENT

Drainage Areas:	CN	Area (ac)
Pen/Open Lot Areas:	90	6.87
Adjacent Area:	85	3.77
Paved/Roofed Area:	100	1.65
Settling Basin Surface Area:	100	0.51
RCS #1 Surface Area:	100	2.49
Total Area (acres):		15.29
25-Year, 10-Day Rainfall Event:	(inches)	12.2
Runoff Volume Determination (a)	(inches)	(ac-ft)
Pen/Open Lot Areas:	10.96	6.28
Adjacent Area:	10.31	3.24
Paved/Roofed Area:	12.20	1.68
Settling Basin Surface Area:	12.20	0.52
RCS #1 Surface Area:	12.20	2.53
Total Runoff (ac-ft):		14.24
TOTAL RCS VOLUME REQUIRED		(ac-ft)
Required Volume for Rainfall Runoff:		14.24
Sludge Accumulation Volume (b):		0.23
Additional Required Volume from Water Balance:		2.38
Total Volume Required for RCS #1		16.85

NOTES:

(a) Using SCS method; Where:

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



(b) USDA Agricultural Field Waste Handbook, Kansas, Part 651.1082, Suggested procedures for sediment volume estimation (1.5 % Solids for 1 year).

NOTE: Calculations were performed in Microsoft Excel using floating point arithmetic in order to maintain the accuracy of the data. Any inconsistencies in rounding of the displayed values are not to be construed as errors in the calculation. For more information, please refer to http://support.microsoft.com/kb/42980

					IR		ER BALANCI	E MODEL RATION for RCS	#1					
						ENVIR	Table 2.3 O-AG ENGINEE	RING, INC.						
NAME: LOCATION:	Golden Star Heife Hico, TX	er Ranch		Pen Area (acres):	CHARACTERIST	TICS	6.87			25-Year, 10-Day	ELL VOLUME SU Rainfall Volume (ac-ft):	A	14.24
DATE:	May-22			Adjacent Area (a	,		3.77				d Wastewater Vol	```		0.00
				Paved/Roof Area			1.65				tion Volume (ac-fi	t):		0.23
					SB Surface Area (acres):	3.00	25.0		Additional Volum	· /			2.38
				Total Irrigated Ar	. ,. ,		35.0	35.0		Total Required C	apacity (ac-ft):			16.85
				Cropping scheme	: ition Surface Area	(carear)	Coastal 2.12	Winter Wheat						
		RCS IN	FLOW CALCULA		mon Surface Area	(acres);		CROP DEMAND CA	LCULATIONS			RCS STORA	GE SUMMARY	
	(1)	(2)	(2)	(3)	(4)	(5)	(6)	(6)	(7)	(7)	(8)	(9)	(10)	(11)
MONTH	(inches)	(inches)	(inches)	(ac-ft)	(ac-ft)	(inches)	(inches)	(inches)	(ac-ft)	(ac-ft)	(inches)	(ac-ft)	(ac-ft)	(ac-ft)
													start value>	0.95
AN	2.04	0.47	0.19	0.00	1.12	2_04	2.10	2.74	0.18	2.04	2.18	0.38	1,45	0.23
EB	2.36	0.66	0.30	0.00	1.39	2,36	2.46	3.11	0.31	2_20	2.57	0.45	0.93	0.23
/IAR	2.59	0.80	0.40	0.00	1.59	2.57	4.06	4.97	4.34	7_00	3.91	0.69	0.90	0.23
PR	3.15	1.18	0.67	0.00	2.11	3.06	4.98	5.74	5.60	7.82	4.62	0.81	1,29	0.23
ЛАҮ	4.27	2.03	1_32	0.00	3.23	3_91	5.73	5.33	5.31	4.14	4_84	0.85	2,38	0.23
UN	3.33	1 31	0.76	0.00	2 28	3.21	6.82	3.22	10,53	0_03	6.52	1.15	1.13	0.23
UL	2.00	0.45	0.18	0.00	1.09	2.00	7.66	0.00	16,51	0.00	7.89	1.09	0,00	0.23
AUG	2.22	0_57	0.25	0.00	1.27	2.22	7.56	0.00	15.58	0_00	7.59	1.27	0,00	0.23
SEP	3.08	1.13	0.63	0.00	2.04	3_00	5.78	0.00	8.10	0_00	5,80	1.02	1_02	0.23
DCT	3_42	1.38	0.81	0.00	2.37	3.28	4.29	2,15	2.95	0_00	4.71	0_83	1.54	0,23
VOV	2.51	0.75	0_36	0.00	1_52	2.50	2.81	1.70	0.91	0.00	3.24	0.57	0.91	0.26
DEC	2.26	0.60	0,26	0.00	1_30	2.26	2.24	2.33	0,00	0.21	2.32	0,41	0.21	0.95
TOTALS	33,23	11,34	6.13	0.00	21.29	32.40	56.49	31.29	70_31	23,44	56.19	9.54	11.76	

NOTES:

(1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Erath County, Quad #610, Retrieved April 22, 2022.

(2) RUNOFF PENS AND ADJACENT AREA - Runoff from pens, adjacent areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Pen CN-77, Adj CN-67). (Ref. NRCS Animal Waste Management Software Help File-Program Documentation for Runoff).

(3) INFLOW - No process generated wastewater at this facility_

(4) TOTAL INFLOW - Total Inflow is calculated as that volume of rainfall that falls on the RCS and process water that enters the RCS.

(5) RAINFALL ON IRRIGATED AREA - Effective monthly rainfall on the irrigated area Runoff from irrigated fields was calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irr Fields CN-48), (Ref. NRCS, and Animal Waste Management Software Help File-Program Documentation for Runoff).

(6) CONSUMPTIVE USE values from Borrelli, et al., 1998. Mean Crop Consumptive Use and Free-Water Evaporation for Texas, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas (Tables 16 & 25 Stephenville).

(7) NET CROP DEMAND - Net Crop Demand = ((Consumptive Use(6) - Effective Rainfall(5))/12) x Irrigated Area.

(8) MONTHLY LAKE SURFACE EVAPORATION - Average monthly lake surface evaporation taken from the Texas Water Development Board, Erath County, Quad #610, Retrieved April 22, 2022.

(9) NET POND EVAPORATION - Net Evaporation from the water surface is taken as (Monthly Lake Surface Evap/12) x (RCS Surface Area).

(10) ACTUAL WITHDRAWAL - Actual Withdrawal from the irrigation cell not to exceed Net Crop Demand, (No consideration given for nutrient demand of crop)

(11) STORAGE AT END OF MONTH - Storage volume in the irrigation cell 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. (12)Total Irrigated Area Acres Include: LMU #1

NOTE: Calculations were performed in Microsoft Excel using floating point arithmetic in order to maintain the accuracy of the data. Any inconsistencies in rounding of the displayed values are not to be construed as errors in the calculation. For more information, please refer to http://support.microsoft.com/kb/42980

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3.0 FACILITY INFORMATION

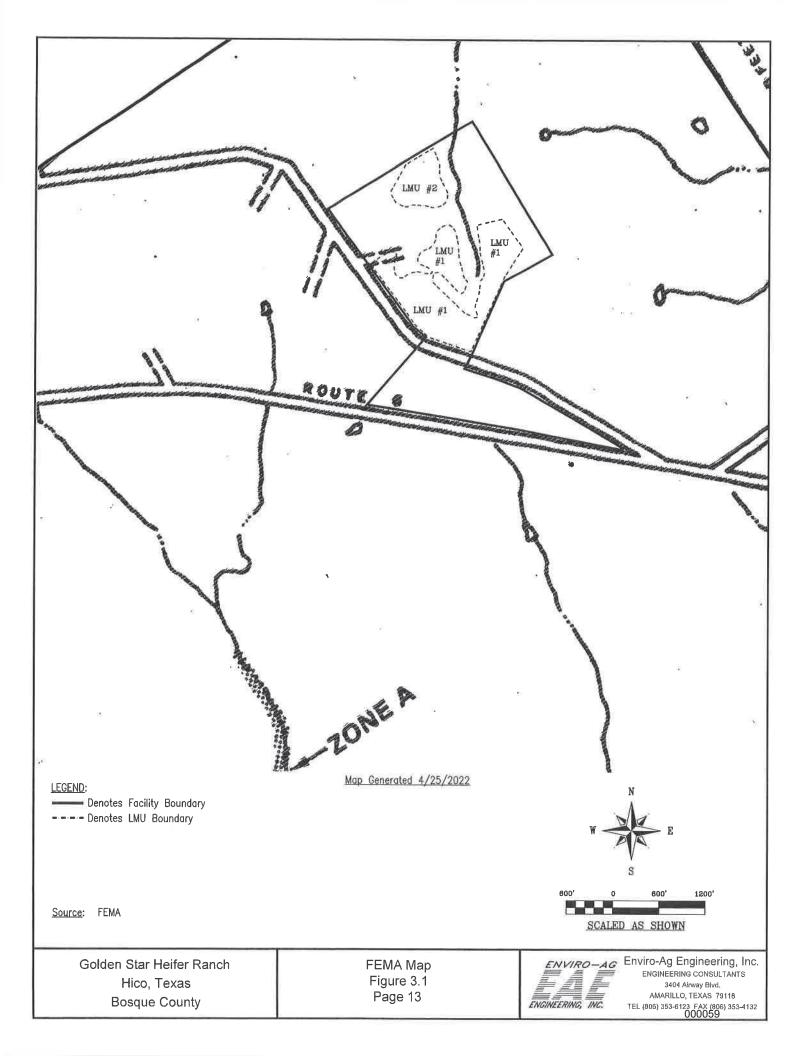
3.1 Required Certifications

RCS #1 and the earthen settling basin have been certified by a licensed Texas professional engineer as meeting the liner requirements of the TCEQ. Existing liner and capacity certifications are attached.

3.2 100-Year Flood Plain Evaluation

The location for this facility is overlain on a FEMA 100-year flood plain map (Figure 3.1). The production area and LMUs are not located within 100-year flood plain.

Golden Star Heifer Ranch New Permit Application





Golden Star Dairy Bosque County, Texas RCS #1 Capacity Certification

The survey capacity performed on January 28, 2010 by Enviro-Ag Engineering, Inc. for retention control structure (RCS) #1 with two vertical feet of dry freeboard is calculated as:

RCS #1 Capacity:20.47 ac-ftRCS #1 Surface Area:2.34 surface acres @ High Water Level

Prepared by:

3/2/10

Norman Mullin, P.E. # 66107 Enviro-Ag Engineering, Inc. Firm # F-2507

(Supporting Documentation Attached)



Golden Star Dairy Bosque County, Texas RCS #1 Liner Certification

Four 3-inch Shelby tube core samples were collected from RCS #1 document the clay liner meets the requirements of the TCEQ for soil liner. The liner thickness was documented to be at least 18 inches.

The hydraulic conductivity of the clay liner is documented as follows:

٠	RCS #1-1 (Lab #1562)	5.3 x 10 ⁻⁸ cm/sec
•	RCS #1-2 (Lab #1563)	2.4 x 10 ⁻⁸ cm/sec
•	RCS #1-3 (Lab #1564)	9.4 x 10 ⁻⁹ cm/sec
٠	RCS #1-4 (Lab #1565)	4.6 x 10 ⁻⁸ cm/sec

Supporting moisture and density laboratory results indicate the embankment and liners were installed at 95% maximum dry density and within the moisture range of minus 1% to plus 3% of optimum moisture content (see attached moisture/density test results). The liner present in RCS #1 is determined to be constructed in accordance with TCEQ requirements for soil liners

I certify that RCS #1 at Golden Star Dairy meets the construction requirements of NRCS Practice Codes 313 (Waste Storage Ponds), 378 (Pond Embankment) and 521D (Pond Sealing or Lining, Compacted Clay Treatment). Erosion protection and emergency spillway are in place and the staff gauge is installed and calibrated.

Prepared by:

Norman Mullin, P.E. # 66107 Enviro-Ag Engineering, Inc. Firm # F-2507

(Supporting Documentation Attached)

TRIAXIAL PERMEABILITY CHAIN of CUSTODY	STRUCTURE	PERM REPORT I.D.	LAB LOG
	QCS#1-1	1.1.2.	1562
	11 -2		1563
	11 -3		1564
N 2 03 existing			1567
Facility Name: Hoter Sas			
Project Engineer: Norm	Ē		
Sampled by: Aca Date Sampled: 1/25/10	302 Morg Bld Stephenvi (254)	gan Mill Road g C lle, TX 76401 965-3500	
Date to Lab: 1/29/10 Received: Tull Ball	Fax: (254	4) 965-8000	

Enviro-Ag Engineering, Inc. HYDRAULIC CONDUCTIVITY 3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123 REPORT

LABORATORY SERVICES

Jient / Project Nama: Golden Star Dairy

Sample ID:

1

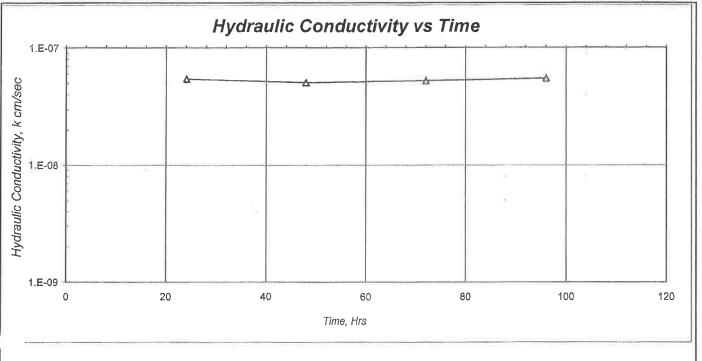
Project No: **10-01-25** Sample Location: RCS #1 - 1

1562 Report Date:

Lab Sample Number.

