Administrative Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
2. First Notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
3. Application Materials

ENGLISH LANGUAGE TEMPLATE FOR CAFO PERMIT APPLICATIONS

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by the TCEQ Public Participation Plan and Language Access Plan. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

1) Applicant's Name: 4P Pastures, LLC and Horizon Dairy, LLC
2) Enter Customer Number: CN606034338; CN605539436
3) Name of facility: Horizon Dairy
4) Enter Regulated Entity Number: RN102334661
5) Provide your permit Number: WQ0004842000
6) Facility Business: The facility confines 5,900 head of cattle in which 4,700 are milking. The facility has twenty-three (23) land management units (LMUs) with the following acreages: LMU #1 – 102, LMU #1A – 36, LMU #2 – 178, LMU #2A – 73, LMU #3 – 180, LMU #3A – 105, LMU #4 –58, LMU #5 – 42, LMU #6 – 65, LMU #7 – 65, LMU #8 – 84, LMU #9 – 20, LMU #10 – 120, LMU #11 – 22, LMU #13 – 90, LMU#14 – 77, LMU #15 – 58, LMU #16 – 85, LMU #17 – 85, LMU #18 – 113, LMU #20 – 120, LMU #21 – 24 and LMU #23 - 90 acres. Four (4) retention control structures (RCSs), one slurry storage pit and four settling basins with concrete bottoms and earthen sidewalls and an anerobic digester and associated equipment. The required capacities are: Digester Operational - RCS #1 – 12.42 ac-ft, RCS #2A – 50.79 ac-ft, RCS #2B – 116.39 ac-ft and RCS #3 – 14.19 ac-ft. Digester on Bypass – RCS #1 – 10.61 ac-ft, RCS #2A – 7.42 ac-ft, RCS #2B – 109.05 ac-ft and RCS #3 – 14.19. There are twenty-four (24) onsite wells of which six (6) are plugged. The facility is located in the Leon River Below Proctor Lake and the North Bosque River in Segment Nos. 1221 and 1226 of the Brazos River Basin.
7) Facility Location: The facility is located on the north side of FM 219 approximately 3.5 miles east of the intersection of US Hwy 281 and FM 219; said intersection is approximately 12 miles north of Hamilton in Hamilton County, Texas
8) Application Type: Individual Permit Major Amendment
9) Description of your request: Phase 1 is to increase headcount from 5,900 total and 4,700 milking to 10,000 total and 7,500 milking, addition of Parlor A, addition of a X vent Barn, addition of 4 freestall barns, reconfigure LMUs #2 (now #2B & #2C), #2A, #3 (now #3B & #3C), #3A, #4 & #5, addition of LMUs #Mayhugh 1, #Mayhugh 2, #Watson 1 and #Watson 2, total LMU acres increased from 1,892 to 2,326, LMUs #2C, #3A, #3B, #4, #20 and #23 are in the Leon Watershed and General Permit soil sampling rules apply, remove the anerobic digester and associated equipment, reconfigure Drainage Area #1 to divert to the Leon Watershed, addition of Slurry Storage Pit #2 and the addition of Wells #M1 and #W1. Phase 2 is to include the addition of an anerobic digester and associated equipment, addition of RCS #2C and decrease acres in LMU #15.
10) Potential pollutant sources at the facility include (list the pollutant sources): Manure, manure stockpiles, wastewater, sludge, slurry, compost, burial pit, feed &

bedding, silage stockpiles, dead animals, dust, lubricants, parlor chemicals, pesticides and fuel storage tanks.

11) The following best management practices will be implemented at the site to manage pollutants from the listed pollutant sources (describe the best management practices that are used): stormwater is stored in the lagoon (RCS) until land applied through irrigation and manure and sludge are stockpiled in the drainage area of the RCS until land applied or hauled offsite for beneficial use. Manure and sludge generated by the CAFO will be retained and used in an appropriate and beneficial manner in accordance with a certified site-specific nutrient management plan. Wastewater will be contained in the RCS properly designed ((25-year frequency 10-day duration (25 year/10 day), constructed, operated and maintained according to the provision of the permit. Maintain 100-foot buffer for all irrigation wells or 150-foot for all supply wells. Dust - control speed and regular pen maintenance. Fertilizers - store under roof and handle according to specified label directions. Fuel Tanks - provide secondary containment and prevent overfills/spills. Dead animals - dispose by a third-party rendering service, compost on-site or on-site burial. Collected within 24 hours of death and disposed within three days.

12) Unless otherwise limited, manure, sludge, or wastewater will not be discharged from a land management unit (LMU) or a retention control structure (RCS) into or adjacent to water in the state from a CAFO except resulting from any of the following conditions:

1) a discharge of manure, sludge, or wastewater that the permittee cannot reasonably prevent or control resulting from a catastrophic condition other than a rainfall event;

2) overflow of manure, sludge, or wastewater from a RCS resulting from a chronic/catastrophic rainfall event; or

3) a chronic/catastrophic rainfall discharge from a LMU that occurs because the permittee takes measures to de-water the RCS if the RCS is in danger of imminent overflow.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT AMENDMENT

PERMIT NO. WQ0004842000

APPLICATION. 4P Pastures, L.L.C. and Horizon Dairy, L.L.C., 4483 East Farm-to-Market Road 219, Hico, Texas 76457, have applied to the Texas Commission on Environmental Quality (TCEQ) to amend Wastewater Permit No. WQ0004842000 (EPA I.D. No. TX0121878) for a Concentrated Animal Feeding Operation (CAFO) to authorize the following amendments in two phases: Phase 1 will include an increase to the headcount from 5,900 total and 4,700 milking to 10,000 total and 7,500 milking; the addition of Parlor A; the addition of an X Vent Barn; the addition of 4 freestall barns; the reconfiguration of LMUs #2 (now #2B & #2C), #2A, #3 (now #3B & #3C), #3A, #4 and #5; the addition of LMUs #Mayhugh 1, #Mayhugh 2, #Watson 1 and #Watson 2; the increase of total LMU acres from 1,892 to 2,326; LMUs #2C, #3A, #3B, #4, #20 and #23 are in the Leon Watershed and General Permit soil sampling rules apply; the removal of the anerobic digester and associated equipment; to reconfigure Drainage Area #1 to divert to the Leon Watershed; the addition of Slurry Storage Pit #2; and the addition of Wells #M1 and #W1; Phase 2 will include the addition of an anaerobic digester and associated equipment; the addition of RCS #2C; and a decrease in acreage of LMU #15. The facility is located at 4483 East Farm-to-Market Road 219, near the city of Hico, in Hamilton County, Texas 76457. TCEQ received this application on September 3, 2025. The permit application will be available for viewing and copying at Texas Agri Life Extension Office, 101 East Henry Street, Hamilton, in Hamilton County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.041388,31.868611&level=18

ADDITIONAL NOTICE. TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing.** A contested case hearing is a legal proceeding similar to a civil trial in state district court.

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

MAILING LIST. If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

INFORMATION AVAILABLE ONLINE. For details about the status of the application, visit the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid. Search the database using the permit number for this application, which is provided at the top of this notice.

AGENCY CONTACTS AND INFORMATION. All public comments and requests must be submitted either electronically at **https://www14.tceq.texas.gov/epic/eComment/**, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from 4P Pastures, L.L.C. and Horizon Dairy, L.L.C. at the address stated above or by calling Mr. David DeJong at 254-918-3156.

Issuance Date: September 23, 2025

Leah Whallon

From: Jourdan Mullin <jmullin@enviroag.com>
Sent: Monday, September 15, 2025 1:04 PM
To: Leah Whallon; Corey Mullin
Subject: RE: Application to Amend Permit No. WQ0004842000; Horizon Dairy
Attachments: ADJACENT LANDOWNER LABELS - 1.docx; ADJACENT LANDOWNER LABELS - 2.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Good Monday Afternoon Leah,

Attached are the adjacent landowner labels formatted for mailing labels (Avery 5160) in a Word document. The NORI has been reviewed, and everything is correct as shown.

Respectfully,
Jourdan Mullin

Enviro-Ag Engineering, Inc.
9855 FM 847
Dublin, TX 76446

254/965-3500 – Work
806/679-5570 - Mobile

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, September 12, 2025 2:42 PM
To: Corey Mullin <cmullin@enviroag.com>
Cc: Jourdan Mullin <jmullin@enviroag.com>
Subject: Application to Amend Permit No. WQ0004842000; Horizon Dairy

Good Afternoon,

Please see the attached Notice of Deficiency letter dated September 12, 2025, requesting additional information needed to declare the application administratively complete. Please send the complete response by September 26, 2025.

Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at
www.tceq.texas.gov/customersurvey

Disclaimer

CURTIS W WUEMNLING
475 CR 242
HICO TX 76457

DOMINGO CONDE
380 PR 4906
HASLET TX 76052

DWAIN GRAY
PO BOX 1537
CELINA TX 75009

HEATH WILLIAMS CASEY TRUSTEE;
CRAWFORD RANCH INTER VIVOS
563 CR 130
STEPHENVILLE TX 76401

BILLY & BARBARA BALEY
2515 CR 239
HICO TX 76457

NATHAN HUGGINS
370 CR 3214
HICO TX 76457

KENNETH M & MARGART A DOLSON
2830 CR 207
HICO TX 76457

LAKE M DAVIS
PO BOX 466
HICO TX 76457

OENE KUENING
4745 CR 207
HICO TX 76457

DAVID & ANGELA SHELTON
322 GEORGIAN OAK CR
LAKE DALLAS TX 76065

GARY & JANA CRABTREE
PO BOX 690
GLEN ROSE TX 76043

THE MORNING STAR FAMILY, LP
3628 BEVERLY DRIVE
DALLAS TX 75025

JAMES V JR. & KAREN K FELPS
2144 CR 3231
HICO TX 76457

ALBERT L. SHARP
3617 PARK RIDGE
FORT WOTH TX 76109

ZZZ FARMS, LLC
2008 SOUTH 57TH STREET
TEMPLE TX 76504

BEJAMIN RHODES
2726 WHISPERING TRAIL CIRCLE
PANTEGO TX 76013

LONG POINT CATTLE CO.
C/O THOMAS SMITH
2110 WARNER RD
FORT WORTH TX 76110

WOMAN'S COUNCIL OF HAMILTON COUNTY
PO BOX 292
HAMILTON TX 76531

LLOYD J & BETTYE G HUGGINS
370 CR 214
HICO TX 76457

WILLIAM J RICHEY
5020 E FM 219
HICO TX 76457

ROGER D WUEMLING
2606 CR 535
HICO TX 76457

O & B FARMS
PO BOX 227
HAMILTON TX 76531

LARRY FRISCH
860 CR 3213
HICO TX 76457

MELODY & CURTIS HALEY
8219 E FM 219
HICO TX 76457

MARISOL HUDSON
C/O JACK HUDSON
600 DENNIS CT
MERCED, CA 95340

REICH ACRES, LLC
200 TANGLEWOOD DR
STEPHENVILLE TX 76401

SEDRAK PARTNERS, LTD
AMIR & ADIA IBRAHIM
3610 GARDENIA
DALWORTHINGTON TX 76016

JAMES HARRISON
3905 MOCKINGBIRD LANE
TEMPLE TX 76502

NEEDHAM FARM BOBBY & ANDY NEEDHAM
915 CHESTNUT ST
HICO TX 76457

JACKIE & CARLA MONK
PO BOX 36
CARLTON TX 76436

TOM & ASHLEIGH COLE
PO BOX 128
CARLTON TX 76436

CEBORN CONSTRUCTION CO INC
PO BOX 15694
BATON ROUGE LA 70895

PATRICK & BARBARA BRYSON
1756 FM 1744
CARLTON TX 76436

CHARLES UPCHURCH
PO BOX 64
CARLTON TX 76436

JM & VICKI TAYLOR
763 CR 127
CARLTON TX 76436

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

Horizon Dairy

Major Amendment

Prepared For:

4P Pastures, LLC

4483 East Farm-to-Market Road 219

Hico, Texas 76457

August 21, 2025

Prepared By:

ENVIRO-AG ENGINEERING, INC.
EAE
AMARILLO - STEPHENVILLE - ARTESIA

9855 FM 847 ♦ Dublin, Texas 76446 ♦ Tel 254/965-3500 ♦ Fax 254/965-8000

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?

☒ 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))

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

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

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?

☒ 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))

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

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: 781707 & 781708	
	Copy of Payment Voucher enclosed?	Yes ☒

SECTION 2. TYPE OF APPLICATION

A. Coverage: State Only ☐ TPDES ☒

B. Media Type: Water Quality ☐ Air and Water Quality ☒

C. Application Type: New ☐ Major Amendment ☒

Renewal ☐ Minor Amendment ☐

D. For amendments, describe the proposed changes: 4P Pastures, LLC is submitting a major amendment application in two phases in order to maintain compliance throughout the transition. Phase 1 will included the increase headcount from 5,900 total and 4,700 milking to 10,000 total and 7,500 milking, addition of Parlor A, addition of a X Vent Barn, addition of 4 freestall barns, reconfigure LMUs #2 (now #2B & #2C), #2A, #3 (now #3B & #3C), #3A, #4 & #5, addition of LMUs #Mayhugh 1, #Mayhugh 2, #Watson 1 and #Watson 2, total LMU acres increased from 1,892 to 2,326, LMUs #2C, #3A, #3B, #4, #20 and #23 are in the Leon Watershed and General Permit soil sampling rules apply, remove the anerobic digester and associated equipment, reconfigure Drainage Area #1 to divert to the Leon Watershed, addition of Slurry Storage Pit #2 and addition of Wells #M1 and #W1. Phase 2 will include the addition of an anaerobic digester and associated equipment, addition of RCS #2C and

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:	781707
Trace Number:	582EA000683369
Date:	09/02/2025 09:54 AM
Payment Method:	CC - Authorization 000002437G
Voucher Amount:	$300.00
Fee Type:	CAFO PERMIT - NEW OR MAJOR AMENDMENT
ePay Actor:	JOURDAN MULLIN
Actor Email:	jmullin@enviroag.com
IP:	156.146.244.233

Payment Contact Information

Name:	JOURDAN MULLIN
Company:	ENVIRO-AG ENGINEERING INC
Address:	3404 AIRWAY BLVD, AMARILLO, TX 79118
Phone:	806-679-5570

Site Information

Site Name:	HORIZON DAIRY
Site Location:	4483 FM 219 HICO TX 76457

Customer Information

Customer Name:	4P PASTURES LLC
Customer Address:	4483 EAST FM 219, HICO, TX 76457

Other Information

Program Area ID:	4842

Close

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:	781708
Trace Number:	582EA000683369
Date:	09/02/2025 09:54 AM
Payment Method:	CC - Authorization 000002437G
Voucher Amount:	$50.00
Fee Type:	30 TAC 305.53B WQ NOTIFICATION FEE
ePay Actor:	JOURDAN MULLIN
Actor Email:	jmullin@enviroag.com
IP:	156.146.244.233

Payment Contact Information

Name:	JOURDAN MULLIN
Company:	ENVIRO-AG ENGINEERING INC
Address:	3404 AIRWAY BLVD, AMARILLO, TX 79118
Phone:	806-679-5570

Close

decrease acres in LMU #15.

E. For existing permits:

What is the permit number? WQ0004842000

What is the EPA I.D. Number? TX 0121878

SECTION 3. FACILITY OWNER (APPLICANT) INFORMATION

A. What is the legal name of the facility owner?

4P Pastures, LLC

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN 606034338

C. What is the contact information for the owner?

Mailing Address: 4483 FM 219

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/918-3156 Fax Number: n/a

E-mail Address: david@horizondairy.farm

D. Indicate the type of customer:

- ☐ Individual
- ☐ Limited Partnership
- ☐ General Partnership
- ☐ Trust
- ☐ Sole Proprietorship (D.B.A.)
- ☒ Corporation
- ☐ Estate
- ☐ Federal Government
- ☐ County Government
- ☐ State Government
- ☐ City Government
- ☐ Other Government
- ☐ Other, specify:

E. If the customer type is individual, complete Attachment 1.

F. Is this customer an independent entity?

☒ Yes ☐ No government, subsidiary, or part of a larger corporation

G. Number of employees:

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: 32083742083

What is the Charter Filing Number issued by the Texas Secretary of State: 0804500516

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?

Horizon Dairy, LLC

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN 605539436

C. What is the contact information for the co-applicant?

Mailing Address: 4483 FM 219

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/918-3156 Fax Number: n/a

E-mail Address: david@horizondairy.farm

D. Indicate the type of customer:

- ☐ Individual
- ☐ Limited Partnership
- ☐ General Partnership
- ☐ Trust
- ☐ Sole Proprietorship (D.B.A.)
- ☒ Corporation
- ☐ Estate
- ☐ Federal Government
- ☐ County Government
- ☐ State Government
- ☐ City Government
- ☐ Other Government
- ☐ Other, specify:

E. If the customer type is individual, complete Attachment 1.

F. Is this customer an independent entity?

☒ Yes ☐ No government, subsidiary, or part of a larger corporation

G. Number of employees:

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: 32065098900

What is the Charter Filing Number issued by the Texas Secretary of State: 0802835521

SECTION 5. APPLICATION CONTACT INFORMATION

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

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

Application Contact First and Last Name: Corey Mullin

Title: Consultant Credentials:

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000

E-mail Address: cmullin@enviroag.com

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): Mr.

Permit Contact First and Last Name: Corey Mullin

Title: Consultant Credentials: n/a

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000 E-mail Address: cmullin@enviroag.com

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

Permit Contact First and Last Name: Daivd DeJong

Title: Member Credentials:

Company Name: 4P Pastures, LLC

Mailing Address: 4483 FM 219

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/918-3156 Fax Number: n/a E-mail Address: david@horizondairy.farm

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, 4P Pastures, LLC

☐ No, complete this section

Prefix (Mr., Ms., Miss):

First and Last Name:

Title: Credentials:

Company Name:

Mailing Address:

City, State and Zip Code:

Phone Number: Fax Number: E-mail Address:

SECTION 8. LANDOWNER INFORMATION

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

Landowner Name: 4P Pastures, LLC

B. Landowner of the land management units (LMUs)

Landowner Name: 4P Pastures, LLC, David and Leslie DeJong, William & Sydney Rienstra and Victor & Rosa Aguilar

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:

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

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:

☒ Regular Mail:

Mailing Address: 9855 FM 847

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: David Delong

Title: Member Credentials:

Company Name: 4P Pastures, LLC

Phone Number: 254/918-3156

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: Texas Agri. Life Extension Office

Physical Address of Building: 101 E. Henry

City: Hamilton County: Hamilton

Phone Number: 254/386-3919

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?

6. Complete the CAFO Plain Language Summary Template (English) for CAFO Permit Applications for a new, renewal, major or minor amendment and submit with this application.

If a bilingual education program is required by the Texas Education Code at the nearest elementary or middle school to the facility or proposed facility, also complete the CAFO Plain Language Summary Template (Spanish) or provide a translated copy of the completed English plain language summary in the appropriate alternative language if different from Spanish.

F. **Public Involvement Plan Form**
Complete and attach one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment to a permit.

SECTION 10. REGULATED ENTITY (SITE) INFORMATION

A. Site Name as known by the local community: Horizon Dairy

B. If this is an existing permitted site, provide the Regulated Entity Number (RN) issued to this site? RN 102334661

ENGLISH LANGUAGE TEMPLATE FOR CAFO PERMIT APPLICATIONS

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by the TCEQ Public Participation Plan and Language Access Plan. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

1) Applicant's Name: 4P Pastures, LLC and Horizon Dairy, LLC
2) Enter Customer Number: CN606034338; CN605539436
3) Name of facility: Horizon Dairy
4) Enter Regulated Entity Number: RN102334661
5) Provide your permit Number: WQ0004842000
6) Facility Business: The facility confines 5,900 head of cattle in which 4,700 are milking. The facility has twenty-three (23) land management units (LMUs) with the following acreages: LMU #1 – 102, LMU #1A – 36, LMU #2 – 178, LMU #2A – 73, LMU #3 – 180, LMU #3A – 105, LMU #4 –58, LMU #5 – 42, LMU #6 – 65, LMU #7 – 65, LMU #8 – 84, LMU #9 – 20, LMU #10 – 120, LMU #11 – 22, LMU #13 – 90, LMU#14 – 77, LMU #15 – 58, LMU #16 – 85, LMU #17 – 85, LMU #18 – 113, LMU #20 – 120, LMU #21 – 24 and LMU #23 - 90 acres. Four (4) retention control structures (RCSs), one slurry storage pit and four settling basins with concrete bottoms and earthen sidewalls and an anerobic digester and associated equipment. The required capacities are: Digester Operational - RCS #1 – 12.42 ac-ft, RCS #2A – 50.79 ac-ft, RCS #2B – 116.39 ac-ft and RCS #3 – 14.19 ac-ft. Digester on Bypass – RCS #1 – 10.61 ac-ft, RCS #2A – 7.42 ac-ft, RCS #2B – 109.05 ac-ft and RCS #3 – 14.19. There are twenty-four (24) onsite wells of which six (6) are plugged. The facility is located in the Leon River Below Proctor Lake and the North Bosque River in Segment Nos. 1221 and 1226 of the Brazos River Basin.
7) Facility Location: The facility is located on the north side of FM 219 approximately 3.5 miles east of the intersection of US Hwy 281 and FM 219; said intersection is approximately 12 miles north of Hamilton in Hamilton County, Texas
8) Application Type: Individual Permit Major Amendment
9) Description of your request: Phase 1 is to increase headcount from 5,900 total and 4,700 milking to 10,000 total and 7,500 milking, addition of Parlor A, addition of a X vent Barn, addition of 4 freestall barns, reconfigure LMUs #2 (now #2B & #2C), #2A, #3 (now #3B & #3C), #3A, #4 & #5, addition of LMUs #Mayhugh 1, #Mayhugh 2, #Watson 1 and #Watson 2, total LMU acres increased from 1,892 to 2,326, LMUs #2C, #3A, #3B, #4, #20 and #23 are in the Leon Watershed and General Permit soil sampling rules apply, remove the anerobic digester and associated equipment, reconfigure Drainage Area #1 to divert to the Leon Watershed, addition of Slurry Storage Pit #2 and the addition of Wells #M1 and #W1. Phase 2 is to include the addition of an anerobic digester and associated equipment, addition of RCS #2C and decrease acres in LMU #15.
10) Potential pollutant sources at the facility include (list the pollutant sources): Manure, manure stockpiles, wastewater, sludge, slurry, compost, burial pit, feed &

bedding, silage stockpiles, dead animals, dust, lubricants, parlor chemicals, pesticides and fuel storage tanks.

11) The following best management practices will be implemented at the site to manage pollutants from the listed pollutant sources (describe the best management practices that are used): stormwater is stored in the lagoon (RCS) until land applied through irrigation and manure and sludge are stockpiled in the drainage area of the RCS until land applied or hauled offsite for beneficial use. Manure and sludge generated by the CAFO will be retained and used in an appropriate and beneficial manner in accordance with a certified site-specific nutrient management plan. Wastewater will be contained in the RCS properly designed ((25-year frequency 10-day duration (25 year/10 day), constructed, operated and maintained according to the provision of the permit. Maintain 100-foot buffer for all irrigation wells or 150-foot for all supply wells. Dust - control speed and regular pen maintenance. Fertilizers - store under roof and handle according to specified label directions. Fuel Tanks - provide secondary containment and prevent overfills/spills. Dead animals - dispose by a third-party rendering service, compost on-site or on-site burial. Collected within 24 hours of death and disposed within three days.

12) Unless otherwise limited, manure, sludge, or wastewater will not be discharged from a land management unit (LMU) or a retention control structure (RCS) into or adjacent to water in the state from a CAFO except resulting from any of the following conditions:

1) a discharge of manure, sludge, or wastewater that the permittee cannot reasonably prevent or control resulting from a catastrophic condition other than a rainfall event;

2) overflow of manure, sludge, or wastewater from a RCS resulting from a chronic/catastrophic rainfall event; or

3) a chronic/catastrophic rainfall discharge from a LMU that occurs because the permittee takes measures to de-water the RCS if the RCS is in danger of imminent overflow.

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

[ ] New Permit or Registration Application
[X] New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

[X] Requires public notice,
[ ] Considered to have significant public interest, **and**
[ ] Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

[ ] Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air [ ] Initial [ ] Federal [ ] Amendment [ ] Standard Permit [ ] Title V

Waste [ ] Municipal Solid Waste [ ] Industrial and Hazardous Waste [ ] Scrap Tire
[ ] Radioactive Material Licensing [ ] Underground Injection Control

Water Quality

[X] Texas Pollutant Discharge Elimination System (TPDES)

- [ ] Texas Land Application Permit (TLAP)
- [X] State Only Concentrated Animal Feeding Operation (CAFO)
- [ ] Water Treatment Plant Residuals Disposal Permit

[ ] Class B Biosolids Land Application Permit

[ ] Domestic Septage Land Application Registration

Water Rights New Permit

[ ] New Appropriation of Water

[ ] New or existing reservoir

Amendment to an Existing Water Right

[ ] Add a New Appropriation of Water

[ ] Add a New or Existing Reservoir

[ ] Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Horizon Dairy is a dairy milking facility.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Hico
(City)

Hamilton
(County)

(Census Tract)
Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☒ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

88.9%

(b) Per capita income for population near the specified location

$24,810

(c) Percent of minority population and percent of population by race within the specified location

White= 75.6%, Black or African America= 3.29%, Hispanic= 12.7%, Two or More Races= 2.11%, Other= 2.68%, Asian= 1.3%, Indian= 1.6%, Multiracial= 0.72%

(d) Percent of Linguistically Isolated Households by language within the specified location

0%

(e) Languages commonly spoken in area by percentage

English = 89.4%
Spanish = 10.6%

(f) Community and/or Stakeholder Groups

N/A

(g) Historic public interest or involvement

N/A

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

[X] Yes [ ] No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

[ ] Yes [X] No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

[ ] Yes [ ] No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

[ ] Publish in alternative language newspaper

[ ] Posted on Commissioner's Integrated Database Website

[ ] Mailed by TCEQ's Office of the Chief Clerk

[ ] Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

[ ] Yes [ ] No

(e) If a public meeting is held, will a translator be provided if requested?

[ ] Yes [ ] No

(f) Hard copies of the application will be available at the following (check all that apply):

[ ] TCEQ Regional Office [ ] TCEQ Central Office

[ ] Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

[ ] Yes [X] No

What types of notice will be provided?

[ ] Publish in alternative language newspaper

[ ] Posted on Commissioner's Integrated Database Website

[ ] Mailed by TCEQ's Office of the Chief Clerk

[ ] Other (specify)

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: 4483 E FM 219

City, State and Zip Code: Hico, TX 76457

Item 2: Site Location Description:

Location description:

City where the site is located or, if not in a city, what is the nearest city:

Zip Code where the site is located:

D. County or counties if more than 1: Hamilton

E. Latitude: 31 52' 09.75"N Longitude: 98 02' 25.40"W

F. Animal Type:

- ☒ Dairy-0241
- ☐ Beef Cattle- 0211
- ☐ Swine-0213
- ☐ Broiler-0251
- ☐ Laying Hens-0252
- ☐ Sheep/Goats-0214
- ☐ Auction-5154
- ☐ Other, specify:

G. Existing Maximum Number of Animals: 5,900 Total; 4,700 Milking

Proposed Maximum Number of Animals: 10,000 Total; 7,500 Milking

H. What is the total LMU acreage? Phase 1 - 2,326; Phase 2 - 2,315

SECTION 11. MISCELLANEOUS INFORMATION

A. Did any person who was formerly employed by the TCEQ represent your company and get paid for service regarding this application? Yes ☐ No ☒
If yes, provide the name(s) of the former TCEQ employee(s):

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 ☐ No ☒

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

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.

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

☐ 4 sets of mailing labels

D. Landowner data source. Provide the source of the landowners' names and mailing addresses.

Hamilton 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. New and Major amendment

- Public Involvement Plan Form (TCEQ-20960)

- 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: WQ0004842000

Applicant: 4P Pastures, LLC

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: David DeJong

Title: Member

Signature: _____ Date: 8/20/25

SUBSCRIBED AND SWORN to before me by the said David DeJong on

this 20th day of August, 20 25

My commission expires on the 21st day of October, 20 28

COREY MULLIN
ID #126609838
My Commission Expires
October 21, 2028

(Seal)

_____
Notary Public

_____
Erath
County, Texas

- 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: WQ0004842000

Applicant: Horizon Dairy, LLC

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: David DeJong

Title: Member

Signature: _____ Date: 8/20/25

SUBSCRIBED AND SWORN to before me by the said David DeJong on

this 20th day of August, 2025

My commission expires on the 21st day of October, 2028

(Seal)

COREY MULLIN
ID #132809838
My Commission Expires
October 21, 2028

_____
Notary Public

_____
County, Texas

TCEQ USE ONLY

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

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form is required for all TPDES applications

1. Applicant: 4P Pastures, LLC and Horizon Dairy, LLC
2. Permit Number: WQ0004842000 EPA ID Number: TX0121878
3. Address of the project (location description that includes street/highway, city/vicinity, and county). The facility is located on the North side of FM 219 approximately 3.5 miles East of the intersection of US Hwy 281 and FM 219; said intersection is approximately 12 miles North of Hamilton in Hamilton 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: 9855 FM 847

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

   Phone Number: 254/965-3500 Fax Number: 254/965-8000
5. County where the facility is located: Hamilton
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. Leon River Below Proctor Lake and the North Bosque River in Segment Nos. 1221 and 1226 of the Brazos River Basin
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.
    - ☐ 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): Construction of an anaerobic digester, parlor and barns. Approximately 1 surface acre and 20 feet deep.

12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances): The land management units (LMUs) at the facility are planted in hybrid Bermuda grass over seeded with small grains in the winter, corn and sorghum. Normal expected farming practices to maintain crops are utilized.

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

13. List construction dates of any buildings or structures on the property: The original facility was built in 1994. Then expanded in 1997 and 2002.

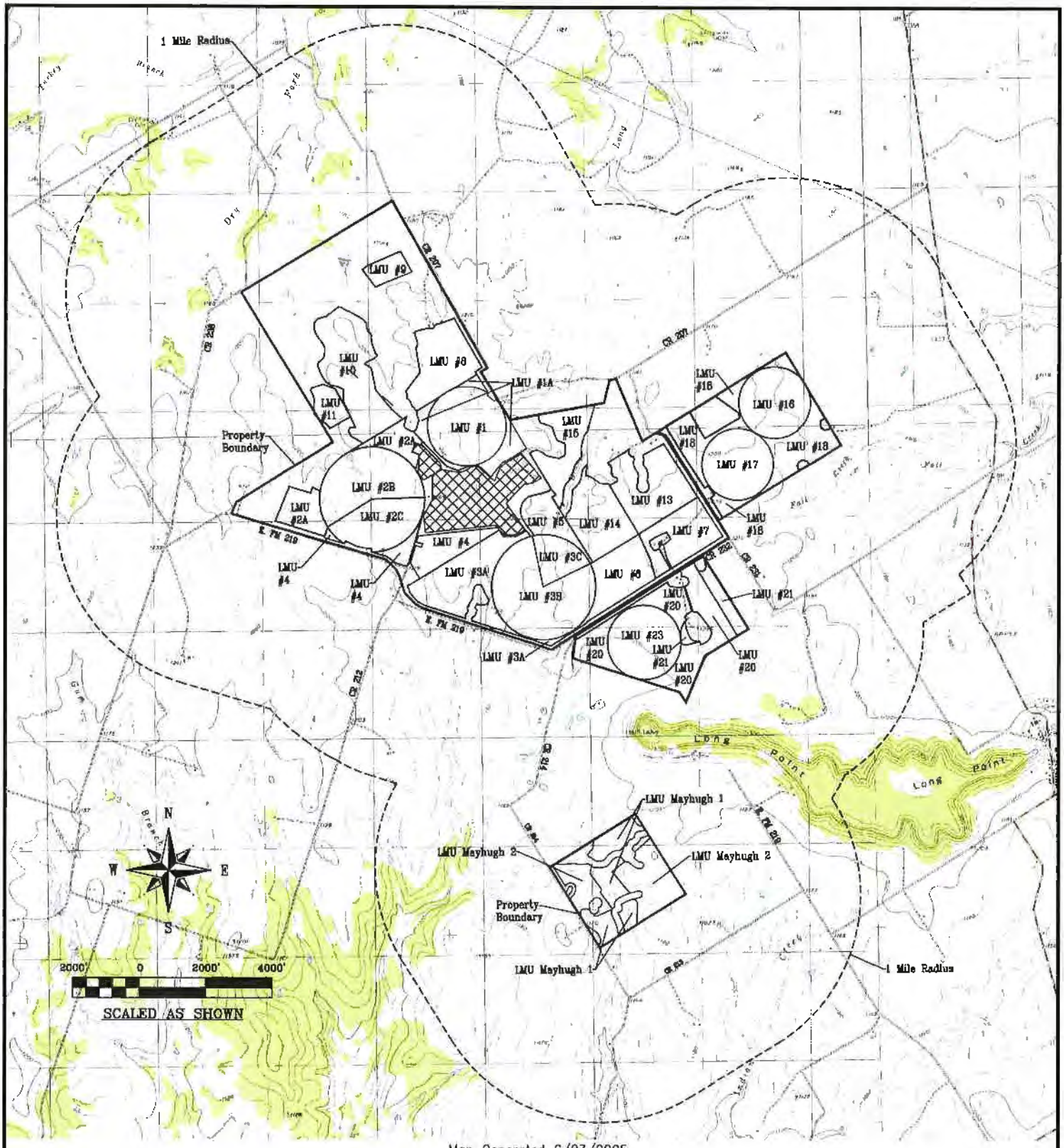
14. Provide a brief history of the property, and name of the architect/builder, if known: The facility was built hy Mike Hancock of West Texas Dairy Construction.