ASTM D-5084, Method C

February 19, 2010



SPECIN	IEN DATA			TEST D	ATA
SAMPLE ID:	1			ASTM D-5084, 1	Method C
DESCRIPTION:	RCS #1 - 1		EFFECT	TIVE STRESS:	5 psi
	INITIAL	FINAL	GRADIE	NT RANGE:	2 - 2
			IN/OUT	RATIO:	0.95
HEIGHT, in.	4.2	4.3			
DIAMETER, in.	2.8	2.8			
WATER CONTENT, %	15.4	19.8			HYDRAULIC
DRY DENSITY, pcf	112	110	TRIAL	TIME	CONDUCTIVITY
SATURATION, %	82	99	nos.	<u>hrs.</u>	<u>cm / sec</u>
Specific Gravity assumed as 2.7)		1	24.1	5.5E-08
SAMPLE COLOR	Brown		2	48.0	5.1E-08
			3	72.2	5.2E-08
SAMPLE CONSISTENCY	Clay		4	96.1	5.5E-08
MMENTS:					
ap water used as permeant			AVEF	RAGE LAST 4 :	5.3E-08
These results apply only to the	above listed samples. The d	ata and information are proprie	plary and can not be rele	ased without authorization	of Enviro-Ag Engineering Inc.
By accepting the data and results repre this data to the cost for the respective tes	sented on this page, client a	agrees to limit the liability of En	iviro-Ag Engineering, Ind hold harmless Enviro-Ag	s from Client and all other from and against all liability	parties claims arising out of the use
s Lab\Perms \1910 \ 10-01-25 \ 1562	Print D	17117778G		viewed By:	L ALSN:
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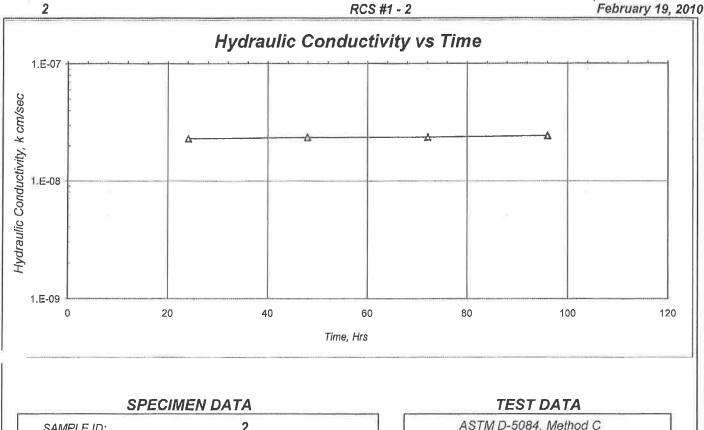
Enviro-Ag Engineering, Inc. HYDRAULIC CONDUCTIVITY 3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123 LABORATORY SERVICES REPORT ASTM D-5084, Method C Jient / Project Name: Lab Samplo Number:

Golden Star Dairy Sample ID:

Project No: 10-01-25 Sample Location:

Report Date: February 19, 2010

1563



SAMPLE ID:	2			ASTM D-5084, 1	Method C
DESCRIPTION:	RCS #1 - 2		EFFECT	TIVE STRESS:	5 psi
	INITIAL	<u>EINAL</u>	GRADIE	ENT RANGE:	2 - 2
			IN/OU	T RATIO:	1.00
HEIGHT, in.	4.1	4.2			
DIAMETER, in.	2.9	2.9			
WATER CONTENT, %	8.7	12.3			HYDRAULIC
DRY DENSITY, pcf	129	126	TRIAL	TIME	CONDUCTIVITY
SATURATION, %	77	100	nos.	<u>hrs.</u>	<u>cm / sec</u>
(Specific Gravity assumed as 2.7)		1	24.1	2.3E-08
SAMPLE COLOR	Light Brown		2	48.0	2.4E-08
	-		3	72.2	2.4E-08
SAMPLE CONSISTENCY	Clay		4	96.1	2.4E-08
COMMENTS:					
Tap water used as permeant.			AVE	RAGE LAST 4 :	2.4E-08
These results apply only to the a By accepting the data and results repre- this data to the cost for the respective rest	sented on this page, client ag (s) represented here, and Cl	grees to limit the liability of En tent agrees to indemnify and	iviro-Ag Englneering, Ind hold harmless Enviro-Ag	c. from Client and all other y 9 from and against all liabili	parties claims arising out of the u
Solls Lab/Perms \1910 \ 10-01-25 \ 1563	Print Da			viewed By:	LSN:
N: EAE-QC-GRAPH (rev. 11/10/04)		02/19/10	Micah Mulli	11101	unde
				0000	00006

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Enviro-Ag Engineering, Inc.

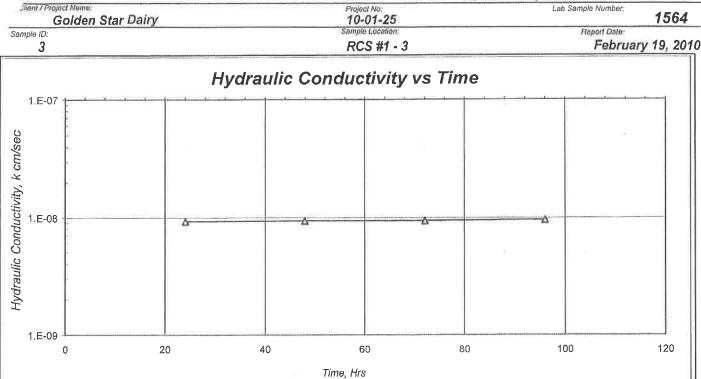
HYDRAULIC CONDUCTIVITY

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123 LABORATORY SERVICES

REPORT

ASTM D-5084, Method C Lab Sample Number;





SAMPLE ID:	3			ASTM D-5084, M	Aethod C
ESCRIPTION:	RCS #1 - 3		EFFEC	TIVE STRESS:	5 psi
	INITIAL	FINAL	GRADIE	ENT RANGE:	3 - 3
			IN/OU	T RATIO:	1.00
IEIGHT, in.	3.5	3.5			
DIAMETER, in.	2.9	2.9			
VATER CONTENT, %	17.7	25.8			HYDRAULIC
DRY DENSITY, pcf	99	97	TRIAL	TIME	CONDUCTIVITY
SATURATION, %	68	95	<u>nos.</u>	<u>hrs.</u>	<u>cm / sec</u>
Specific Gravily assumed as 2.7)		1	24.1	9.3E-09
SAMPLE COLOR	Dark Brown		2	48.0	9.4E-09
			3	72.2	9.4E-09
SAMPLE CONSISTENCY	Clay		4	96.1	9.6E-09
MMENTS: p water used as permeant			AVE	RAGE LAST 4 :	9.4E-09
These results apply only to the	shows listed angular. The data	a and information are proprie	alocy and can not be fel	eased without authorization	of Enviro-An Engineering Inc

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Enviro-Ag Engineering, Inc.

HYDRAULIC CONDUCTIVITY

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123 LABORATORY SERVICES

Sample ID

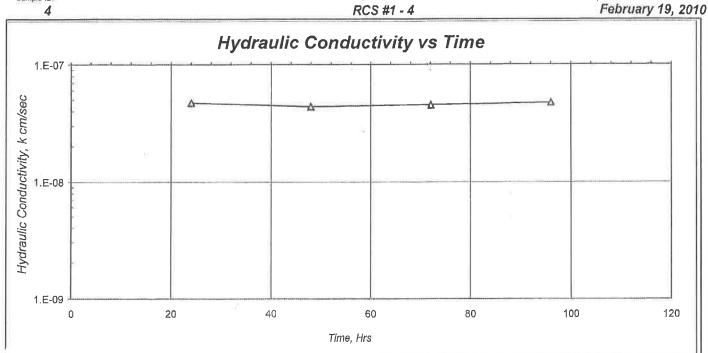
REPORT ASTM D-5084, Method C

Lab Sample Number

Shont / Project Name Golden Star Dairy

Project No. 10-01-25 Sample Location

1565 Report Date:



SAMPLE ID:	IEN DATA4			TEST D. ASTM D-5084, N	the second s
ESCRIPTION:	RCS #1 - 4			TIVE STRESS:	5 psi
	INITIAL	FINAL	GRADIE	ENT RANGE:	2 - 3
	<u></u>	<u></u>	IN/OU	T RATIO:	0.95
HEIGHT, in.	3.6	3.7			
DIAMETER, in.	2.8	2.8			
NATER CONTENT, %	14.5	17.0			HYDRAULIC
DRY DENSITY, pcf	117	116	TRIAL	TIME	CONDUCTIVITY
SATURATION, %	89	100	nos.	<u>hrs.</u>	<u>cm / sec</u>
Specific Gravity assumed as 2.7)		1	24.1	4.7E-08
SAMPLE COLOR	Brown		2	48.0	4.4E-08
			3	72.2	4.5E-08
SAMPLE CONSISTENCY	Clay		4	96.1	4.7E-08
MMENTS: p water used as permeant.			 AVEI	RAGE LAST 4 :	4.6E-08
These results apply only to the a By accepting the data and results represented the second se	bove listed samples. The de	ata and information are propri	etery and can not be reli	eased without authorization	of Enviro-Ag Engineering Inc
this data to the cost for the rospective test	(s) represented here, and C	lient agrees to indemnify and	hold harmless Enviro-A	g from and against all liabili viewed By:	ty in excess of the aforemention

Weller 000066



Golden Star Diary Bosque County, Texas Settling Basin #1 Liner Certification

One 3-inch Shelby tube core sample was collected from the Settling Basin #1 to document that the liner meets the requirements of the TCEQ for soil liner. The liner thickness was documented to be at least 18 inches.

The hydraulic conductivity of the clay liner is documented as follows:

• Settling Basin #1 (Lab #1530) 2.6 x 10⁻⁸ cm/sec

Based on the above documentation the liner in Settling Basin #1 is determined to be in accordance with TCEQ requirements for soil liners. The test locations were backfilled with bentonite chips. The test results meet the requirements of the TCEQ for hydraulic conductivity considered protective of ground and surface water sources.

Prepared by:

3/Z/10

Norman Mullin, P.E. # 66107 Enviro-Ag Engineering, Inc. Firm # F-2507

(Supporting Documentation Attached)

TRIAXIAL PERMEABILITY CHAIN of CUSTODY	STRUCTURE	PERM REPORT I.D.	LAB LOG
* TRESHL HISB	P245 5B#1		1530
North			
Facility Name: Mathematical State Project Engineer: Image: Sampled by: Sampled by: Image: Sampled: Date Sampled: Image: Sampled: Date to Lab: Image: Sampled:	Bld Stephenvi (254)	gan Mill Road	

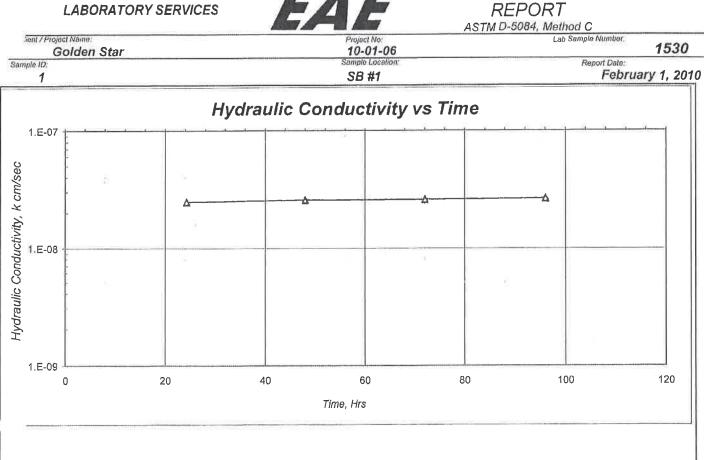
000068

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Enviro-Ag Engineering, Inc.

HYDRAULIC CONDUCTIVITY

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123 LABORATORY SERVICES



SPECIN	IEN DATA			TE
SAMPLE ID:	1			ASTM D-
DESCRIPTION:	SB #1		EFFECT	TIVE STRE
	INITIAL	FINAL	GRADIE	NT RANG
			IN/OUT	T RATIO:
HEIGHT, in.	4.5	4.6		
DIAMETER, in.	2.8	2.8		
WATER CONTENT, %	18.6	23.5		
DRY DENSITY, pcf	105	103	TRIAL	TIME
SATURATION, %	84	100	nos.	hrs.
(Specific Gravity assumed as 2.7)		1	24.3
SAMPLE COLOR	Dark Brown		2	48.1
			3	72.1
SAMPLE CONSISTENCY	Clay		4	96.1
OMMENTS:				
Tap water used as permeant			AVE	RAGE LA
These results apply only to the By accepting the data and results repre this data to the cost for the respective tes	sented on this page, client a	grees to limit the liability of E	nviro-Ag Engineering, In	c from Client a
oils Lab\Perms \1910 \ 10-01-06 \ 1530	Print D		Re	eviewed By:

TEST DATA

GRADIENT RANGE: 2 - 2 IN / OUT RATIO: 1.00 HYDRAULIC RIAL TIME CONDUCTIVITY	FFFFC	TIVE STRESS:	5 pei
IN / OUT RATIO: 1.00 HYDRAULIC RIAL TIME CONDUCTIVITY IOS. hrs. cm / sec 1 24.3 2.5E-08 2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08			
HYDRAULIC RIAL TIME CONDUCTIVITY tos. hts. cm/sec 1 24.3 2.5E-08 2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08	0.0.0		
RIAL TIME CONDUCTIVITY toss. hrs. cm / sec 1 24.3 2.5E-08 2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08	IN 7 OU	I RATIO:	1.00
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hrs. cm / sec 1 24.3 2.5E-08 2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08			HYDRAULIC
1 24.3 2.5E-08 2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08	RIAL	TIME	CONDUCTIVITY
2 48.1 2.6E-08 3 72.1 2.6E-08 4 96.1 2.6E-08	<u>105,</u>	hrs.	<u>cm / sec</u>
3 72.1 2.6E-08 4 96.1 2.6E-08	1	24.3	2.5E-08
4 96.1 2.6E-08	2	48.1	2.6E-08
	3	72.1	2.6E-08
AVERAGE LAST 4 : 2.6E-08	4	96.1	2.6E-08
AVERAGE LAST 4 : 2.6E-08			
	AVE	RAGE LAST 4 :	2.6E-08
		11 contraction of the second	

02/01/10

Micah Mullin Multur

4.0 WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN

4.1 Nutrient Utilization

Agronomic application of a heifer facility wastewater enhances soil productivity and provides the crop and forage growth with needed nutrients for optimum growth and vigor. Land application of wastewater will take place according to a Nutrient Utilization/Nutrient Management Plan (NUP/NMP) in accordance with NRCS Codes 590 and 633. The NUP/NMP for crop year 2022 is attached.

Per 30 TAC §321.42(j), existing dairy facilities located in a major sole-source impairment zone may request the TCEQ to allow the operator to provide manure, litter and wastewater to owners of third-party fields (areas not owned, operated, controlled, rented, or leased by the permittee) that have been identified in the PPP. Peter & Nova Schouten requests access to third-party fields to be operated in accordance with 30 TAC §321.42(j)(1)-(4). Third-party written contracts between the permittee and the third-party recipient will be maintained in the PPP. These contracts will confirm that the third party will allow manure, wastewater and slurry from the facility to be beneficially applied at agronomic rates based on the soil test phosphorus in accordance with applicable requirements of 30 TAC §321.36 and §321.40.

A Texas State Soil and Water Conservation Board (TSSWCB) certified Comprehensive Nutrient Management Plan (CNMP) has been developed.

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 as discussed above in Section 4.1

Site Specific Information for LMU 1 & 2 from Nutrient Management Plan Golden Star Dairy WQ#TBD 2022

LMU Summary:

LMU#1 & 2 are established in native grasses harvesting and grazing purposes

Nutrient Summary:

The following chart shows the current year's crop rotation according to the current NMP

LMU	Max N	Max P205	Planned N	Planned P
#	Lb/ac	Lb/ac	Lb/ac	Lb/ac
	Application	Application	Application	Application
	Rates	Rates	Rates	Rates
1	300	82	30	8
2	400	228	400	228

The Maximum Rates for Nitrogen and Phosphorus will be updated annually based on that current year's crop rotation, soil and waste analysis and Crop "S" Tables.

Maximum Rates to apply or each crop is calculated using the values given in the Crop "S" Table Summary. When the producer decides to utilize one of the crop scenarios in the alternative crop list, the NMP will reflect the new crop and new maximum rates to apply.

Because the LMUs were reconfigured in this application, the following shows what soil analysis was used for each LMU in this plan:

LMU 1 in this NMP was planned with the soil analysis from LMU 2. LMU 2 in this NMP was planned with the soil analysis from LMU 3.

Supplemental nutrients will be necessary to achieve the desired yields. Commercial fertilizer applications should be split such that individual application events do not exceed 100 lb/Ac.

All manure is to be hauled off by a contract hauler for beneficial use. Offsite manure transfer activities will be in accordance with NRCS and TCEQ requirements for sampling, recordkeeping, and land application.

See Attached Nutrient Management Plan.

Waste Utilization and Nutrient Management Plan

Golden Star Heifer Ranch 287 CR 2495 Hico, TX 76457

TCEQ Permit Number: TBD

Owner Pete & Nova Schouten 3728 CR 229 Hico, TX 76457

Type of Organic Nutrient Management Plan: Other AFO-CAFO Waste Plan located in Bosque County

Prepared By:

(Signature) Corey Mullin Certified Nutrient Management Specialist Certificate Number = TX20171 Expiration Date = December 31, 2022 Enviro-Ag Engineering 9855 FM 847 Dublin, TX 76457 (254) 965-3500

This plan is based on: 590 Organic Nutrient Management Plan V 5.0

10/12/22 3:32 PM

Site Specific Information for LMU 1 & 2 from Nutrient Management Plan Golden Star Heifer Ranch WQ#TBD 2022

LMU Summary:

LMU#1 & 2 are established in native grasses harvesting and grazing purposes

Nutrient Summary:

The following chart shows the current year's crop rotation according to the current NMP

LMU	Max N	Max P205	Planned N	Planned P
#	Lb/ac	Lb/ac	Lb/ac	Lb/ac
	Application	Application	Application	Application
	Rates	Rates	Rates	Rates
1	300	82	30	8
2	400	228	400	228

The Maximum Rates for Nitrogen and Phosphorus will be updated annually based on that current year's crop rotation, soil and waste analysis and Crop "S" Tables.

Maximum Rates to apply or each crop is calculated using the values given in the Crop "S" Table Summary. When the producer decides to utilize one of the crop scenarios in the alternative crop list, the NMP will reflect the new crop and new maximum rates to apply.

Because the LMUs were reconfigured in this application, the following shows what soil analysis was used for each LMU in this plan:

LMU 1 in this NMP was planned with the soil analysis from LMU 2. LMU 2 in this NMP was planned with the soil analysis from LMU 3.

Supplemental nutrients will be necessary to achieve the desired yields. Commercial fertilizer applications should be split such that individual application events do not exceed 100 lb/Ac.

All manure is to be hauled off by a contract hauler for beneficial use. Offsite manure transfer activities will be in accordance with NRCS and TCEQ requirements for sampling, recordkeeping, and land application.

See Attached Nutrient Management Plan.



Alternative Crop List Golden Star Heifer Ranch

Crop and Yield Goal	Nitrogen		P20	95
Crop and view Goal	Requirement	Removal	Requirement	Remova
Alfalfa Hay 10 Tons	530	532	180	101
Alfalfa Hay 12 Tons	640	638	180	121
Alfalfa Hay 2 Tons	120	106	35	20
Alfalfa Hay 4 Tons	210	213	80	40
Alfalfa Hay 6 Tons	300	319	130	60
Alfalfa Hay 8 Tons	420	426	180	81
Bahia 2 Cut Hay 7000 #	140	89	70	21
Bahia 3 Cut Hay 8000 #	210	102	80	24
Bahia 4 Cut Hay 9000 #	280	114	115	27
Bahia Grazing + 1 Hay	110	83	70	19
Bahia Grazing 1 AU/1 ac	260	114	70	27
Bahia Grazing 1 AU/2 ac	220	108	45	25
Bahia Grazing 1 AU/3 ac	180	102	45	24
Bahia Grazing 1 AU/4 ac	140	95	45	22
Bahia Grazing 1 AU/5 ac	100	79	45	18
Bahia Grazing 1 AU/6 ac	60	65	45	15
Cantaloupes 15-20 tons	120	88	105	82
Coastal 2 Cut + Graze	260	198	125	62
Coastal 2 Cut Hay	200	169	125	39
Coastal 3 Cut + Graze	360	257	125	80
Coastal 3 Cut Hay	300	238	125	74
Coastal 4 Cut Hay	400	257	170	80
Coastal 5-6 Cut Hay	500	297	170	93
Coastal Grazing + 1 Hay	160	145	70	34
Coastal Grazing 1 AU/0.5 ac	300	218	70	68
Coastal Grazing 1 AU/1 ac	240	198	70	62
Coastal Grazing 1 AU/2 ac	200	169	70	39
Coastal Grazing 1 AU/3 ac	160	145	70	34
Coastal Grazing 1 AU/4 ac	120	120	70	28
Coastal Grazing 1 AU/5 ac	90	103	70	24
Coastal Grazing 1 AU/6 ac	60	86	70	20
Coastal GC (30%DM) 21-23 Ton	400	345	170	95
Coastal GC (30%DM) 21-23 Ton	350	300	170	82
Coastal GC (30%DM) 15-17 Ton	300	255	125	70
Coastal GC (30%DM) 9-11 Ton	200	170	125	47
Common 2 Cut Hay 6000 #	140	113	80	26
Common 3 Cut Hay 7400 #	210	141	80	46
Common 4 Cut Hay 8000 #	280	152	80	49
Common 5-6 Cut Hay 9000 #	350	171	80	56
Common Grazing + 1 Hay	110	100	70	23
Common Grazing + 2 Hay	180	132	80	30
Common Grazing + 2 Hay	250	132	80	48
Common Grazing + 5 Hay	260	148	70	40
Common Grazing 1 AU/1ac	220	132	45	49
	180	143	45	30
Common Grazing 1 AU/3 ac Common Grazing 1 AU/4 ac	140	132	45	26
U U	140	94	45	20
Common Grazing 1 AU/5 ac Common Grazing 1 AU/6 ac	60	79	45	18

Crop and Yield Goal	eld Goal		P20)5
Crop and Tield Goal	Requirement	Removal	Requirement	Remova
Corn 111 - 130 bu	144	117	105	47
Com 131 - 150 bu	164	135	105	54
Com 151 - 170 bu	180	153	130	61
Corn 171 - 190 bu	210	171	130	68
Corn 191 - 210 bu	250	189	130	75
Corn 211 - 230 bu	280	207	130	83
Corn 231 - 250 bu	300	225	130	90
Com 250 - 275 bu	325	243	130	97
Corn 276 - 300 bu	350	261	130	104
Corn 301 - 350 bu	375	279	130	111
Corn 50 - 70 bu	70	63	80	25
Corn 71 - 90 bu	90	81	80	32
Com 91 - 110 bu	120	99	105	39
Cotton 0.5 Bale	25	18	30	9
Cotton 1.0 Bale	50	36	55	18
Cotton 2.0 Bale	100	71	105	35
Cotton 3.0 Bale	150	107	105	53
Cotton 3.5 Bale	175	125	105	62
Cotton 4.0 Bale	200	142	105	71
Cotton 4.5 Bale	225	160	105	80
Cotton 5.0 Bale	250	178	105	89
Eastern gamagrass- 3000 #	80	57	40	21
Eastern gamagrass- 6000 #	120	114	60	41
Fescue, Tall Hay/Graze 7000#	150	140	80	42
Grain Sorg. 1000 #	20	17	30	8
Grain Sorg. 10000 #	200	167	130	82
Grain Sorg. 1500 #	30	25	30	12
Grain Sorg. 2000 #	40	33	30	16
Grain Sorg. 3000 #	60	50	55	25
Grain Sorg. 4000 #	80	67	55	33
Grain Sorg, 5000 #	100	84	80	41
Grain Sorg. 6000 #	120	100	80	49
Grain Sorg. 7000 #	140	117	130	58
Grain Sorg. 8000 #	160	134	130	66
Grain Sorg. 9000 #	180	150	130	74
Guar 3500 lbs	25	22	80	76
Johnsongrass Hay 6000 #	140	101	80	32
Klein 3 Cut Hay 7200 #	150	83	55	16
Klein 4 Cut Hay 7800 #	150	90	55	18
Klein Grazing + 1 Hay	80	69	55	14
Klein Grazing 1 AU/1.5 ac	150	90	80	18
Klein Grazing 1 AU/2.5 ac	80	69	55	14
Klein Grazing 1 AU/6 ac	40	58	55	11
Legume Overseeded	80	60	105	15
Legume w/ryegrass	160	94	160	38
Midland Bermuda 4000 #	120	75	80	17
Midland Bermuda 6000 #	150	113	105	26
Midland Bermuda 8000 #	200	150	105	35



Alternative Crop List Golden Star Heifer Ranch

Crop and Vield Cool	Nitro	gen	P20)5
Crop and Yield Goal	Requirement	Removal	Requirement	Removal
Native Grazing or Hay 4000#	80	44	70	34
Native Grazing or Hay 3000#	40	33	55	25
Native Grazing or Hay 1500#	20	17	27	13
Native Grazing or Hay 750#	10	8	13	6
Oat Light Grazing	120	107	55	40
Oat Moderate Grazing	160	110	80	41
Oats Hay 2-3 tons	120	100	55	37
Oats Heavy Grazing plus Hay	200	117	80	43
Old World Bluestem- 3000 #	40	33	55	25
Old World Bluestern- 6000 #	80	66	55	51
Peanut Hay Dryland 1 Ton	50	47	70	11
Peanut Hay Dryland 2 Tons	100	93	70	22
Peanut Hay Irrigated 3 Tons	150	140	95	33
Peanuts Irrigated 4500 #	180	162	95	18
Rice Early 7500 #	195	104	45	41
Rice Late 7500 #	180	104	45	41
Rice plus Ratoon Early 10000 #	295	139	60	55
Rice plus Ratoon Late 10000 #	280	139	60	55
Rye Forage 5000 #	140	84	55	31
Rye Forage 7000 #	240	117	80	43
Ryegrass Hay 6000	140	100	55	37
Ryegrass Heavy Grazing	200	117	80	43
Ryegrass Moderate Grazing	140	84	55	31
SG Green Chop(25% DM) 8 to 9 tons	260	203	90	73
SG Green Chop(25% DM) 6 to 7 tons	200	158	80	57
SG Green Chop(25% DM) 4 to 5 tons	135	113	60	41
SG Green Chop(25% DM) 2 to 3 tons	75	68	40	24
SG Silage(35% DM) 12 to 14 tons	160	128	90	67
SG Silage(35% DM) 12 to 14 tons	120	101	70	53
SG Silage(35% DM) 8 to 9 tons	95	83	40	43
SG Silage(35% DM) 5 to 7 tons	70	64	30	34
Silage - Corn(35% DM) 11 - 15 Ton	140	119	80	58
Silage - Com(35% DM) 11 - 15 Ton Silage - Com(35% DM) 16 - 20 Ton	240	183	100	77
Silage - Corn(35% DM) 21 - 25 Ton	350	263	100	96
Silage - Corn(35% DN) 21 - 25 Ton Silage - Corn(35% DM) 26 - 30 Ton	420	315	135	115
Silage - Com(35% DM) 20 - 50 Ton Silage - Com(35% DM) 7 - 10 Ton	85	79	60	38
	200	179	75	55
Silage - Sorg(35% DM) 11 - 15 Ton	280	238	95	74
Silage - Sorg(35% DM) 16 - 20 Ton	360	238	115	92
Silage - Sorg(35% DM) 21 - 25 Ton	380	315	113	92
Silage - Sorg(35% DM) 26 - 30 Ton				135
Silage - Sorg(35% DM) 31 - 40 Ton	450	364	155	
Silage - Sorg(35% DM) 41 - 50 Ton	580	455	190	168
Silage - Sorg(35% DM) 51 - 60 Ton	700	550	220	202
Silage - Sorg(35% DM) 7 - 10 Ton	125	119	60	37
Small Grain Heavy Grazing	240	112	105	41
Small Grain Light Grazing	60	75	80	28
Small Grain Moderate Grazing	160	97	105	36
Sorg Sudan Hay/Graze 11000 #	240	219	105	83

Crop and Yield Goal	Nitrogen		P20)5
	Requirement	Removal	Requirement	Removal
Sorg Sudan Hay/Graze 7500 #	160	149	55	57
Sorg Forage Hay/Graze 11000 #	240	219	105	83
Sorg Forage Hay/Graze 7500 #	160	151	55	57
Soybean 30 bu	110	119	60	24
Soybean 50 bu	180	180	80	40
Sunflower 2000#	100	71	56	30
Sunflower 3000#	175	107	65	45
Triticale Graze or Hay 7000 #	160	117	105	43
Triticale Graze or Hay 9000 #	240	150	105	56
Watermelons 12 tons	80	53	55	49
Weeping Lovegrass 3500 #	70	39	55	30
Wheat Forage 2000 #	60	33	80	12
Wheat Forage 4000 #	160	67	105	25
Wheat Forage 6000 #	240	100	105	37
Wheat Grain 20 - 30 bu + Grazing	60	58	55	40
Wheat Grain 20 - 30 bu	45	37	55	26
Wheat Grain 31 - 40 bu + Grazing	80	71	75	48
Wheat Grain 31 - 40 bu	60	50	75	34
Wheat Grain 41 - 50 bu + Grazing	100	83	75	57
Wheat Grain 41 - 50 bu	75	62	75	43
Wheat Grain 51 - 60 bu + Grazing	120	96	90	65
Wheat Grain 51 - 60 bu	90	75	90	51
Wheat Grain 61 - 70 bu + Grazing	140	108	90	74
Wheat Grain 61 - 70 bu	105	87	90	60
Wheat Grain 71 - 80 bu + Grazing	160	121	95	82
Wheat Grain 71 - 80 bu	120	100	95	68
Wheat Grain 81 - 90 bu + Grazing	180	133	95	91
Wheat Grain 81 - 90 bu	135	112	95	77
Wheat Grain 91 - 100 bu + Grazing	200	146	95	99
Wheat Grain 91 - 100 bu	150	125	95	85
Wheat Heavy Grazing	240	114	105	42
Wheat Light Grazing	60	75	80	28
Wheat Moderate Grazing	160	97	105	36
Millet GC (25% DM) 18 - 24 Ton	180	140	60	46
Millet Hay/Graze 11000 #	150	95	45	40
Silage - Millet(35% DM) 15 - 18 Ton	190	139	60	46
Popcom Shelled 3000 - 4000 #	80	74	80	27
Popcorn Shelled 4000 - 5000 #	100	92	80	33
Popcorn Shelled 5000 - 6000 #	120	110	80	40
Vetch Hay I Ton	70	60	105	14
Vetch Hay 2 Tons	140	120	105	28
Vetch Green chop(25%DM) 4 Tons	70	56	105	7
Vetch Green chop(25%DM) 8 Tons	140	112	105	14
Winter Pea Hav 5000#	140	137	105	35
Winter Pea Green chop(25%DM)8-9 Tons	140	123	105	32
Cowpea Hay 2 Tons	140	120	105	26
Cowpea GreenChop 8Tons(25%DM) Tons	140	120	105	26

Waste Utilization and Nutrient Management Plan EXECUTIVE SUMMARY: Permit #:

TBD

See Executive Summary

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Bosque** 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
or crop change (yield or crop) result in a new P-Index rating or plan classification (NMP-NUP). The waste has
been stored in aDairy Lagoon. Approximately2000head willbe confined with the average weight of
hours per day for970pounds. The animals will be confined24

TABLES 1, 2 and 2a

Permit #:

TBD

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.

SOLIDS APPLICATION: (cont)

Permit #:

TBD

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.

EFFLUENT APPLICATION: (cont)

Permit #:

TBD

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 most restrictive layer in the upper 24 inches are given in Table 12.

EFFLUENT APPLICATION: (cont)

Permit #:

TBD

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.

MORTALITY MANAGEMENT: (cont)

Permit #:

TBD

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.

Waste Utilization and Nutrient Management Plan EFFLUENT AND SOLIDS STORAGE & TESTING: Permit #: TBD

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.

RECORD KEEPING:

Permit #:

TBD

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
	-	
cess Remaining		May be continued on additional sheets

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Plan is based on: 590 Organic Nutrient Management F

OPERATION AND MAINTENANCE:

Permit #:

TBD

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:	10/12/2022	
Plan Approved by:	Mith	Date:	12/12/22	
Producer Signature:	Discourse with Fordicer	Date:	17/122	

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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Plan is based on: 590 Organic Nutrient Management Pl

	Waste	Utilizatio	n and Nut	rient Ma	anage	ment F	Plan		
Table 1 - Esti	imated Effluer	nt and Solids (Juantities Pro	duced		Permit	#:	TBD	
Avg. Numbe	er of Animals						Type of Wa	aste	
2,0	000						Dairy Lago		
		-					Dairy Soli		
							nservation Serv	vice office if	the
total number o	of animals chan								
		Es	timated Acre I	nches of Ef	fluent to	be Availa	able Annually*	141	
		Estimated	Tons Solids to	be Land A	pplied A	Annually (on or off site)*	4,186.0	
								ngineering desig	n.
Estimated Nu Effluent	itrient Availab	oilty				Estimate Solids	d Nutrient Ava	ailabilty	
		Pounds /	Pounds /				pounds /	pounds /	
	pounds/yr	1000 gal	Acre Inch				yr	ton	
Ν	970	0.25	6.9	* *		N	84,283	20.1	**
P2O5	264	0.07	1.9			P2O5	47,978	11.5	
K2O	2,522	0.66	17.9			K2O	17,240	4.1	
** E	ffluent Values	Based on An	alysis			** Solids	Values Based		S
dated:		July 23, 2021				date	d: May 1	7, 2018	

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	P – Index Rating P Application Rate ^{5/}		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 ⁵	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 ⁵	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 ⁵	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 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.</p>
- 3/ Not to exceed the annual nitrogen requirement rate.
- 4/ Not to exceed the annual nitrogen removal rate.
- 5/ When soil test phosphorus levels are ≥ 500 ppm, with a P-Index rating of "High" or "Very High", there will be no additional application of phosphorus to a CMU or field.