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

15. List each Retention Control Structure and its required capacity (Acre Feet). Phase 1 RCS #1 – 16.93 ac-ft, RCS #2A-B – 114.08 ac-ft and RCS #3 – 14.30 ac-ft. Phase 2 RCS #2B – 91.74 ac-ft, RCS #2C – 153.04 and RCS #3 – 14.30 ac-ft. Phase 2 Bypass RCS #2B – 16.93 ac-ft, RCS #2C – 125.90 and RCS #3 – 14.30

16. Provide the location and number of acres where wastewater and manure are land applied: The applicant has 2,326 (Phase 1) and 2,315 (Phase 2) onsite acres for waste and wastewater application. See attached Figures 1.3A1-2, B & C for exact locations of LMUs.

17. List the maximum number of head to be permitted. 10,000



Map Generated 6/23/2025

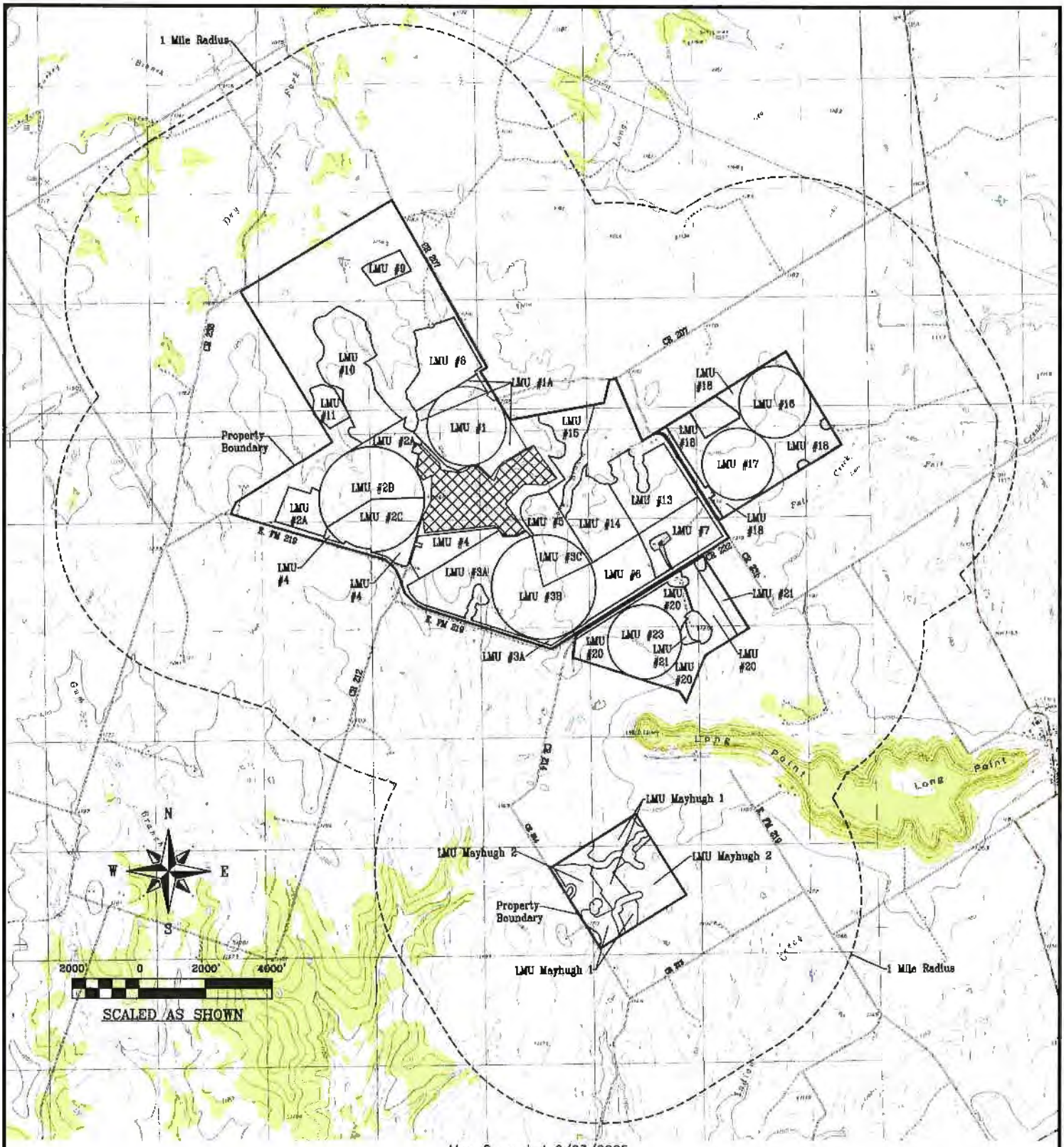
LEGEND:

Denotes Production Area

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	SPIF Map A - Phase 1	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

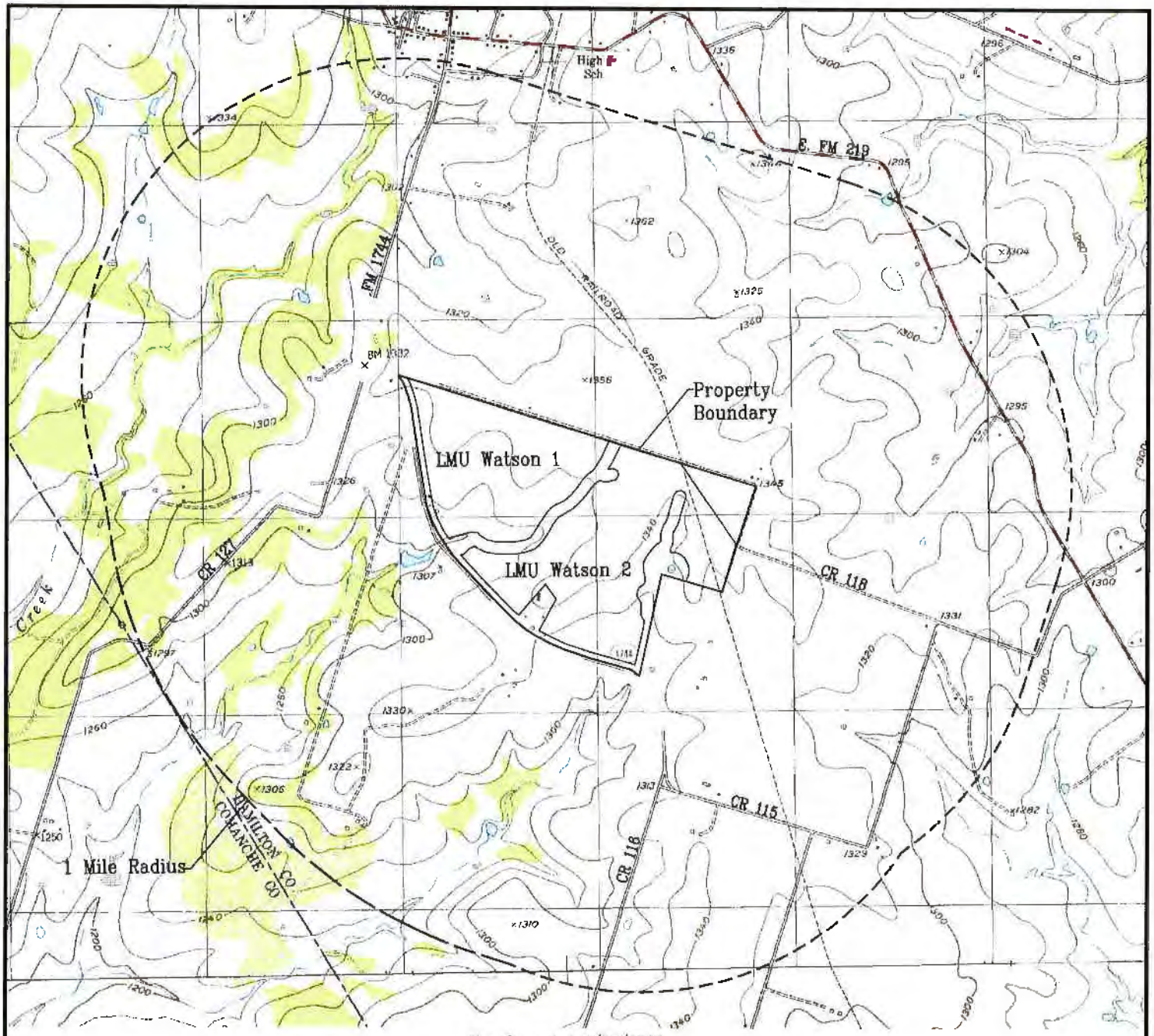
LEGEND:

Denotes Production Area

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	SPIF Map A - Phase 2	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

N

W E

S

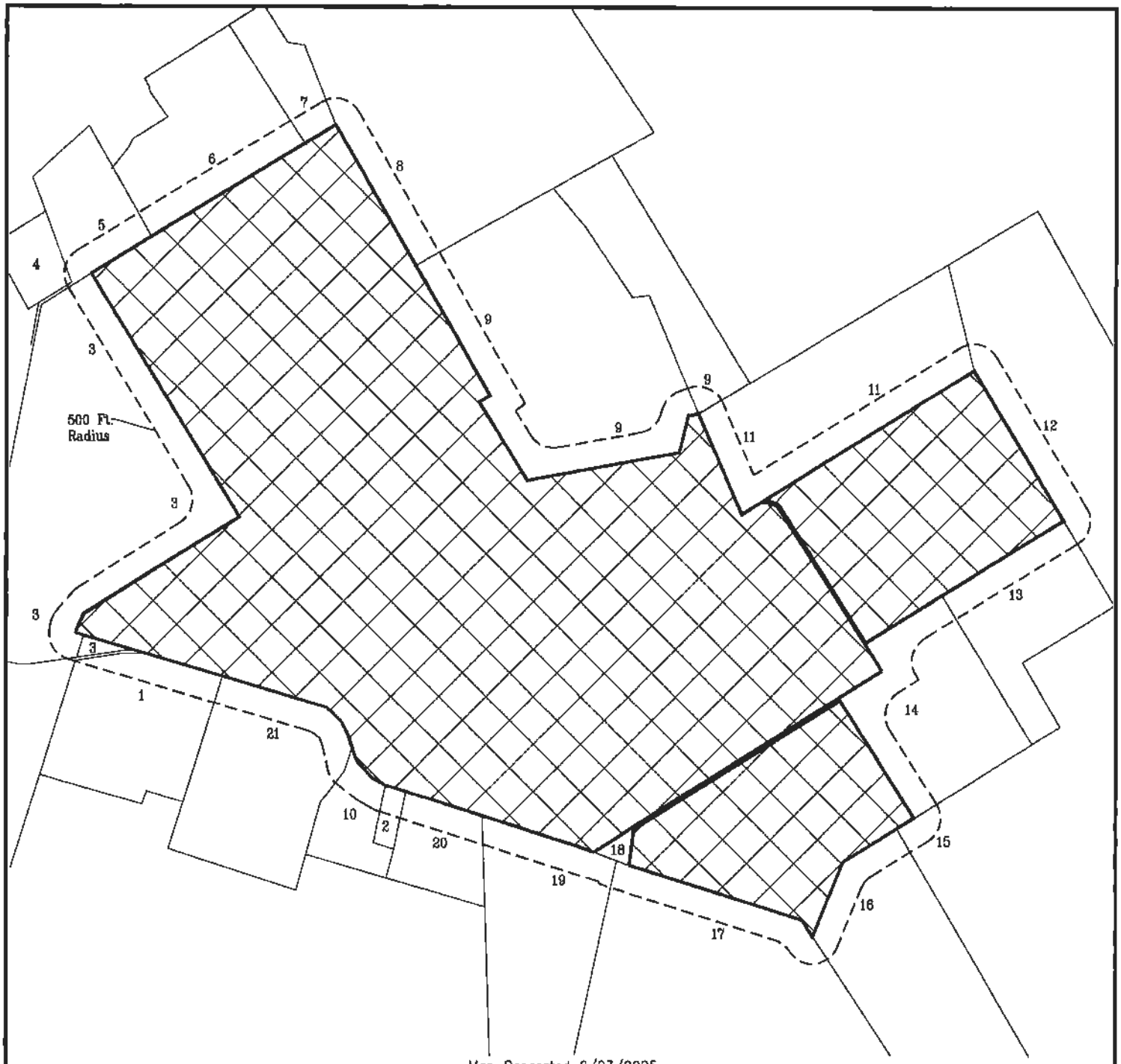
1200' 0 1200' 2400'

SCALED AS SHOWN

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usdo.gov/. Digital Raster Grophic County Mosaic by NRCS – Accessed Morch 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	SPIF Map B	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

Denotes Horizon Dairy Property

Denotes 500 Ft. Radius From Horizon Dairy

Denotes Adjacent Landowner Tract

N

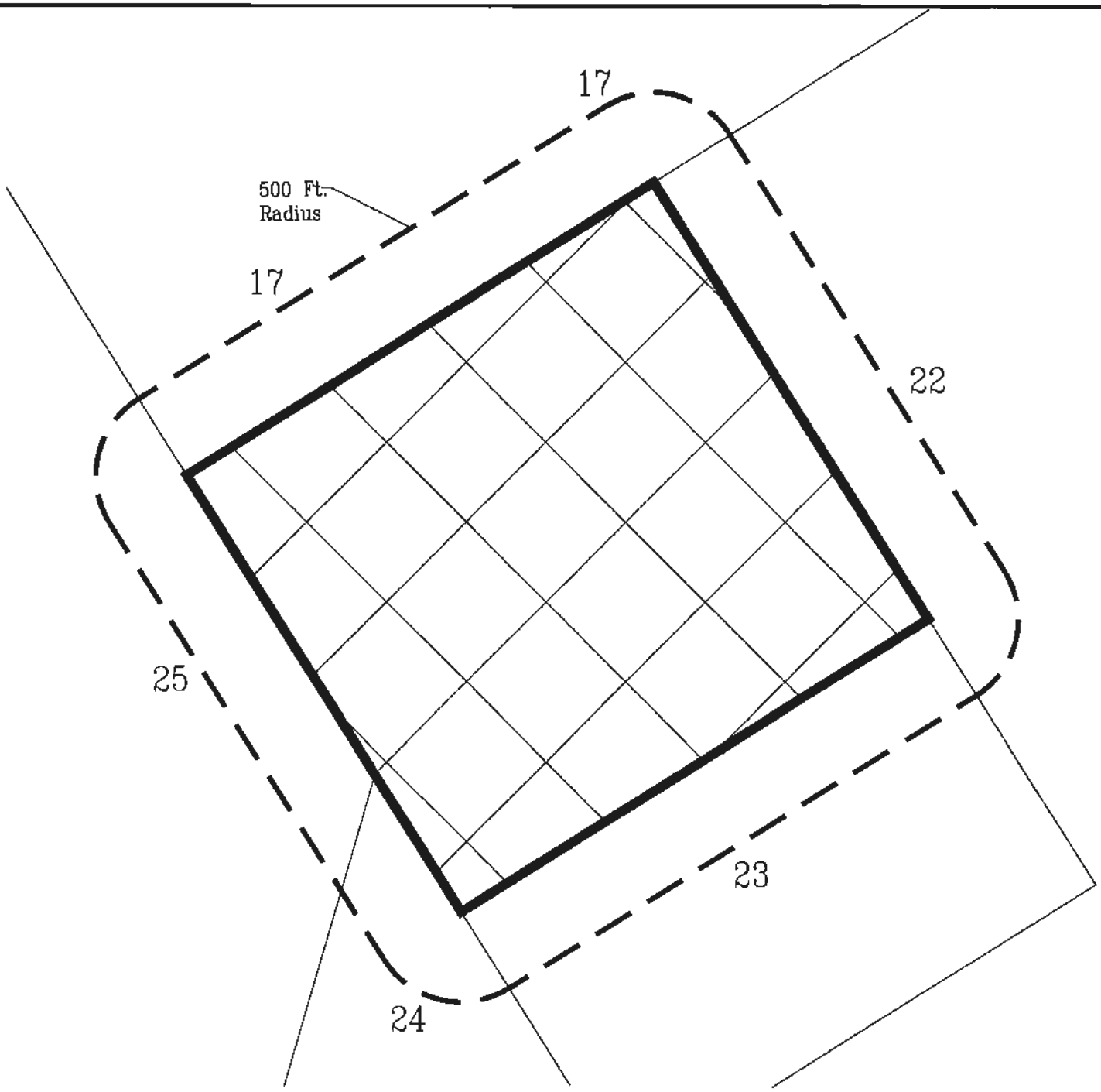
W E

S

1300' 0 1300' 2600'

SCALE AS SHOWN

Horizon Dairy, LLC Hico, Texas Hamilton County	Adjacent Landowner Map A	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

Denotes Horizon Dairy Property

Denotes 500 Ft. Radius From Horizon Dairy

Denotes Adjacent Landowner Tract

N

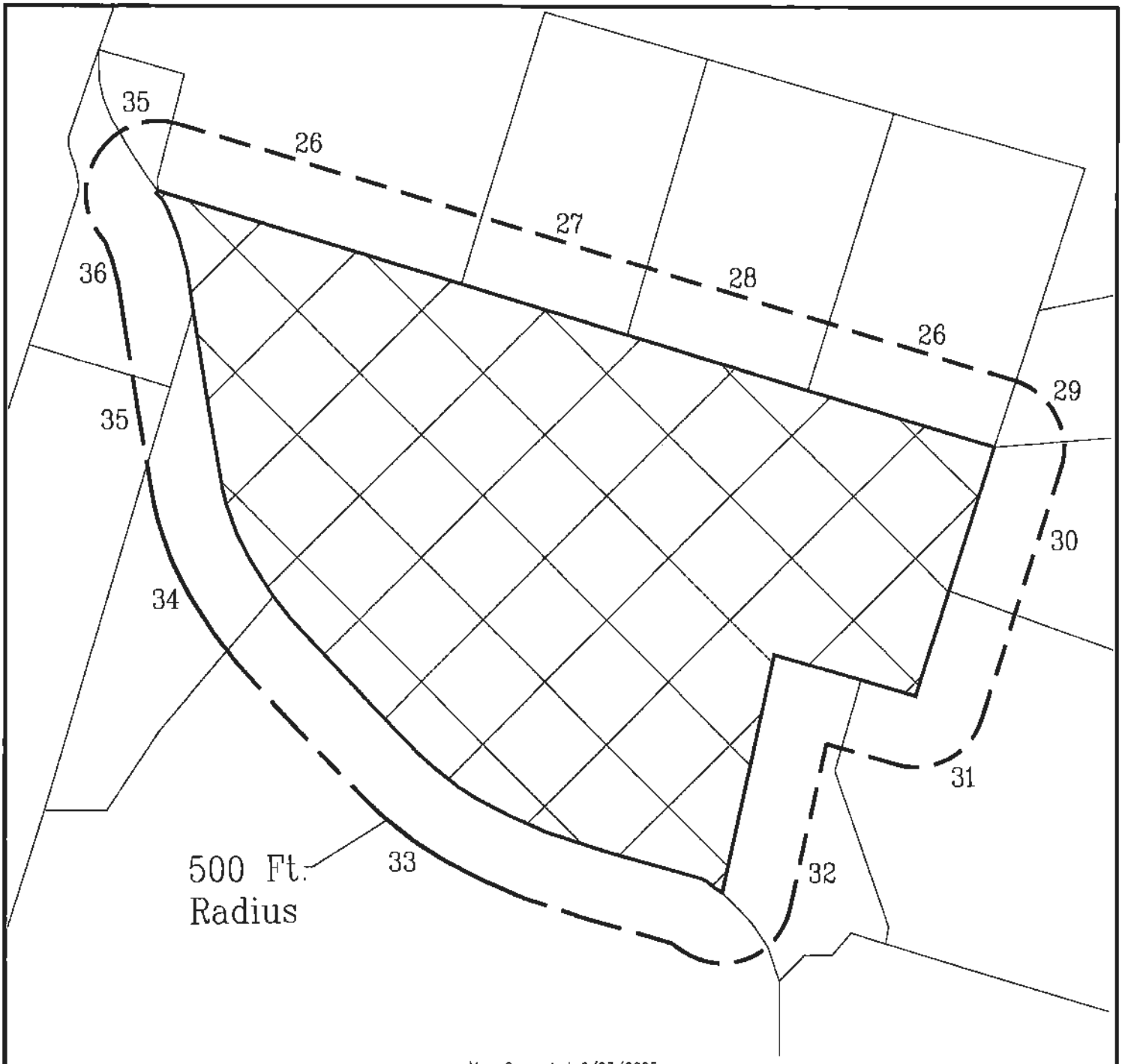
W E

S

400' 0 400' 800'

SCALE AS SHOWN

Horizon Dairy, LLC Hico, Texas Hamilton County	Adjacent Landowner Map B	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-8123 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

- Denotes Horizon Dairy Property
- Denotes 500 Ft. Radius From Horizon Dairy
- Denotes Adjacent Landowner Tract

N
W E
S

500' 0 500' 1000'

SCALE AS SHOWN

Horizon Dairy, LLC Hico, Texas Hamilton County	Adjacent Landowner Map C	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

ADJACENT LANDOWNERS LIST

Name Curtis W Wuemling Number on Map 1 Address 475 CR 242 Address Hico, TX 76457	Name David & Angela Shelton Number on Map 10 Address 322 Georgian Oak Cr Address Lake Dallas, TX 76065
Name Domingo Conde Number on Map 2 Address 380 PR 4906 Address Haslet, TX 76052	Name Gary & Jana Crabtree Number on Map 11 Address PO Box 690 Address Glen Rose, TX 76043
Name Dwain Gray Number on Map 3 Address PO Box 1537 Address Celina, TX 75009	Name The Morning Star Family, LP Number on Map 12 Address 3628 Beverly Drive Address Dallas, TX 75205
Name Heath William Casey Trustee; Crawford Ranch Inter Vivos Number on Map 4 Address 563 CR 130 Address Stephenville, TX 76401	Name James V Jr. & Karen K Felps Number on Map 13 Address 2144 CR 3231 Address Hico, TX 76457
Name Billy & Barbara Baley Number on Map 5 Address 2515 CR 239 Address Hico, TX 76457	Name Albert L. Sharp Number on Map 14 Address 3617 Park Ridge Address Ft. Worth, TX 76109
Name Nathan Huggins Number on Map 6 Address 370 CR 3214 Address Hico, TX 76457	Name ZZZ Farms, LLC Number on Map 15 Address 2008 South 57th Street Address Temple, TX 76504
Name Kenneth M & Margaret A Dolson Number on Map 7 Address 2830 CR 207 Address Hico, TX 76457	Name Benjamin Rhodes Number on Map 16 Address 2726 Whispering Trail Circle Address Pantego, TX 76013
Name Lake M Davis Number on Map 8 Address PO Box 466 Address Hico, TX 76457	Name Long Point Cattle Co. c/o Thomas Smith Number on Map 17 Address 2110 Warner Rd Address Fort Worth, TX 76110
Name Oene Keuning Number on Map 9 Address 4745 CR 207 Address Hico, TX 76457	Name Woman's Council of Hamilton County Number on Map 18 Address PO Box 292 Address Hamilton, TX 76531

Please identify where you obtained the landowner information.

Hamilton County Appraisal District; July 2025

Facility Name Horizon Dairy

ADJACENT LANDOWNERS LIST

Name Lloyd J & Bettye G Huggins Number on Map 19 Address 370 CR 3214 Address Hico, TX 76457	Name James Harrison Number on Map 29 Address 3905 Mockingbird Lane Address Temple, TX 76502
Name William J Richey Number on Map 20 Address 5020 E FM 219 Address Hico, TX 76457	Name Needham Farm Bobby & Andy Needham Number on Map 30 Address 915 Chestnut St. Address Hico, TX 76457
Name Roger D Wuemling Number on Map 21 Address 2606 CR 535 Address Hico, TX 76457	Name Jackie & Carla Monk Number on Map 31 Address PO Box 36 Address Carlton, TX 76436
Name Q & B Farms, Inc. Number on Map 22 Address PO Box 227 Address Hamilton, TX 76531	Name Tom & Ashleigh Cole Number on Map 32 Address PO Box 128 Address Carlton, TX 76436
Name Larry Frisch Number on Map 23 Address 860 CR 3213 Address Hico, TX 76457	Name Ceborn Construction Co. Inc. Number on Map 33 Address PO Box 15694 Address Baton Rouge, LA 70895
Name Melody & Curtis Haley Number on Map 24 Address 8219 E FM 219 Address Hico, TX 76457	Name Patrick & Barbara Bryson Number on Map 34 Address 1756 FM 1744 Address Carlton, TX 76436
Name Marisol Hudson c/o Jack Hudson Number on Map 25 Address 600 Dennis Ct Address Merced, CA 95340	Name Charles Upchurch Number on Map 35 Address PO Box 64 Address Carlton, TX 76436
Name Reich Acres, LLC Number on Map 26 Address 200 Tanglewood Drive Address Stephenville, TX 76401	Name JM & Vicki Taylor Number on Map 36 Address 763 CR 127 Address Carlton, TX 76436
Name Confidential Number on Map 27	
Name Sedrak Partners, LTD Amir & Adia Ibrahim Number on Map 28 Address 3610 Gardenia Address Dalworthington, TX 76016	

Please identify where you obtained the landowner information.

Hamilton County Appraisal District; July 2025

Facility Name Horizon Dairy

Land Lease Agreement

Lessor: David and Leslie DeJong
Family Limited Partnership
4483 E FM 219
Hico, Texas 76457

Lessee: 4P Pastures, LLC
4483 E FM 219
Hico, Texas 76457

Subject Property Legal Description & Address:
-468 R Kennedy; 705.11 Acres (CR 207 FAIRY, TX)

Total of 705.11 Acres.

Term: 5 year renewable lease. Two years must be given by either party to terminate lease.

Price: Undisclosed

Lessee further agrees to leave property in as good or better condition, to abide by any and all state and federal laws, work with Lessee for other possible income opportunities. Lessee will indemnify Lessor of any and all liability due to farming activities.

The above terms have been reviewed and are in mutual agreement between both the lessee and the lessor on this date: 7-24-2023.

Lessor: _____ for: David and Leslie DeJong FLP

Lessee: _____ for: 4P Pastures LLC

Land Lease Agreement

Lessor: Victor J & Rosa Aguilar
5105 E FM 219
Hico, TX 76457

Lessee: 4P Pastures, LLC
4483 E FM 219
Hico, Texas 76457

Subject Properties Legal Description & Address:
-745 Samuel Smith; Acres 19 (E FM 219, Hico, TX)
-745 Samuel Smith; Acres 1 (5105 E FM 219, Olin, TX)

Total of 20 Acres.

Term: 5 year renewable lease. Two years must be given by either party to terminate lease.

Price: Undisclosed

Lessee further agrees to leave property in as good or better condition, to abide by any and all state and federal laws, work with Lessee for other possible income opportunities. Lessee will indemnify Lessor of any and all liability due to farming activities.

The above terms have been reviewed and are in mutual agreement between both the lessee and the lessor and becomes effective on this date: 7/24/2023.

Lessor: _____ for: Victor Aguilar.

Lessee: _____ for: 4P Pastures LLC

Land Lease Agreement

Lessor: William H & Sydney A Rienstra
106 Angela Court
Stephenville, TX 76401

Lessee: 4P Pastures, LLC
4483 E FM 219
Hico, Texas 76457

Subject Property:
-745 S SMITH; 9.26 Acres (CR 3231 HICO)
-745 S SMITH; 44 Acres (HICO)
-745 S SMITH; 66 Acres (CR 3231 HICO)

Total of 119.26 Acres

Term: 5 year renewable lease. Two years must be given by either party to terminate lease.

Price: Undisclosed

Lessee further agrees to leave property in as good or better condition, to abide by any and all state and federal laws, work with Lessee for other possible income opportunities. Lessee will indemnify Lessor of any and all liability due to farming activities.

The above terms have been reviewed and are in mutual agreement between both the lessee and the lessor and become effective on this date: 7/26/2023

Lessor: [signature] for: WILLIAM H & SYDNEY A RIENSTRA

Lessee: [signature] for: 4P Pastures LLC

Franchise Tax Account Status

As of : 06/27/2023 11:30:28

This page is valid for most business transactions but is not sufficient for filings with the Secretary of State

4P PASTURES, L.L.C.

Texas Taxpayer Number	32083742083
Mailing Address	4483 E FM 219 HICO, TX 76457-9005
Right to Transact Business in Texas	ACTIVE
State of Formation	TX
Effective SOS Registration Date	03/14/2022
Texas SOS File Number	0804500516
Registered Agent Name	DAVID DEJONG
Registered Office Street Address	4483 EAST FM 219 HICO, TX 76457

Franchise Tax Account Status

As of : 06/27/2023 11:48:16

This page is valid for most business transactions but is not sufficient for filings with the Secretary of State

HORIZON DAIRY, L.L.C.	
Texas Taxpayer Number	32065098900
Mailing Address	4483 E FM 219 HICO, TX 76457-9005
Right to Transact Business in Texas	ACTIVE
State of Formation	TX
Effective SOS Registration Date	10/11/2017
Texas SOS File Number	0802835521
Registered Agent Name	DAVID P DE JONG
Registered Office Street Address	4483 E FM 219 HICO, TX 76457

Public Information Report

Public Information Report
HORIZON DAIRY, L.L.C.
Report Year :2022

Information on this site is obtained from the most recent Public Information Report (PIR) processed by the Secretary of State (SOS). PIRs filed with annual franchise tax reports are forwarded to the SOS. After processing, the SOS sends the Comptroller an electronic copy of the information, which is displayed on this web site. The information will be updated as changes are received from the SOS.

You may order a copy of a Public Information Report from open.records@cpa.texas.gov or Comptroller of Public Accounts, Open Records Section, PO Box 13528, Austin, Texas 78711.