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Plan is based on: 590 Organic Nutrient Management Plan V 5.0

LMU or Field No.AcresCrop and P Index LevelTotal est.Total Est.Nu135.0Coastal graze 1 AU/1 ac, SG mod graze MNUPDefault30090267	
1 35.0 Coastal graze 1 AU/1 ac, SG mod graze M NUP Default 300 90 267	
1 35.0 Coastal graze 1 AU/1 ac, SG mod graze M NUP Default 300 90 267	
2 8.0 Coastal graze 1 AU/1 ac, SG mod graze M NMP Default 300 90 267	

Table 3 1.0 CE. 0.1.3

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

Table 4 - Maximum Solids Application per Field

Permit #:

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1.61	

						r		
Est. Solids				Current	Max	Annual/Biennial	Maximum	Maximum
Produced	LMU or			Soil Test	Annual	Bien	Solids	Allowable Application
Annually	Field			P Level	P2O5	ual/	Allowable	Per field
(wet tons)	No.	Acres	Crop Management and PI runoff potential	(ppm)	lbs/acre	Ann	Tons/Acre	(Tons)
4,186	1							
	2	8.0	Coastal graze 1 AU/1 ac, SG mod graze M	130	228	A	19.9	159
		0,0	e constant graze i i reci a ce, c c inica graze ini	150	220		17.5	107
	h							
	l.			2				
T . 10 111								
Total Solids								
Application								0
Acres								
8								
Application								
Allowable								
on-site								
(tons)								
158.9								
Not								
Adequate								
Solids to be								
used off-								
site (tons)								
4,027.1								
4,04/.1								

. . . . ~ - - -

Table 5 - Nu	trients Applie	ed/Needs at Ma	aximum Solids	Rates	Permit #:	T	BD
	Ν	plied When Ap Maximum Rate	S		al Nutrients Nee Maximu	eded When Ap m Rates	oplication is at
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1 2	400	228	82	0	0	0	0

Table 6 - 1	Pla	nned	Solids Application Rates				Permit #:	TE	3D	
LMU or Field No. 1 2	Double crop	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Siennial	Max Rate tons/ac	% of Maximum to apply	Planned Solids tons/ac	Planned Solids per field (tons)	
1	F			1 ppm		10113/ 40	to apply	tons/ac	(10115)	
2		8.0	Coastal graze 1 AU/1 ac, SG mod graze M	130	A	19.9	100	19.9	158.9	
Acres 8.0			Will the p				ation rates	158.9		
4186			Tons of wet solids produced Annually use all of the Solids?							
0			Tons to be used off-site at Max. rates	Tons to be used off-site at planned rates 4027						

Plan is based on: 590 Organic Nutrient Management Pla

Table 7 - Nutrients Applied/Needed at Planned Solids Rates

Permit #:

TBD

		d to adjustment page	and fix.		i cillit #.	IDD	
	Nutrients	Applied at Plann		Supplemen	tal Nutrients Ne	eded at Planned	Rates
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1 2	400	228	82	0	0	0	0

Table 8 - Maximum Effluent Application Per Field

Permit #:

TBD

			-						
							ial		Maximum
Eat Arraitable			do		Current	Max	Annual/Biennial	Maximum	Effluent
Est. Available			e cr		Soil Test	Annual	B	Effluent	Allowable
Effluent	LMU or		ldu		P Level	P_2O_5	nua	Allowable	/ Field
(ac inches)	LMU or Field No.	Acres	Ď	Crop Management and PI runoff potential	(ppm)	(lbs/acre)	An	(ac in/ac)	(ac in)
141	1	35.0		Coastal graze 1 AU/1 ac, SG mod graze M	326	82	A	43.7	1529
Source:	2			-			en.e		
Source.	2								
Dairy Lagoon									
1									
Total									
Effluent									
Application									
Acres									
35									
Maximum									
Effluent									
Application									
Allowable									
On-Site									
(ac in)									
1529									
1.347									
Adequate									
Lacquate									
Effluent to 1									
Effluent to be									
used Off-Site									
(ac in)									
0									
· · · ·									· · · · · · · · · · · · · · · · · · ·

End of Table 8

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

Table 9 - Nu	trients Applie	ed/Needed at N	Aaximum Efflu	ent Rates	Permit #:	TI	3D
	r	plied When Ap Maximum Rate	S		al Nutrients Nee Maximur	eded When Ap m Rates	plication is a
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac		Lime T/Ac
LMU / Field # 1 2	Nutrients Ap	plied When Ap Maximum Rate P ₂ O ₅ Lb/ac 82	plication is at s K2O Lb/ac 781	Supplementa N Lb/ac 90	Maximur	eded When Ap m Rates K ₂ O Lb/ac 0	

Access 35.0 Constant graze 1 AU/1 ac, SG mod graze M 32.6 A 43.7 10.0 4.4 153 Access 35.0 Constant graze 1 AU/1 ac, SG mod graze M 32.6 A 43.7 10.0 4.4 153	Table	Table 10 - Planned Effluent Application Rates Permit #: TBD								
1 35.0 Coastal graze 1 AU/1 ac, SG mod graze M 326 A 43.7 10.0 4.4 153 2 3 A 43.7 10.0 4.4 153 3 A A 43.7 10.0 4.4 153 A A A A A A A 4.4 153										
1 35.0 Coastal graze 1 AU/1 ac, SG mod graze M 326 A 43.7 10.0 4.4 153 2 3 A 43.7 10.0 4.4 153 3 A A 43.7 10.0 4.4 153 A A A A A A A 4.4 153			e cro		Current	ul / ial	Maximum	% of	Planned	
1 35.0 Coastal graze 1 AU/1 ac, SG mod graze M 326 A 43.7 10.0 4.4 153 2 3 A 43.7 10.0 4.4 153 3 A A 43.7 10.0 4.4 153 A A A A A A A 4.4 153			ldud		Soil Test	enni	Effluent	Maximum		/ field
2		Acres	ã					to apply	(ac in/ac)	(Ac. In)
Aces 35.0 Will the planed application rates 153		35.0		Coastal graze 1 AU/1 ac, SG mod graze M	326	A	43.7	10.0	4.4	153
	2									
		1								
					1					
	Acres	35.0				Will t				153
							use all of	the Efflue	nt?	YES

Table 11 - Nutrients Applied/Needed at the Planned Effluent Rates

Permit #:

TBD

Γ		ed to adjustment pa Applied at Plar		Supplemental Nutrients Needed at Planned Rates						
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K ₂ O Lb/ac	Lime T/Ac			
1 2	30	8	78	360	0	0	0			

000096

Plan is based on: 590 Organic Nutrient Management I

Waste Utilization and	d Nutrient	Management Plan
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Table 12 - Available Water Capacity to 24 inches(or less) of predominantPermit #:soil in fields receiving effluent and Texture of the most restrictive soillayer in the upper 24 inches

LMU / Field #	AWC (inches)	Restrictive Texture	LMU / Field #	AWC (inches)	Restrictive Texture
1	2.88	Sandy Clay			
2					
1 1					
	()				

TBD

Permit #:

TBD

Table 13 - Non Application Areas by Field

FS = 393-Filter Strip; FB = 386-Field Border, RFB = 391-Riparian Forest Buffer; OLEA = Other Land Excluded Arter Strip (Content of the strip) and the sFS FB RFB **OLEA** Total FS FB RFB **OLEA** Total LMU / LMU / Field # Acres Acres Acres Acres Excluded Field # Acres Acres Acres Acres Excluded 1 0.0 0.0 2 0.0 0.0 See Application Map for location of buffers Totals 0.0 0.0 0.00.0 0.0 Total 590-633 application acres: 43.0 Total 590-633 Field Acres: 43.0

Plan is based on: 590 Organic Nutrient Management Plan V 5.0

Waste Utilization and Nutrient Management Data Entries

	General Data
Date :	10/12/2022
Farmer Name :	Golden Star Heifer Ranch
County in which the Land is located :	Bosque
	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 :	No
Permit # :	TBD

All other entries on General Page appear on the Cover Page

	Animal Information
Plan Year :	2022
Are you receiving waste from another producer?	No
Number of animals :	2000
Approximate Weight :	970
Days per year in confinement :	365
Hours per day confined :	24
ACRE FEET of effluent to be irrigated* :	11.76
Estimated annual gallons of effluent to be	
irrigated/applied annually :	3831972.48
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)* :	2993
Is this the first Year of the AFO-CAFO Operation?	
:	No

Analysis Information

nt Information
//23/2021
iry Lagoon
0.00379
0.00036
0.00657
99.9

Manure / Solids Information

Date of Analysis:	5/17/2018
Manure Source:	Dairy Solids
Nitrogen % From Analysis:	1.76
Phosphorus % From Analysis:	0.35
Potassium % From Analysis:	0.24
Moisture % From Analysis:	28.5
What will be Applied to Fields on this Farm?	Both Effluent and Solids
Is this Farm part of an AFO-CAFO?	No

This plan is based on: rganic Nutrient Management PlanPrinted on:10/12/22 3:44 PM

Field and Buffer Entries

	Drinted on:	10/10/00					Permit #:	
$FS = 30^{\circ}$	Printed on: 3-Filter Strip			or DED -	201 Dinovi	Plai	n is based on:	590 Organic Nutrient Management Plan
15-35	non-ann	rb – 500-, dication ar	eas (i.e. h	er, KFD = . eadquarter	s frea flo	an rorest i aded areas	butter, OLEA	= Other Land Exclusion Areas or s, water bodies, etc)
	NOTE: Field	Border (F	B) is expres	ssed in AC	RES on thi	s spreadsh	eet. but as LIN	NEAR FEET on the CPO.
	1.7 · · · · · · · · · · · · · · · · · · ·							
	Total					Total	Actual	
Field	LMU or Field					Buffer	Application	
No.	Acres	FS	FB	RFB	OLEA	Acres	Acres	This Column Intentionally Left Blank
1	35					0.0	35.0	
2	8					0.0	8.0	
					2			
							·	
				-				
-								
				·				
						_		
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1	Printed on:	10/12/22	3:44 PM	Plan is	based on:	590 Organ	nic Nutrient Management Plan V 5.0			Permit #:		TBD	
										Plant A	nalysis &	Yield (opt	ional) <mark>Use</mark>
	Soil Test	Analysis		This					<u>.0</u>	Only W	hen Crop I	Removal i	s Required
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)	column	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)	% N	% P	% K	Yield Air Dry Production (lbs/ac/yr)
5.28	326	310			1	35.0	Coastal graze 1 AU/1 ac, SG mod graze M	E	N				
1.88	130	213			2	8.0	Coastal graze 1 AU/1 ac, SG mod graze M	S	N				
				4									
							f						

Solids Application Rate Entries

4186		1			Permit #:	
	"Wet tons" of solids produced Annually		N	/ill the plan		
		_		Tons to be	e used off-s	ite at plar
LMU or Field No. Acres	Crop Management and PI runoff potential	Current Soil Test P ppm		Annual or Biennial Application Cycle	Maximum Sulids Allowable Tons/Ac	Enter % o Maximun Planned t Apply
1						
	Coastal graze 1 AU/1 ac, SG mod graze M	130	175	Annual	19.9	100.0

Printed on: 10/12/22 3:44 PM

Plan is based on: 590 Organi

Effluent Application Rate Entries

Efflu	lent	 Set the Planned Application Rat 	es			Permit #:		TBD	
	3831972]		Will the p	lanned rate	s use all of	the effluent?	Yes
	141	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 P2O5 Req.	Annual or Biennial Application Cycle	Max Effluent Allowable (ac in/ac)	Enter % of Maximum Planned to Apply	Planned Effluent (ac in/ac)	Planned Effluent per field (acre inches)
1	35.0					-		1	33
1 2	35.0	Coastal graze 1 AU/1 ac, SG mod graze M	326	175	Annual	43.7	10.0	4.37	153
							_	luent This Page	

Total Effluent This Page 153

Printed on: 10/12/22 3:44 PM

Plan is based on: 590 Organic Nutrient Management Plan '

Available Water Capacity Entries

	Printed on:	10/12	/22 3:4	14 PM				ed on:	590 Or	ganic N	utrient	Manager	nent Pla	Pe	rmit #:		TE	BD
				-				EX	AMPLE	ENTR	RIES							Available
					0													Water
	Texture of the																	Holding
	soil layer within	~		0.40				0.40	0.04		10		0.40	40				Capacity
	the upper 24	0	3	0.12	0.2	3	14		0.21		18		0.12	18	24	0	0	(AWC) of
	inches of the			1			En	ter Da	ta for i	ne to	5 24" 0	oniy		12				the upper
LMU or	soil profile that	Dep	th of	AW	C of	Dep	th of	AW	C of	Dep	th of		C of	Dep	th of	AW	C of	24 inches
Fields	has the lowest	-	rst		rst		ond		ond		ird	Th		-	urth		urth	of the soil
receiving	permeability		yer	La	yer		yer		yer		yer		yer		yer		yer	profile
Effluent	(Don't Abbreviate)		hes)		/in)		hes)		/in)		hes)		/in)		, hes)		/in)	(Inches)
1	Sandy Clay	0	7	0.11	0.13	7	44	0.11	0.13	44				0				2.88
														-				
															-			
						-			<u> </u>						-			
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REPORT NUMBER

21-222-4043

REPORT DATE Aug 10, 2021 RECEIVED DATE Aug 03, 2021 SEND TO 22923





ENVIRO-AG ENGINEERING INC ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO TX 79118

Nutrient Land Application

For: (22923) ENVIRO-AG ENGINEERING INC Golden Star Dairy Wastewater/Matthew Gray

ample ID: WW Lab Number: 8	Date Oamp	Died: 2021-07-2 Pounds of N			
	Analysis	per	per		Deviewer Dete
Parameter	As Received	1000 gal	acre-in	Method	Reviewer-Date
Total Kjeldahl nitrogen (TKN)	37.7 mg/L	0.32	8.50	PAI-DK01 *	jdb5 2021-08-04 16:41:59
Organic nitrogen	38 mg/L	0.3	8.6	Calculation	Auto 2021-08-10 08:31:07
Ammoniacal Nitrogen	< 5.0 mg/L			SM 4500-NH3 C-(1997)	jdb5 2021-08-09 09:31:42
Phosphorus (as P2O5)	8.24 mg/L	0.1	1.9	EPA 200.7	Auto 2021-08-10 08:31:07
Phosphorus (total)	3.6 mg/L	0.03	0.81	EPA 200.7	trh1 2021-08-09 17:02:04
Potassium (as K2O)	79.1 mg/L	0.7	17.8	EPA 200.7	Auto 2021-08-10 08:31:07
Potassium (total)	65.7 mg/L	0.56	14.8	EPA 200.7	trh1 2021-08-09 17:02:04
Nitrate/Nitrite nitrogen	< 0.2 mg/L		5777a	EPA 353.2	jdb5 2021-08-10 08:31:07
Total solids	0.14 %			SM 2540 B-(1997)	jdb5 2021-08-09 15:54:08
Volatile solids	0.06 %			SM 2540 E-(1997) *	jdb5 2021-08-09 15:54:08
Total organic carbon (TOC)	240 mg/L	2.03	54.1	SM 5310 B-(2011)	jdb5 2021-08-09 09:31:42
5 ()	•				

First year availability of nitrogen is calculated based on pre-plant application with incorporation. Nitrogen available from previous year's application not considered. Total manure salts should not exceed 500 lbs/acre. Less than 500 lbs/acre if annual rainfall is less than 25 inches and/or the soil CEC is less than 12 meq/100g. Salt contributions from commercial fertilizer applications must also be considered. Soil test yearly to monitor phosphorus levels, organic matter, pH, and micronutrients. Spring soil test for residual nitrate - make accurate sidedress recommendations! Nitrogen availability will vary with methods of application and field conditions. The nitrogen availability values used on a manure management plan must comply with state regulations. These regulations vary from state to state.