Title	Name and Address
MEMBER	**DAVID DE JONG** 4483 E FM 219 HICO, TX 76457

Hamilton CAD Property Search

Property Details

Account

Property ID:	19723	**Geographic ID:**	260000000004B9001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	CR 207 FAIRY, TX		
Map ID:	HI5	**Mapsco:**	
Legal Description:	468 R KENNEDY; ACRES: 705 11		
Abstract/Subdivision:	A00468		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	20942		
Name:	DE JONG DAVID & LESLIE		
Agent:			
Mailing Address:	FAMILY LIMITED PARTNERSHIP 4483 E FM 219 HICO, TX 76457		
% Ownership:	100 0%		
Exemptions:	AB - For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$259,460 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$3,346,270 (+)
Market Value:	$3,605,730 (=)
Agricultural Value Loss:	$3,280,030 (-)
Appraised Value:	$325,700 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$325,700
Ag Use Value:	$66,240

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: DE JONG DAVID & LESLIE **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0 085295	$3,605,730	$325,700	$277 81	
GHA	HAMILTON COUNTY	0 430000	$3,605,730	$325,400	$1,399 22	
SHI	HICO ISD	0 855200	$3,605,730	$325,700	$2,785 39	
CAD	County Appraisal District	0 000000	$3,605,730	$325,700	$0 00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $4,462 42

Estimated Taxes Without Exemptions: $49,416 35

Property Improvement - Building

Description: WORKSHOP **Type:** Misc Imp **Living Area:** 4500.0 sqft **Value:** $259,460

Type	Description	Class CD	Year Built	SQFT
COMMERCIAL	COMMERCIAL	WHS	2017	3200
COMMERCIAL	COMMERCIAL	CNS	2017	400
COMMERCIAL	COMMERCIAL	CNS	2017	900

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	705 11	30,714,591 60	0 00	0 00	$3,346,270	$66,240

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2026	$259,460	$3,346,270	$66,240	$325,700	$0	$325,700
2024	$263,560	$4,512,700	$55,150	$318,710	$0	$318,710
2023	$180,960	$4,265,200	$64,000	$244,960	$0	$244,960
2022	$183,720	$4,265,200	$64 000	$247,720	$0	$247,720
2021	$174,780	$2,115,330	$64,000	$238,780	$0	$238,780
2020	$92,510	$2,115,330	$64,000	$156,510	$0	$156,510
2019	$39,750	$2,115,330	$57 170	$96,920	$0	$96 920
2018	$39,750	$1,410,220	$57 170	$96,920	$0	$96,920
2017	$0	$1,410,220	$57 170	$57 170	$0	$57,170

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
11/26/2008	WD	WARRANTY DEED	207 HICO LAND TRUST	DE JONG DAVID & LESLIE	432	389	0
6/22/2007	OT	OWNER TRANSFER	NIX HAROLD	207 HICO LAND TRUST	415	753	0
12/22/2006	OT	OWNER TRANSFER	DRAGOO GAYLE D & JEAN D LIVING TRUST	NIX HAROLD	384	219	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	21058	**Geographic ID:**	26000000002349001
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	4483 FM 219 OLIN, TX
Map ID:	**Mapsco:**
Legal Description:	754 J L STANLEY; Acres 191 51
Abstract/Subdivision:	A00754
Neighborhood:	(HICO) HICO STUDY

Owner

Owner ID:	36160
Name:	4P PASTURES LLC
Agent:	
Mailing Address:	4483 E FM 219 HICO, TX 76457
% Ownership:	100 0%
Exemptions:	For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$851,660 (+)
Market Value:	$851,660 (=)
Agricultural Value Loss:	$833,670 (-)
Appraised Value:	$17,990 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)

Assessed Value:	$17,990
Ag Use Value:	$17,990

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$851,660	$17,990	$15.34	
GHA	HAMILTON COUNTY	0.430000	$851,660	$17,990	$77.36	
SHI	HICO ISD	0.855200	$851,660	$17,990	$153.85	
CAD	County Appraisal District	0.000000	$851,660	$17,990	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $246.55

Estimated Taxes Without Exemptions: $11,671.96

Property Land

Type	Description	Acreage	SqFt	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	191 51	8,342,175 60	0 00	0 00	$851,660	$17,990

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$851,660	$17,990	$17,990	$0	$17,990
2024	$0	$1,225,680	$14,980	$14,980	$0	$14,980
2023	$0	$1,292,690	$13,980	$13,980	$0	$13,980
2022	$0	$1,292,690	$13,980	$13,980	$0	$13,980
2021	$0	$459,620	$13,980	$13,980	$0	$13,980
2020	$0	$459,620	$13,980	$13,980	$0	$13,980
2019	$0	$459,620	$13,980	$13,980	$0	$13,980
2018	$0	$344,720	$13,980	$13,980	$0	$13,980
2017	$0	$344,720	$13,980	$13,980	$0	$13,980

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221292
9/3/2013	WD	WARRANTY DEED	HORIZON DAIRY	DE JONG DAVID	476	328	1300
8/23/1994	OT	OWNER TRANSFER	DE JONG WILLIAM C INA & DAVID P	HORIZON DAIRY	289	838	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	21057	**Geographic ID:**	260000000002347001
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	4483 E FM 219 FAIRY.		
Map ID:	HI5	**Mapsco:**	
Legal Description:	468 R KENNEDY; ACRES: 483 94		
Abstract/Subdivision:	A00468		
Neighborhood:	(HICO) HICO STUDY		

Owner

Owner ID:	35160
Name:	4P PASTURES LLC
Agent:	
Mailing Address:	4483 E FM 219 HICO, TX 76457
% Ownership:	100.0%
Exemptions:	AB - For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$2,568,510 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$2,152,110 (+)
Market Value:	$4,720,620 (=)
Agricultural Value Loss:	$2,105,460 (-)
Appraised Value:	$2,615,160 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$2,615,160
Ag Use Value:	$46,650

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085205	$4,720,620	$2,615,160	$2,230.60	
GHA	HAMILTON COUNTY	0.430000	$4,720,620	$2,615,116	$11,245.00	
SHI	HICO ISD	0.855290	$4,720,620	$2,615,160	$22,364.85	
CAD	County Appraisal District	0.000000	$4,720,620	$2,615,160	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $35,840.45

Estimated Taxes Without Exemptions: $64,685.86

Property Improvement - Building

Description: BARNS **Type:** Misc Imp **Living Area:** 521030.5 sqft **Value:** $2,568,510

Type	Description	Class CD	Year Built	SQFT
COMMERCIAL	MA	WHS	0	12320
COMMERCIAL	COMMERCIAL	SHED	1990	85853
COMMERCIAL	3 SIDE BARN SLAB	BARN2S	0	7200
COMMERCIAL	3 SIDE BARN DT	BARN2S	1990	3500
COMMERCIAL	3 SIDE BARN DT	BARN2S	1990	2400
COMMERCIAL	OPEN POLE SHED SLAB	SHED	1990	60000
COMMERCIAL	OPEN POLE SHED DT	SHED	1990	83258
COMMERCIAL	COMMERCIAL	WHS	1990	3600
COMMERCIAL	COMMERCIAL	SHED	1990	72400
COMMERCIAL	COMMERCIAL	SHED	2019	41300
COMMERCIAL	COMMERCIAL	SHED	1990	24000
COMMERCIAL	COMMERCIAL	SHED	1990	83000
COMMERCIAL	COMMERCIAL	SHED	1990	7500
COMMERCIAL	COMMERCIAL	SHED	1990	7200
COMMERCIAL	COMMERCIAL	SHED	1990	7500

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	248.94	10,843,826.40	0.00	0.00	$1,107,050	$23,390
IMP	IMPROVED PASTURE	235.00	10,236,600.00	0.00	0.00	$1,045,060	$23,260

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$2,568,510	$2,152,110	$46,650	$2,615,160	$0	$2,615,160
2024	$2,568,510	$3,097,220	$45,160	$2,613,670	$0	$2,613,670
2023	$2,271,750	$3,097,220	$42,730	$2,314,480	$0	$2,314,480
2022	$2,308,980	$3,097,220	$42,730	$2,351,710	$0	$2,351,710
2021	$1,685,700	$1,161,460	$42,730	$1,728,490	$0	$1,728,490
2020	$1,153,740	$1,161,460	$42,730	$1,196,470	$0	$1,196,470
2019	$1,422,240	$1,161,460	$42,730	$1,464,970	$0	$1,464,970
2018	$1,422,240	$871,090	$42,730	$1,464,970	$0	$1,464,970
2017	$1,422,240	$871,090	$42,730	$1,464,970	$0	$1,464,970

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221282
9/3/2013	WD	WARRANTY DEED	HORIZON DAIRY	DE JONG DAVID	476	328	1300
9/23/1994	OT	OWNER TRANSFER	DEJONG WILLIAM C INA & DAVID P	HORIZON DAIRY	288	836	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	19843	**Geographic ID:**	26000000000376001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	4483 FM 219 E OLIN, TX		
Map ID:		**Mapsco:**	
Legal Description:	745 SAMUEL SMITH; ACRES: 235.57		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36180		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100.0%		
Exemptions:	For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$1,047,590 (+)
Market Value:	$1,047,590 (=)
Agricultural Value Loss:	$1,025,460 (-)
Appraised Value:	$22,130 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)

Assessed Value:	$22,130
Ag Use Value:	$22,130

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
FHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$1,047,590	$22,130	$18.88	
GHA	HAMILTON COUNTY	0.430000	$1,047,590	$22,130	$95.16	
SHI	HICO ISD	0.855200	$1,047,590	$22,130	$189.20	
CAD	County Appraisal District	0.000000	$1,047,590	$22,130	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $303.30

Estimated Taxes Without Exemptions: $14,357.17

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	235.57	10,261,429.20	0.00	0.00	$1,047,590	$22,130

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$1,047,590	$22,130	$22,130	$0	$22,130
2024	$0	$1,507,850	$18,420	$18,420	$0	$18,420
2023	$0	$1,590,100	$17,200	$17,200	$0	$17,200
2022	$0	$1,590,100	$17,200	$17,200	$0	$17,200
2021	$0	$585,370	$17,200	$17,200	$0	$17,200
2020	$0	$585,370	$17,200	$17,200	$0	$17,200
2019	$0	$585,370	$17,200	$17,200	$0	$17,200
2018	$0	$424,030	$17,200	$17,200	$0	$17,200
2017	$0	$424,030	$17,200	$17,200	$0	$17,200

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221292
9/3/2013	WD	WARRANTY DEED	HORIZON DAIRY	DE JONG DAVID	476	328	1300
6/8/2007	OT	OWNER TRANSFER	HORIZON DAIRY	AGUILAR VICTOR J & ROSA	415	215	0

Hamilton CAD Property Search

Property Details

Account			
Property ID:	19719	**Geographic ID:**	26000000000485001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	CR 3232 TX		
Map ID:	HI7	**Mapsco:**	
Legal Description:	745 S SMITH: Acres. 200 00		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36160		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100.0%		
Exemptions:	AB - For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$996,350 (+)
Market Value:	$996,350 (=)
Agricultural Value Loss:	$974,150 (-)
Appraised Value:	$22,200 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$22,200
Ag Use Value:	$22,200

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$996,350	$22,200	$18.94	
GHA	HAMILTON COUNTY	0.430000	$996,350	$21,868	$94.46	
SHI	HICO ISD	0.855200	$996,350	$22,200	$189.85	
CAD	County Appraisal District	0.000000	$996,350	$22,200	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $303.25

Estimated Taxes Without Exemptions: $13,654.93

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	145.87	6,354,097.20			$726,690	$13,700
CROP	CROP	54.13	2,357,902.80	0.00	0.00	$269,660	$8,500

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$996,350	$22,200	$22,200	$0	$22,200
2024	$0	$1,075,780	$21,180	$21,180	$0	$21,180
2023	$0	$929,910	$19,120	$19,120	$0	$19,120
2022	$0	$856,980	$19,120	$19,120	$0	$19,120
2021	$0	$600,000	$19,120	$19,120	$0	$19,120
2020	$0	$612,480	$19,120	$19,120	$0	$19,120
2019	$0	$600,000	$16,660	$16,660	$0	$16,660
2018	$0	$500,010	$16,660	$16,660	$0	$16,660
2017	$0	$500,010	$16,660	$16,660	$0	$16,660

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID & LESLIE	4P PASTURES LLC	811	600	20221292
5/11/2017	WD	WARRANTY DEED	DJC HAMILTON LLC	DE JONG DAVID & LESLIE	621	584	0753
1/17/2017	WD	WARRANTY DEED	CLARK CLYDE MILTON &	DJC HAMILTON LLC	617	175	0079

Hamilton CAD Property Search

Property Details

Account

Property ID:	11986	**Geographic ID:**	000000083100221S
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	935 CR 3232 FAIRY, TX		
Map ID:	HI5	**Mapsco:**	
Legal Description:	745 S SMITH: Acres: 238.65		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		

Owner

Owner ID:	36160
Name:	4P PASTURES LLC
Agent:	
Mailing Address:	4483 E FM 219 HICO, TX 76457
% Ownership:	100.0%
Exemptions:	AB - For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$1,061,290 (+)
Market Value:	$1,061,290 (=)
Agricultural Value Loss:	$1,038,140 (-)
Appraised Value:	$23,150 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$23,150
Ag Use Value:	$23,150

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$1,061,290	$23,150	$19.75	
GHA	HAMILTON COUNTY	0.430000	$1,061,290	$23,150	$97.86	
SHI	HICO ISD	0.855200	$1,061,290	$23,150	$197.98	
CAD	County Appraisal District	0.000000	$1,061,290	$23,150	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $315.59

Estimated Taxes Without Exemptions: $14,544.93

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	92.65	4,035,834.00	0.00	0.00	$412,020	$8,700
IMP	IMPROVED PASTURE	146.00	6,359,760.00	0.00	0.00	$649,270	$14,450

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$1,061,290	$23,150	$23,150	$0	$23,150
2024	$0	$1,286,480	$23,210	$23,210	$0	$23,210
2023	$0	$1,610,880	$22,020	$22,020	$0	$22,020
2022	$0	$1,610,880	$22,020	$22,020	$0	$22,020
2021	$0	$485,150	$22,020	$22,020	$0	$22,020
2020	$0	$485,150	$22,020	$22,020	$0	$22,020
2019	$0	$485,150	$22,020	$22,020	$0	$22,020
2018	$0	$429,570	$22,020	$22,020	$0	$22,020
2017	$0	$429,570	$22,020	$22,020	$0	$22,020

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221292
9/9/2013	WD	WARRANTY DEED	HORIZON DAIRY	DE JONG DAVID	476	328	1300
4/7/2000	OT	OWNER TRANSFER	ROACH RUDY AND SARAH	HORIZON DAIRY	324	621	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	20452	**Geographic ID:**	26000000001495001
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	3875 CR 3231 FAIRY,		
Map ID:	H5	**Mapsco:**	
Legal Description:	745 S SMITH; ACRES: 88 55		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		

Owner

Owner ID:	36160
Name:	4P PASTURES LLC
Agent:	
Mailing Address:	4483 E FM 219 HICO, TX 76457
% Ownership:	100.0%
Exemptions:	For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$625,240 (+)
Market Value:	$625,240 (=)
Agricultural Value Loss:	$616,920 (-)
Appraised Value:	$8,320 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)

Assessed Value:	$8,320
Ag Use Value:	$8,320

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$625,240	$8,320	$7.10	
GHA	HAMILTON COUNTY	0.430000	$625,240	$8,320	$35.78	
SHI	HICO ISD	0.855200	$625,240	$8,320	$71.15	
CAD	County Appraisal District	0.000000	$625,240	$8,320	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $114.03

Estimated Taxes Without Exemptions: $8,568.88

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	88.55	3,857,238.00	0.00	0.00	$625,240	$8,320

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$625,240	$8,320	$8,320	$0	$8,320
2024	$0	$664,130	$8,030	$8,030	$0	$8,030
2023	$0	$442,750	$6,460	$6,460	$0	$6,460
2022	$0	$411,760	$6,460	$6,460	$0	$6,460
2021	$0	$336,490	$6,460	$6,460	$0	$6,460
2020	$0	$285,050	$6,460	$6,460	$0	$6,460
2019	$0	$266,650	$6,460	$6,460	$0	$6,460
2018	$0	$221,380	$6,460	$6,460	$0	$6,460
2017	$0	$221,380	$6,460	$6,460	$0	$6,460

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221292
4/13/2017	WD	WARRANTY DEED	RIENSTRA FAMILY TRUST	DE JONG DAVID	520	623	0504
9/3/2004	WD	WARRANTY DEED	FOSTER COLLEEN EST	RIENSTRA FAMILY TRUST	376	49	0

Hamilton CAD Property Search

Property Details

Account			
Property ID:	11737	**Geographic ID:**	000000008310001667
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	CR 3231 HICO, TX 76457		
Map ID:	HI5	**Mapsco:**	
Legal Description:	745 S SMITH; ACRES: 66 00		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	21376		
Name:	RIENSTRA WILLIAM H & SYDNEY A		
Agent:			
Mailing Address:	6251 STEVENSON OAKS DR APT 1209 FORT WORTH, TX 76123		
% Ownership:	100 0%		
Exemptions:	AB - For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$450,820 (+)
Market Value:	$450,820 (=)
Agricultural Value Loss:	$440,450 (-)
Appraised Value:	$10,370 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$10,370
Ag Use Value:	$10,370

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: RIENSTRA WILLIAM H & SYDNEY A **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0 085295	$450,820	$10,370	$8 85	
GHA	HAMILTON COUNTY	0 430000	$450,820	$10,308	$44 32	
SHI	HICO ISD	0 855200	$450,820	$10,370	$88 68	
CAD	County Appraisal District	0 000000	$450,820	$10,370	$0 00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $141 85

Estimated Taxes Without Exemptions: $6,178 47

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
CROP	CROP	66 00	2,874,960 00	0.00	0 00	$450,820	$10,370

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$450,820	$10,370	$10,370	$0	$10,370
2024	$0	$429,000	$11,910	$11,910	$0	$11,910
2023	$0	$429,000	$10,330	$10,330	$0	$10,330
2022	$0	$429,000	$10,330	$10,330	$0	$10,330
2021	$0	$198,000	$10,330	$10,330	$0	$10,330
2020	$0	$198,000	$10,330	$10,330	$0	$10,330
2019	$0	$198,000	$7,330	$7,330	$0	$7,330
2018	$0	$165,000	$6,900	$6,900	$0	$6,900
2017	$0	$165,000	$6,900	$6,900	$0	$6,900

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
12/10/2012	WD	WARRANTY DEED	BULLARD CLIFFORD W	RIENSTRA WILLIAM H & SYDNEY A	467	661	

Hamilton CAD Property Search

Property Details

Account

Property ID:	20171	**Geographic ID:**	760000000001090001
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	CR 3231 HICO, TX 76457		
Map ID:	H15	**Mapsco:**	
Legal Description:	745 S SMITH; Acres: 44		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		

Owner

Owner ID:	21378
Name:	RIENSTRA WILLIAM H & SYDNEY A
Agent:	
Mailing Address:	6251 STEVENSON OAKS DR APT 1209 FORT WORTH, TX 76123
% Ownership:	100.0%
Exemptions:	AB – For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value	$0 (+)
Agricultural Market Valuation:	$300,540 (+)
Market Value:	$300,540 (=)
Agricultural Value Loss:	$293,630 (-)
Appraised Value:	$6,910 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$6,910
Ag Use Value:	$6,910

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: RIENSTRA WILLIAM H & SYDNEY A **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$300,540	$6,910	$5.89	
GHA	HAMILTON COUNTY	0.430000	$300,540	$6,881	$29.59	
SHI	HICO ISD	0.855200	$300,540	$6,910	$59.09	
CAD	County Appraisal District	0.000000	$300,540	$6,910	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $94.57

Estimated Taxes Without Exemptions: $4,116.89

Property Land

Type	Description	Acreage	SqFt	Eff Front	Eff Depth	Market Value	Prod. Value
CROP	CROP	44.00	1,916,640.00	0.00	0.00	$300,540	$6,910

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$300,540	$6,910	$6,910	$0	$6,910
2024	$0	$286,000	$7,940	$7,940	$0	$7,940
2023	$0	$286,000	$6,890	$6,890	$0	$6,890
2022	$0	$286,000	$6,880	$6,880	$0	$6,880
2021	$0	$132,000	$6,890	$6,890	$0	$6,890
2020	$0	$132,000	$6,890	$6,890	$0	$6,890
2019	$0	$132,000	$4,880	$4,880	$0	$4,880
2018	$0	$110,000	$3,400	$3,400	$0	$3,400
2017	$0	$110,000	$3,400	$3,400	$0	$3,400

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
12/10/2012	WD	WARRANTY DEED	BULLARD CLIFFORD W	RIENSTRA WILLIAM H & SYDNEY A	467	661	1703
6/4/1990	OT	OWNER TRANSFER	BULLARD JERREL G	BULLARD CLIFFORD W	276	438	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	11733	**Geographic ID:**	000000083100188B
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	CR 3231 HICO, TX 76457		
Map ID:	HI5	**Mapsco:**	
Legal Description:	745 S SMITH; ACRES: 9 26		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		

Owner

Owner ID:	21370
Name:	RIENSTRA WILLIAM H & SYDNEY A
Agent:	
Mailing Address:	6251 STEVENSON OAKS DR APT 1209 FORT WORTH, TX 76123
% Ownership:	100 0%
Exemptions:	AB - For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$236,340 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$35,830 (+)
Agricultural Market Valuation:	$56,420 (+)
Market Value:	$299,590 (=)
Agricultural Value Loss:	$55,120 (-)
Appraised Value:	$244,470 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$244,470
Ag Use Value:	$1,300

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: RIENSTRA WILLIAM H & SYDNEY A **%Ownership:** 100 0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHS	HICO EMERGENCY SERVICE DISTRICT	0 085295	$299,590	$244,470	$208 52	
GHA	HAMILTON COUNTY	0 430000	$299,590	$244,470	$1,051 01	
SHI	HICO ISD	0 855200	$299,590	$244,470	$2,090 71	
CAD	County Appraisal District	0 000000	$299,590	$244,470	$0 00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $3,350 24

Estimated Taxes Without Exemptions: $4,105 87

Property Improvement - Building

Type: Residential Living **Area:** 2096.0 sqft **Value:** $236,340

Type	Description	Class CD	Year Built	SQFT
LA	LIVING AREA	RS3F	2019	1144
PORCHES	PORCHES	RS3F	2019	144
ST	STORAGE	STM1	2019	280
ST	STORAGE	STF1	2019	96
ST	STORAGE	STS1	2019	360
MH	MH	MH2	2022	952
PORCHES	PORCHES	RS3F	2022	64

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
CROP	CROP	8 26	359,805 60	0 00	0 00	$56,420	$1,300
RES	RESIDENTIAL LAND	1 00	43,560 00	0 00	0 00	35,830	$0

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$236,340	$63,250	$1,300	$244,470	$0	$244,470
2024	$236,590	$61,980	$1,490	$248,380	$0	$248,380
2023	$142,820	$61,890	$1,290	$152,410	$0	$152,410
2022	$142,840	$61,890	$1,290	$152,430	$0	$152,430
2021	$104,180	$29,280	$1,290	$109,970	$0	$109,970
2020	$0	$27,760	$1,450	$1,450	$0	$1,450
2019	$0	$27,780	$1,030	$1,030	$0	$1,030
2018	$0	$23,150	$710	$710	$0	$710
2017	$0	$23,150	$710	$710	$0	$710

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
12/10/2012	WD	WARRANTY DEED	BULLARD CLIFFORD W	RIENSTRA WILLIAM H & SYDNEY A	467	661	1793
8/4/1990	OT	OWNER TRANSFER	BULLARD JERREL G	BULLARD CLIFFORD W	276	435	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	19987	**Geographic ID:**	26000000000844001
Type:	R	**Zoning:**	
Property Use:			

Location

Situs Address:	CR 3231 HICO, TX 76457
Map ID:	HIS
Mapsco:	
Legal Description:	43 ED BALL; ACRES: 326 66
Abstract/Subdivision:	A00043
Neighborhood:	(HICO) HICO STUDY

Owner

Owner ID:	36160
Name:	4P PASTURES LLC
Agent:	
Mailing Address:	4483 E FM 219 HICO, TX 76457
% Ownership:	100 0%
Exemptions:	AB - For privacy reasons not all exemptions are shown online

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$231,890 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$1,453,560 (+)
Market Value:	$1,685,450 (=)
Agricultural Value Loss:	$1,407,260 (-)
Appraised Value:	$278,190 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$278,190
Ag Use Value:	$46,300

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$1,685,450	$278,190	$237.28	
GHA	HAMILTON COUNTY	0.430000	$1,685,450	$278,045	$1,195.59	
SHI	HICO ISD	0.855200	$1,685,450	$278,190	$2,379.08	
CAD	County Appraisal District	0.000000	$1,685,450	$278,190	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $3,811.85

Estimated Taxes Without Exemptions: $23,099.01

Property Improvement - Building

Description: OPEN POLE SHED DT **Type:** Misc Imp Living **Area:** 2772.0 sqft **Value:** $231,890

Type	Description	Class CD	Year Built	SQFT
SHED	MA	SHED2	1980	4800
MH	MH	MH2	2022	924
MH	MH	MH2	2022	924
MH	MH	MH2	2022	924
PORCHES	PORCHES	CNF3	2022	64
PORCHES	PORCHES	MH2	2022	64
PORCHES	PORCHES	MH2	2022	64

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	80.00	3,484,800.00	0.00	0.00	$355,700	$7,520
CROP	CROP	246.66	10,743,221.60	0.00	0.00	$1,097,800	$38,780

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$231,890	$1,453,560	$46,300	$278,190	$0	$278,190
2024	$236,610	$1,572,690	$50,790	$287,400	$0	$287,400
2023	$20,800	$1,899,900	$44,470	$65,270	$0	$65,270
2022	$21,130	$1,859,900	$44,470	$65,600	$0	$65,600
2021	$14,920	$980,580	$44,470	$59,390	$0	$59,390
2020	$15,140	$932,580	$44,470	$59,610	$0	$59,610
2019	$3,070	$980,580	$33,240	$36,310	$0	$36,310
2018	$3,070	$817,150	$33,240	$36,310	$0	$36,310
2017	$0	$500,000	$17,410	$17,410	$0	$17,410

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID & LESLIE	4P PASTURES LLC	611	600	20221292
2/22/2018	WD	WARRANTY DEED	GLIDEWELL BILLY	DE JONG DAVID & LESLIE	530	16	0346
10/19/2015	LIFE	ENHANCED LIFE ESTATE	GLIDEWELL BILLY D	GLIDEWELL BILLY	502	746	1680

Hamilton CAD Property Search

Property Details

Account			
Property ID:	20453	**Geographic ID:**	26000000001496001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:			
Map ID:	HI5	**Mapsco:**	
Legal Description:	468 R KENNEDY; ACRES: 154 57		
Abstract/Subdivision:	A00468		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36160		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100 0%		
Exemptions:	AB - For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$1,015,930 (+)
Market Value:	$1,015,930 (=)
Agricultural Value Loss:	$992,880 (-)
Appraised Value:	$23,050 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$23,050
Ag Use Value:	$23,050

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100 0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0 065295	$1,015,930	$23,050	$15.05	
GHA	HAMILTON COUNTY	0 430000	$1,015,930	$23,041	$99 08	
SHI	HICO ISD	0 855200	$1,015,930	$23,050	$197 12	
CAD	County Appraisal District	0 000000	$1,015,930	$23,050	$0 00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $315 86

Estimated Taxes Without Exemptions: $13,923 27

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	19 57	852,469 20	0 00	0 00	$128,630	$1,840
CROP	CROP	135 00	5,880,600 00	0 00	0 00	$887,300	$21,210

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$1,015,930	$23,050	$23,050	$0	$23,050
2024	$0	$975,350	$25,880	$25,880	$0	$25,880
2023	$0	$955,780	$22,560	$22,560	$0	$22,560
2022	$0	$987,520	$22,560	$22,560	$0	$22,560
2021	$0	$463,710	$22,560	$22,560	$0	$22,560
2020	$0	$451,970	$22,560	$22,560	$0	$22,560
2019	$0	$463,710	$16,420	$16,420	$0	$16,420
2018	$0	$386,430	$16,420	$16,420	$0	$16,420
2017	$0	$386,430	$16,420	$16,420	$0	$16,420

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID	4P PASTURES LLC	611	600	20221292
4/13/2017	WD	WARRANTY DEED	RIENSTRA FAMILY TRUST	DE JONG DAVID	520	623	0504
9/3/2004	WD	WARRANTY DEED	FOSTER COLLEEN EST	RIENSTRA FAMILY TRUST	376	48	0

Hamilton CAD Property Search

Property Details

Account			
Property ID:	19628	**Geographic ID:** 26000000000356001	
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	CR 3214 FAIRY, TX		
Map ID:	HI6	**Mapsco:**	
Legal Description:	893 ROBERT M WILLIAMS; ACRES: 150 00		
Abstract/Subdivision:	A00893		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	19939		
Name:	MAYHUGH EDDIE F & ROXIE R		
Agent:			
Mailing Address:	C/O MIKE MAYHUGH PO BOX 672 HENDERSON, TX 75653		
% Ownership:	100 0%		
Exemptions:	AB – For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$944,350 (+)
Market Value:	$944,350 (=)
Agricultural Value Loss:	$930,260 (-)
Appraised Value:	$14,090 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$14,090
Ag Use Value:	$14,090

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: MAYHUGH EDDIE F & ROXIE R **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0 085295	$944,350	$14,090	$12.02	
GHA	HAMILTON COUNTY	0.430000	$944,350	$13,948	$59.98	
SHI	HICO ISD	0 855200	$944,350	$14,090	$120.50	
CAD	County Appraisal District	0 000000	$944,350	$14,090	$0.00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $192 50

Estimated Taxes Without Exemptions $12 942.26

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	150 00	6,534,000 00	0 00	0 00	$944,350	$14,090

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$944,350	$14,090	$14,090	$0	$14,090
2024	$0	$750,000	$11,730	$11,730	$0	$11,730
2023	$0	$600,000	$10,950	$10,950	$0	$10,950
2022	$0	$690,000	$10,950	$10,950	$0	$10,950
2021	$0	$450,000	$10,950	$10,950	$0	$10,950
2020	$0	$360,000	$10,950	$10,950	$0	$10,950
2019	$0	$450,000	$10,950	$10,950	$0	$10,950
2018	$0	$375,000	$10,950	$10,950	$0	$10,950
2017	$0	$375,000	$10,950	$10,950	$0	$10,950

Hamilton CAD Property Search

Property Details

Account

Property ID:	20458	**Geographic ID:**	2R000000001512001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	FM 1744 CARLTON, TX 76436		
Map ID:	HI4	**Mapsco:**	
Legal Description:	857 J B WALDEN; Acres 214 80		
Abstract/Subdivision:	A00857		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36160		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100.0%		
Exemptions:	AB - For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$1,121,540 (+)
Market Value:	$1,121,540 (=)
Agricultural Value Loss:	$1,100,280 (-)
Appraised Value:	$21,260 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$21,260
Ag Use Value:	$21,260

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	$1,121,540	$21,260	$18.13	
GHA	HAMILTON COUNTY	0.430000	$1,121,540	$20,923	$89.97	
SHI	HICO ISD	0.855200	$1,121,540	$21,260	$181.82	
CAD	County Appraisal District	0.000000	$1,121,540	$21,260	$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: $289.92

Estimated Taxes Without Exemptions: $15,370.65

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
IMP	IMPROVED PASTURE	214.80	9,356,688.00	0.00	0.00	$1,121,540	$21,260

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$1,121,540	$21,260	$21,260	$0	$21,260
2024	$0	$1,018,920	$23,450	$23,450	$0	$23,450
2023	$0	$1,018,920	$22,420	$22,420	$0	$22,420
2022	$0	$1,018,920	$22,420	$22,420	$0	$22,420
2021	$0	$643,530	$22,420	$22,420	$0	$22,420
2020	$0	$643,530	$22,420	$22,420	$0	$22,420
2019	$0	$643,530	$23,510	$23,510	$0	$23,510
2018	$0	$536,280	$23,510	$23,510	$0	$23,510
2017	$0	$536,280	$23,510	$23,510	$0	$23,510

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
4/1/2025	WD	WARRANTY DEED	WATSON STEVEN & SONS INC	4P PASTURES LLC	656	150	20250521
2/25/2005	OT	OWNER TRANSFER	JONES RICHARD C & ESTHER	WATSON STEVEN & SONS INC	382	140	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	21274	**Geographic ID:**	2600000000501 6001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	FM 1744 CARLTON, TX 76436		
Map ID:	H14	**Mapsco:**	
Legal Description:	857 J B WALDEN; Acres: 150		
Abstract/Subdivision:	A00857		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36160		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100 0%		
Exemptions:	AB – For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$783,200 (+)
Market Value:	$783,200 (=)
Agricultural Value Loss:	$768,740 (-)
Appraised Value:	$14,460 (=)
HS Cap Loss:	$0 (-)