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.

REPORT NUMBER

1 - 222 - 4043

REPORT DATE Aug 10, 2021 RECEIVED DATE Aug 03, 2021 SEND TO 22923





ENVIRO-AG ENGINEERING INC ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO TX 79118

REPORT OF ANALYSIS

For: (22923) ENVIRO-AG ENGINEERING INC Golden Star Dairy Wastewater/Matthew Gray

		Level Found		Reporting	l	Analyst-	Verified-
Analysis		As Received	Units	Limit	Method	Date	Date
Sample ID: WW	Lab Number: 8947323	Date Sampled: 2021-	07-23	1. 1.			
% Moisture		99.9	%	0.1	Calculation	Auto-2021/08/09	Auto-2021/08/10

All results are reported on an AS RECEIVED basis.

For questions please contact:

Rob Ferris Account Manager rferris@midwestlabs.com (402)829-9871

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.

REPORT NUMBER

May 24, 2018

18-151-4117 REPORT DATE **May 31, 2018** RECEIVED DATE





ENVIRO-AG ENGINEERING INC ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO TX 79118

SEND TO

22923

Nutrient Land Application

For: (22923) ENVIRO-AG ENGINEERING INC GOLDEN STAR DAIRY

Sample ID: MANURE

Lab Number: 2811017 Date Sampled: 2018-05-17

			Pounds of Nutrient AR		
	Analysis	Analysis	per		
Parameter	As Received	Dry Weight	ton	Method	Reviewer-Date
Nitrogen (total)	1.26 %	1.76 %	25.2	MWL WC PRO	C 55
Organic nitrogen	1.25 %	1.75 %	25.0	Calculation	
Ammonium nitrogen (total)	0.009 %	0.012 %		AOAC 920.03 (mod)
Phosphate (P2O5)	0.57 %	0.80 %	11.4	MWL ME PROC	26
Phosphorus (total)	0.25 %	0.35 %		MWL ME PROC	26
Potash (K2O)	0.20 %	0.28 %	4.00	MWL ME PROC	26
Potassium (total)	0.17 %	0.24 %		MWL ME PROC	26
Nitrate-nitrogen	< 0.01 %	< 0.01 %		WC PROC 32	
Carbon (total)	21.15 %	29.58 %		ASTM D 5373 (mod)
Carbon nitrogen ratio C/N	17:1			Calculation	
Moisture	28.5 %			SM 2540 G-(19	97)
Total solids	71.50 %			Calculation	
Loss on ignition (OM)	36.5 %	51.0 %		MWL WC PRO	C 60
Ash	33.8 %	47.3 %		SM 2540 G-(19	97)

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

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SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

Yes, complete this form and Tables 1 and 2 below. Attach a copy of the laboratory analyses to this soil monitoring report form.

No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2021 Sample Collection Date: 10/25/2021

B. Facility Information

- 1) Permit Number: WQ0003656000
- 2) Site Name: Golden Star Dairy
- 3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 1
- 4) Name of Owner/Operator: Pete Schouten
- 5) Mailing Address for Owner/Operator: 3728 CR 229, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO3-N), ppm	4.27	1.7
Phosphorus (extractable), ppm	86	4
Potassium (extractable), ppm	426	295
Sodium (extractable), ppm	4	8
Magnesium (extractable), ppm	282	187
Calcium (extractable), ppm	10239	14321
Electrical Conductivity/Soluble Salts, dS/m	0.173	0.154
pH, SU	7.76	7.9

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemins per meter, equivalent to millimhols per centimeter (mmhols/cm); SU = standard units.

TCEQ-20170-b CAFO Individual Permit Soil Monitoring Report (July 20, 2014; Rev 01/15/22) Page 2

C. Certification

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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Pete Schouten, Owner

Signature: Jule Mulles fr. 7 Date: 3/20/22

Telephone Number: 254/965-9652

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

Yes, complete this form and Tables 1 and 2 below. Attach a copy of the laboratory analyses to this soil monitoring report form.

No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2021 Sample Collection Date: 10/25/2021

B. Facility Information

- 1) Permit Number: WQ0003656000
- 2) Site Name: Golden Star Dairy
- 3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 2
- 4) Name of Owner/Operator: Pete Schouten
- 5) Mailing Address for Owner/Operator: 3728 CR 229, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO3-N), ppm	5.28	2.56
Phosphorus (extractable), ppm	326	46
Potassium (extractable), ppm	310	227
Sodium (extractable), ppm	8	5
Magnesium (extractable), ppm	371	281
Calcium (extractable), ppm	16836	16913
Electrical Conductivity/Soluble Salts, dS/m	0.169	0.202
pH, SU	7.57	7.94

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemins per meter, equivalent to millimhols per centimeter (mmhols/cm); SU = standard units.

TCEQ-20170-b CAFO Individual Permit Soil Monitoring Report (July 20, 2014; Rev 01/15/22) Page 2

C. Certification

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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Pete Schouten, Owner

Signature: Jonk. Malken' Date: 3/20/22

Telephone Number: 254/965-9652

D. How to Submit

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By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

Yes, complete this form and Tables 1 and 2 below. Attach a copy of the laboratory analyses to this soil monitoring report form.

- No, provide the facility information for the LMU below with the exception of the tables.
- 2) Reporting Year: 2021

Sample Collection Date: 10/25/2021

B. Facility Information

- 1) Permit Number: WQ0003656000
- 2) Site Name: Golden Star Dairy
- 3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 3
- 4) Name of Owner/Operator: Pete Schouten
- 5) Mailing Address for Owner/Operator: 3728 CR 229, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO3-N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	1.88	0.59
Phosphorus (extractable), ppm	130	12
Potassium (extractable), ppm	213	168
Sodium (extractable), ppm	19	103
Magnesium (extractable), ppm	222	380
Calcium (extractable), ppm	4913	6038
Electrical Conductivity/Soluble Salts, dS/m	0.164	0.173
pH, SU	7.55	8.01

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemins per meter, equivalent to millimhols per centimeter (mmhols/cm); SU = standard units.

TCEQ-20170-b CAFO Individual Permit Soil Monitoring Report (July 20, 2014; Rev 01/15/22) Page 2

C. Certification

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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Pete Schouten, Owner

Signature: Julia Muller fur Date: 3/20/22

Telephone Number: 254/965-9652

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

 F_{i}

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

Yes, complete this form and Tables 1 and 2 below. Attach a copy of the laboratory analyses to this soil monitoring report form.

No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2021 Sample Collection Date: 10/25/2021

B. Facility Information

- 1) Permit Number: WQ0003656000
- 2) Site Name: Golden Star Dairy
- 3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 4
- 4) Name of Owner/Operator: Pete Schouten
- 5) Mailing Address for Owner/Operator: 3728 CR 229, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			en e
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	4.71	1.17
Phosphorus (extractable), ppm	149	27
Potassium (extractable), ppm	414	272
Sodium (extractable), ppm	5	49
Magnesium (extractable), ppm	259	354
Calcium (extractable), ppm	6853	6340
Electrical Conductivity/Soluble Salts, dS/m	0.173	0.123
pH, SU	7.66	7.91

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemins per meter, equivalent to millimhols per centimeter (mmhols/cm); SU = standard units.

TCEQ-20170-b CAFO Individual Permit Soil Monitoring Report (July 20, 2014; Rev 01/15/22) Page 2

C. Certification

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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Pete Schouten, Owner Signature: Julia Mulla' for 7 Date: 3/28/22

Telephone Number: 254/965-9652

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

1

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

TEXAS COMMISS ENVIRON QUALITY	SION ON IMENTAL			Ch	ain	of	Cust	od	y F	Reco		
	iolde	nS	10	n this shaded		F the fac		ation	must b	e confid	Permit #: 365	56
egion:	Organization			PCA Code			Program				Sampler telephone number:	
-Mail ID;		Samp	iler:	(signature) Ma Je	n	~~~					Sampler: (please print clearly)	
ab ID umber	Sample ID	Date		Time	# of	Grab/ Comp.	Matrix L,S,M,O,	CL2	pН	Cond.	Analyses Requested REMAR	Ś
11453	-01	10/25	阳	0940							See EFA UMUIO	-le
1454	-02			0940							Lmu i	2-24
11455	-03			1000							imu Za	5-6
11456	-04			1000							1 Unuzi	2-24
1457	-05			1040							umu 3	0-6
11458	-06			1040							UMU3L	2-24
1461	-07			1620							I Imu u	<u>0-4</u>
11462	2 -08		L	IDD							mu unu unu	2-24
	-09											
	-10						21					
Relinquished	py: Jerbhan		1/21	Time 1545		ived by:	/un	10	9-2	9.2	For Laboratory Use:	
Relinquished	by:	Date		Time		ived by:					Received on ice: Y / N	deg. C
Relinquished	by:	Date		Time		ived by:					Preservatives: Y N	
Relinquished	by:	Date		Time	Rece	ived by:					COC Seal: Y N	
Shipper nam FED EX		Ship	per N	Number: 50 4	647	83	334				Seals Intact: Y N	

Report for Samples analyzed Under Contract Number: 582-10-99518

Print Date:

Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory 108 Soil Testing Laboratory, 2478 TAMU College Station, TX 77843-2478 979-862-4955

Client Name: Golden Star Dairy Client address: not provided

Standard Sample Report TCEQ COC# 055538

Laboratory ID:	TCEQ/client Sample ID:	Sample Depth (inches)	Sample Coll. Date:	Collector Name;	TCEQ Region #	Date	Sample	Sample opened	Sample Ground	Process
11453	55538-01	0-6	10/25/2021	Vanessa Gardner	Region #	Received	Type:	Date	Date	Tech.
11454	55538-02	6-24	10/25/2021		4	10/29/2021	soil	10/29/2021	11/4/2021	TLP
11455	55538-03			Vanessa Gardner	4	10/29/2021	soil	10/29/2021	11/4/2021	TLP
11456		0-6	10/25/2021	Vanessa Gardner	4	10/29/2021	soil	10/29/2021	11/4/2021	
	55538-04	6-24	10/25/2021	Vanessa Gardner	4	10/29/2021	soil	10/29/2021		TLP
11457	55538-05	0-6	10/25/2021	Vanessa Gardner	Λ	10/29/2021			11/4/2021	TLP
11458	55538-06	6-24	10/25/2021	Vanessa Gardner	-		soil	10/29/2021	11/4/2021	TLP
				Vancosa Galunei	4	10/29/2021	soil	10/29/2021	11/4/2021	TLP

Methods and Sample Preparation:

Receiving of samples

Processing - SWFTL0097R0.SOP

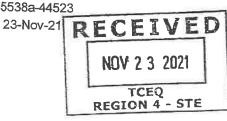
Upon opening of sample chests, all samples are identified and organized as listed on COC to insure completeness and condition of shipment. Individually each sample is spread across a non-reactive tray where foreign materials is physically removed and discarded. The sample(s) are then placed inside a 65C drying oven and allow to remain until dry. Individual samples were then removed from drying oven and pulverized with an Agvise soil pulzerized fitted with a shaking 2mm screen. Every attempt was again made to remove any remaining plant tissue in the pulverized sample(s). Soil was then transferred to the laboratory sample cups and while additional sample was stored.

Analytical Methods:

Soil pH 2:1 DI water:soil SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP Schofield, R.K. and A.W. Taylor. 1955. The measurement of soil pH. Soil Sci. Soc. Am. Proc. 19:164-167. Soil Conductivity 2:1 DI Water: Soil SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP Rhoades, J.D. 1982. Soluble salts. p. 167-178. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI. Soil Nitrate-N KCI Extractable with Cd-Reduction Analyses NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP Keeney, D.R. and D.W. Nelson. 1982. Nitrogen - inorganic forms. p. 643-687. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

Soil P. K. Ca. Mg. S and Na -- Mehlich III by ICP M3 EXTRACTION - SWFTL0079R1.SOP/M3 ANALYSIS - SWFTL0081R2.SOP

Mehlich-3 soil test extractant a modification of Mehlich-2 extractant. Commun. Soil Sci. Plant Anal. 15(12):1409-1416



Report ID: 055538a-44523

Report ID Itandard Sam	: 055538a-44523 ple Report		Print Date: EQ COC#										
Laboratory ID:	TCEQ/client Sample ID;	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III								
11453	55538-01	86			K units	Ca conc.	Caunits	Mg conc.	Mg units	S conc.	S units	Na conc.	Na units
11454	55538-02		ppm	426	ppm	10239	ppm	282	ppm	13	ppm	4	
11455	55538-03	4	ppm	295	ppm	14321	ppm	187	ppm	9	ppm	8	ppm
11456		326	ppm	310	ppm	16836	ppm	371	ppm	23			ppm
	55538-04	46	ppm	227	ppm	16913	ppm	281			ppm	8	ppm
11457	55538-05	130	ppm	213	ppm	4913			ppm	10	ppm	5	ppm
11458	55538-06	12		168			ppm	222	ppm	7	ppm	19	ppm
		12	ppm	100	ppm	6038	ppm	380	ppm	6	ppm	103	ppm

Laboratory ID:	Mehlich III	Mehlich III	Mehlich III	Mahfah III	B. J. J. P. J. 195							
, , , , , , , , , , , , , , , , , , ,				Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Makes III	
	P conc.	P units	K conc.	K units	Ca conc.	Ca units	11	0.010			Mehlich III	Mehlich III
Detection Limit	0.0323	-	0.0704			Calurius	Mg conc.	Mg conc.	S conc.	S units	Na conc.	Na units
	0.0525	ppm	0.0794	ppm	2.9360	ppm	0.0035	0000	0.0004			INA UTILS
Reporting Limit	1	ppm	1			10000000	0.0000	ppm	0.0631	ppm	0.0181	ppm
	· · ·	pprin		ррл		ppm	1	ppm	1	0.000	4	1.1
								PP-11		ppm		ppm

Laboratory ID:	TCEQ/client	Mehlich III	Mehlich III	Mehlich III	Mehlich III
	Sample ID:	Extract Date	Extract Tech	Anal.Date	Anal. Tech
11453	55538-01	11/15/2021	FMR	11/16/2021	JLP
11454	55538-02	11/15/2021	FMR	11/16/2021	JLP
11455	55538-03	11/15/2021	FMR	11/16/2021	JLP
11456	55538-04	11/15/2021	FMR	11/16/2021	JLP
11457	55538-05	11/15/2021	FMR	11/16/2021	JLP
11458	55538-06	11/15/2021	FMR	11/16/2021	JLP

Laboratory ID:	TCEQ/client	pН	pН	Conductivity	Conductivity	Nitrate-N	Nitrate-N
	Sample ID:		units		units		units
11453	55538-01	7.76	NA	0.173	dS/M	4.27	ppm
11454	55538-02	7.9	NA	0.154	dS/M	1.7	ppm
11455	55538-03	7.57	NA	0.169	dS/M	5.28	ppm
11456	55538-04	7.94	NA	0.202	dS/M	2.56	ppm
11457	55538-05	7.55	NA	0.164	dS/M	1.88	ppm
11458	55538-06	8.01	NA	0.173	dS/M	0.59	ррл

Laboratory ID:	pН	pH units	Conductivity	Conductivity	Nitrate-N	Nitrate-N
Detection Limit	0.01	na	0.001	dS/M	0.01	units
Reporting Limit	0.1	па	0.001	dS/M	1	ppm