Circuit Breaker:	$0 (-)
Assessed Value:	$14,460
Ag Use Value:	$14,460

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC %Ownership: 100 0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0 065295	$783,200	$14,460	$12 33	
GHA	HAMILTON COUNTY	0 430000	$783,200	$14,434	$62 07	
SHI	HICO ISD	0 855200	$783,200	$14,460	$123 66	
CAD	County Appraisal District	0 000000	$783,200	$14,460	$0 00	

Total Tax Rate: 1 370495

Estimated Taxes With Exemptions: $199 06

Estimated Taxes Without Exemptions: $10,733 72

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	77 00	3,354,120 00	0 00	0 00	$402,040	$7,230
IMP	IMPROVED PASTURE	73 00	3,179,880 00	0 00	0 00	$381,160	$7,230

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$783,200	$14,460	$14,460	$0	$14,460
2024	$0	$731,750	$14,000	$14,000	$0	$14,000
2023	$0	$654,750	$13,250	$13,250	$0	$13,250
2022	$0	$616,250	$13,250	$13,250	$0	$13,250
2021	$0	$450,000	$13,250	$13,250	$0	$13,250
2020	$0	$403,800	$13,250	$13,250	$0	$13,250
2019	$0	$450,000	$13,720	$13,720	$0	$13,720
2018	$0	$375,000	$13,720	$13,720	$0	$13,720
2017	$0	$375,000	$13,720	$13,720	$0	$13,720

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
4/1/2025	WD	WARRANTY DEED	WATSON STEVEN & SONS INC	4P PASTURES LLC	656	150	20250521
2/25/2005	OT	OWNER TRANSFER	JONES RICHARD C & ESTHER	WATSON STEVEN & SONS INC	382	140	0

Hamilton CAD Property Search

Property Details

Account

Property ID:	19720	**Geographic ID:**	260000000004186001
Type:	R	**Zoning:**	
Property Use:			
Location			
Situs Address:	CR 3232 TX		
Map ID:	HI7	**Mapsco:**	
Legal Description:	745 S SMITH; Acres 48.32		
Abstract/Subdivision:	A00745		
Neighborhood:	(HICO) HICO STUDY		
Owner			
Owner ID:	36160		
Name:	4P PASTURES LLC		
Agent:			
Mailing Address:	4483 E FM 219 HICO, TX 76457		
% Ownership:	100.0%		
Exemptions:	For privacy reasons not all exemptions are shown online		

Property Values

Improvement Homesite Value:	$0 (+)
Improvement Non-Homesite Value:	$0 (+)
Land Homesite Value:	$0 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$240,720 (+)
Market Value:	$240,720 (=)
Agricultural Value Loss:	$233,130 (-)
Appraised Value:	$7,590 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)

Assessed Value:	$7,590
Ag Use Value:	$7,590

The 2025 appraisal roll values are subject to change and are not certified. 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

Owner: 4P PASTURES LLC **%Ownership:** 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085285	$240,720	$7,590	$6.47	
GHA	HAMILTON COUNTY	0.430000	$240,720	$7,590	$32.64	
SHI	HICO ISD	0.855200	$240,720	$7,590	$64.91	
CAD	County Appraisal District	0.000000	$240,720	$7,590	$0.00	

Total Tax Rate: 1.370485

Estimated Taxes With Exemptions: $104.02

Estimated Taxes Without Exemptions: $3,299.06

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
CROP	CROP	48.32	2,104,819.20	0.00	0.00	$240,720	$7,590

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	$0	$240,720	$7,590	$7,590	$0	$7,590
2024	$0	$308,250	$8,720	$8,720	$0	$8,720
2023	$0	$308,250	$7,560	$7,560	$0	$7,560
2022	$0	$308,250	$7,560	$7,560	$0	$7,560
2021	$0	$144,960	$7,560	$7,560	$0	$7,560
2020	$0	$144,960	$7,560	$7,560	$0	$7,560
2019	$0	$144,960	$5,360	$5,360	$0	$5,360
2018	$0	$120,800	$5,360	$5,360	$0	$5,360
2017	$0	$120,800	$5,360	$5,360	$0	$5,360

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
5/31/2022	SWD	SPECIAL WARRANTY DEED	DE JONG DAVID & LESLIE	4P PASTURES I LC	611	600	20221292
5/11/2017	WD	WARRANTY DEED	OJC HAMILTON LLC	DE JONG DAVID & LESLIE	521	584	0753
1/17/2017	WD	WARRANTY DEED	CLARK CLYDE MILTON &	OJC HAMILTON LLC	517	175	0079

TECHNICAL INFORMATION PACKET FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS)

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

Name of Site: Horizon Dairy

TCEQ Permit Number, if assigned: WQ000 4842000

Date Prepared: August 2025

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.

Table 1: Potential Pollutant Sources and Best Management Practices

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: Parlor Chemicals & Burial Pit	See Attached BMPs

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: Midwest Plan Services

I. POLLUTANT SOURCES AND MANAGEMENT

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

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

Potential Pollutant Sources:	Potential Best Management Practices (BMPs)
Manure, Sludge, Stockpiles, Slurry, Bedding, Feed Waste & Compost	Temporary (< 30 days) & Permanent Storage (>30 days) Store in drainage area of the RCS - OR - If not located within drainage area, berm area to contain runoff. 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 or transferred to other persons. Regular pen maintenance (scraping & drainage)
Dust - Vehicle Traffic	Control speeds around the facility. Reduce travel on unpaved facility roads, or manage dust by sprinkling road with water and/or a suppressant on an as needed basis. Utilize paving products and/or gravel to manage dust on facility roads.
Dust - Feed Handling/Processing	Utilize dust abatement measures for feed handling equipment. Utilize choke feeding when handling feed ingredients & Utilize feed ingredients, such as moisture or other additives, to manage dust.
Feedstuff/Silage Stockpiles	Contain leachate in an earthen berm or in the RCS Minimize feed spoilage & utilize plastic covers or roofed areas for storage when applicable.
Lubricants/Pesticides/Herbicides/Parlor Chemicals	Store under roof Handle and dispose according to label directions
Fuel Tanks	Provide secondary containment Prevent overfills/spills
Wastewater	Store in 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 Land application on-site or to third-party fields Maintain adequate capacity as determined by the pond marker schematic
Dead Animals	Disposed by a third-party rendering service, composted on-site or burial. Collected within 24 hours of death and disposed within three days of death
Burial Pits	Carcasses buried at least 3 feet below the natural surface of the ground. Covered with 3 feet of native soil.

2) Total Number of Animals:

In Open Lots: 2,500 In Buildings: 7,500

3) Animal Housing Location, hours/day:

Opeu Lots: 22 Buildings: 2

4) Average Liveweight, pounds per head: 1,400 lbs

5) Volatile Solids Removed by Separator System: 50% Primary; 40% Secondary

6) Volatile Solids Loading Rate, lbs/day/1000 ft^3: 5.0

7) Spilled Drinking Water, gallons/day: Included in cleanup water

8) Water for Cleanup, gallons/day: 112,500 gal/day

9) Water for Manure Removal, gallons/day: Included in cleannp water

10) Recycled Wastewater, gallons/day: 0

B. Wastewater Runoff

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

☐ Other; specify:

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

Table 2. RCS Volume Allocations (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity	Actual Capacity
1	0.00	0.00	14.63	2.29	0.00	16.93*+	17.52
2A	0.00	10.36	0.00	0.68	0.00	11.04+	62.99
2B	79.73	0.00	0.00	0.00	23.32	103.04*+	117.81
3	12.42	0.00	0.00	0.12	1.76	14.30	15.02
						*Rounded Figure +Phase 1	

Indicate which RCSs are in-series: RCS #1, RCS #2A and RCS #2B

2) Total Number of Animals:
In Open Lots: 2,500 In Buildings: 7,500

3) Animal Housing Location, hours/day:
Open Lots: 22 Buildings: 2

4) Average Liveweight, pounds per head: 1,400 lbs

5) Volatile Solids Removed by Separator System: 90.12%

6) Volatile Solids Loading Rate, lbs/day/1000 ft³: 5.0

7) Spilled Drinking Water, gallons/day: Included in cleanup water

8) Water for Cleanup, gallons/day: 112,500 gal/day

9) Water for Manure Removal, gallons/day: Included in cleanup water

10) Recycled Wastewater, gallons/day: 0

B. Wastewater Runoff

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

☐ Other; specify: Click here to enter text.

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

Table 2. RCS Volume Allocations (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity	Actual Capacity
2B	0.00	0.00	68.29	23.44	0.00	91.74*~	117.81
2C	91.58	23.71	0.00	0.68	37.07	153.04~	TBD
3	12.42	0.00	0.00	0.12	1.76	14.30	15.02
						*Rounded Figure ~Phase 2	

Indicate which RCSs are in-series: RCS #2B & RCS #2C

2) Total Number of Animals:

In Open Lots: 2,500 In Buildings: 7,500

3) Animal Housing Location, hours/day:

Open Lots: 22 Buildings: 2

4) Average Liveweight, pounds per head: 1,400 lbs

5) Volatile Solids Removed by Separator System: 50% Primary; 40% Secondary

6) Volatile Solids Loading Rate, lbs/day/1000 ft^3: 5.0

7) Spilled Drinking Water, gallons/day: Included in cleanup water

8) Water for Cleanup, gallons/day: 112,500 gal/day

9) Water for Manure Removal, gallons/day: Included in cleanup water

10) Recycled Wastewater, gallons/day: 0

B. Wastewater Runoff

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

☐ Other; specify:

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

Table 2. RCS Volume Allocations (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity	Actual Capacity
2B	0.00	0.00	14.63	2.29	0.00	16.92*^	117.81
2C	91.58	10.36	0.00	0.68	23.28	125.90^	TBD
3	12.42	0.00	0.00	0.12	1.76	14.30	15.02
						*Rounded Figure ^Bypass	

Indicate which RCSs are in-series: RCS #2B and RCS #2C

D. RCS Liner or Lack of Hydrologic Connection Certification

Table 3: RCS Hydrologic Connection

RCS Name	Construction Date	Type of Hydrologic Connection Certification
1	1994	Liner Cert., Norman Mullin, P.E., 2008
2A	1994	Liner Cert., Norman Mullin, P.E., 2010
2B	2009	Liner Cert., Norman Mullin, P.E., 2009
3	2009	Liner Cert., Norman Mullin, P.E., 2009
Settling Basins #1-4	2011	Liner Cert., Norman Mullin, P.E., 2011
Slurry Pit #1	2021	Liner Cert., Norman Mullin, P.E., 2021

E. Playa Lakes

Are any playa lakes used for RCSs? Yes ☐ No ☒

SECTION 3. MANURE, SLUDGE, AND WASTEWATER HANDLING

A. Manure:

1) Use or Disposal Method:
   - ☒ Land Application to LMUs
   - ☒ Transfer to other persons
   - ☒ Third Party Fields
   - ☐ Other; specify:

2) Land Application Location:
   - ☒ Onsite ☒ Offsite ☐ Not Applicable

3) Composting Location:
   - ☒ Onsite ☐ Offsite ☐ Not Applicable

B. Sludge:

1) Use or Disposal Method:
   - ☒ Land Application to LMUs
   - ☒ Transfer to other persons
   - ☒ Third Party Fields
   - ☐ Other; specify:

2) Land Application Location:

☒ Onsite ☒ Offsite ☐ Not Applicable

C. Wastewater:

1) Use or Disposal Method:

☒ Land Application to LMUs

☐ Total Evaporation

☒ Third Party Fields

☐ Other; specify:

2) Land Application Location:

☒ Onsite ☒ Offsite ☐ 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.

Table 4: Land Management Unit Summary from the Current NMP

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac-ft/Ac/Year OR Tons/Ac/Year)
1	102	Silage-Corn 16-20T; SG Green Chop 6-7T	0.175 Ac-ft/Ac/Yr
1A	36	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
2A	60	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
2B	105	Coastal GC 9-11T; SG GC 6-7T M	0.283 Ac-ft/Ac/Yr
2C	73	Coastal GC 9-11T; SG GC 6-7T M	0.283 Ac-ft/Ac/Yr
3A	104	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
3B	142	Coastal GC 9-11T; SG GC 6-7T M	0.283 Ac-ft/Ac/Yr
3C	38	Coastal GC 9-11T; SG GC 6-7T M	0.283 Ac-ft/Ac/Yr
4	56	Coastal graze 1 AU/lac; SG Mod Graze M	44.3 Tons/Ac/Yr
5	37	Coastal GC 21-23T; SG GC 6-7T H	66.5 Tons/Ac/Yr
6	65	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
7	65	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
8	84	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
9	20	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
10	120	Silage-Sorg 11-15T; SG Green Chop 6-7TM	44.3 Tons/Ac/Yr

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:

☒ Onsite ☒ Offsite ☐ 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.

Table 4: Land Management Unit Summary from the Current NMP

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac-ft/Ac/Year OR Tons/Ac/Year)
1	102	Silage-Corn 16-20T; SG Green Chop 6-7T	0.3 Ac-ft/Ac/Yr
1A	36	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
2A	60	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
2B	105	Coastal GC 9-11T; SG GC 6-7T M	0.467Ac-ft/Ac/Yr
2C	73	Coastal GC 9-11T; SG GC 6-7T M	0.458 Ac-ft/Ac/Yr
3A	104	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
3B	142	Coastal GC 9-11T; SG GC 6-7T M	0.458 Ac-ft/Ac/Yr
3C	38	Coastal GC 9-11T; SG GC 6-7T M	0.458 Ac-ft/Ac/Yr
4	56	Coastal graze 1 AU/1ac; SG Mod Graze M	44.3 Tons/Ac/Yr
5	37	Coastal GC 21-23T; SG GC 6-7T H	66.5 Tons/Ac/Yr
6	65	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
7	65	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
8	84	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
9	20	Coastal GC 21-23T; SG GC 6-7T M	66.5 Tons/Ac/Yr
10	120	Silage-Sorg 11-15T; SG Green Chop 6-7TM	44.3 Tons/Ac/Yr

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac-ft/Ac/Year OR Tons/Ac/Year)
11	22	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
13	90	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
14	77	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
15	58	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
16	85	Silage-Sorg 11-15T; SG Green Chop 6-7T H	0.283 Ac-ft/Ac/Yr
17	85	Silage-Corn 16-20T; SG Green Chop 6-7T M	0.308 Ac-ft/Ac/Yr
18	113	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
20	120	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
21	24	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
23	90	Silage-Sorg 11-15T; SG Green Chop 6-7T M	0.283 Ac-ft/Ac/Yr
Mayhugh 1	70	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Mayhugh 2	92	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Watson 1	125	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Watson 2	168	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr

1) Wastewater production, ac-in/year: 3,118.92 ac-in/yr (Tables 2.3A&D, Col. 4)
2) Estimated Wastewater application, ac-in/year: 2,097.96 ac-in/yr (Tables 2.3A&D, Col. 10)
3) Manure production, tons/year: 32,394 tons/yr (Table 2.1)
4) Estimated manure application, tons/year: 15,980.11 tons/yr
5) Estimated manure transferred to other persons, tons/year: 16,413.79 tons/yr

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac-ft/Ac/Year OR Tons/Ac/Year)
11	22	Coastal GC 9-11T; SG GC 6-7T M	44.3 Tons/Ac/Yr
13	90	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
14	77	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
15	47	Coastal GC 9-11T; SG GC 6-7T H	44.3 Tons/Ac/Yr
16	85	Silage-Sorg 11-15T; SG Green Chop 6-7T H	0.467 Ac-ft/Ac/Yr
17	85	Silage-Corn 16-20T; SG Green Chop 6-7T M	0.517 Ac-ft/Ac/Yr
18	113	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
20	120	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
21	24	Silage-Sorg 11-15T; SG Green Chop 6-7T H	44.3 Tons/Ac/Yr
23	90	Silage-Sorg 11-15T; SG Green Chop 6-7T M	0.467 Ac-ft/Ac/Yr
Mayhugh 1	70	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Mayhugh 2	92	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Watson 1	125	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr
Watson 2	168	Silage-Sorg 11-15T; SG Green Chop 6-7T M	32.8 Tons/Ac/Yr

1) Wastewater production, ac-in/year: 5,398.56 ac-in/yr (Tables 2.3B&D, Col. 4)
2) Estimated Wastewater application, ac-in/year: 3,830.88 ac-in/yr (Tables 2.3B&D, Col. 10)
3) Manure production, tons/year: 32,394 tons/yr (Table 2.1)
4) Estimated manure application, tons/year: 15,980.11 tons/yr
5) Estimated manure transferred to other persons, tons/year: 16,413.79 tons/yr

E. Floodplain Information

1) Is any part of the production area within a 100-year floodplain? Yes ☐ No ☒

If YES, describe management practices to protect the sites.

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

If YES, describe management practices. Vegetative buffers shall be maintained between all waters of the state and any waste/wastewater application.

F. Soil Limitations

Table 5: Soil Limiting Characteristics and Best Management Practices

Soil Types	Limiting Characteristics	Best Management Practices
BtC, ByC, ReB, BxD, PkB	Droughty Depth to Bedrock	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils. -All RCSs have been certified as meeting TCEQ liner requirements.
ChB, ReB	Depth to Cemented Pan Droughty	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
KrB, NuB, SaB, SsB, DnB	Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan)

Soil Types	Limiting Characteristics	Best Management Practices
		- Maintain cover crops in LMUs. -No land application to inundated soils. -All RCSs have been certified as meeting TCEQ liner requirements.
NuC	Large Stones on the Surface Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -No land application to inundated soils.
OgB	Droughty Depth to Bedrock Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
ToC, ToD, WsC	Depth to Soft Bedrock	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
ToD	Slope	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of

Soil Types	Limiting Characteristics	Best Management Practices
		the available water holding capacity of the LMU. -No land application to inundated soils.

G. Well Protection

Table 6: Water Well Status and Protective Measures

Well ID Number	Well Type	Producing or Non-Producing	Open, Cased, or Capped	Protective Measures
1	Domestic	Producing	Cased	See Attached Approved Well Buffer Exception
2	Domestic	Producing	Cased	Maintain 150-ft Buffer
3	Domestic	Producing	Cased	Maintain 150-ft Buffer
4	Domestic	Producing	Cased	Maintain 150-ft Buffer
5	Domestic	Non-Producing	Cased	See Attached Plugging Report
6	Domestic	Producing	Cased	Maintain 150-ft Buffer
7	Domestic	Non-Producing	Cased	No Evidence of Well-See Attached due diligence letter from Associated Well.
8	Domestic	Non-Producing	Cased	See Attached Plugging Report
9	Domestic	Non-Producing	Cased	See Attached Plugging Report
10	Irrigation	Producing	Cased	Maintain 100-ft Buffer
11	Domestic	Non-Producing	Cased	See Attached Plugging Report

Well ID Number	Well Type	Producing or Non-Producing	Open, Cased, or Capped	Protective Measures
12	Domestic	Non-Producing	Cased	See Attached Plugging Report
13	Domestic	Producing	Cased	Maintain 150-ft Buffer
14	Domestic	Producing	Cased	Maintain 150-ft Buffer
15	Domestic	Producing	Cased	Maintain 150-ft Buffer
16	Domestic	Producing	Cased	Maintain 150-ft Buffer
17	Domestic	Producing	Cased	Maintain 150-ft Buffer
18	Domestic	Producing	Cased	Maintain 150-ft Buffer
19	Domestic	Producing	Cased	Maintain 150-ft Buffer
20	Irrigation	Producing	Cased	Maintain 100-ft Buffer
21	Irrigation	Producing	Cased	Maintain 100-ft Buffer
22	Irrigation	Producing	Cased	Maintain 100-ft Buffer
23	Irrigation	Producing	Cased	Maintain 100-ft Buffer
24	Irrigation	Non-Producing	Cased	See Attached Plugging Report
M1	Domestic	Producing	Cased	Maintain 150-ft Buffer
W1	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*
- ☐ ¼ mile buffer* and an odor control plan

☒ Operation started on or before August 19, 1998:
- ☐ ¼ mile buffer*
- ☒ odor control plan

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

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: 3 (3 Applicant Owned)

¼ - ½ mile: 11 (6 Applicant Owned)

½ - 1 mile: 13 (8 Applicant Owned)

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)

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

D. Air Standard Permit Documentation (if required)

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

E. Groundwater Monitoring (if required)

1) Groundwater Monitoring Plan
2) Groundwater Monitoring Analyses

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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 March 2018). The location of the facility is depicted on the map.

1.2 USGS Quadrangle Map

Figures 1.2A1-2 & B, entitled 7.5-Minute USGS Map is a seamless, high-quality copy of the 7.5-minute USGS quadrangle map (Hico, Carlton & Edison Lake, TX, quadrangles) that shows the boundaries of land owned, operated, or controlled by 4P Pastures, LLC 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.

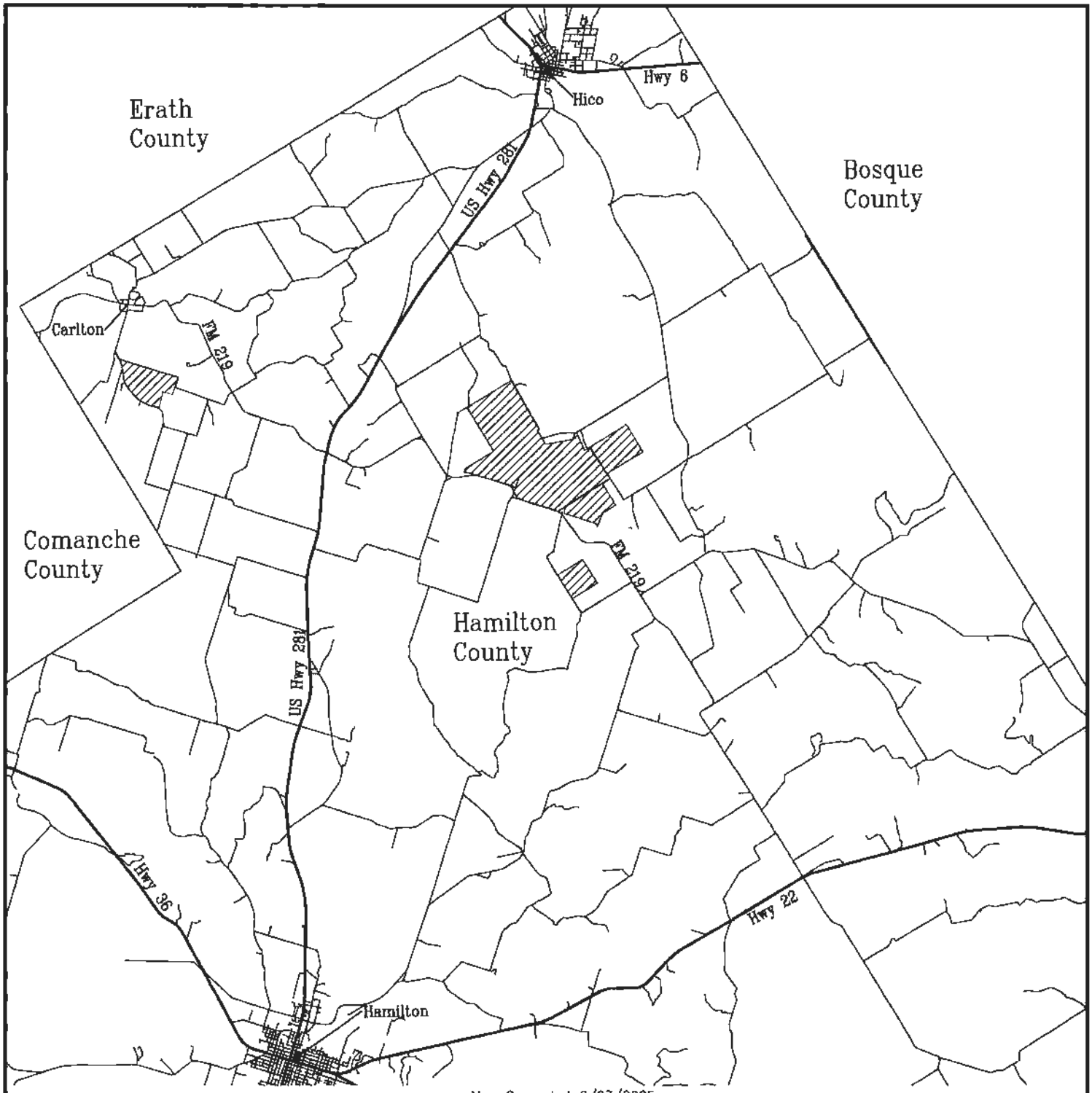
1.3 Site Map

Figures 1.3A1-2, B & C Site Map, 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
- Wells
- Freshwater Ponds
- Milking Parlors
- Manure/Compost Storage Areas
- Irrigation Reservoir
- Burial Pit
- Anerobic Digester

1.4 Runoff Control Map

Figures 1.4A-B is a scaled drawing of the production area showing the pens, barns, wells, RCSs, permanent manure storage and compost areas, berms, silage storage area, hay storage area, anerobic digester, drainage area boundaries and flow directions.



Map Generated 6/23/2025

LEGEND:

- Denotes City/County Roads
- Denotes Major Roads
- Horizon Dairy

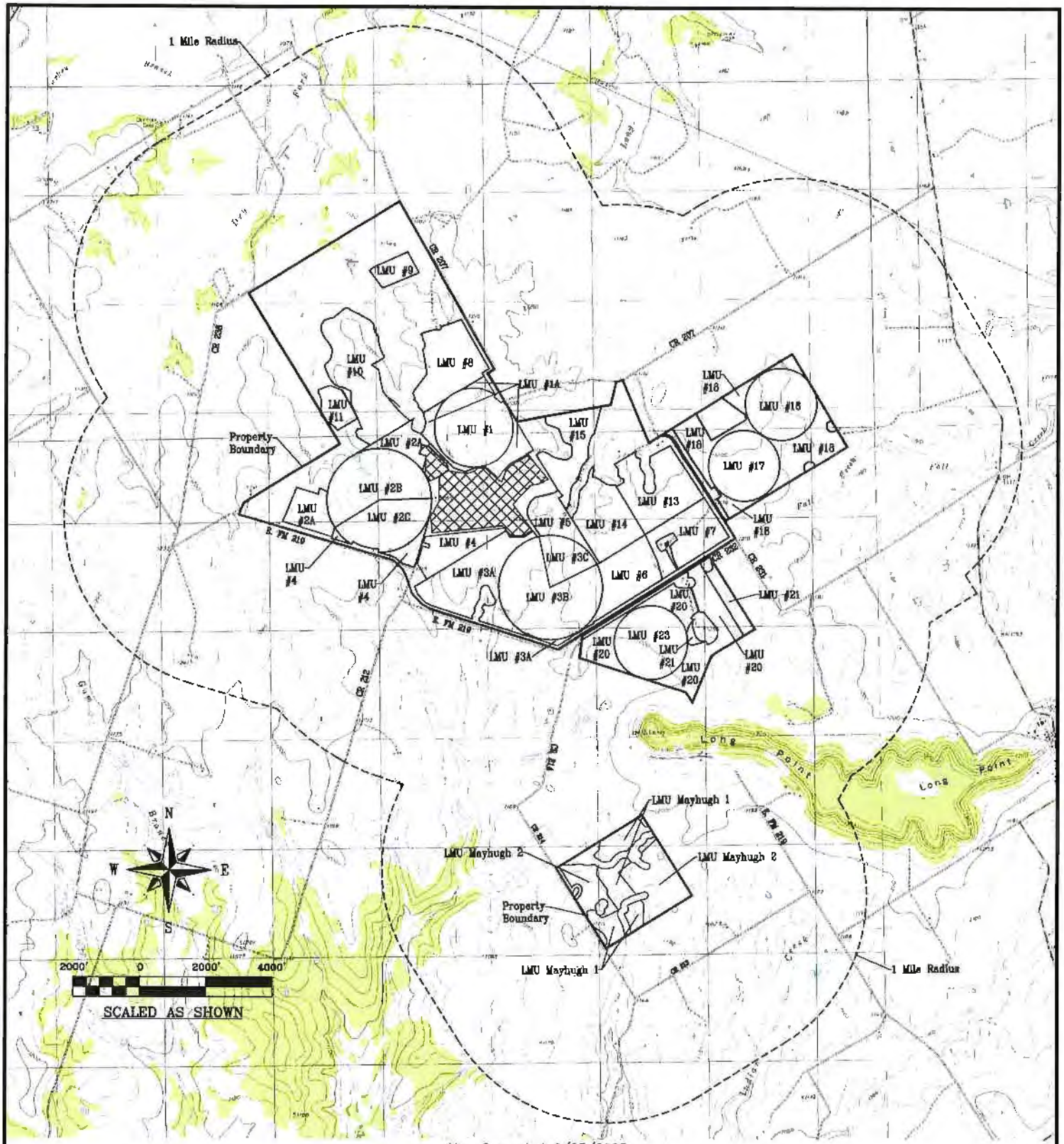
N
W E
S

7000' 0 7000' 14000'

SCALED AS SHOWN

Source: USDA–NRCS. Geospatiol Data Goteway. Availoble at: http://datagateway.nrcs.usda.gov/. Tiger 2010 Primary and Secondary Roads – Accessed May, 2014.