Laboratory ID:	TCEQ/client	pH/Conduct	tivity prep	pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
11453	55538-01	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	
11454	55538-02	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR		FMR
11455	55538-03	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021		11/16/2021	FMR
11456	55538-04	11/15/2021	DEC	11/15/2021	DEC	11/15/2021			FMR	11/16/2021	FMR
11457	55538-05	11/15/2021					DEC	11/16/2021	FMR	11/16/2021	FMR
			DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR
11458	55538-06	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR

Report ID: 055538a-44523Print Date:23-Nov-21Quality Control ReportTCEQ COC# 055538

Laboratory ID:		Mehlich III	Mehlich (1)	Mehlich III									
		P conc.	P units	K conc.	K units	Ca conc.	Ca units	Мд сопс.	Mg conc.	S conc.	S units	Na conc.	Na units
11459	IC817	44	ppm	292	ppm	2264	ppm	327	ppm	17	ppm	40	ppm
11460	IC818	44	ppm	287	ppm	2206	ppm	327	ppm	16	ppm	40	ppm
	Mean (C	44	ppm	290	ppm	2235	ppm	327	ppm	17	ppm	40	ppm
	IC Lower	36.9	ppm	249.0	ppm	1699.0	ppm	268.0	ppm	11.9	ppm	19.0	ppm
	IC Upper	45.3	ppm	321.0	ppm	2290.0	ppm	340.0	ppm	31.2	ppm	51.0	
	blk178	0.398	ppm	0.116	ppm	3.721	ppm	0.306	ppm	0.904	ppm	0.55	ppm

Laboratory ID:	Mehlich III											
	P conc.	P units	K conc.	K units	Са солс.	Ca units	Mg conc.	Mg conc.	S conc.	S units	Na conc.	Na units
Detection Limit	0.0323	ppm	0.0794	ppm	2.9360	ppm	0.0035	ppm	0.0631	ppm	0.0181	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	DDW	1	ppm

Laboratory ID:	Mehlich III	Mehlich III	Mehlich III	Mehlich III
	Extract Date	Extract Tech	Anal.Date	Anal. Tech
IC817	11/15/2021	FMR	11/16/2021	JLP
IC818	11/15/2021	FMR	11/16/2021	JLP
blk178	11/15/2021	FMR	11/16/2021	JLP

1000

Report ID: 055538a-44523

Quality Control Report

TCEQ COC# 055538

Laboratory ID:		pН	pН	Conducitity	Conducitity	Nitrate-N	Nitrate-N	Nitrate-N
Laboratory 10.		P	units	conc.	units	conc.	units	% recovery
11459	IC817	5.9	na	0.287	dS/M	6.18	ppm	
11460	IC818	5.9	na	0.289	dS/M	5.84	ppm	
11400	Mean IC	5.905	na	0.288	dS/M	6.01	ppm	
11460spike	Spiked sample		-	5 # 5	3 	4.9	ppm	93.24
11-00apine	IC lower	5,750	na	0.259	dS/M	52.4	ppm	
	IC Upper	5.930	na	0.340	dS/M	8.0	ppm	
	blk178		na	0	dS/M	0.055	ppm	

Laboratory ID:	pН	pН	Conducitity	Conducitity	Nitrate-N conc.	Nitrate-N units
		units	conc.			
Detection Limit	0.01	na	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ррпі

L. Is contained IDs	pH/Conduct	ivity prep	oH Ana	alvsis	Conduc	tivity	Nitate-N	Extract	Nitrate-N /	Analysis
Laboratory ID:		Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
	Date	Tech				DEC	11/16/2021	FMR	11/16/2021	FMR
IC817	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/10/2021	t ivit v		
	44/45/0004	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR
IC818	11/15/2021	DEC	1111012021				44400004	EN4D	11/16/2021	FMR
blk178	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/10/2021	T IVIL V

Report for Samples analyzed Under Contract Number: 582-10-99518

Report ID: 055538b-44523 23-Nov-21 Print Date:

Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory 108 Soil Testing Laboratory, 2478 TAMU College Station, TX 77843-2478 979-862-4955

Golden Star Dairy Client Name: not provided Client address:

TCEQ COC# 055538 Standard Sample Report

Laboratory ID:	TCEQ/client Sample ID:	Sample Depth (inches)	Sample Coll. Date:	Collector Name:	TCEQ Region #	Date Received	Sample Type:	Sample opened Date	Sample Ground Date	Process Tech.
11461	55538-07	0-6	10/25/2021	Vanessa Gardner	4	10/29/2021	soil	10/29/2021	11/4/2021	TLP
11462	55538-08	6-24	10/25/2021	Vanessa Gardner	4	10/29/2021	soil	10/29/2021	11/4/2021	TLP

Methods and Sample Preparation:

Processing - SWFTL0097R0.SOP

Receiving of samples Upon opening of sample chests, all samples are identified and organized as listed on COC to insure completeness and condition of shipment. Individually each sample is spread across a non-reactive tray where foreign materials is physically removed and discarded. The sample(s) are then placed inside a 65C drying oven and allow to remain until dry. Individual samples were then removed from drying oven and pulverized with an Agvise soil pulzerized fitted with a shaking 2mm screen. Every attempt was again made to remove any remaining plant tissue in the pulverized sample(s). Soil was then transferred to the laboratory sample cups and while additional sample was stored.

Analytical Methods:

SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP Soil pH_2:1 DI water:soil Schofield, R.K. and A.W. Taylor. 1955. The measurement of soil pH. Soil Sci. Soc. Am. Proc. 19:164-167. SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP Soil Conductivity 2:1 DI Water:Soil Rhoades, J.D. 1982. Soluble salts. p. 167-178. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI. NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP Soil Nitrate-N_KCl Extractable with Cd-Reduction Analyses Keeney, D.R. and D.W. Nelson. 1982. Nitrogen - inorganic forms. p. 643-687. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

M3 EXTRACTION - SWFTL0079R1.SOP/M3 ANALYSIS - SWFTL0081R2.SOP Soil P. K. Ca. Mg. S and Na -- Mehlich III by ICP

Mehlich-3 soil test extractant: a modification of Mehlich-2 extractant. Commun. Soil Sci. Plant Anal. 15(12):1409-1416

Report ID	: 055538b-44523		Print Date:	23-Nov-21									
Standard Sarr	ple Report	TC	EQ COC#	055538									
Laboratory ID:	TCEQ/client	Mehlich III											
	Sample ID:	P conc.	P units	K conc.	K units	Ca conc.	Ca units	Mg conc.	Mg units	S conc.	S units	Na conc.	Na units
11461	55538-07	149	ppm	414	ppm	6853	ppm	259	ppm	12	ppm	5	ppm
11462	55538-08	27	ppm	272	ppm	6340	ppm	354	ppm	3	ppm	49	ppm

Laboratory ID:	Mehlich 111	Mehlich III										
	P conc.	P units	K conc.	K units	Ca conc.	Ca units	Mg conc.	Mg conc.	S conc.	S units	Na conc.	Na units
Detection Limit	0.0323	ppm	0.0794	ppm	2.9360	ppm	0.0035	ppm	0.0631	ppm	0.0181	ppm
Reporting Limit	1	ppm										

Laboratory ID:	TCEQ/client	Mehlich III	Mehlich III	Mehlich III	Mehlich III
	Sample ID:	Extract Date	Extract Tech	Anal.Date	Anal. Tech
11461	55538-07	11/15/2021	FMR	11/16/2021	JLP
11462	55538-08	11/15/2021	FMR	11/16/2021	JLP

	: 055538b-44 ample Report		Print Dat TCEQ COC		1		
Laboratory ID:	TCEQ/client Sample ID:	pН	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
11461	55538-07	7.6	6 NA	0.173	dS/M	4.71	ppm
11462	55538-08	7.9	1 NA	0.123	dS/M	1.17	ppm

Laboratory ID:	pН	pH	Conductivity	Conductivity	Nitrate-N	Nitrate-N
		units		units		units
Detection Limit	0.01	ла	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	па	0.001	dS/M	1	ppm

Laboratory ID:	TCEQ/client	pH/Conduct	ivity prep	pH Ana	lysis	Conduc	tivity	Nitate-N	Extract	Nitrate-N A	nalysis
Laboratory ib.	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
11461	55538-07	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR
11461	55538-08	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR

Report ID: 055538b-44523Print Date: 23-Nov-21Quality Control ReportTCEQ COC# 055538

 		Mahlah III	Meblich III	Meblich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III
					Caunits	Mg conc.	Mg conc.	S conc.	S units	Na conc.	Na units
						342	ppm	18	ppm	42	ppm
						336	ppm	18	ppm	41	ppm
				2255		339	ppm	18	ppm	41	ppm
	••			1699.0		268.0	ррт	11.9	ppm	19.0	ppm
				2290.0	ppm	340.0	ppm	31.2	ppm	51.0	ppm
			CONTENTS	3.589	ppm	0.288	ppm	0.89	ppm	0.423	ppm
IC819 IC820 Mean IC IC Lower IC Upper blk179	IC820 44 Mean IC 44 IC Lower 36.9 IC Upper 45.3	P conc.P unitsIC81945ppmIC82044ppmMean IC44ppmIC Lower36.9ppmIC Upper45.3ppm	P conc. P units K conc. IC819 45 ppm 301 IC820 44 ppm 299 Mean IC 44 ppm 300 IC Lower 36.9 ppm 249.0 IC Upper 45.3 ppm 321.0	P conc. P units K conc. K units IC819 45 ppm 301 ppm IC820 44 ppm 299 ppm Mean IC 44 ppm 300 ppm IC Lower 36.9 ppm 249.0 ppm IC Upper 45.3 ppm 321.0 ppm	P conc. P units K conc. K units Ca conc. IC819 45 ppm 301 ppm 2309 IC820 44 ppm 299 ppm 2201 Mean IC 44 ppm 300 ppm 2255 IC Lower 36.9 ppm 249.0 ppm 1699.0 IC Upper 45.3 ppm 321.0 ppm 2290.0	P conc. P units K conc. K units Ca conc. Ca units IC819 45 ppm 301 ppm 2309 ppm IC820 44 ppm 299 ppm 2201 ppm Mean IC 44 ppm 300 ppm 2255 ppm IC Lower 36.9 ppm 249.0 ppm 1699.0 ppm IC Upper 45.3 ppm 321.0 ppm 2290.0 ppm	Memicri III Memicri IIII Memicri IIII Memicri IIII Memicri IIII Memicri IIII	Mehlich III Mehlich III	Mehlich III Mehlich III	Mehlich III Mehlich III	Mehlich III Mehlich III

			A	Mehlich III	Mehlich ill	Mehlich III	Mehlich III	Mehlich III				
Laboratory ID:	Mehlich III	Mehlich III	Mehlich III K conc.	K units	Ca conc.	Ca units	Mg conc.	Mg conc.	S conc.	S units	Na conc.	Na units
	P conc.	P units	K COIIC.	TC units					0.0631	ppm	0.0181	ppm
Detection Limit	0.0323	ppm	0.0794	ppm	2.9360	ppm	0.0035	ppm	0.0031	ppm	0.0101	
-	0.0020	C28656811	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm
Reporting Limit	1	ppm	1	Phili		E						

Laboratory ID:	Mehlich III	Mehlich III	Mehlich III	Mehlich III
Laboration	Extract Date	Extract Tech	Anal.Date	Anal. Tech
IC819	11/15/2021	FMR	11/16/2021	JLP
IC820	11/15/2021	FMR	11/16/2021	JLP
blk179	11/15/2021	FMR	11/16/2021	JLP

Report ID: 055538b-44523

Quality Control Report

TCEQ COC# 055538

Laboratory ID:		pН	pН	Conducitity	Conducitity	Nitrate-N	Nitrate-N	Nitrate-N
Laboratory 12.			units	conc.	units	CONC.	units	% recovery
11479	IC819	5.9	па	0.286	dS/M	5.91	ppm	
11480	IC820	5.9	na	0.288	dS/M	6.66	ppm	
11400	Mean IC	5.895	na	0.287	dS/M	6.285	ppm	
11480spike	Spiked sample	12	-	-	221	4.7	ppm	89.59
	IC lower	5,750	na	0.259	dS/M	52.4	ppm	
	IC Upper	5.930	па	0.340	dS/M	8.0	ppm	
	blk179		na	0	dS/M	0.07	ppm	

Laboratory ID:	рН	ρH	Conducitity	Conducitity	Nitrate-N	Nitrate-N
Laboratory 10.	P. 1	units	CONC.	units	conc.	units
Detection Limit	0.01	па	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ppm

Laboratory ID:	pH/Conduct	ivity prep	pH Ana	alysis	Conduc	ctivity	Nitate-N	Extract	Nitrate-N	Analysis
Laboratory iD.	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
10040	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR
IC819	,				11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR
IC820	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC				
blk179	11/15/2021	DEC	11/15/2021	DEC	11/15/2021	DEC	11/16/2021	FMR	11/16/2021	FMR

Attachment E.

REQUEST FOR ANALYSIS TCEQ-BOSQUE 1255/1226 SOIL SAMPLES

Sample ID: 01-0	8
Standard Re	quest for Analysis
NO3-N	Mg
P Mehlich III by ICP	Conductivity ·
<u>K.</u>	pH
Na	
· Addiți	onal Tests
NA	
	8 a 2

5.0 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(50). 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, P.E. Enviro-Ag Engineering, Inc. Firm #F-2507

> Golden Star Heifer Ranch New Permit Application

5.1 General

This recharge feature certification report was authorized by Peter & Nova Schouten representing Golden Star Heifer Ranch. The findings and recommendations contained herein were compiled by Ms. Jourdan Mullin and Mr. Norman Mullin, P.E., of Enviro-Ag Engineering, Inc., Amarillo, Texas.

5.2 Purpose of Report

Peter & Nova Schouten is applying for a new individual permit 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) onsite inspection. The TCEQ Regulatory Guidance RG-433 was followed to identify recharge features and recommend best management practices.

5.3 Property Under Evaluation

The property under evaluation consists of approximately 150 acres in Bosque County, Texas. The area is within the jurisdiction of the Middle Trinity Ground Water Conservation District.

5.4 Definition of Waste Production

Rain falling on the open lots comes into contact with the manure layer and absorbs some of the excreted nutrients present in manure. The nutrient enriched runoff is considered wastewater, which flows by designed slopes from the open lots toward the settling basin and into the RCS.

Manure solids accumulated in the open confinement lots are collected at least annually and hauled off-site to farmland by a waste transporter. While in the open lots, manure becomes compacted and slowly permeable due to hoof action by the cattle. This compacted manure layer results in an increase of the overall runoff volume during rainfall events. Infiltration of nutrients downward through the manure layer into the underlying soils is considered minimal as a result of pen surface compaction (Sweeten, 1990).

5.5 Definition of Recharge Feature

TCEQ rules define a "Recharge Feature" as: "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

Golden Star Heifer Ranch New Permit Application 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 geologic formations that are identified as an aquifer; or a water course bisecting an aquifer." (30 TAC §321.32(50))

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 <u>significant</u> 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."

EVALUATION OF NATURAL FEATURES

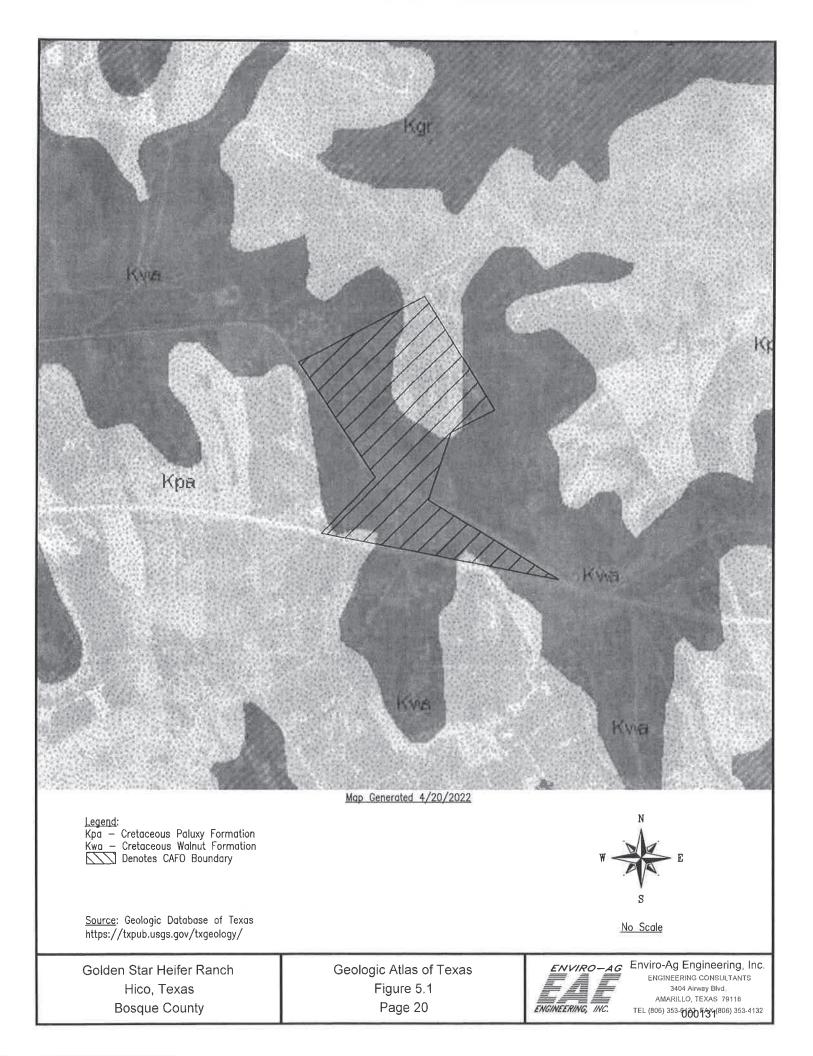
5.6 Geomorphologic/Geologic Features

The Purves-Maloterre soil associations in this area of Bosque County are immediately underlain by the Cretaceous Walnut Formation and the Cretaceous Paluxy Formation, as shown in Figure 5.1, Geologic Atlas (Dallas and Waco Sheets). The Glen Rose Formation outcrops in many areas outside of the subject property.

The Walnut Formation comprises the beds of clay and nonchalky limestones at the base of the Fredericksburg division. They consist of alternations of calcareous laminated clays, weathering yellow on oxidation, semicrystalline limestone flags, and shell agglomerate, all of which grade upward without break into the more chalky beds of the Edwards limestone. In places, they weather into rich black soils and make extensive agricultural belts (Hill, 1901).

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. Underlaying the Paluxy, the Glen Rose Formation forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. Paluxy bedrock outcrops in much of the northern area of this site. Limiting application rates of wastewater and manure will protect this feature from adverse impacts.

The basal unit of the Trinity Group consists of the Twin Mountain and Travis Peak formations, which are laterally separated by a facies change. To the north, the Twin Mountain Formation consists mainly of medium-to coarse-grained sands, silty clays, and conglomerates (TWDB, 1995).



5.6.1 Outcrops/Stream Interception

An inspection of the CAFO property and review of the USGS topographic map of the area shows a tributary to Duffau Creek located around LMUs #1 and #2. There is also a freshwater pond located west and north of LMU #1. These areas will be protected from land application with a 140-ft buffer.

5.6.2 Excessive Slopes

No slopes of greater than 8 percent are present on the property.

5.6.3 Other Large-Scale Conduits

No faults, fractured sediments, caves, sinkholes, solution cavities, vugs or concentrated or extensive animal burrowing was observed during an on-site visit, nor is identified on the geologic atlas, soil surveys or USGS maps.

5.6.4 Surface Water

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 (2017). The buffer zones and LMU boundaries in Figure 6.1 (Refer to Section 6) are submitted with this application for TCEQ approval.

5.6.5 Aquifer

The Trinity aquifer consist 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 form the adjacent Edwards-Trinity aquifer. The aquifer discharges by evapotranspiration, spring discharges, diffuse lateral or upward leakage into shallower aquifers, and withdrawals from wells (USGS, 2003). Land application at agronomic rates and maintain permanent cover crops will protect the feature from adverse impacts associated with this operation.

5.7 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 Bosque County. Soils descriptions are included in the supporting documentation and were obtained from the most current version of the NRCS electronic soil information database for Bosque County available on the NRCS Web Soil Survey.

5.7.1 Production Area

Soils underlying the pen and pond areas are predominately of the Purves-Maloterre (PmC) series. The RCS has been certified as meeting TCEQ guidelines for soil liner (30 TAC §321.38(g). Best management practices pertaining to surface drainage, surface compaction and manure management within the open lot confinement area will be followed. Steve Evans, Ph.D., soil physicist with the USDA Agricultural Research Service in Bushland, Texas, stated that his work with lysimeters and potential evapotranspiration indicated limited infiltration and even less deep percolation will occur on areas with sloped surfaces (1996). Work performed by the NRCS calculated the feedlot surface curve number (potential for runoff) as 90 on a scale of 100.

5.7.2 Land Application Areas

Soils underlying the land application areas are primarily of the Hico-Windthorst (HwD3) and Purves-Maloterre (PmC) series. The application of wastewater and/or manure will be performed at agronomic rates according to an approved NUP/NMP. No pooling or ponding is anticipated due to application through sprinklers.

Figure 5.2 shows the soils underlying the property as delineated from the electronic NRCS Soil Survey map for Bosque County. The electronic version of the soil survey is considered the most current soils information available. Table 5.1 is a summary of the estimated physical properties of the soils in the subject area, obtained from the NRCS Web Soil Survey.

Soil Series (Map ID)	Slope (%)	HSG	Depth (in)	USDA Soil Texture	Permeability / Infiltration Rate (in/hr)	Available Water Capacity (in/in of soil)
Cranfill (CrC)	3-5	В	0-10	Gravelly Clay	0.6-2.0	0.10-0.14
			10-54	Loam	0.6-2.0	0.08-0.14
Hico (HwD3)	1-8	B	0-7	Sandy Clay	0.6-6.0	0.11-0.13
. ,			7-44	Loam	0.6-2.0	0.11-0.13
Windthorst		С	0-6	Sandy Clay	0.20-2.0	0.11-0.14
			6-16	Loam	0.20-0.6	0.15-0.19
			16-25		0.20-0.6	0.16-0.20
Purves (PmC)		D	0-11	Gravelly Clay	0.20-0.6	0.08-0.18
. ,			11-16		0.20-0.6	0.08-0.18

Table 5.1: Estimated Soil Properties

Golden Star Heifer Ranch

New Permit Application

		16-20		0.06-2.0	
Maloterre	 D	0-5	Gravelly Clay	0.20-0.6	0.13-0.16
		5-7	Loam	0.06-	

The major 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. Associated best management practices will be implemented, as appropriate, based on physical and economic conditions.

Table 5.2: Major Soil Types

LMU ID	Major Soil Type
1	Purves-Maloterre (PmC)
2	Hico-Windthorst (HwD3)

Table 5.3: Potential Soil Limitations for Land Application

Soil Series	Potential Soil Limitations	Best Management Practices
HwD3	Depth to Soft Bedrock	 Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils.
PmC	Droughty Depth to Bedrock	 Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils. Maintain clay liners in RCS.

5.7.3 Erosion

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 exposed areas with forage or cover crops,
- Constructing terraces or berms (shortening the length and steepness of slopes),
- Covering erosive areas with road surfacing materials,
- Implementing reduced tillage practices,
- Maintaining a cover of plants or crop residue.



ARTIFICIAL FEATURES

5.8 Railroad Commission Records

A search of the RRC database files was performed by 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.

5.9 Ground Water Conservation District Records

A search of the Middle Trinity Ground Water Conservation District database was performed. 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 onsite PPP.

5.10 GeoSearch

GeoSearch was not utilized in this application.

5.11 TWDB Water Information Integration & Dissemination (WIID)

The TWDB WIID online database was reviewed for artificial penetrations. The database revealed no water wells registered with the TWDB as being located on the subject property. The wells that could be correlated with onsite wells are shown on Table 5.4.

5.12 Natural Resource Conservation Service

The historical NRCS Soil Survey of Bosque County (1973) was reviewed for locations of potential recharge features.

5.13 Other Artificial Features

Numerous features, such as irrigation tail water pits, stock ponds, and borrow pits exist on the subject property and are shown to be buffered on Figure 5.3. These areas shall be buffered during land application events or backfilled prior to the first land application event.

5.14 Previous/Current Land Owner

Mr. Peter Schouten was contacted regarding then presence of any potential recharge features on the property. Mr. Schouten is considered the most knowledgeable about the property. The previous landowner could not be located. Mr. Schouten confirmed the locations of all active water wells.

5.15 Onsite Inspection

The property has been inspected both on the ground and by historical mapping. All active water wells were documented on the property during the onsite inspection and

Golden Star Heifer Ranch New Permit Application are shown on Figure 5.3. The BMPs for all wells are listed in Table 5.4. Should any open well or test hole be encountered, it will be marked, reported to the Engineer, included on Figure 5.3 and properly plugged (30 TAC §321.34(f)(3)(B)). Well plugging reports shall be submitted as required to the Texas Department of Licensing and Registration (Well Drillers Board) and will be maintained in the onsite PPP.

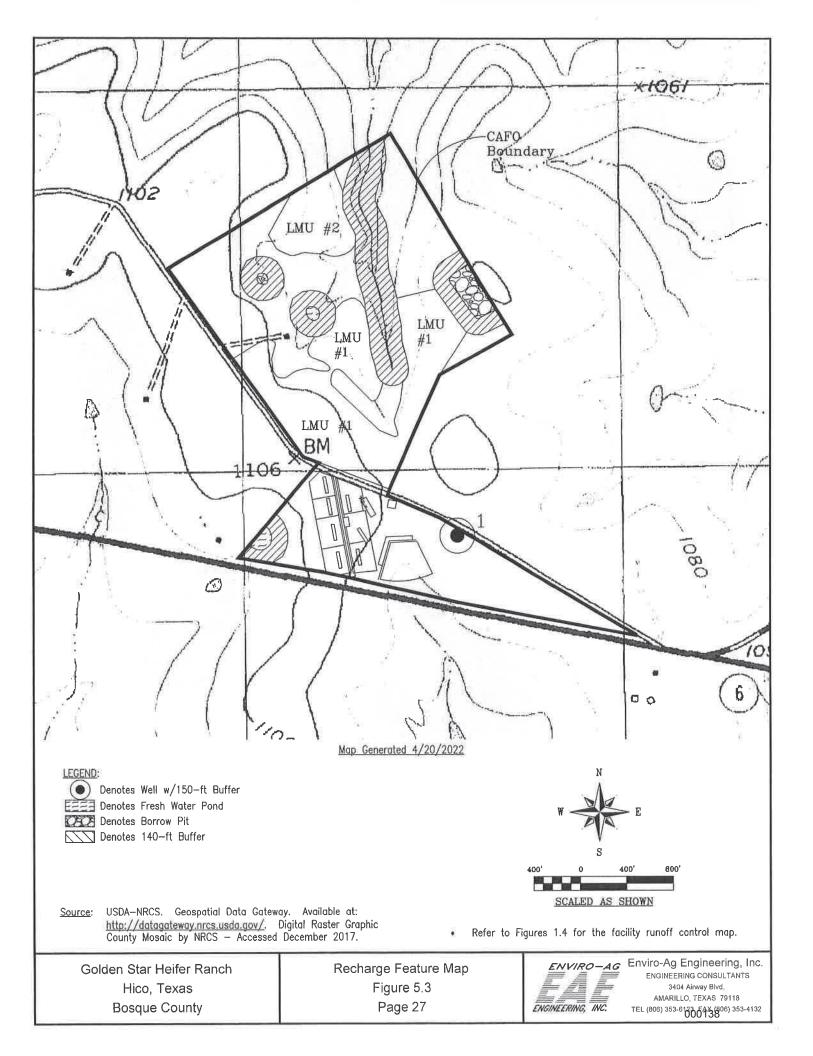
All well data listed in Table 5.4 is based on information received from the water district, TCEQ and TWDB files, onsite inspection, and interviews of persons knowledgeable of the property. The map number corresponds to the location shown in Figure 5.3. The well identification number corresponds to the database number or drilling report number used by the water district, TCEQ or TWDB Commission.

Table 5.4: Well Information

Map No.	Well ID	Best Management Practices	
]	N/A	Maintain 150-ft buffer	
lote: A copy of	f the well logs for or	nsite wells are attached.	

No public water supply wells are located within 500 feet of the property boundary. All offsite wells within the required buffer distances required by this authorization are shown (on the Site Map) 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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Supporting Documentation

USDA Soil Descriptions & Limitations Texas Railroad Commission Map Water District Well Location Map (if available) Onsite Well Logs (if available)

> Golden Star Heifer Ranch New Permit Application

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

	RUSLE2 Related Attributes–Bosque County, Texas										
Map symbol and soil name	Pct. of	Slope	Hydrologic group	Kf	T factor	Representative value					
		length (ft)				% Sand	% Silt	% Clay			
CrC—Cranfill gravelly clay loam, 3 to 5 percent slopes											
Cranfill	100	180	В	.20	5	34.2	32.3	33.5			
HwD3—Hico and Windthorst sandy clay loams, 1 to 8 percent slopes, severely eroded											
Hico, severely eroded	50	180	В	.24	4	64.0	11.0	25.0			
Windthorst, severely eroded	40	200	с	.43	4	62:0	15.0	23.0			
PmCPurves-Maloterre association, undulating											
Purves	50	200	D	.10	1	26.1	28.9	45.0			
Maloterre	40	161	D	.20	1	31.5	31.0	37.5			

Data Source Information

Soil Survey Area: Bosque County, Texas Survey Area Data: Version 19, Sep 9, 2021



Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

Selected Soil Interpretations-Bosque County, Texas										
Map symbol and soil name	Pct. of	AWM - Irrigation Disposal of Wastewater		AWM - Land Applica Municipal Sewage S		ENG - Sewage Lagoons				
	map unit	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value			
CrC—Cranfill gravelly clay loam, 3 to 5 percent slopes										
Cranfill	100	Somewhat limited		Not limited		Somewhat limited				
		Seepage, porous bedrock	0.50			Seepage	0.50			
		Too steep for surface application	0.08			Slope	0.32			
HwD3—Hico and Windthorst sandy clay loams, 1 to 8 percent slopes, severely eroded										
Hico, severely eroded	50	Somewhat limited		Somewhat limited		Somewhat limited				
		Slow water movement	0.96	Slow water movement	0.96	Seepage	0.50			
		Too steep for surface application	0.08			Slope	0.32			
Windthorst, severely eroded	40	Somewhat limited	2	Somewhat limited		Very limited				
		Slow water movement	0.96	Slow water movement	0.96	Depth to soft bedrock	1.00			
		Depth to bedrock	0.18	Depth to bedrock	0.18	Slope	0.08			
		Too acid	0.08	Shallow to densic materials	0.18					
				Too acid	0.08		112			

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

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For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

		Selected Soil Inte	rpretatio	ns-Bosque County, Te	xas		
Map symbol and soil name	Pct. of	AWM - Irrigation Disposal of Wastewater		AWM - Land Applicat Municipal Sewage S		ENG - Sewage Lagoons	
	map unit	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CrC—Cranfill gravelly clay loam, 3 to 5 percent slopes							
Cranfill	100	Somewhat limited		Not limited		Somewhat limited	
		Seepage, porous bedrock	0.50			Seepage	0.50
		Too steep for surface application	0.08			Slope	0.32
HwD3—Hico and Windthorst sandy clay loams, 1 to 8 percent slopes, severely eroded							
Hico, severely eroded	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.96	Slow water movement	0.96	Seepage	0.50
		Too steep for surface application	0.08			Slope	0.32
Windthorst, severely eroded	40	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Depth to soft bedrock	1.00
·		Depth to bedrock	0.18	Depth to bedrock	0.18	Slope	0.08
		Too acid	0.08	Shallow to densic materials	0.18		
				Too acid	0.08		