Horizon Dairy, LLC Hico, Texas Hamilton County	Vicinity Map Figure 1.1 Page 2	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

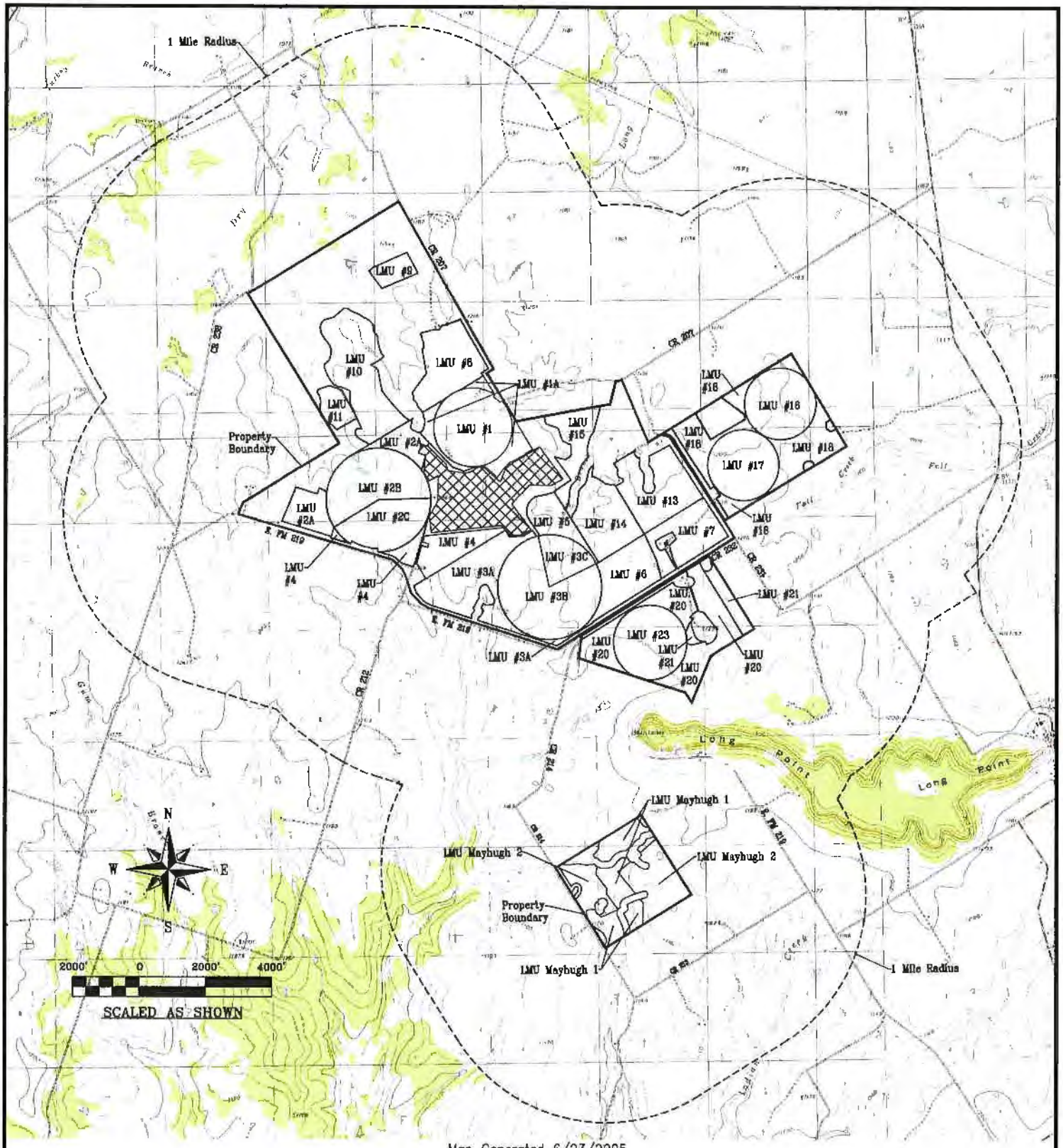
LEGEND:

Denotes Production Area

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	USGS 7.5 Min. Quad. Map - Phase 1 Figure 1.2A Page 3	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

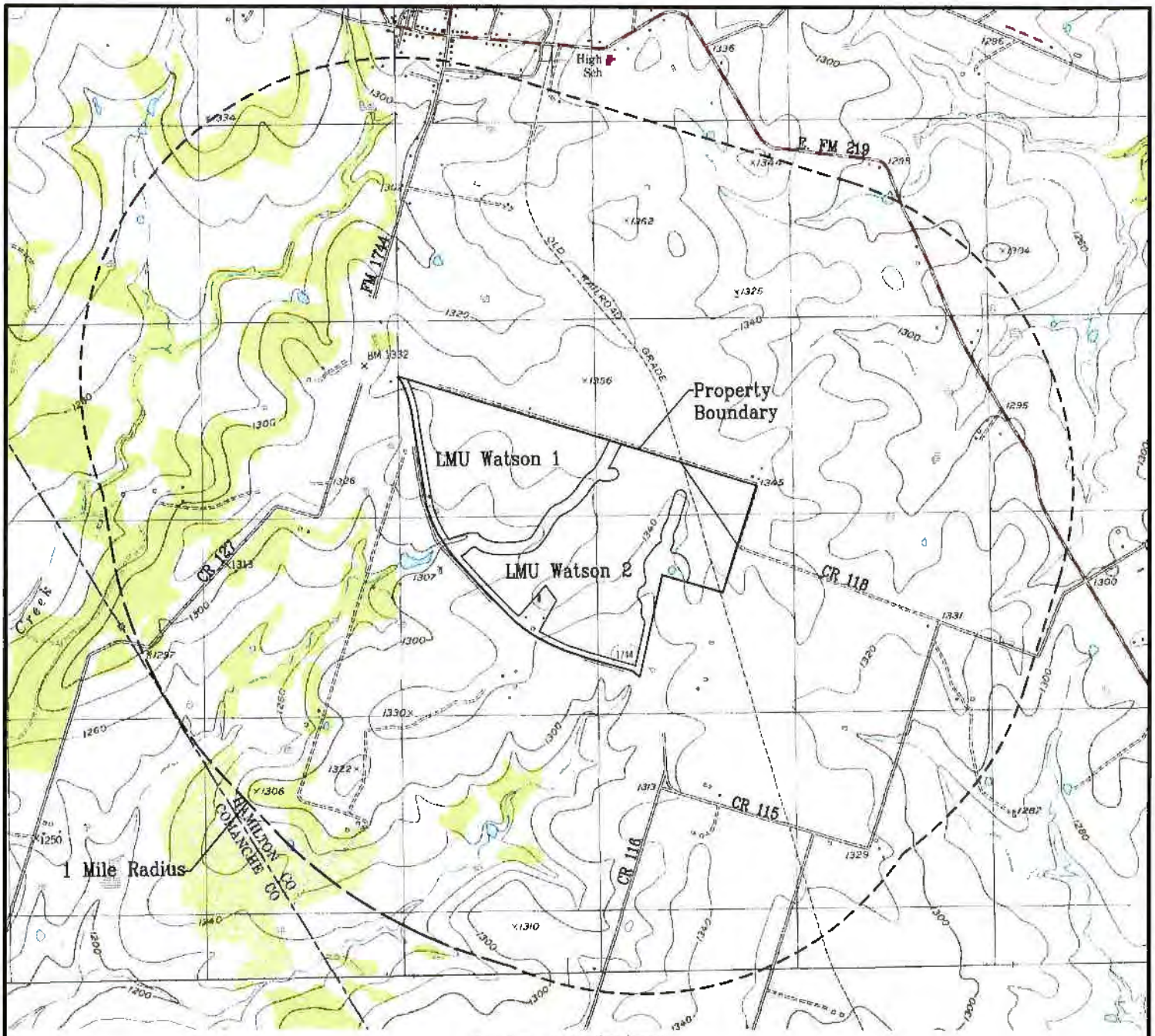
LEGEND:

XXXX Denotes Production Area

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	USGS 7.5 Min. Quad. Map - Phase 2 Figure 1.2A Page 4	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

N

W E

S

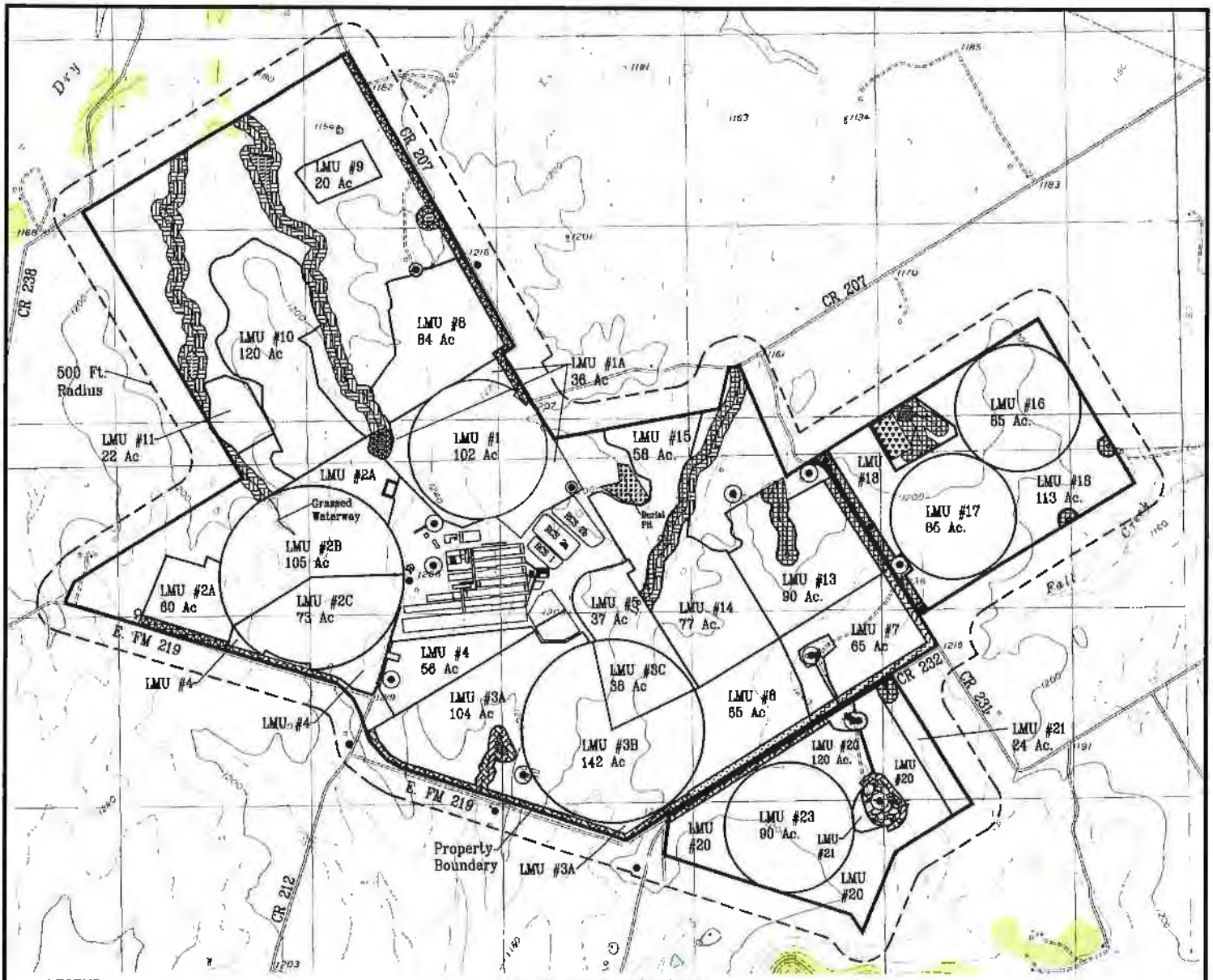
1200' 0 1200' 2400'

SCALED AS SHOWN

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	USGS 7.5 Min. Quad. Map Figure 1.2B Page 5	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N
W E
S

1300' 0 1300' 2600'

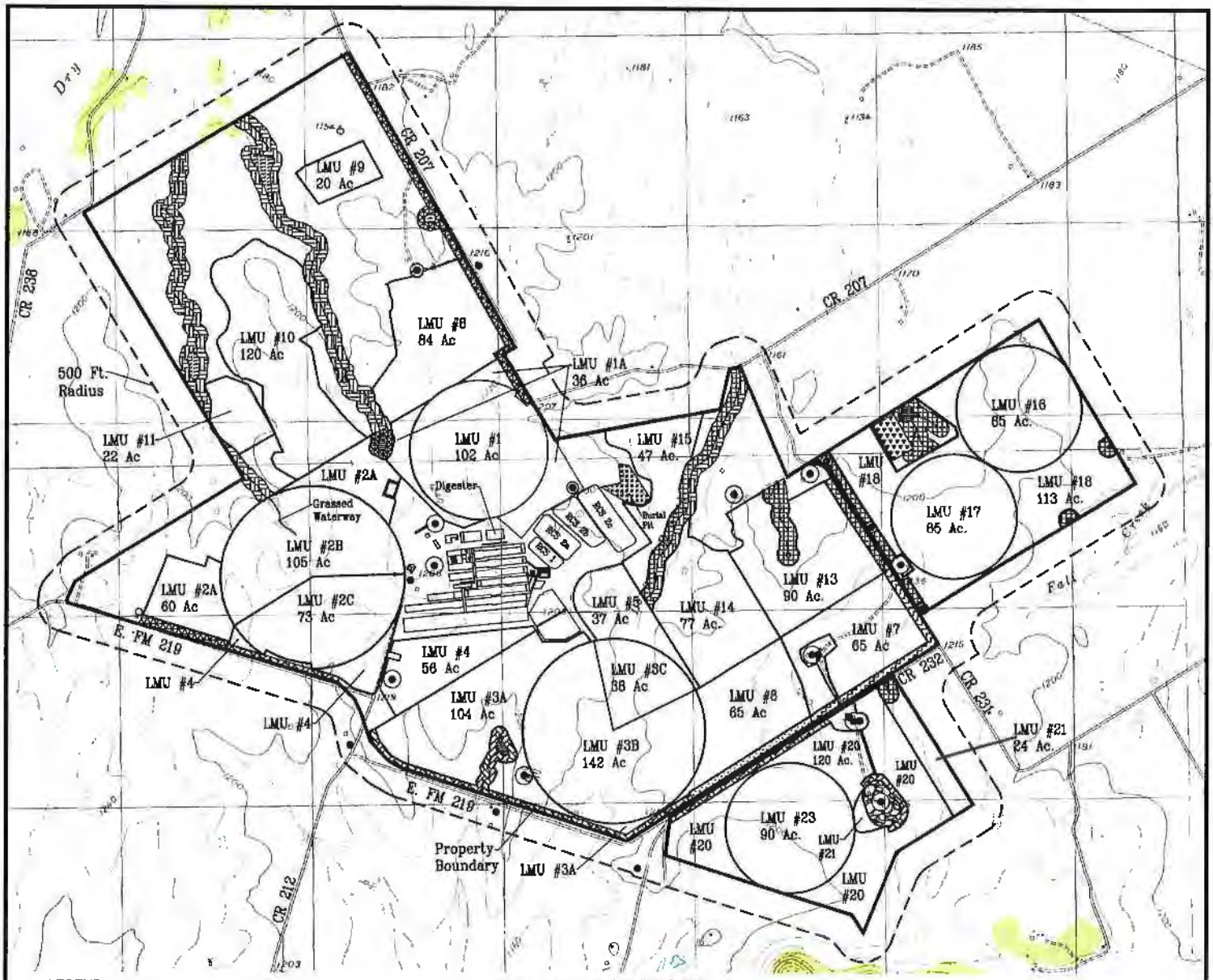
SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Note:
LMU's 2C, 3A, 3B, 4, 20 & 23 are located in the Lean Watershed.

Horizon Dairy, LLC Hico, Texas Hamilton County	Site Map - Phase 1 Figure 1.3A Page 6	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N

W E

S

1300' 0 1300' 2600'

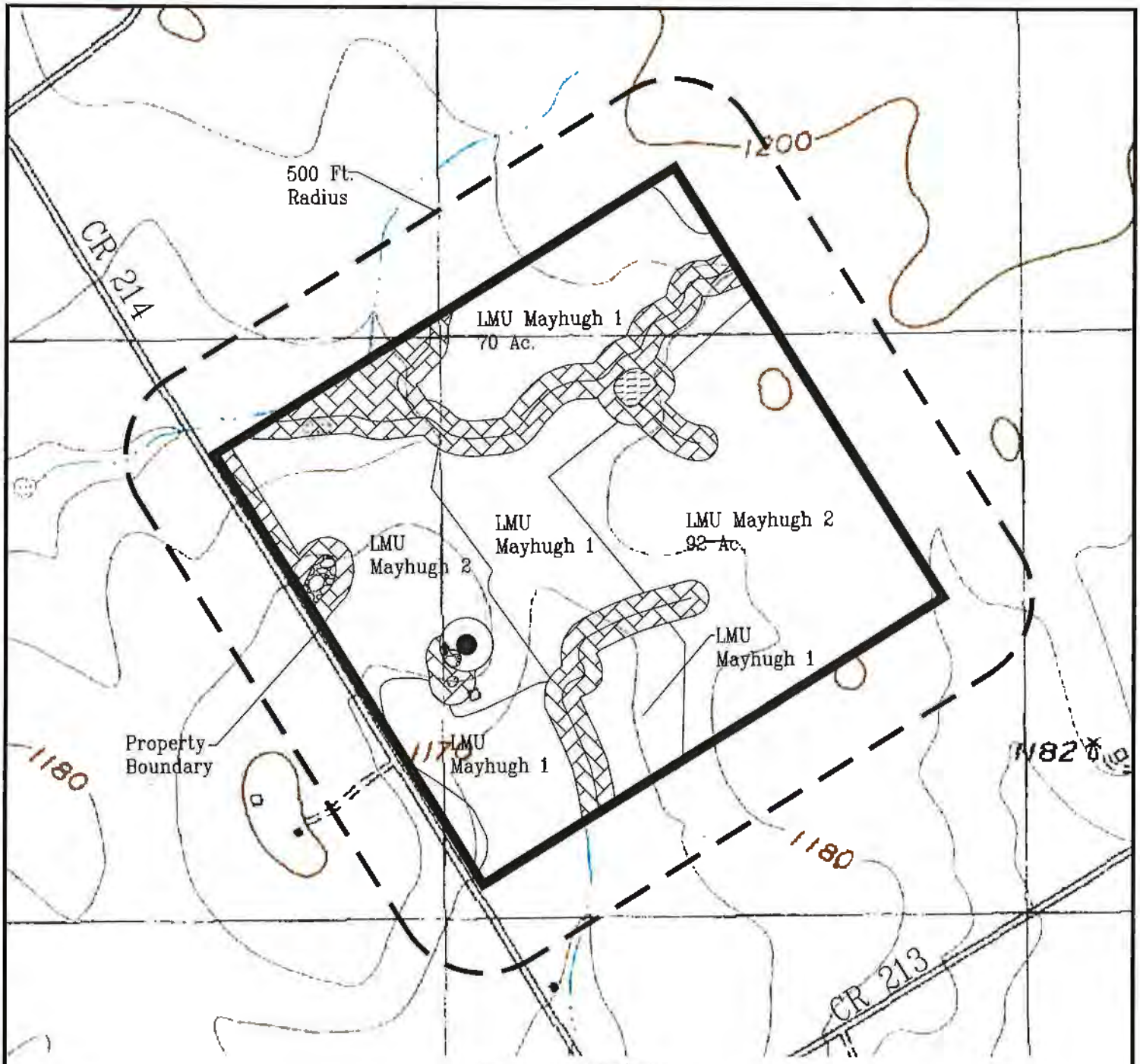
SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digitol Raster Graphic County Mosaic by NRCS - Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Note:
LMU's 2C, 3A, 3B, 4, 20 & 23 are located in the Leon Watershed.

Horizon Dairy, LLC Hico, Texas Hamilton County	Site Map - Phase 2 Figure 1.3A Page 7	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

Map Generated 6/23/2025

N
W E
S

Note:
LMU's Mayhugh 1 and Mayhugh 2 are located in the Leon Watershed.

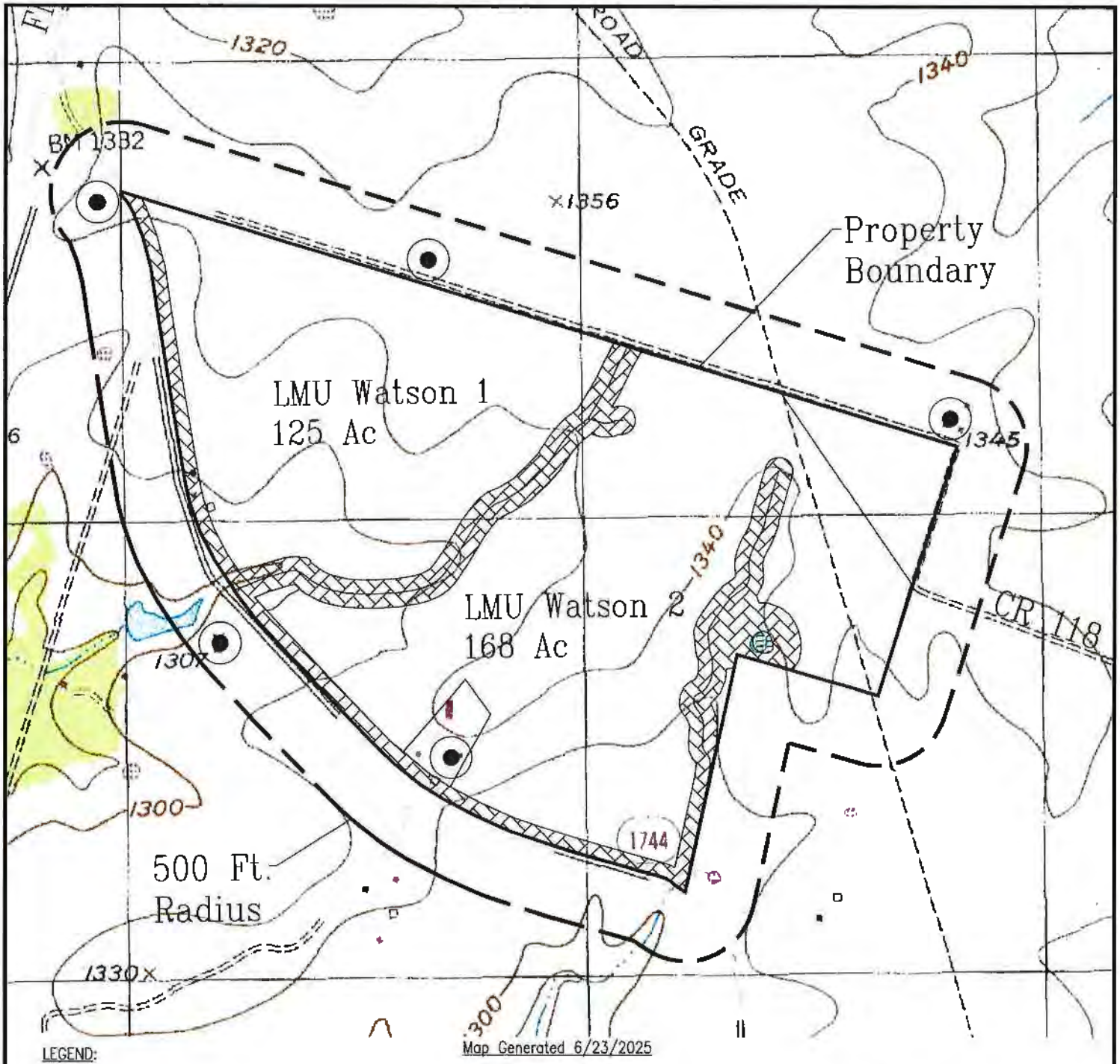
400' 0 400' 800'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Site Map Figure 1.3B Page 8	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

N
W E
S

Note:
LMU's Watson 1 and Watson 2 are located in the Leon Watershed.

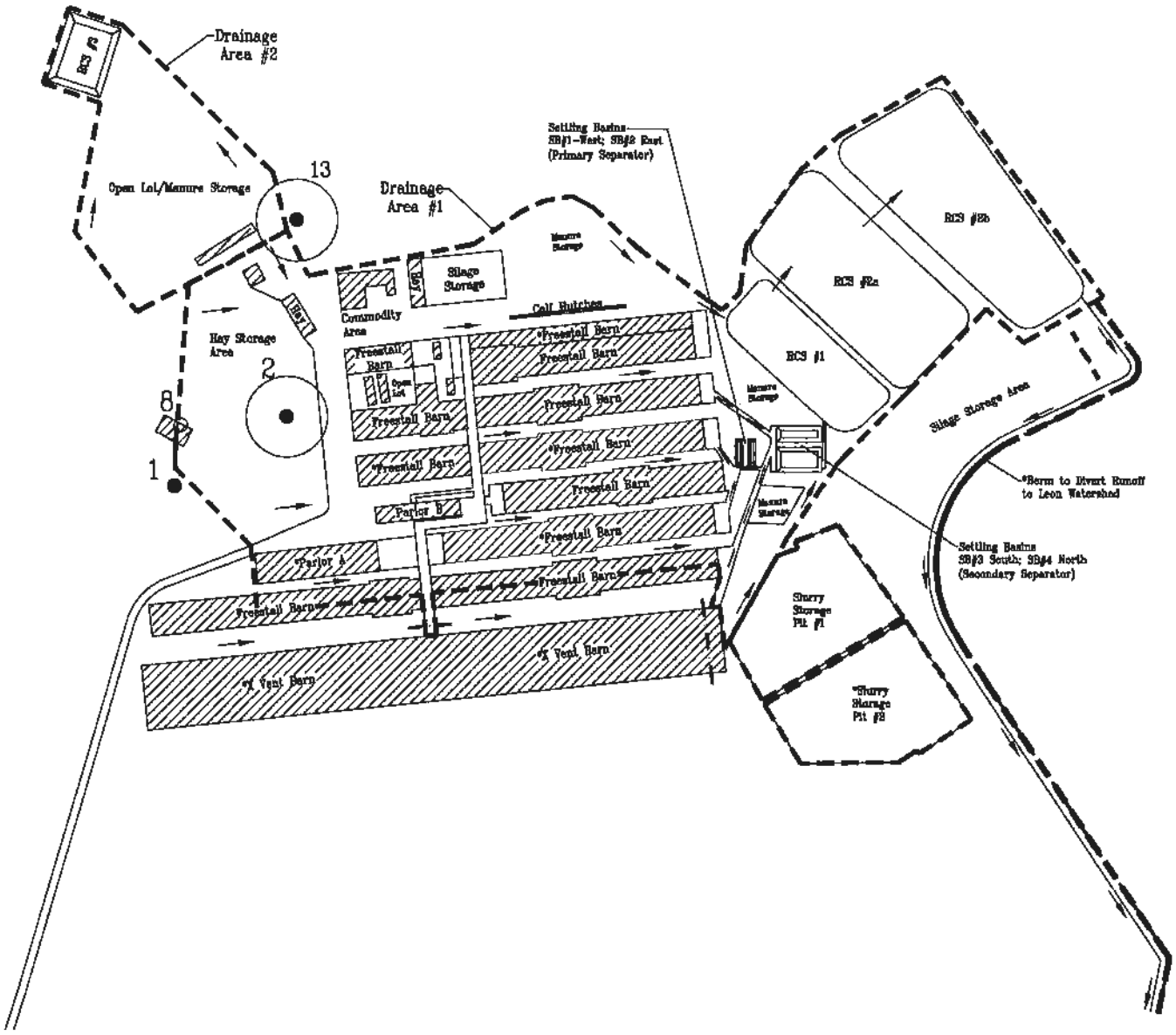
600' 0 600' 1000'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS - Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Site Map Figure 1.3C Page 9	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Water Well
- Denotes Plugged Water Well
- Denotes Water Well With 150' Buffer
- Denotes Ditches and/or Berms
- Denotes Underground Pipe
- Denotes Barns/Roofed Areas
- * Denotes Proposed Structures

Map Generated 6/16/2025

N
W E
S

250' 0 250' 500'

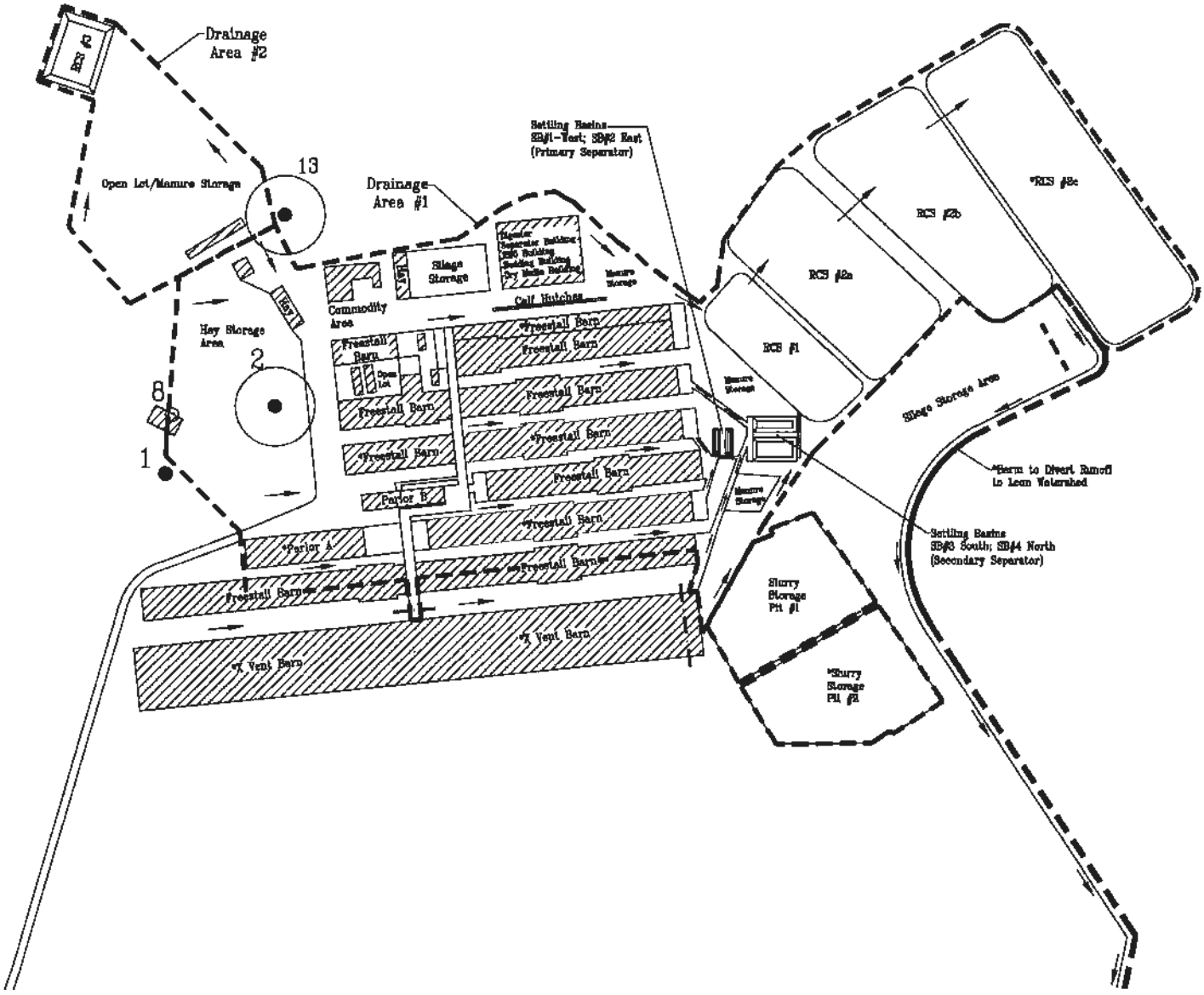
SCALED AS SHOWN

Runoff Control:
Drainage is depicted by arrows shown on maps. The drainage will be directed to the RCS via ditches, berms or underground pipe. Freeboard will be maintained in the slurry storage pits to store the 25-year, 25-hour design rainfall event.

Note:
The runoff from Drainage Area #1 will be diverted to the Leon Watershed.

* Refer to Figure 1.3 for an overall facility map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Proposed Runoff Control Map - Phase 1 Figure 1.4A Page 10	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Water Well
- Denotes Plugged Water Well
- Denotes Water Well With 150' Buffer
- Denotes Ditches and/or Berms
- Denotes Underground Pipe
- Denotes Barns/Roofed Areas
- * Denotes Proposed Structures

Map Generated 6/16/2025

N

W E

S

250' 0 250' 500'

SCALED AS SHOWN

Runoff Control:
Drainage is depicted by arrows shown on maps. The drainage will be directed to the RCS via ditches, berms or underground pipe. Freeboard will be maintained in the slurry storage pits to store the 25-year, 25-hour design rainfall event.

Note:
The runoff from Drainage Area #1 will be diverted to the Leon Watershed.