USDA

		Selected Soil Inter	rpretatio	ns-Bosque County, Te	xas		
Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater		AWM - Land Application of Municipal Sewage Sludge		ENG - Sewage Lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
PmC—Purves- Maloterre association, undulating							
Purves	50	Very limited		Very limited		Very limited	
		Droughty	1.00	Droughty	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Seepage	0,21
		Seepage, porous bedrock	0.50	Slow water movement	0.37	Slope	0.08
		Slow water movement	0.37				
Maloterre	40	Very limited	8-10	Very limited		Very Ilmited	in the second
		Depth to bedrock	1.00	Depth to bedrock	1,00	Depth to hard bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.68
		Seepage, porous bedrock	0.50	Slow water movement	0.37		
		Slow water movement	0.37				
		Too steep for surface application	0.32			, The last	12

Data Source Information

Soil Survey Area: Bosque County, Texas Survey Area Data: Version 19, Sep 9, 2021

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

USDA

000146

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)



Report—Physical Soil Properties

					Physic	al Soil Properties	Bosque Co	unty, Texas						
Map symbol and soil name	Depth	Sand	d Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility	Wind erodibility
										Kw	Kf	т	group	index
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
CrC—Cranfill gravelly clay loam, 3 to 5 percent slopes														
Cranfill	0-10	-34-	-32-	27-34- 40	1.32-1.39 -1.45	4.00-9.00-14.00	0.10-0.12-0. 14	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.10	.20	5	5	56
	10-54	-34-	-37-	20-30- 40	1.32-1.41 -1.50	4.00-9.00-14.00	0.08-0.11-0. 14	3.0- 4.5- 5.9	0.1- 0.3- 0.5	.15	.32	v		
	54-80	-34-	-32-	27-34- 40	1.35-1.48 -1.60	4.00-9.00-14.00	0.08-0.11-0. 14	3.0- 4.5- 5.9	0.1- 0.3- 0.5	.15	.28			

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

					Physic	al Soil Properties	s-Bosque Co	unty, Texas						
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility	Wind erodibility
										Kw	Kf	т	group	index
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
HwD3—Hico and Windthorst sandy clay loams, 1 to 8 percent slopes, severely eroded														
Hico, severely eroded	0-7	59-64- 70	10-11- 18	20-25- 30	1.46-1.53 -1.60	4.00-14.00-42.0 0	0.11-0.12-0. 13	2.1- 3.0- 3.8	0.4- 1.2- 2.0	.24	.24	4	5	56
	7-44	43-57- 61	11-18- 23	18-25- 39	1.48-1.54 -1.60	4.00-9.00-14.00	0.11-0.12-0. 13	1.9- 2.9- 5.1	0.2- 0.4- 0.6	.32	.32			
	44-60	33-66- 81	12-15- 42	4-19- 32	1.55-1.58 -1.61	4.00-9.00-42.00	0.13-0.14-0. 15	0.1- 2.0- 3.7	0.1- 0.2- 0.3	.37	.37			
	60-79	26-61- 85	8-27- 57	7-12- 25	1.76-1.82 -1.88	0.42-1.40-4.00	0.01-0.02-0. 03	0.5- 1.1- 2.7	0.0- 0.1- 0.2	.64	.64			
Windthorst, severely eroded	0-6	46-62- 66	14-15- 27	20-23- 34	1.47-1.52 -1.56	1.40-4.00-14.00	0.11-0.13-0. 14	0.7- 3.4- 5.3	0.5- 0.7- 1.0	.43	.43	4	5	56
	6-16	32-40- 43	16-24- 33	26-36- 43	1.35-1.42 -1.51	1.40-2.70-4.00	0.15-0.17-0. 19	3.8- 5.1- 5.6	0.5- 0.6- 1.0	.37	.37			
	16-25	31-41- 52	16-26- 39	27-33- 38	1.39-1.48 -1.55	1.40-2.70-4.00	0.16-0.18-0. 20	3.2- 4.3- 5.6	0.3- 0.5- 0.8	.37	.37			
	25-33	36-46- 59	19-32- 41	14-22- 30	1.35-1.50 -1.60	1.40-2.70-4.00	0.15-0.17-0. 19	2.0- 2.6- 5.0	0.1- 0.3- 0.4	.55	.55			
	33-79	26-61- 85	8-27- 57	7-12- 25	1.76-1.82 -1.88	0.42-1.40-4.00	0.01-0.02-0. 03	0.5- 0.9- 2.6	0.0- 0.1- 0.2	.64	.64			

					Physic	al Soil Properties	Bosque Co	unty, Texas						
Map symbol and soil name	Depth	h Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility	Wind erodibility
										Kw	Kf	т	group	index
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
PmC—Purves- Maloterre association, undulating														
Purves	0-11	-26-	-29-	35-45- 55	1.25-1.35 -1.45	1.40-2.70-4.00	0.08-0.13-0. 18	6.0- 7.5- 8.9	1.0- 2.5- 4.0	.05	.10	1	5	56
	11-16	-26-	-29-	35-45- 55	1.25-1.35 -1.45	1.40-2.70-4.00	0.08-0.13-0. 18	6.0- 7.5- 8.9	1.0- 1.5- 2.0	-10	.20			
	16-20				-	0.42-7.20-14.00		-						
Maloterre	0-5	-32-	-31-	30-38- 45	1.30-1.40 -1.50	1.40-2.70-4.00	0.13-0.15-0. 16	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.10	.20	1	5	56
	5-7		-	-	-	0.42-7.20-14.00			2 1	-	-			

Data Source Information

Soil Survey Area: Bosque County, Texas Survey Area Data: Version 19, Sep 9, 2021

Public GIS Viewer Legend

Well Number

0

Well Locations

- Permitted Location
- ↔ Dry Hole
- Oil
- 🌣 Gas
- 🗰 🛛 Oil / Gas
- Plugged Oil
- 🔯 🛛 Plugged Gas
- & Canceled / Abandoned Location
- 💘 🛛 Plugged Oil / Gas
- **Q** Injection / Disposal
- & Core Test
- Ø Sulfur Test
- Storage from Oil
- Storage from Gas
- ♀ Shut-In Oil
- 🖓 🛛 Shut-In Gas
- Injection / Disposal from Oil
- 效 Injection / Disposal from Gas
- 🦉 🛛 Injection / Disposal from Oil / Gas
- ^{BR}O Brine Mining
- So Water Supply
- Water Supply from Oil
- *☆ Water Supply from Gas

- Water Supply from Oil / Gas HS ALC C^BO Observation 10 Observation from Oil ^小☆ Observation from Gas 🅬 🗰 Observation from Oil / Gas \bigcirc Storage OVZ Service Service from Oil 0 ^{SV}C Service from Gas Service from Oil / Gas Storage from Oil / Gas 0 Injection / Disposal from Storage Injection / Disposal from Storage / ٢ Oil Injection / Disposal from Storage / Gas Injection / Disposal from Storage / ٢ Oil / Gas 000 Observation from Storage © Observation from Storage / Oil ⁽¹⁾ Observation from Storage / Gas Observation from Storage / Oil / 00 Gas ^{Sv}(Õ) – Service from Storage Service from Storage / Oil Service from Storage / Gas S (1) Service from Storage / Oil / Gas
- Plugged Storage
- Plugged Storage / Oil

Public GIS Viewer Legend

- 🚳 🛛 Plugged Storage / Gas
- 🕘 🛛 Plugged Storage Oil / Gas
- Brine Mining
- Brine Mining / Oil
- සත් Brine Mining / Gas
- 🐃 🕺 Brine Mining / Oil / Gas
- Injection / Disposal from Brine Mining
- Injection / Disposal from Brine Mining / Oil
- Injection / Disposal from Brine Mining / Gas
- Injection / Disposal from Brine Mining / Oil / Gas
- Observation from Brine Mining
- Observation from Brine Mining / Oil
- Observation from Brine Mining /
 Gas
- Observation from Brine Mining / Oil / Gas
- No Service from Brine Mining
- Service from Brine Mining / Oil
- 🙀 Service from Brine Mining / Gas
- Service from Brine Mining / Oil / Gas
- 🗝 Plugged Brine Mining
- Plugged Brine Mining / Oil
- Plugged Brine Mining / Gas
- Plugged Brine Mining / Oil / Gas
- [™]⊙ Storage / Brine Mining

- " Storage / Brine Mining / Oil
- 🖤 😳 Storage / Brine Mining / Gas
- 🖤 🖤 Storage / Brine Mining / Oil / Gas
- Injection / Disposal from Storage / Brine Mining
- Injection / Disposal from Storage / Brine Mining / Oil
- Injection / Disposal from Storage / Brine Mining / Gas
- Injection / Disposal from Storage / Brine Mining / Oil / Gas
- Big Observation from Storage / Brine Mining
- Observation from Storage / Brine Mining / Oil
- Observation from Storage / Brine Mining / Gas
- Observation from Storage / Brine Mining / Oil / Gas
- Being Plugged Storage / Brine Mining
- Plugged Storage / Brine Mining / Oil
- Plugged Storage / Brine Mining / Gas
- Plugged Storage / Brine Mining / Oil / Gas

Orphan Wells

63

Commercial Disposal

Injection/Disposal

۲

HCTS Deeper than 15,000 ft.

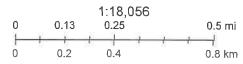
Page 2 of 3

Public GIS Viewer Legend

High Cost Tight Sands	
	Alert Areas
EOR H13 Oil Wells	
	Water
Well Logs	100
	City Limits
Horiz/Dir Surface Locations	
🗇 Horizontal Well	Counties
🔷 Directional Well	
Horizontal/Directional Lines	Operator Cleanup Program Sites
_	👍 Active
LPGAS Sites	🛆 Closed
Ē	Voluntary Cleanup Program Sites
QPipelines	VCP, Accepted
	VCP, Closed
Pipelines	Brownfield Response Program Sites
	★ Brownfield, Accepted
Bay Tracts	$\overset{\Lambda}{\sim}$ Brownfield, Closed
Offshore Areas	Commercial Waste Disposal Sites & Discharge Permits
Offshore Tracts	Commercial Waste Disposal
	Discharge Permits
Water Lines	Oil and Gas Districts
Subdivisions	AED Districts
Railroads	Pipeline Safety Regions
Surveys	
Quads	
	Page 3 of 3







Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Golden Star Heifer







Well Reports

The data in Water Data Interacive represents the best available information provided by the TWDB and third-party cooperators of the TWDB, The TWDB provides in formation via this web site as a public service, Neither the State of Texas nor the TWDB assumes any legal tability or responsibility or makes any guarantees or warranties as to the accuracy, completeness or suitability of the information for any particular purpose. The TWDB systematically revises or removes data discovered to be incorned. If you find inaccurate in formation or have questions, blease contact

0.15 0.3 0.6 mi n 0.25 0.5 Ω 1 km 1:18,056

Source: Esri, Maxár, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

6.0 SURFACE WATER & 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(63). 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. According to NRCS, Codes 601 (applied to severely eroded areas) and 332 (applied to cropland) are not currently applicable to the LMUs at this facility. Should field conditions or cropping systems change, Codes 601 and 332 will be implemented as necessary.

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 (2017). The buffer zones and LMU boundaries in Figure 6.1 are submitted with this application for TCEQ approval.

6.2 TMDL Assessment

Golden Star Heifer Ranch is located in Segment 1226, North Bosque River, Brazos River Basin, which is a 303(d)-listed watershed. To demonstrate that Golden Star Heifer Ranch is designed and will be constructed and operated in a manner that is consistent with the Phosphorus Total Maximum Daily Load (TMDL) and Implementation Plan approved in 2001 and to address the other listed impairments for this segment, the following practices have been or will be implemented:

- 1. Implement a Nutrient Utilization Plan that limits P application to crop requirement and incorporates a P reduction component on fields over 200 ppm P.
- 2. Limit maximum P level in soils to 200 ppm.
- 3. Perform annual soil sampling in accordance with the provisions of 30 TAC §321.42(k)-(m) and with Texas Cooperative Extension guidelines for composite sampling.
- 4. Implement a certified Comprehensive Nutrient Management Plan that meets the NRCS requirements for a whole-farm Resource Management System.
- 5. Maintain contracts with owners of third party fields in accordance with 30 TAC §321.42(j)(1)-(4) and with applicable requirements of 30 TAC §321.36 and §321.40.
- 6. Operate the facility in accordance with 30 TAC §321.42 with additional Best Management Practices as follows:
 - a. Excluding extraneous drainage areas from the RCSs (roof areas, etc.)
 - b. Reduce the potential for soil erosion and downgradient sediment deposition by maintaining permanent pastures and additional filter strips adjacent to waters in the state, as described above in Section 6.1.



Golden Star Heifer Ranch Hico, Texas Bosque County

Buffer Map Figure 6.1 Page 31



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

7.0 AIR STANDARD PERMIT REQUIREMENTS

7.1 Permit Requirements

This facility was constructed prior to August 19, 1998. The facility meets the 1/4-mile buffer option required in 30 TAC §321.43(j)(2) for facility expansion. The facility is designed, and will be operated, in accordance with the provisions and emissions limitations of the air standard permit in 30 TAC §321.43(j) regarding abatement of nuisance conditions, wastewater treatment, dust control and maintenance and housekeeping procedures. The facility uses an anaerobic treatment pond to minimize odors from process generated wastewater in accordance with §321.43(j) (3).

An Area Land Use Map (Figure 7.1) is attached depicting the locations of all occupied residences or business structures, schools (including associated recreational areas), churches, or public parks within 1 mile of the permanent odor sources of the facility. The map includes a north arrow, direction of prevailing wind, and scale. For the purposes of this application, the measurement of buffer distances is from the nearest edge of the permanent odor source to the occupied structure or designated recreational area identified on the Area Land Use Map (30 TAC §321.32(43)).

7.2 Odor control Plan

Per 30 TAC 321.43(j)(2)(F), the following Best Management Practices have been or will be implemented to control and reduce odors, dust and other air contaminants at Golden Star Heifer Ranch.

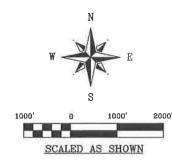
- Pen surfaces will be maintained to reduce ponding.
- The manure in the confinement pens will be removed on a regular basis (at least once annually) to prevent the manure from building up in the pens.
- Removal of manure and pond solids will be done in favorable wind conditions carrying odors away from nearby receptors. The TCEQ must be notified prior to RCS cleanout.
- Land application shall only occur from one hour after sunrise until one hour before sunset, unless written consent is obtained from current occupants of all residences within 1/4-mile of the LMU boundary that receives waste or wastewater.
- Dust will be controlled on facility roads with the use of a portable water truck on an as-needed basis to minimize fugitive dust emissions.
- Dead animals will be collected within 24 hours and composted on-site or disposed by a rendering service within 3 days.
 Revised 10/12/2022

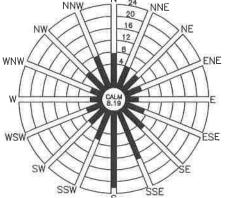


Legend:

Denotes Occupied Structure Denotes Applicant Owned Structure

Site Visit - April 19, 2022 Map Generated - April 20, 2022





ANNUAL WIND ROSE LOCATION: STEPHENVILLE, TEXAS PERIOD OF RECORD: 1984 – 199 SOURCE: TCEQ WINDROSE DATA 1992

USDA-NRCS. Geospatial Data Gateway. Available at: Source: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS - Accessed December 2017.



Hatched area represents permanent odor sources. These include, but are not limited to, pens, confinement buildings, lagoons, RCSs, manure stockpile areas, separators. Permanent odor sources do not include any feed handling facilities, land application equipment or fields.

Golden Star Heifer Ranch Hico, Texas **Bosque County**

Area Land Use Map Figure 7.1 Page 33



ENVIRO-AG Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132 000159