- Refer to Figure 1.3 for an overall facility map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Proposed Runoff Control Map - Phase 2 Figure 1.4B Page 11	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

2.0 CALCULATIONS & SPECIFICATIONS

2.1 Facility Overview

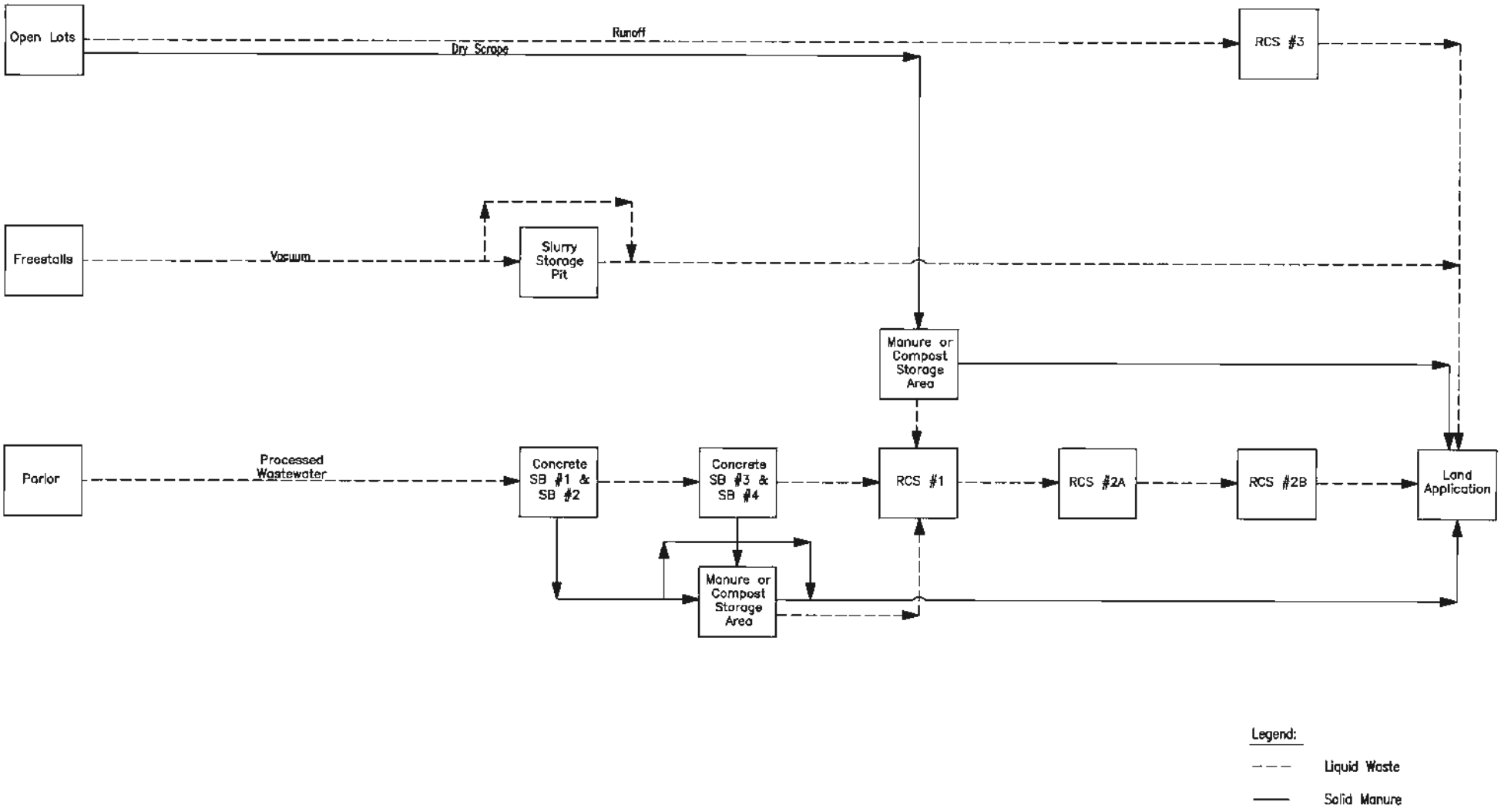
The existing facility consists of open lots, freestall barns, a milking parlor, one slurry storage pit, four settling basins with concrete bottoms and earthen sidewalls, anerobic digester and associated equipment and four retention control structures to confine 5,900 head, of which 4,700 head are milking.

4P Pastures, LLC is submitting a major amendment application in two phases in order to maintain compliance throughout the transition. Phase 1 will included the increase of headcount from 5,900 total and 4,700 milking to 10,000 total and 7,500 milking, addition of Parlor A, addition of a X vent Barn, addition of 4 freestall barns, reconfigure LMUs #2 (now #2B & #2C), #2A, #3 (now #3B & #3C), #3A, #4 & #5, addition of LMUs #Mayhugh 1, #Mayhugh 2, #Watson 1 and #Watson 2, total LMU acres increased from 1,892 to 2,326, LMUs #2C, #3A, #3B, #4, #20 and #23 are in the Leon Watershed and General Permit soil sampling rules apply, remove the anerobic digester and associated equipment, reconfigure Drainage Area #1 to divert to the Leon Watershed, addition of Slurry Pit #2 and addition of Wells #M1 and #W1. Phase 2 will include the addition of an anerobic digester and associated equipment and the addition of RCS #2c. The existing manure and/or wastewater storage structures have been certified as meeting TCEQ requirements for soil liner. Figures 2.1A-B, Manure & Wastewater Flow Chart, shows the waste handling procedures and storage practices at the facility.

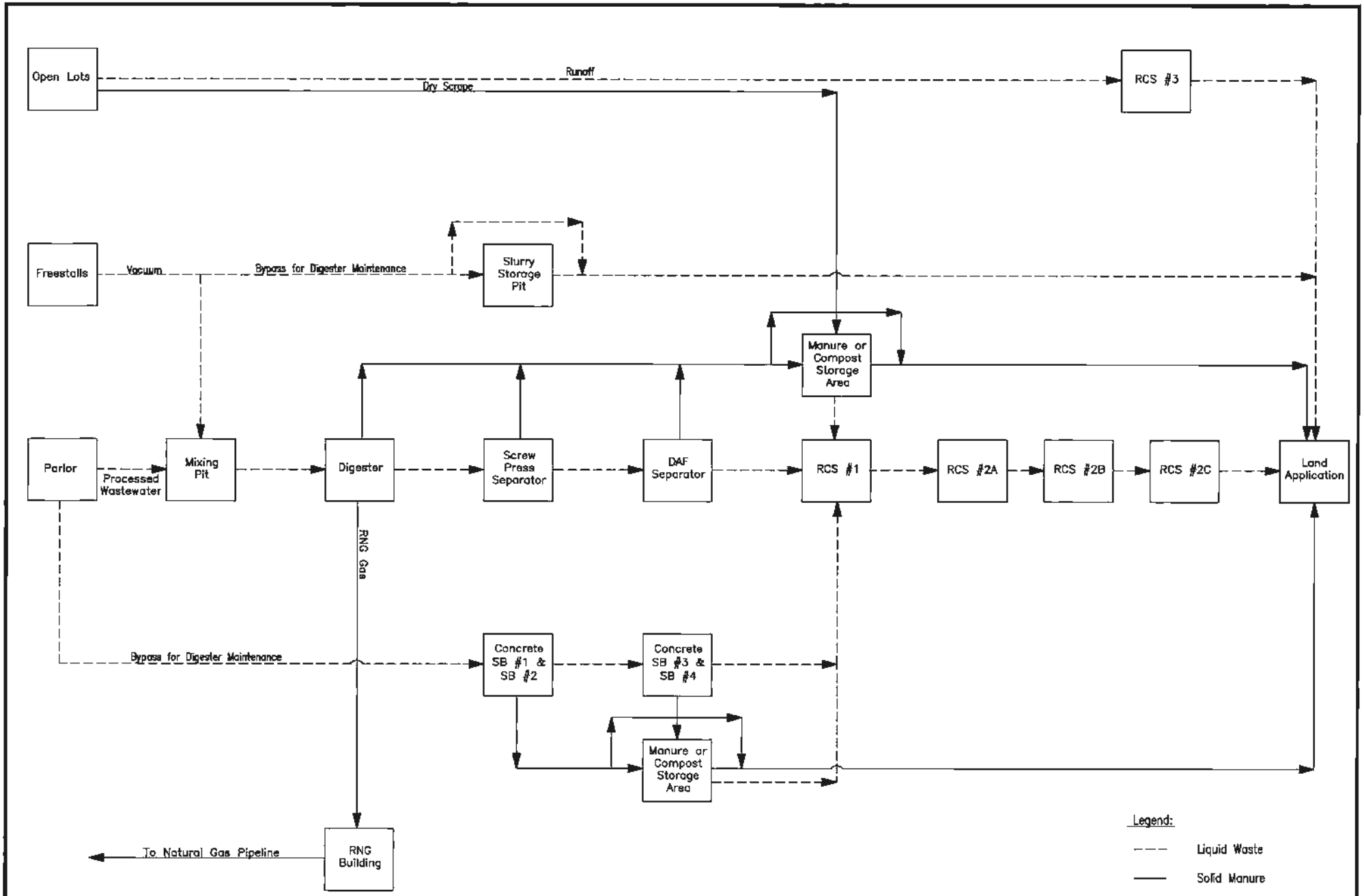
2.2 Manure Production

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.



Horizon Dairy, LLC Hico, Texas Hamilton County	Proposed Manure & Wastewater Flow Chart - Phase 1 Figure 2.1A Page 13	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Horizon Dairy, LLC
Hico, Texas
Hamilton County

Proposed Manure & Wastewater Flow Chart - Phase 2
Figure 2.1B
Page 14

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

ESTIMATED MANURE PRODUCTION
for a DAIRY FACILITY
Table 2.1
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

FACILITY TOTAL	MANURE PRODUCTION CRITERIA (a) Milkers in Parlor	Milkers in Freestall Barns	*Dry Cows in Freestall Barns	Total
1. Maximum Number of Animals Confined (head):	**7,500**	**7,500**	**2,500**	**10,000**
2. Confinement period, hrs./hd/day	2	22	24	24
3. Percent of time in Confinement	8%	92%	100%	100%
4. Total Manure Production, lbs./day	93,750	1,031,250	207,500	1,332,500
5. Total Solids Production, lbs./day	12,500	137,500	27,500	177,500
6. Manure Production, tons/year	2,281	25,094	5,019	32,394
7. Volatile Solids Production, lbs./day	10,625	116,875	23,000	150,500
8. Total Nitrogen Production, lbs./day	619	6,806	1,250	8,675
9. Total Phosphorus, P2O5 lbs./day (b)	243	2,676	378	3,298
10. Total Potassium, K2O lbs./day (b)	173	1,898	990	3,060

NOTES:

- Freestall barns to be vacuumed for manure removal.

* - Includes dry cows, growing heifers and young stock.

(a) - Manure and nutrient production values are taken from American Society of Agricultural and Biological Engineers Data: (ASAE 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.

2.4 Process-Generated Wastewater Volume

The primary source of process-generated wastewater is wash water from the milking parlor operations (15 gal/head/day) and the water generated from the production of biogas (500 gal/day). The flow of the process-generated wastewater can be found on Figures 2.1. The freestall barns are vacuumed for manure removal. All open lot pens are dry scraped for manure removal. The design storage volume in the RCSs for process-generated wastewater is 30 days and is calculated in Table 2.2A-C.

2.5 25-Year, 10-Day Rainfall Storage Volume

In accordance with 30 TAC §321.42(c)(1), RCSs #1, #2A, #2B and #3 are designed to maintain a margin of safety to contain the runoff and direct precipitation from the 25-year, 10-day storm event for this location, 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 open lot runoff area was 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. Run-on from areas outside the control facility is directed away from the RCSs. Tables 2.2A-D shows the calculated storage volume required for the rainfall runoff from a 25-year, 10-day storm.

2.6 Sludge Accumulation Volume

Sludge accumulation was calculated using a rate of 0.0729 cubic feet of sludge per pound total solids (from USDA-NRCS Agricultural Waste Management Handbook) and a sludge storage period of 1 year. The required sludge accumulation volume calculations are shown in Tables 2.2A-D.

2.7 Water Balance Model

Tables 2.3A-D, Water Balance Model, estimates the inflows and withdrawals from the RCSs including runoff, direct rainfall, process-generated wastewater, evaporation, and irrigation withdrawal based on crop demand in accordance with 30 TAC §321.38(e)(7)(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.

2.8 RCS Management Plan

A RCS Management Plan will be developed by a licensed Texas professianal engineer and has been implemented to incarporate 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.

2.9 Minimum Treatment Volume Requirement

A minimum treatment volume for odor control is required to obtain air standard authorization from the TCEQ. The minimum treatment volume is determined by estimating the volatile solids production rate less the removal efficiency of the settling basins and using a loading rate specified by ASABE Standards (ASAE EP 403.4 FEB.2011) of 5.0 lbs of volatile solids per 1,000 cubic feet of storage. Table 2.2a shows the minimum treatment volume calculation.

2.10 Digester Discussion

Wastewater from the milking parlor is directed to the anerobic digester system. The manure from the barns is vacuumed and delivered to the mixing pit to adjust the total solids content required by the digester. The data supporting the calculations used in the volatile solids/total solids reduction in the digester, screw press, and dissolved air flotation systems are from actual sample results from testing by DVO (the digester/equipment company) and are attached.

PHASE I
REQUIRED STORAGE VOLUMES FOR TREATMENT/
RUNOFF RETENTION CONTROL STRUCTURES
Table 2.2A
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

RCS #1 - TREATMENT POND REQUIREMENT

TREATMENT VOLUME

Volatile Solids Produced:	(lb /day)	10,625
Primary Settling Basin Efficiency (%) (a):		50%
Adjusted Volatile Solids Production:	(lb /day)	5,313
Secondary Settling Basin Efficiency (%) (a):		40%
Adjusted Volatile Solids Production:	(lb /day)	3,188
Design Loading Rate (lbVS/1000cuft-day) (b):		5 00
Treatment Volume:	(ac-ft)	14 63

SLUDGE VOLUME

Dry Manure Produced in Parlor:	(lb /day)	12,500
Primary Settling Basin Efficiency (%) (a):		50%
Adjusted Dry Manure Production:	(lb /day)	6,250
Secondary Settling Basin Efficiency (%) (a):		40%
Adjusted Volatile Solids Production:		3,750
Sludge Accumulation Rate (c):	(cuft/lb)	0.0729
Sludge Accumulation Period:	(years)	1
Sludge Volume:	(ac-ft)	2 29

TOTAL TREATMENT VOLUME

Treatment Volume:	(ac-ft)	14 63
1-Year Sludge Volume:	(ac-ft)	2.29
Total Required RCS #1 Volume:	(ac-ft)	16.93

NOTES:
(a) Midwest Plan Service, 1983, Revised 1987 (Waste Management, pg. 702 11).
(b) Loading Rate taken from Figure 2, ASABE Standards (ASABE EP403.4 FEB2011)
(c) Sludge Accumulation Rate taken from Table 10-7, USDA-NRCS Agricultural Waste Management Field Handbook.
(d) Value includes wet manure production from the milking parlor
(e) Using SCS method:
Where: $S = (1000/CN) - 10$
$Q = ((I - 0.2S)^2)/(I + 0.8S)$
S = Potential maximum retention after runoff begins (in)
Q = Runoff (in)
I = 25-year,10-day rainfall (in)
CN = Curve Number from SCS 210-VI-TR-55, 2nd Edition, June 1986
(f) USDA Agricultural Field Waste Handbook, Kansas, Part 651 1082, Suggested procedures for sediment for volume estimation (SC of 1.5% 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

RCS #2a-b - RUNOFF POND REQUIREMENT

PROCESS GENERATED WASTE/WASTEWATER

Parlor Wash Water (d):	(gal/head/day)	15
No. of Head in Parlor:		7,500
Volume of Process Water:	(gal/day)	112,500
Design Storage Period:	(days)	30
Process Water Volume:	(ac-ft)	10 36

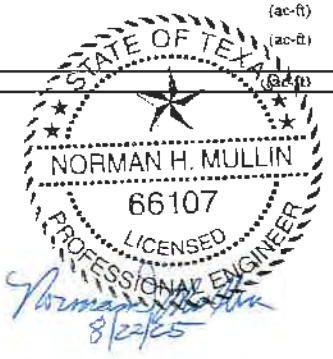
RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	0 62	90
Adjacent Area:	40 62	85
Paved/Roof Areas:	24 36	100
RCS Surface Areas:	18 29	100
Settling/Slurry Basin Surface Areas:	0.88	100
Total Drainage Area:	84.77	
25-year, 10-day rainfall:	(inches)	12.2

Runoff Volume Determination (e):	(inches)	(ac-ft)
Pen Area:	11 0	0 57
Adjacent Area:	10 3	34 90
Paved/Roof Areas:	12 2	24 77
RCS Surface Areas:	12 2	18 59
Settling/Slurry Basin Surface Areas:	12 2	0 89
Rainfall Volume:	(ac-ft)	79 73

TOTAL RCS VOLUME REQUIRED

Runoff Sludge Volume (f):	(ac-ft)	0.68
Process Water Volume:	(ac-ft)	10 36
Rainfall Volume:	(ac-ft)	79 73
Additional from Water Balance:	(ac-ft)	23 32
Total Required RCS #2a-b Volume:	(ac-ft)	114.08



Firm No. F-2507

PHASE 2 - ANEROBIC DIGESTER
REQUIRED STORAGE VOLUMES FOR TREATMENT/
RUNOFF RETENTION CONTROL STRUCTURES
Table 2.2B
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

RCS #2B - TREATMENT VOLUME REQUIREMENT

SLUDGE VOLUME

Dry Manure Produced	(lb /day)	177,500
Anaerobic Digester Efficiency (%) (a):		34%
	(lb /day)	117,150
Screw Press Efficiency (%) (a):		22%
	(lb /day)	91,377
Dissolved Air Flotation Efficiency (%) (a):		58%
	(lb /day)	38,378
Sludge Accumulation Rate (b):	(cuft/lb)	0 0729
Sludge Accumulation Period:	(years)	1
1-Year Sludge Volume:	(ac-ft)	23 44

TREATMENT VOLUME

Volatile Solids Produced:	(lb /day)	150,500
Anaerobic Digester Efficiency (%) (a):		42%
	(lb /day)	87,290
Screw Press Efficiency (%) (a):		29%
	(lb /day)	61,976
Dissolved Air Flotation Efficiency (%) (a):		76%
Adjusted Volatile Solids Production:	(lb /day)	14,874
Design Loading Rate (lbVS/1000cuft-day) (g):		5 0
Treatment Volume:	(ac-ft)	68 29

TOTAL TREATMENT VOLUME

Treatment Volume:	68 29
1-Year Sludge Volume:	23 44
Total Required RCS #2B Volume: (ac-ft)	**91.74**

NOTES:
(a) Based on data provided by DVO
(b) Sludge Accumulation Rate taken from Table 1, ASABE Standards (ASABE EP403 4 FEB 2011)
(c) Site Specific Data
(d) Based on data provided by DVO
(e) Using SCS method:
Where, $S = (1000/CN) - 10$
$Q = ((I - 0.2S)^2)/(I + 0.8S)$
S = Potential maximum retention after runoff begins in)
Q = Runoff (in)
I = 25-year, 10-Day rainfall (in)
CN = Curve Number from SCS 210-VI-TR-55, 2nd Edition, June 1986
(f) USDA Agricultural Field Waste Handbook, Kansas, Part 651 1082, Suggested procedures for sediment volume estimation (Inputs-per/adj contribution, 1 5% solids and 1 year)
(g) Loading Rate taken from Figure 2, ASABE Standards (ASABE EP403 4 FEB2011)

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

RCS #2C - RUNOFF POND REQUIREMENT

PROCESS GENERATED WASTEWASTEWATER

Parlor Wash Water (c):	(gal/head/day)	15
No of Head in Parlor:		7,500
Volume of Process Water:	(gal/day)	112,500
Biogas Production Generated Water (d):	(gal/day)	1,000
Wet Manure Production:	(lb /day)	1,332,500
Total Solids Produced:	(lb /day)	177,500
Total Solids Removed by Separation System:	(lb /day)	139,122
Wet Manure Production Less Separated Solids:	(lb /day)	1,193,378
	(gal/day)	143,975
Design Storage Period:	(days)	30
Process Water Volume:	(ac-ft)	23 71

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	0 62	90
Adjacent Area:	40 92	85
Paved/Roof Areas:	24 36	100
RCS Surface Areas:	29 70	100
Settling/Slurry Basin Surface Areas:	0 88	100
Total Drainage Area:	96 48	
25-year, 10-Day rainfall:	(inches)	12 2

Runoff Volume Determination (e):	(inches)	(ac-ft)
Pen Area:	11 0	0 57
Adjacent Area:	10 3	35 16
Paved/Roof Areas:	12 2	24 77
RCS Surface Areas:	12 2	30 20
Settling/Slurry Basin Surface Areas:	12 2	0 89
Rainfall Volume:	(ac-ft)	91 58

TOTAL RCS VOLUME REQUIRED

Runoff Sludge Volume (f):	(ac-ft)	0 68
Process Water Volume:	(ac-ft)	23 71
Rainfall Volume:	(ac-ft)	91 58
Additional from Water Balance:	(ac-ft)	37 07
Total Required RCS #2C Volume:	**(ac-ft)**	**153.04**

STATE OF TEXAS
NORMAN H. MULLIN
66107
LICENSED
PROFESSIONAL ENGINEER
8/22/25

Firm No F-2507

PHASE 2 - ANEROBIC DIGESTER BYPASS
REQUIRED STORAGE VOLUMES FOR TREATMENT/
RUNOFF RETENTION CONTROL STRUCTURES
Table 2.2C
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

RCS #2B - TREATMENT VOLUME REQUIREMENT

TREATMENT VOLUME

Volatile Solids Produced:	(lb/day)	10,625
Primary Settling Basin Efficiency (%) (a):		50%
Adjusted Volatile Solids Production:	(lb/day)	5,313
Secondary Settling Basin Efficiency (%) (a):		40%
Adjusted Volatile Solids Production:	(lb/day)	3,188
Design Loading Rate (lbVS/1000cufi-day) (b):		5 00
Treatment Volume:	(ac-ft)	14 63

SLUDGE VOLUME

Dry Manure Produced in Parlor:	(lb/day)	12,500
Primary Settling Basin Efficiency (%) (a):		50%
Adjusted Dry Manure Production:	(lb/day)	6,250
Secondary Settling Basin Efficiency (%) (a):		40%
Adjusted Volatile Solids Production:		3,750
Sludge Accumulation Rate (c):	(cuft/lb)	0.0729
Sludge Accumulation Period:	(years)	1
Sludge Volume:	(ac-ft)	2 29

TOTAL TREATMENT VOLUME

Treatment Volume:	(ac-ft)	14 63
1-Year Sludge Volume:	(ac-ft)	2.29
Total Required RCS #2B Volume:	**(ac-ft)**	**16.93**

NOTES:
(a) Midwest Plan Service, 1983, Revised 1987 (Waste Management, pg. 702 11)
(b) Loading Rate taken from Figure 2, ASABE Standards (ASABE EP403.4 FEB2011)
(c) Sludge Accumulation Rate taken from Table 10-7, USDA-NRCS Agricultural Waste Management Field Handbook
(d) Value includes wet manure production from the milking parlor
(e) Using SCS method:

Where:
$S = (1000/CN) - 10$
$Q = ((I - 0.2S)^2)/(I + 0.8S)$

S = Potential maximum retention after runoff begins in)
Q = Runoff (in)
I = 25-year,10-day rainfall (in)
CN = Curve Number from SCS 210-VI-TR-55, 2nd Edition, June 1986

(f) USDA Agricultural Field Waste Handbook, Kansas, Part 651.1082, Suggested procedures for sediment for volume estimation (SC of 1 5% 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.

RCS #2C - RUNOFF POND REQUIREMENT

PROCESS GENERATED WASTEWASTEWATER

Parlor Wash Water (d):	(gal/head/day)	15
No of Head in Parlor:		7,500
Volume of Process Water:	(gal/day)	112,500
Design Storage Period:	(days)	30
Process Water Volume:	(ac-ft)	10 36

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	0 62	90
Adjacent Area:	40 92	85
Paved/Roof Areas:	24.56	100
RCS Surface Areas:	29.70	100
Settling/Slurry Basin Surface Areas:	0.88	100
Total Drainage Area:	96 48	
25-year, 10-day rainfall:	(inches)	12 2

Runoff Volume Determination (e):	(inches)	(ac-ft)
Pen Area:	11 0	0 57
Adjacent Area:	10 3	35 16
Paved/Roof Areas:	12 2	24 77
RCS Surface Areas:	12.2	30 20
Settling/Slurry Basin Surface Areas:	12 2	0 89
Rainfall Volume:	(ac-ft)	91.58

TOTAL RCS VOLUME REQUIRED

Runoff Sludge Volume (f):	(ac-ft)	0.68
Process Water Volume:	(ac-ft)	10 36
Rainfall Volume:	(ac-ft)	91 58
Additional from Water Balance:	(ac-ft)	23.28
Total Required RCS #2C Volumes:	**(ac-ft)**	**125.90**

STATE OF TEXAS
NORMAN H. MULLIN
66107
LICENSED
PROFESSIONAL ENGINEER
8/22/25

Firm No F-2507

REQUIRED STORAGE VOLUMES FOR RUNOFF RETENTION CONTROL STRUCTURE
Table 2.2D
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO:	Horizon Dairy
LOCATION:	Hamilton County
DATE:	June-25

RCS #3 - RUNOFF POND REQUIREMENT

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	11.00	90
Adjacent Areas:	0.00	85
Roof Area:	0.00	100
RCS Surface Area:	2.37	100
Total Drainage Area:	13.37	

25-year, 10-day rainfall:	(inches)	12.2

Runoff Volume Determination (a):	(inches)	(ac-ft)
Pen Area:	11.0	10.05
Adjacent Areas:	10.3	0.00
Roof Area:	12.2	0.00
RCS Surface Area:	12.2	2.37
Rainfall Volume:	(ac-ft)	12.42

TOTAL RCS VOLUME REQUIRED

Rainfall Volume:	(ac-ft)	12.42
5-year Sludge Volume (b):	(ac-ft)	0.12
Additional from Water Balance:	(ac-ft)	1.76
Total Required RCS #3 Volume:	**(ac-ft)**	**14.30**

NOTES:

(a) Using SCS method:

Where:

$S = (1000/CN) - 10$

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

S = Potential maximum retention after runoff begins(in)

Q = Runoff (in)

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

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

(b) USDA Agricultural Field Waste Handbook, Kansas, Part 651.1082, Suggested procedures for sediment volume estimation (Inputs-pen/adj contribution, 1.5% solids and 1 year).

PHASE I WATER BALANCE MODEL
IRRIGATION AND EVAPORATION
Table 2.3A
ENVIRO-AG ENGINEERING, INC.

NAME: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

HYDROLOGIC CHARACTERISTICS			
Pen Area (acres)	0 62		
Adjacent Area (acres):	40 62		
Paved/Roof Area (acres):	24 36		
Total RCS/SB Surface Area (acres):	19 17		
Total Irrigated Area (acres)(12)		460	460
Cropping scheme:		Wheat	Coastal
Effective Evaporation Surface Area (a	16 29		

IRRIGATION CELL VOLUME SUMMARY DATA	
25-Year, 10- Day Rainfall Volume (ac-ft):	79 75
Process Generated Wastewater Volume (ac-ft):	19 36
Sludge Accumulation Volume (ac-ft):	0 68
Additional Volume (ac-ft):	23 32
Total Required Capacity (ac-ft):	114 08

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS					RCS STORAGE SUMMARY			
MONTH	(1) (inches)	(2) (inches)	(2) (inches)	(3) (ac-ft)	(4) (ac-ft)	(5) (inches)	(6) (inches)	(6) (inches)	(7) (ac-ft)	(7) (ac-ft)	(8) (inches)	(9) (ac-ft)	(10) (ac-ft)	(11) (ac-ft)
													start value --->	0 68
JAN	1 57	0 24	0 06	10 70	16 62	1 57	2 74	2 10	44 92	20 40	2 23	3 03	12 60	0 68
FEB	1 89	0 39	0 14	9 67	17 03	1 86	3 11	2 46	47 76	22 84	2 56	3 48	13 55	0 68
MAR	2 12	0 52	0 21	10 70	19 15	2 06	4 97	4 06	111 46	76 58	4 08	5 54	12 61	0 68
APR	2 68	0 86	0 44	10 36	21 60	2 50	5 74	4 98	124 21	95 08	4 97	6 75	14 86	0 68
MAY	4 15	1 94	1 24	10 70	30 07	3 41	5 33	5 73	73 49	88 82	4 97	6 75	23 32	0 68
JUN	3 08	1 13	0 63	10 36	23 72	2 78	3 22	6 82	16 94	154 94	6 67	9 06	14 66	0 68
JUL	1 87	0 38	0 14	10 70	17 97	1 85	0 00	7 66	0 00	222 86	7 72	10 48	7 49	0 68
AUG	2 13	0 52	0 22	10 70	19 20	2 07	0 00	7 56	0 00	210 43	7 42	10 08	9 12	0 68
SEP	2 95	1 04	0 56	10 36	23 02	2 69	0 00	5 78	0 00	118 43	5 61	7 62	15 40	0 68
OCT	2 96	1 05	0 57	10 70	23 42	2 70	2 15	4 29	0 00	61 05	4 60	6 25	17 17	0 68
NOV	1 88	0 39	0 14	10 36	17 67	1 86	1 70	2 81	0 00	36 60	3 17	4 30	13 36	0 68
DEC	1 60	0 25	0 07	10 70	16 76	1 60	2 33	2 24	28 11	24 65	2 37	3 22	13 54	0 68
TOTALS	28 88	8 71	4 43	126 03	246 22	26 94	51 29	56 49	446 90	1132 58	56 37	76 54	169 68	

NOTES:
(1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Hamilton County, Quad #609, retrieved June 17, 2025
(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 - Inflow is calculated from process generated wastewater, Table 2.2A
(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 areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irrigated CN 58)(Ref. NRCS Animal Waste Management Software Help File-Program)
(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, Hamilton County, Quad #609, retrieved June 17, 2025
(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) Irrigated Acres Include LMUs 1, 2B, 2C, 3B & 3C

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

PHASE 2 WATER BALANCE MODEL FOR ANEROBIC DIGESTER/RUNOFF RETENTION CONTROL STRUCTURES
IRRIGATION AND EVAPORATION

Table 2.2B

ENVIRO-AG ENGINEERING, INC.

NAME: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

HYDROLOGIC CHARACTERISTICS

Pen Area (acres):	0.62		
Adjacent Area (acres):	40.92		
Paved/Roof Area (acres):	24.36		
Total RCS/SB Surface Area (acres):	30.58		
Total Irrigated Area (acres)(12):		460	460
Cropping scheme:		Wheat	Coastal
Effective Evaporation Surface Area:	25.93		

IRRIGATION CELL VOLUME SUMMARY DATA

25-Year, 10- Day Rainfall Volume (ac-ft):	91.58
Process Generated Wastewater Volume (ac-ft)	23.71
Sludge Accumulation Volume (ac-ft):	0.68
Additional Volume (ac-ft):	37.07
Total Required Capacity (ac-ft):	153.04

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS					RCS STORAGE SUMMARY			
MONTH	(1) (inches)	(2) (inches)	(2) (inches)	(3) (ac-ft)	(4) (ac-ft)	(5) (inches)	(6) (inches)	(6) (inches)	(7) (ac-ft)	(7) (ac-ft)	(8) (inches)	(9) (ac-ft)	(10) (ac-ft)	(11) (ac-ft)
													start value →	0.68
JAN	1.57	0.24	0.06	24.50	31.91	1.57	2.74	2.10	44.93	20.40	2.23	4.83	27.08	0.68
FEB	1.39	0.39	0.14	22.13	31.28	1.86	3.11	2.46	47.76	22.84	2.56	5.55	25.74	0.68
MAR	2.12	0.53	0.21	24.50	34.96	2.06	4.97	4.06	111.46	76.58	4.08	8.84	26.12	0.68
APR	2.68	0.86	0.44	23.71	37.51	2.50	5.74	4.98	124.21	95.08	4.97	10.77	26.75	0.68
MAY	4.15	1.94	1.24	24.50	47.84	3.41	5.33	5.73	73.49	88.82	4.97	10.77	37.07	0.68
JUN	3.08	1.13	0.63	23.71	40.01	2.78	3.22	6.82	16.94	154.94	6.67	14.45	25.56	0.68
JUL	1.87	0.38	0.14	24.50	33.54	1.85	0.00	7.66	0.00	222.86	7.72	16.72	16.82	0.68
AUG	2.13	0.52	0.22	24.50	35.02	2.07	0.00	7.56	0.00	210.43	7.42	16.07	18.95	0.68
SEP	2.95	1.04	0.56	23.71	39.19	2.69	0.00	5.78	0.00	118.43	5.61	12.15	27.04	0.68
OCT	2.96	1.05	0.57	24.50	40.04	2.70	2.15	4.29	0.00	61.05	4.60	9.96	30.08	0.68
NOV	1.88	0.39	0.14	23.71	32.81	1.86	1.70	2.81	0.00	36.60	3.17	6.87	25.94	0.68
DEC	1.60	0.25	0.07	24.50	32.07	1.60	2.33	2.24	28.11	24.66	2.37	5.13	26.94	0.68
TOTALS	28.38	8.71	4.43	288.43	436.19	26.94	31.29	56.49	676.90	1132.68	56.37	122.10	314.99	

NOTES:

(1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Hamilton County, Quad #609, retrieved June 17, 2025

(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 - Inflow is calculated from process generated wastewater, Table 2.2B

(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 areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irrigated CN 58)(Ref. NRCS Animal Waste Management Software Help File-Program)

(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)

(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, Hamilton County, Quad #609, retrieved June 17, 2025

(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) Irrigated Acres include LMUs 1, 2B, 2C, 3B & 3C

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

PHASE 2 BYPASS WATER BALANCE MODEL FOR ANEROBIC DIGESTER/RUNOFF RETENTION CONTROL STRUCTURES
IRRIGATION AND EVAPORATION

Table 2.2C
ENVIRO-AG ENGINEERING, INC.

NAME: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

HYDROLOGIC CHARACTERISTICS

Pen Area (acres):	0 62		
Adjacent Area (acres):	40 92		
Paved/Roof Area (acres):	24 36		
Total RCS/SB Surface Area (acres):	30 58		
Total Irrigated Area (acres)(12)		460	460
Cropping scheme:		Wheat	Coastal
Effective Evaporation Surface Area (:	25 99		

IRRIGATION CELL VOLUME SUMMARY DATA

25-Year, 10- Day Rainfall Volume (ac-ft):	91 58
Process Generated Wastewater Volume (ac-ft):	10 36
Sludge Accumulation Volume (ac-ft):	0 68
Additional Volume (ac-ft):	23 28
Total Required Capacity (ac-ft):	125 90

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS					RCS STORAGE 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 68
JAN	1 57	0 24	0 06	10.70	18 12	1 57	2.74	2 10	44 93	20 40	2 23	4 83	13 29	0 68
FEB	1 89	0 39	0 14	9 67	18 83	1 86	3 11	2 46	47 76	22 84	2 56	5 55	13 28	0 68
MAR	2 12	0 52	0 21	10 70	21 17	2 06	4 97	4 06	111 46	76 58	4 08	8 84	12 33	0 68
APR	2 68	0 86	0 44	10 36	24 16	2 50	5 74	4 98	124 21	95 03	4 97	10 77	13 40	0 68
MAY	4 15	1 94	1 24	10 70	34 05	3 41	5 33	5 73	73 49	98 82	4 97	10 77	23 28	0 68
JUN	3 08	1 13	0 63	10 36	26 66	2 78	3 22	6 82	16 94	154 94	6 67	14 45	12 22	0 68
JUL	1 87	0 38	0 14	10 70	19 75	1 85	0 00	7 66	0 00	222 86	7 72	16 72	7 03	0 68
AUG	2 13	0 52	0 22	10 70	21 23	2 07	0 00	7 56	0 00	210 43	9 42	16 07	5 15	0 68
SEP	2 95	1 04	0 56	10 36	25 84	2 69	0 00	5 78	0 00	118 43	5 61	12 15	13 69	0 68
OCT	2 96	1 05	0 57	10 70	26 25	2 70	2 15	4 29	0 00	61 05	4 60	9 96	16 29	0 68
NOV	1 88	0 39	0 14	10 36	19 46	1 86	1 70	2 81	0 00	36 60	3 17	6 87	12 59	0 68
DEC	1 60	0 25	0 07	10 70	18 28	1 60	2 33	2 24	28 11	24 66	2 37	5 13	13 14	0 68
TOTALS	28.88	8 71	4 43	126 92	273 79	26 24	31 29	56 49	446 90	1132 68	56 37	122 10	151 69	

NOTES:

(1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Hamilton County, Quad #609, retrieved June 17, 2025

(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 - Inflow is calculated from process generated wastewater, Table 2.2C

(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 areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irrigated CN 58)(Ref. NRCS Animal Waste Management Software Help File-Program)

(6) CONSUMPTIVE USE values from Borrelli, et al., 1999 Mean Crop Consumptive Use and Free-Water Evaporation for Texas, Dept of Civil Engineering, Texas Tech University, Lubbock, Texas (Tables 16 & 25)

(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, Hamilton County, Quad #609, retrieved June 17, 2025

(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) Irrigated Acres Include LMUs 1, 2B, 2C, 3B & 3C

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

WATER BALANCE MODEL
IRRIGATION AND EVAPORATION
Table 23D
ENVIRO-AG ENGINEERING, INC.

NAME: Horizon Dairy
LOCATION: Hamilton, TX
DATE: June-25

HYDROLOGIC CHARACTERISTICS

Pen Area (acres):	11 00		
Adjacent Area (acres):	0 00		
Paved/Roof Area (acres):	0 00		
Total RCS Surface Area (acres):	2 37		
Total Irrigated Area (acres)(12):		460	460
Cropping scheme:		Wheat	Coastal
Effective Evaporation Surface Area (ac	2 01		

IRRIGATION CELL VOLUME SUMMARY DATA

25-Year, 10-day Rainfall Volume (ac-ft)	12 42
Process Generated Wastewater Volume (ac-ft):	0 00
Sludge Accumulation Volume (ac-ft):	0 12
Additional Volume (ac-ft):	1 76
Total Required Capacity (ac-ft):	14 30

	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS					RCS STORAGE SUMMARY			
MONTH	(1) (inches)	(2) (inches)	(2) (inches)	(3) (ac-ft)	(4) (ac-ft)	(5) (inches)	(6) (inches)	(6) (inches)	(7) (ac-ft)	(7) (ac-ft)	(8) (inches)	(9) (ac-ft)	(10) (ac-ft)	(11) (ac-ft)
													start value →	0 12
JAN	1 57	0 24	0 00	0 00	0 53	1 57	2 74	2 10	44 93	20 40	2 23	0 37	0 16	0 12
FEB	1 89	0 39	0 00	0 00	0 73	1 86	3 11	2 46	47 76	22 84	2 56	0 43	0 30	0 12
MAR	2 12	0 52	0 00	0 00	0 89	2 06	4 97	4 06	111 46	76 58	4 08	0 68	0 21	0 12
APR	2 68	0 86	0 00	0 00	1 32	2 50	5 74	4 98	124 21	95 08	4 97	0 83	0 48	0 12
MAY	4 15	1 94	0 00	0 00	2 59	3 41	5 33	5 73	73 49	88 82	4 97	0 83	1 76	0 12
JUN	3 08	1 13	0 00	0 00	1 65	2 78	3 22	6 82	16 94	154 94	5 67	1 12	0 53	0 12
JUL	1 97	0 38	0 00	0 00	0 72	1 85	0 00	7 66	0 00	222 86	7 72	0 72	0 00	0 12
AUG	2 13	0 52	0 00	0 00	0 90	2 07	0 00	7 56	0 00	210 43	7 42	0 90	0 00	0 12
SEP	2 95	1 04	0 00	0 00	1 54	2 69	0 00	5 78	0 00	118 43	5 61	0 94	0 60	0 12
OCT	2 96	1 05	0 00	0 00	1 55	2 70	2 15	4 29	0 00	61 05	4 60	0 77	0 77	0 13
NOV	1 88	0 39	0 00	0 00	0 70	1 86	1 70	2 81	0 00	36 60	3 17	0 55	0 19	0 12
DEC	1 60	0 25	0 00	0 00	0 55	1 60	2 33	2 24	28 11	24 66	2 37	0 40	0 15	0 12
TOTALS	28 88	8 71	0 00	0 00	13 69	26 83	31 29	56 29	446 90	1152 68	56 57	8 54	5 15	

NOTES:

(1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Hamilton County, Quad #609, retrieved June 17, 2025

(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 77)(Ref. NRCS Animal Waste Management Software Help File-Program Documentation for Runoff)

(3) INFLOW - No process inflow for this RCS

(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 areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irrigated CN 58)(Ref. NRCS Animal Waste Management Software Help File-Program)

(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)

(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, Hamilton County, Quad #609, retrieved June 17, 2025

(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) Irrigated Acres Include LMUs 1, 2B, 2C, 3B & 3C

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

3.0 FACILITY INFORMATION

3.1 Required Certifications

All RCSs, the slurry storage pit and settling basins with concrete bottoms and earthen side walls have been certified by a licensed Texas professional engineer as meeting the liner requirements of the TCEQ. Existing liner and capacity certifications are attached. Upon the completion of Phase 2, liner and capacity certifications for RCS #2C will completed and submitted.

3.2 100-Year Flood Plain Evaluation

There are no FEMA floodplain maps available for Hamilton County. Based on an on-site visit none of the production area is located within the 100-year flood plain.

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
RCS #1 Capacity Certification

A capacity survey was performed by Enviro-Ag Engineering, Inc., on RCS #1 at Horizon Dairy in Hamilton County, Texas. The capacity was calculated using the prismoidal method with 2 ft of freeboard. The overall capacity was calculated to be 17.52 ac-ft. The volume of sludge at the time of the survey was measured at 7.88 ac-ft.

Respectfully Submitted,

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

Attachments:
Figure 1 – Capacity Survey
Figure 2 – Stage-Storage Curve

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
Treatment Lagoon Liner Certification

A three-inch Shelby tube core sample was collected from the treatment lagoon to document that the liner meets the requirements of the TCEQ requirements for soil liner. The liner thickness was documented to be at least 18 inches. The sample location was sealed with bentonite chips.

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

- Treatment Lagoon (788) 1.6 x 10-8 cm/sec

Based on the above documentation the liner in the treatment lagoon is determined to be in accordance with TCEQ requirements for soil liners. The test results meet the requirements of the TCEQ for hydraulic conductivity considered protective of ground and surface water resources.

Respectfully Submitted,

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

Enviro-Ag Engineering, Inc.

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

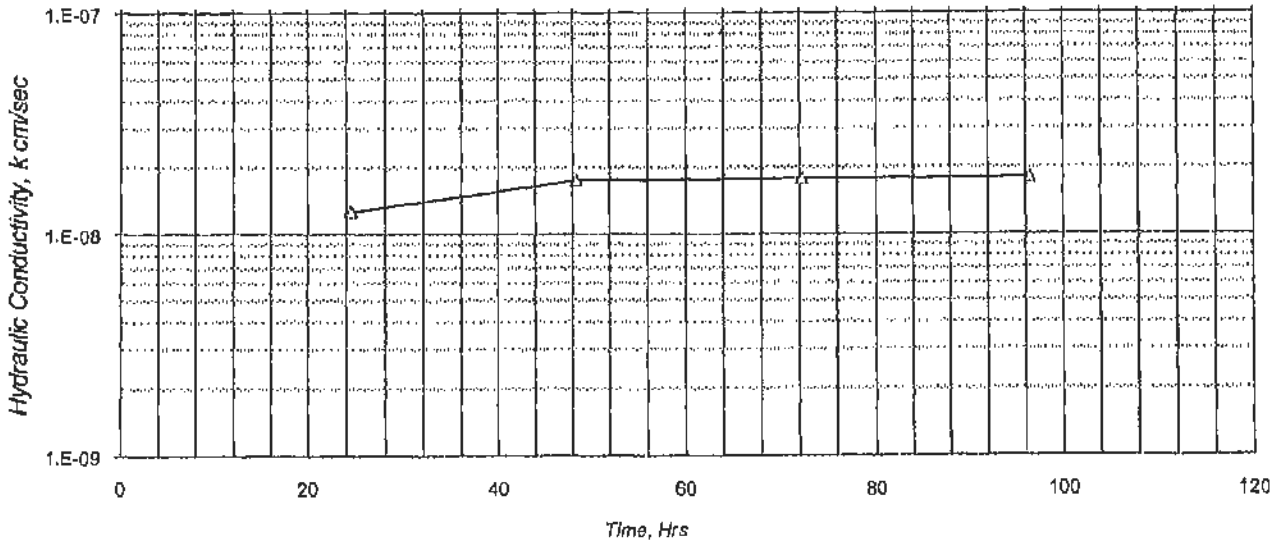
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	08-05-20	788
Sample ID:	**Sample Location:**	**Report Date:**
1	Treatment Lagoon	July 15, 2008

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	Treatment Lagoon	
	INITIAL	FINAL
HEIGHT, in.	3.1	3.1
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	21.7	33.4
DRY DENSITY, pcf	91	88
SATURATION, %	68	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	1.25

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.5	1.3E-08
2	48.4	1.7E-08
3	72.3	1.8E-08
4	96.5	1.8E-08

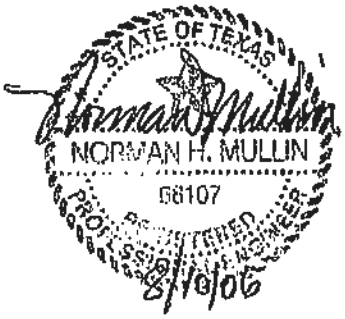
AVERAGE LAST 4 : **1.6E-08**

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
RCS #2 Capacity Certification

A capacity survey was performed by Enviro-Ag Engineering, Inc., on RCS #2 at Horizon Dairy in Hamilton County, Texas. The capacity was calculated using the prismoidal method at the spillway. The overall capacity was calculated to be 62.99 ac-ft. The volume of sludge at the time of the survey was measured at 24.36 ac-ft.

Respectfully Submitted,



Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

Attachments:
Figure 1 – Capacity Survey
Figure 2 – Stage-Storage Curve

ENVIRO-AG
EAE
ENGINEERING, INC.

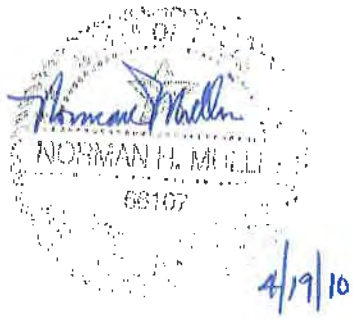
Horizon Dairy
Hamilton County, Texas
RCS #2A Liner Certification

Four 3-inch Shelby tube core samples were collected from RCS #2A 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:

- RCS #2A-1 (Lab # 1618) 2.1×10^{-8} cm/sec
- RCS #2A-2 (Lab # 1619) 2.3×10^{-8} cm/sec
- RCS #2A-3 (Lab # 1620) 7.0×10^{-9} cm/sec
- RCS #2A-4 (Lab # 1621) 3.7×10^{-8} cm/sec

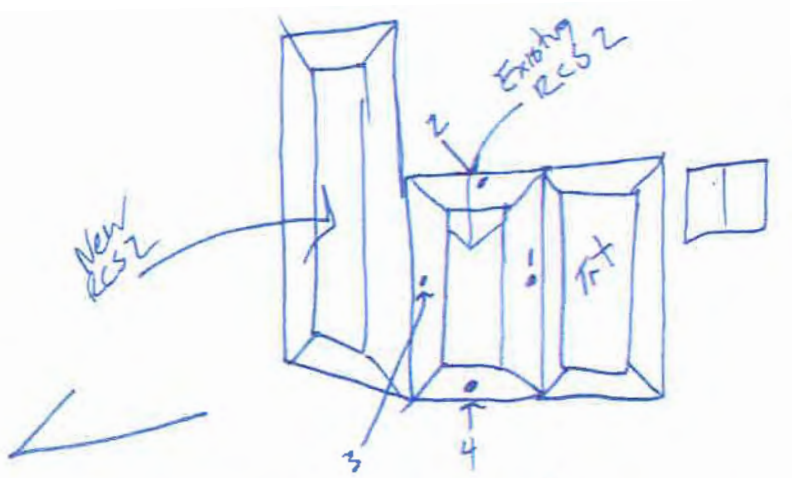
Based on the above documentation the liner in RCS #2A is determined to be in accordance with TCEQ requirements for soil liners. The test locations were backfilled with bentonite chips. The test results meet the requirements of the TCEQ for hydraulic conductivity considered protective of ground and surface water sources.



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
RCS#2-1	1	1618
RCS#2-2	2	1619
RCS#2-3	3	1620
RCS#2-4	4	1621

Facility Name:	~~[redacted]~~ Horizon
Project Engineer:	Norm
Sampled by:	[redacted]
Date Sampled:	3/31/10
Date to Lab: ~~4/1/10~~ 4/5/10	Received: Mike Baker

EAE
302 Morgan Mill Road
Bldg C
Stephenville, TX 76401
(254) 965-3500
Fax: (254) 965-8000

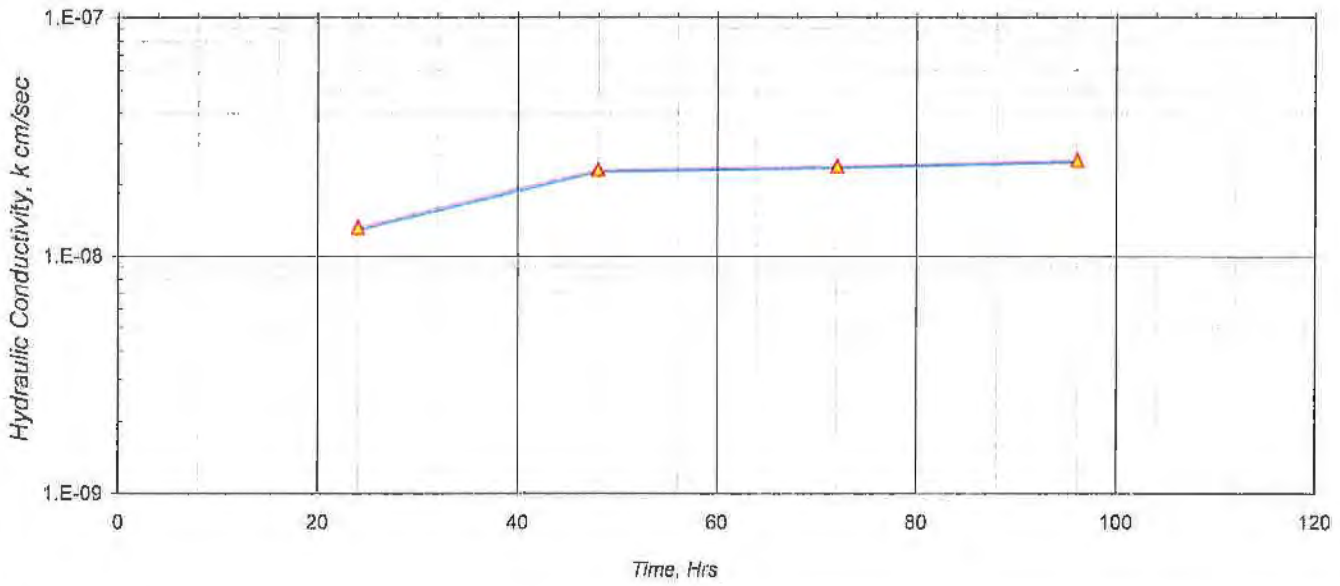
Enviro-Ag Engineering, Inc.
3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	10-04-05	1618
Sample ID:	**Sample Location:**	**Report Date:**
1	RCS #2 - 1	April 19, 2010

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS #2 - 1	
	INITIAL	FINAL
HEIGHT, in.	4.2	4.2
DIAMETER, in.	2.8	2.9
WATER CONTENT, %	14.5	16.9
DRY DENSITY, pcf	119	116
SATURATION, %	93	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	2 - 2
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.1	1.3E-08
2	48.0	2.3E-08
3	72.2	2.3E-08
4	96.1	2.5E-08

AVERAGE LAST 4 : **2.1E-08**

COMMENTS:
Tap water used as permeant.

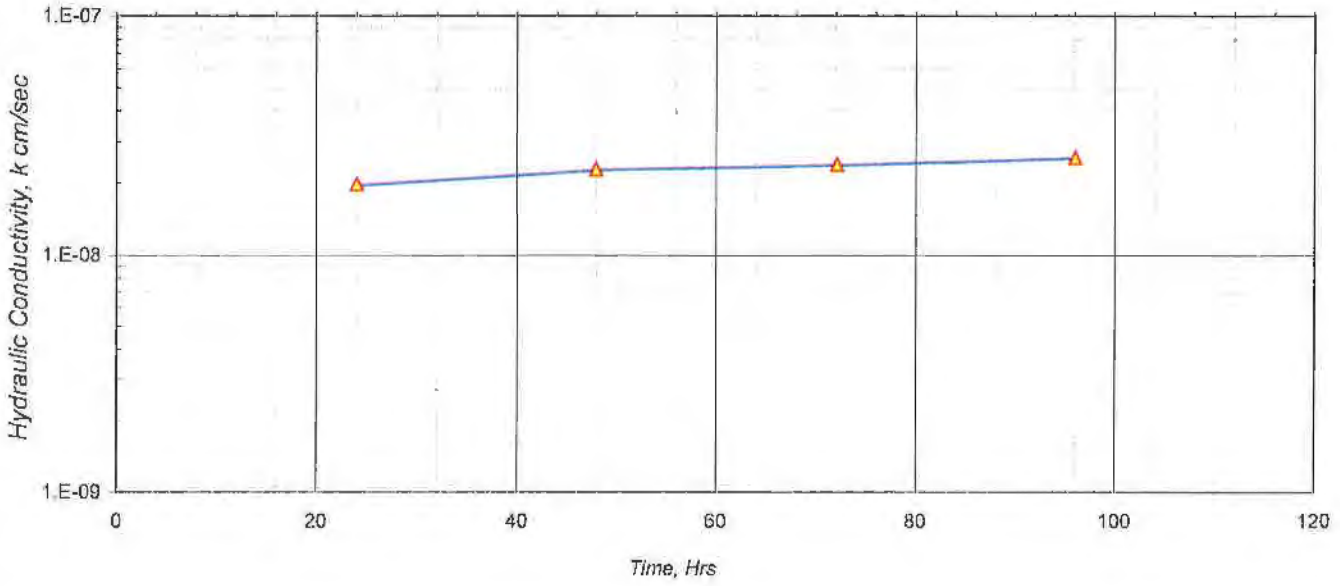
Enviro-Ag Engineering, Inc.
3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	10-04-05	1619
Sample ID:	**Sample Location:**	**Report Date:**
2	RCS #2 - 2	April 19, 2010

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS #2 - 2	
	INITIAL	FINAL
HEIGHT, in.	3.6	3.6
DIAMETER, in.	2.9	2.9
WATER CONTENT, %	36.1	39.6
DRY DENSITY, pcf	81	80
SATURATION, %	91	97
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	2 - 3
IN / OUT RATIO:	1.05

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.1	2.0E-08
2	48.0	2.3E-08
3	72.2	2.4E-08
4	96.1	2.5E-08

AVERAGE LAST 4 : **2.3E-08**

COMMENTS:
Tap water used as permeant.

Enviro-Ag Engineering, Inc.

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

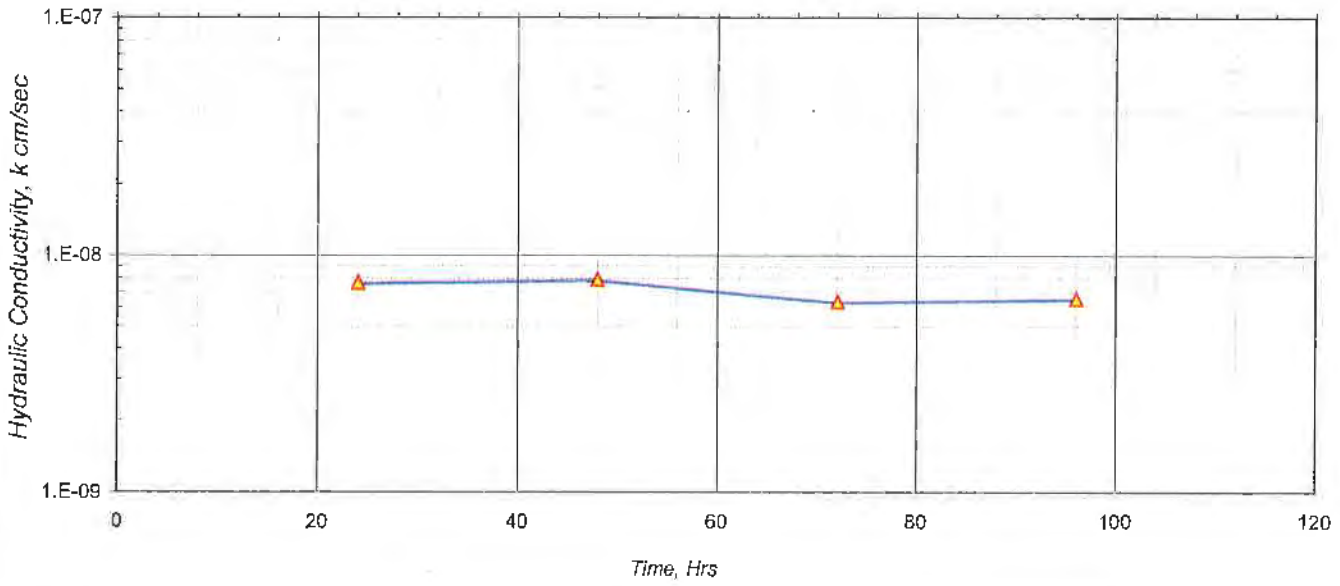
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	10-04-05	1620
Sample ID:	**Sample Location:**	**Report Date:**
3	RCS #2 - 3	April 19, 2010

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	RCS #2 - 3	
	INITIAL	FINAL
HEIGHT, in.	2.9	2.9
DIAMETER, in.	2.9	2.9
WATER CONTENT, %	14.6	17.5
DRY DENSITY, pcf	115	113
SATURATION, %	85	97
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	1.04

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.1	7.6E-09
2	48.0	7.8E-09
3	72.2	6.3E-09
4	96.1	6.5E-09

AVERAGE LAST 4 : **7.0E-09**

COMMENTS:
Tap water used as permeant.

Enviro-Ag Engineering, Inc.

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

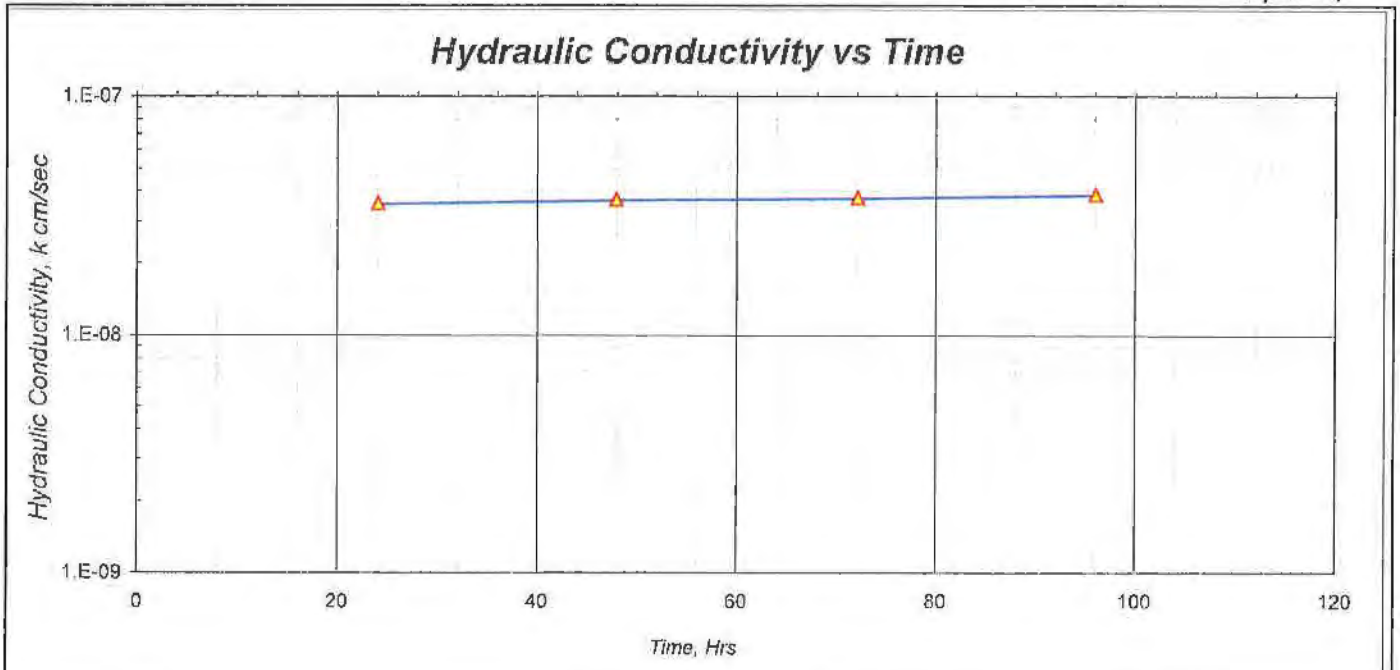
EAE

HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	10-04-05	1621
Sample ID:	**Sample Location:**	**Report Date:**
4	RCS #2 - 4	April 19, 2010



SPECIMEN DATA

SAMPLE ID:	4	
DESCRIPTION:	RCS #2 - 4	
	INITIAL	FINAL
HEIGHT, in.	4.4	4.5
DIAMETER, in.	2.9	2.9
WATER CONTENT, %	15.3	20.7
DRY DENSITY, pcf	110	107
SATURATION, %	77	97
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	2 - 2
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.1	3.5E-08
2	48.0	3.7E-08
3	72.2	3.7E-08
4	96.1	3.9E-08

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

Z : Soils Lab\Perms \1910 \ 10-04-05 \ 1621	Print Date:	Reviewed By:	LSN:
DCN: EAE-QC-GRAPH (rev. 11/10/04)	04/19/10	Micah Mullin	1621

ENVIRO-AG
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
RCS #2 Expansion Capacity Certification

The survey capacity performed on April 7, 2009 by Enviro-Ag Engineering, Inc. for retention control structure (RCS) #2 Expansion with two vertical feet of dry freeboard is calculated as:

RCS #2 Expansion	Capacity:	117.81 ac-ft
RCS #2 Expansion Surface Area:		8.50 surface acres @ High Water Level

Prepared by:

STATE OF TEXAS
NORMAN MULLIN
REGISTERED PROFESSIONAL ENGINEER

Norman Mullin 6/2/09

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

3404 Airway Blvd. • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
RCS #2 Expansion Liner Certification

Nine 3-inch Shelby tube core samples were collected from RCS #2 Expansion to document the clay liner meets the requirements of the TCEQ for soil liner. The sample locations were backfilled with bentonite clay chips for sealing. The liner thickness was documented to be a minimum of 18 inches.

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

• RCS #2 Expansion 1 (Lab #1182)	3.3×10^{-8} cm/sec
• RCS #2 Expansion 2 (Lab #1183)	7.4×10^{-9} cm/sec
• RCS #2 Expansion 3 (Lab #1184)	8.6×10^{-9} cm/sec
• RCS #2 Expansion 4 (Lab #1185)	1.7×10^{-8} cm/sec
• RCS #2 Expansion 5 (Lab #1186)	1.6×10^{-8} cm/sec
• RCS #2 Expansion 6 (Lab #1187)	1.9×10^{-8} cm/sec
• RCS #2 Expansion 7 (Lab #1231)	1.1×10^{-8} cm/sec
• RCS #2 Expansion 8 (Lab #1232)	8.4×10^{-9} cm/sec
• RCS #2 Expansion 9 (Lab #1233)	4.1×10^{-9} cm/sec

The clay liner present in RCS #2 Expansion is determined to be in accordance with TCEQ specific discharge requirements of 1.1×10^{-6} cm/sec. The observed hydraulic conductivity from RCS #2 Expansion is considered protective of ground and surface water resources.

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 #2 Expansion is determined to be constructed in accordance with TCEQ requirements for soil liners

I certify that RCS #2 Expansion at Horizon 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:

STATE OF TEXAS
NORMAN D. MULLIN
REGISTERED
PROFESSIONAL ENGINEER

Norman Mullin, P.E.
Environmental Engineering, Inc.

6/2/09

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-8123
LABORATORY SERVICES

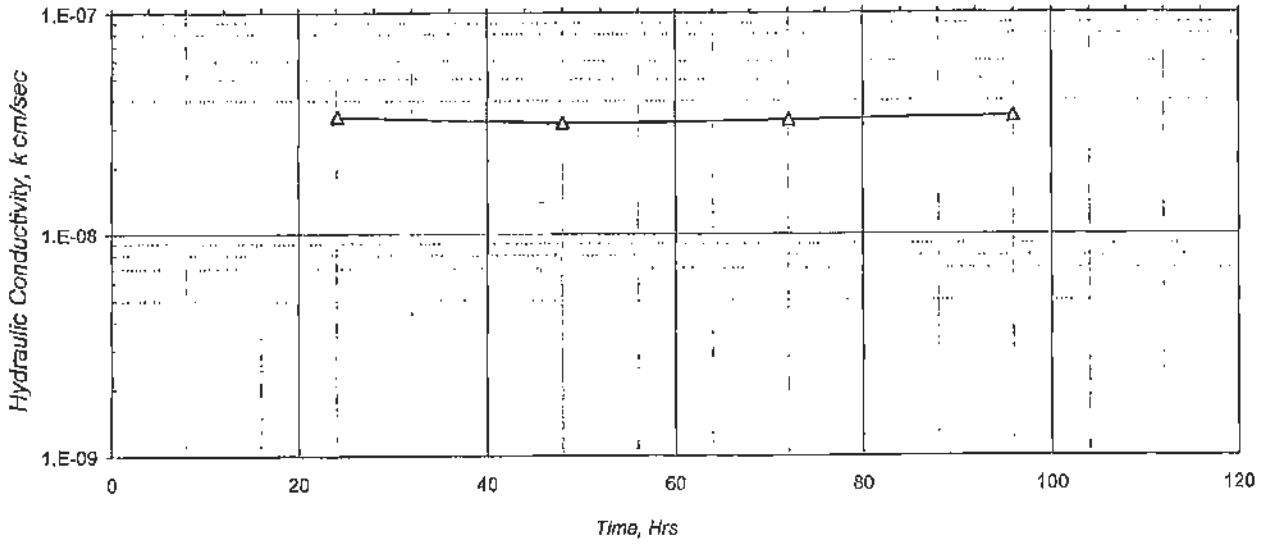
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1182
Sample ID:	**Sample Location:**	**Report Date:**
1	RCS #2 Expansion 1	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS #2 Expansion 1	
	INITIAL	FINAL
HEIGHT, in.	2.8	2.8
DIAMETER, in.	2.8	2.9
WATER CONTENT, %	18.2	25.7
DRY DENSITY, pcf	103	99
SATURATION, %	78	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 4
IN / OUT RATIO:	0.95

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.2	3.4E-08
2	48.1	3.2E-08
3	72.1	3.3E-08
4	96.0	3.4E-08

AVERAGE LAST 4 : **3.3E-08**

COMMENTS:
Tap water used as permeant.

Enviro-Ag Engineering, Inc.

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

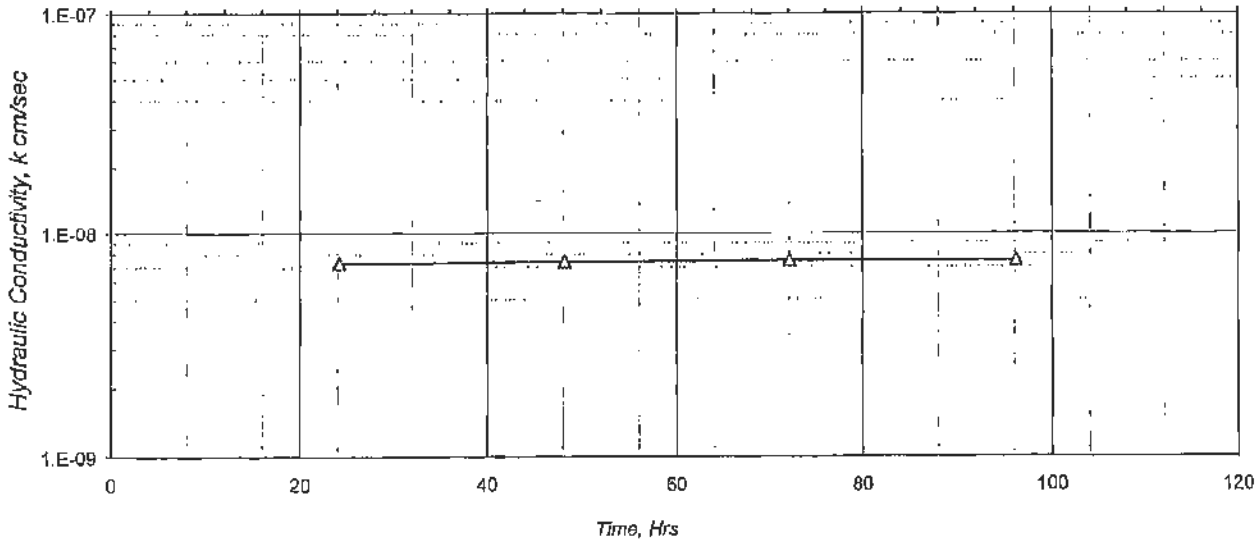
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1183
Sample ID:	**Sample Location:**	**Report Date:**
2	RCS #2 Expansion 2	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS #2 Expansion 2	
	INITIAL	FINAL
HEIGHT, in.	2.7	2.7
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	23.8	29.7
DRY DENSITY, pcf	94	93
SATURATION, %	82	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

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

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.2	7.3E-09
2	48.2	7.4E-09
3	72.1	7.5E-09
4	96.2	7.5E-09

AVERAGE LAST 4 : **7.4E-09**

Enviro-Ag Engineering, Inc.

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

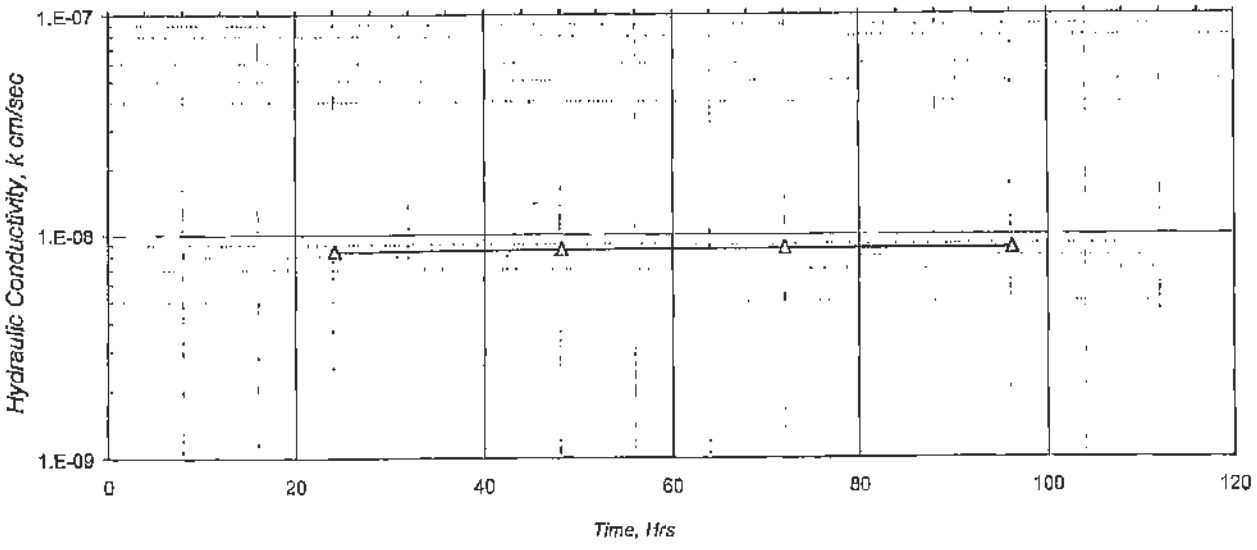
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1184
Sample ID:	**Sample Location:**	**Report Date:**
3	RCS #2 Expansion 3	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	RCS #2 Expansion 3	
	INITIAL	FINAL
HEIGHT, in.	3.0	3.1
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	21.9	24.5
DRY DENSITY, pcf	102	101
SATURATION, %	89	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

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

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.2	8.4E-09
2	48.2	8.5E-09
3	72.1	8.7E-09
4	96.2	8.6E-09

AVERAGE LAST 4 : **8.6E-09**

Enviro-Ag Engineering, Inc.

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

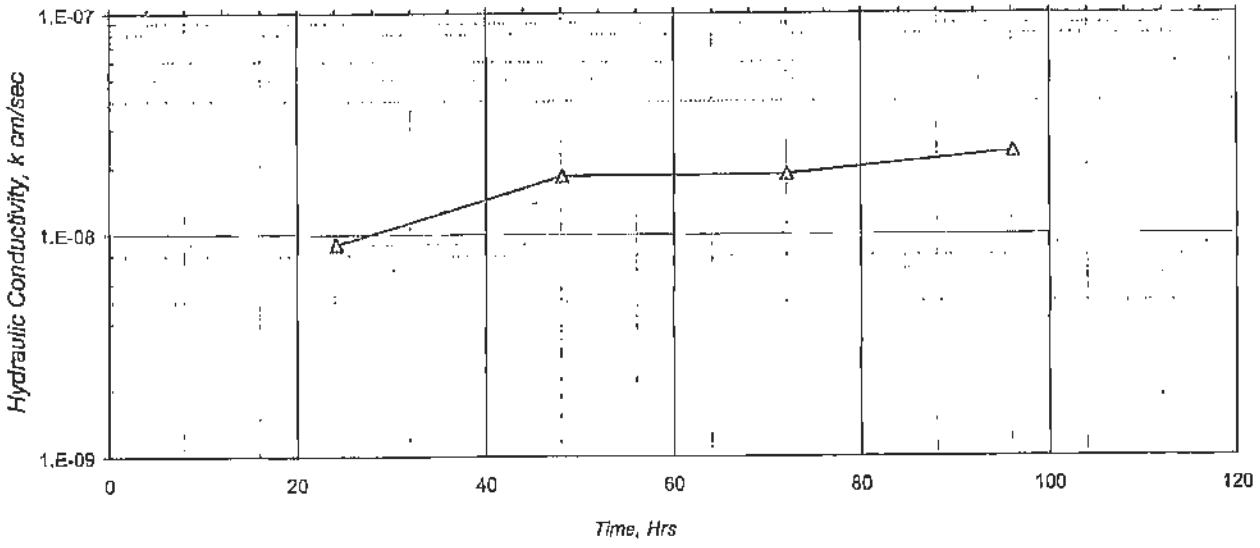
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1185
Sample ID:	**Sample Location:**	**Report Date:**
4	RCS #2 Expansion 4	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	4	
DESCRIPTION:	RCS #2 Expansion 4	
	INITIAL	FINAL
HEIGHT, in.	3.1	3.2
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	16.3	22.5
DRY DENSITY, pcf	107	105
SATURATION, %	77	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown / Yellow	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	0.92

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.2	9.0E-09
2	48.2	1.8E-08
3	72.1	1.9E-08
4	96.2	2.4E-08

AVERAGE LAST 4 : **1.7E-08**

COMMENTS:
Tap water used as permeant.

Enviro-Ag Engineering, Inc.

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

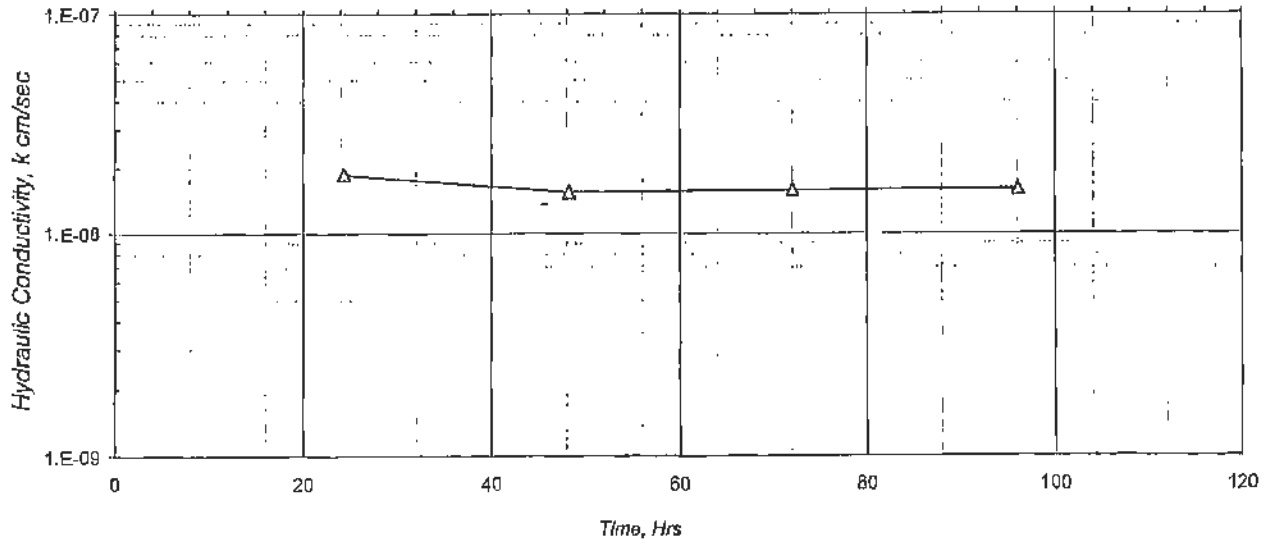
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1186
Sample ID:	**Sample Location:**	**Report Date:**
5	RCS #2 Expansion 5	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	5	
DESCRIPTION:	RCS #2 Expansion 5	
	INITIAL	FINAL
HEIGHT, in.	2.8	2.8
DIAMETER, in.	2.8	2.9
WATER CONTENT, %	22.5	28.7
DRY DENSITY, pcf	100	94
SATURATION, %	88	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	4 - 4
IN / OUT RATIO:	0.92

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	1.9E-08
2	48.2	1.5E-08
3	72.1	1.6E-08
4	96.1	1.6E-08

AVERAGE LAST 4 : **1.6E-08**

COMMENTS:
Tap water used as permeant.

Z : Soils Lab\Perms \2009 \ 09-04-07 \ 1186 | Print Date: 05/18/09 | Reviewed By: Micah Mullin | LSN: 1186

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Enviro-Ag Engineering, Inc.

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

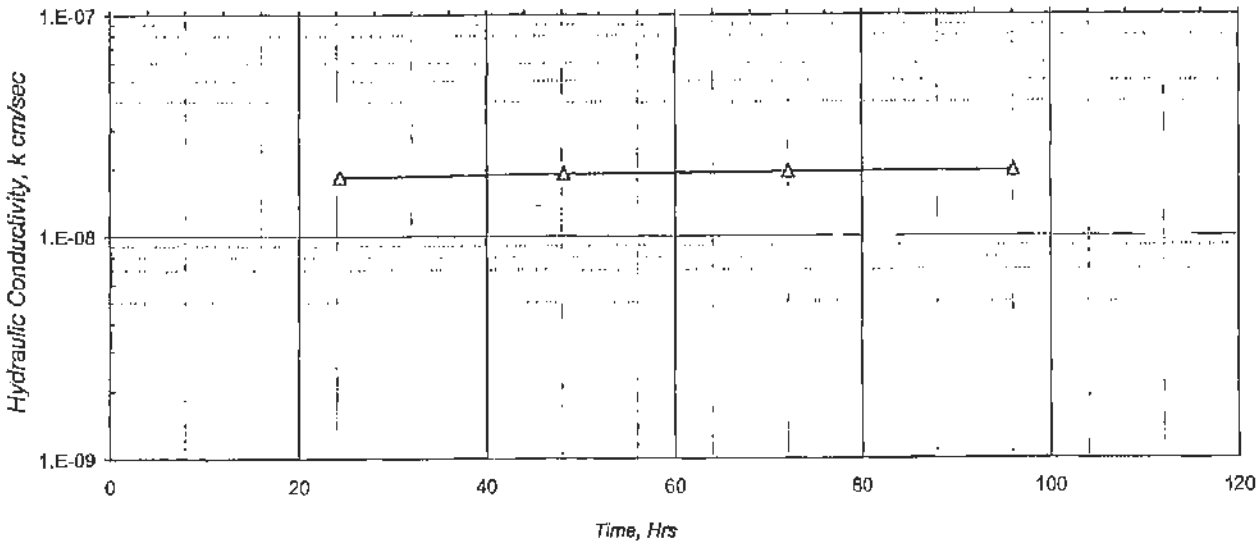
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-04-07	1187
Sample ID:	**Sample Location:**	**Report Date:**
6	RCS #2 Expansion 6	May 18, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	6	
DESCRIPTION:	RCS #2 Expansion 6	
	INITIAL	FINAL
HEIGHT, in.	3.4	3.4
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	21.9	27.7
DRY DENSITY, pcf	98	95
SATURATION, %	82	98
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

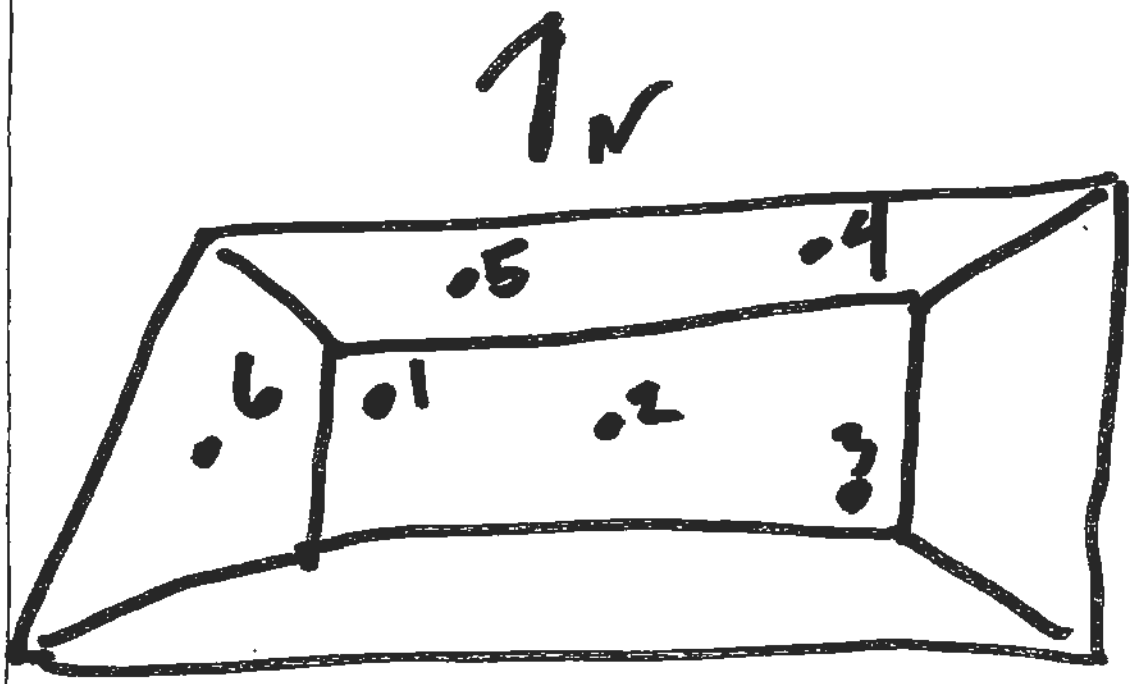
EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	1.8E-08
2	48.2	1.9E-08
3	72.1	1.9E-08
4	96.1	2.0E-08

AVERAGE LAST 4 : **1.9E-08**

COMMENTS:
Tap water used as permeant.

TRIAXIAL PERMEABILITY CHAIN of CUSTODY



RCS #2 Expansion

STRUCTURE	PERM REPORT I.D.	LAB LOG
RCS #2 EXPANSION	1	1182
" "	2	1183
" "	3	1184
" "	4	1185
" "	5	1186
" "	6	1187

Facility Name: Horizon Dairy

Project Engineer: Norman Mullin

Sampled by: Corey Mullin

Date Sampled: 04/07/09

Date to Lab: 4/10/09 Received: Ruth Ballin

ENVIRO-AG ENGINEERING, INC.

Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Boulevard
AMARILLO, TEXAS 79118
TEL (806) 353-8123 FAX (806) 353-4132

Enviro-Ag Engineering, Inc.

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

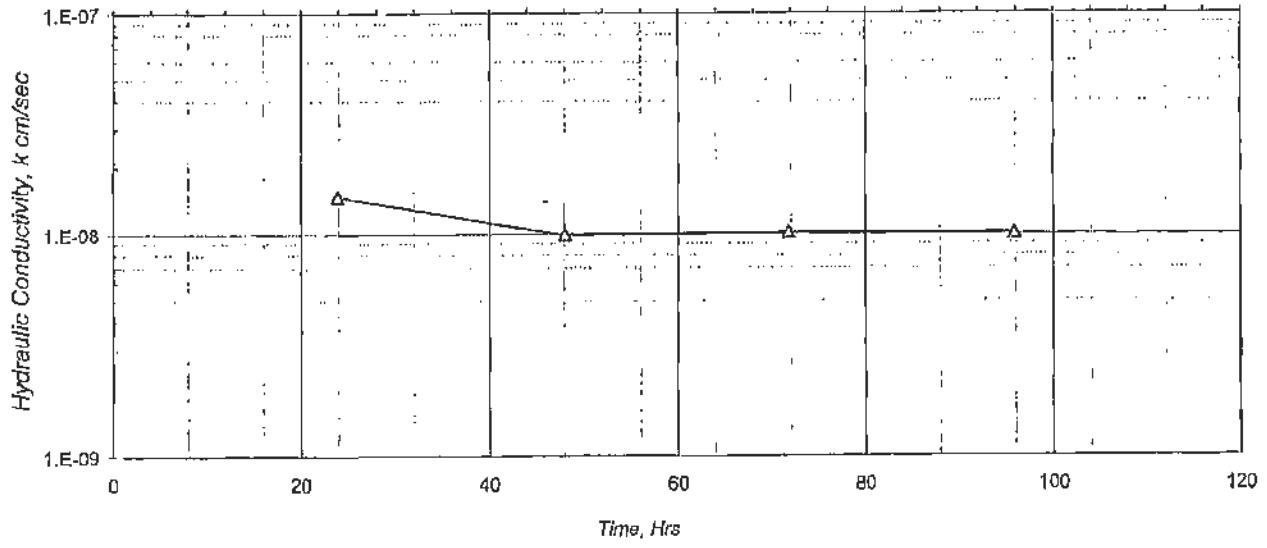
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-05-19	1231
Sample ID:	**Sample Location:**	**Report Date:**
1	RCS #2 - 7	June 2, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS #2 - 7	
	INITIAL	FINAL
HEIGHT, in.	3.6	3.6
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	14.7	17.8
DRY DENSITY, pcf	114	114
SATURATION, %	83	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Brown / Yellow	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	0.87

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	23.9	1.6E-08
2	48.1	9.9E-09
3	71.8	1.0E-08
4	95.9	1.0E-08

AVERAGE LAST 4 : **1.1E-08**

COMMENTS:
Tap water used as permeant.

Z : Soils Lab\Perms \2009 \ 09-05-19 \ 1231	Print Date: 06/02/09	Reviewed By: Micah Mullin	LSN: 1231

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Enviro-Ag Engineering, Inc.

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

LABORATORY SERVICES

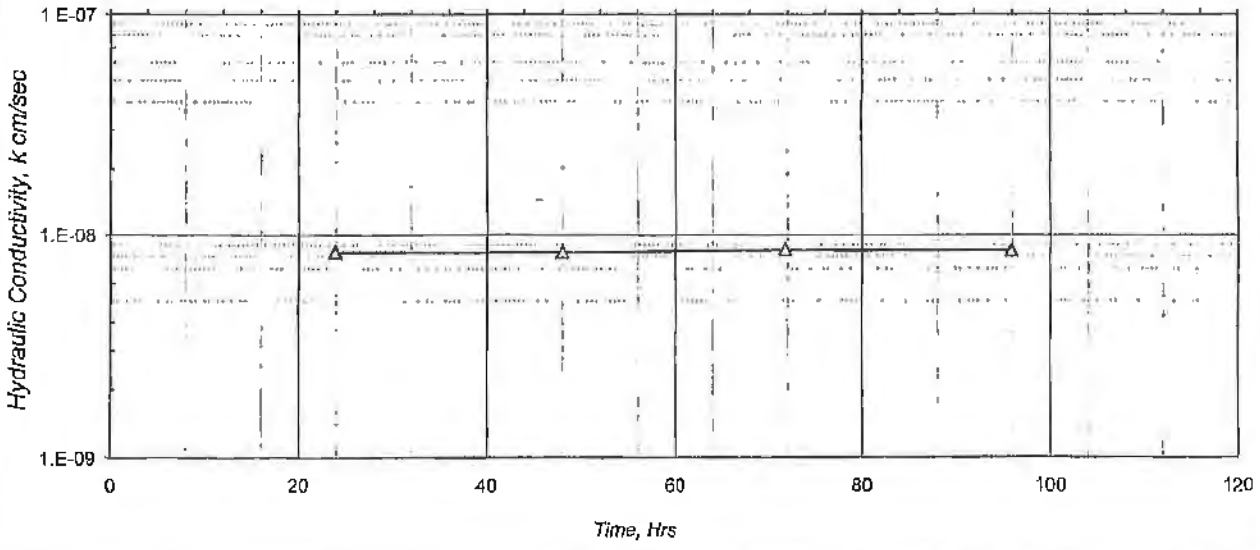
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-05-19	1232
Sample ID:	**Sample Location:**	**Report Date:**
2	RCS #2 - 8	June 2, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS #2 - 8	
	INITIAL	FINAL
HEIGHT, in.	2.9	2.9
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	19.9	25.2
DRY DENSITY, pcf	100	100
SATURATION, %	79	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Brown / Yellow	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

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

TRIAL pos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	23.9	8.3E-09
2	48.1	8.3E-09
3	71.8	8.6E-09
4	95.9	8.5E-09

AVERAGE LAST 4 : **8.4E-09**

COMMENTS:

Tap water used as permeant.

Enviro-Ag Engineering, Inc.

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

LABORATORY SERVICES

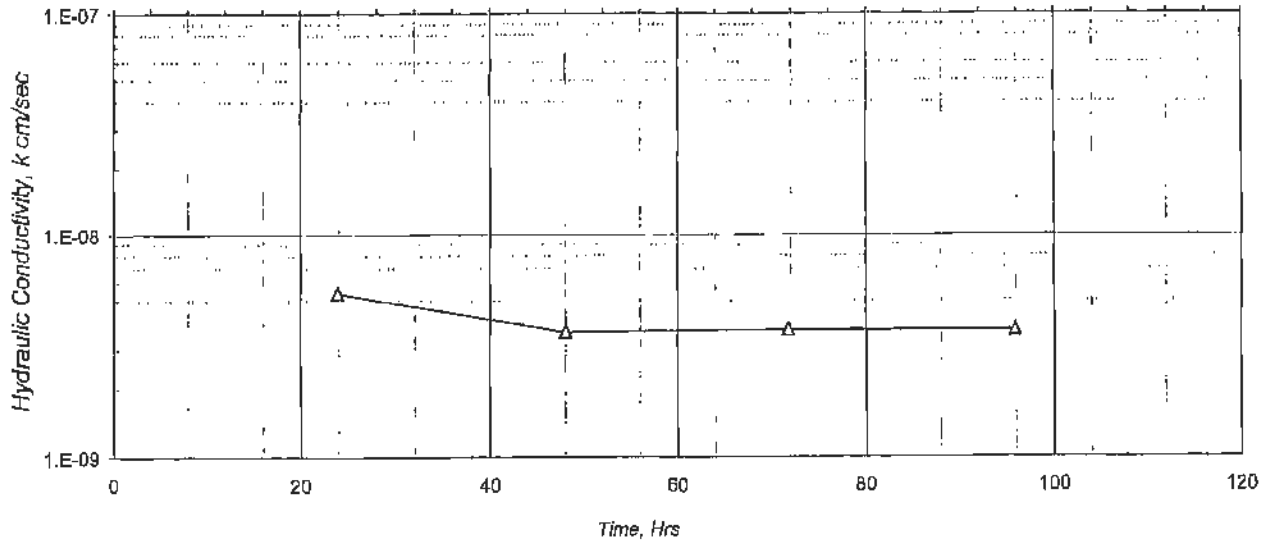
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-05-19	1233
Sample ID:	**Sample Location:**	**Report Date:**
3	RCS #2 - 9	June 2, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	RCS #2 - 9	
	INITIAL	FINAL
HEIGHT, in.	3.3	3.3
DIAMETER, In.	2.8	2.8
WATER CONTENT, %	24.9	29.1
DRY DENSITY, pcf	95	94
SATURATION, %	87	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	3 - 3
IN / OUT RATIO:	0.87

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	23.9	5.4E-09
2	48.1	3.6E-09
3	71.8	3.7E-09
4	95.9	3.7E-09

AVERAGE LAST 4 : **4.1E-09**

COMMENTS:

Tap water used as permeant.

Z : Soils Lab\Forms \2009 \ 09-05-19 \ 1233

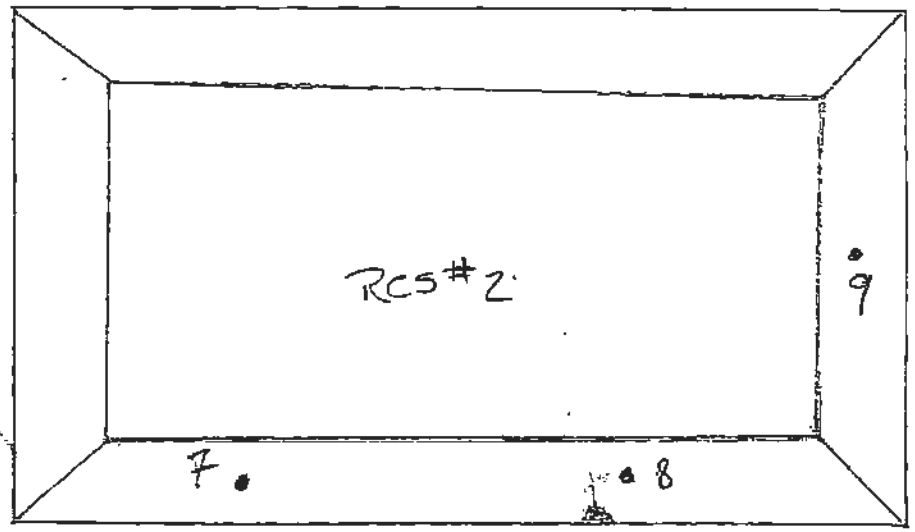
DCN: EAE-QC-GRAPH (rev. 11/10/04)

Print Date: 06/02/09

Reviewed By: Micah Mullin

LSN: 1233

TRIAXIAL PERMEABILITY CHAIN of CUSTODY



STRUCTURE	PERM REPORT I.D.	LAB LOG
RCS#2-7		1231
RCS#2-8		1232
RCS#2-9		1233

Facility Name: Horizon Dairy

Project Engineer: Norman Mullin

Sampled by: Norman Mullin

Date Sampled: 05/19/2009

Date to Lab: 5/20/09 Received: Rick Baker

ENVIRO-AG ENGINEERING, INC.

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

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
RCS #3 Capacity Certification

The as-built survey capacity for the retention control structure (RCS) #3 at Horizon Dairy with 2 vertical feet of freeboard is as follows:

RCS #3 Capacity	15.02 Acre-Feet
RCS #3 Surface Area	2.37 Surface Acres @ HWL

This capacity meets or exceeds the volume required by the TCEQ Individual Permit.

Prepared by:

4/7/09

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

3404 Airway Blvd. • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.envlroag.com

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
RCS #3 Liner Certification

Three 3-inch Shelby tube core samples were collected from RCS #3 to document the clay liner meets the requirements of the TCEQ for soil liner. The sample locations were backfilled with bentonite clay chips for sealing. The liner thickness was documented to be a minimum of 18 inches.

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

- RCS #3-1 (Lab #1179) 9.6×10^{-9} cm/sec
- RCS #3-2 (Lab #1180) 1.8×10^{-8} cm/sec
- RCS #3-3 (Lab #1181) 4.9×10^{-8} cm/sec

The clay liner present in RCS #3 is determined to be in accordance with TCEQ specific discharge requirements of 1.1×10^{-6} cm/sec. The observed hydraulic conductivity from RCS #3 is considered protective of ground and surface water resources.

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 #3 is determined to be constructed in accordance with TCEQ requirements for soil liners

I certify that RCS #3 at Horizon 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:

STATE OF TEXAS
NORMAN MULLIN
REGISTERED PROFESSIONAL ENGINEER

5/9/09

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

Enviro-Ag Engineering, Inc.

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

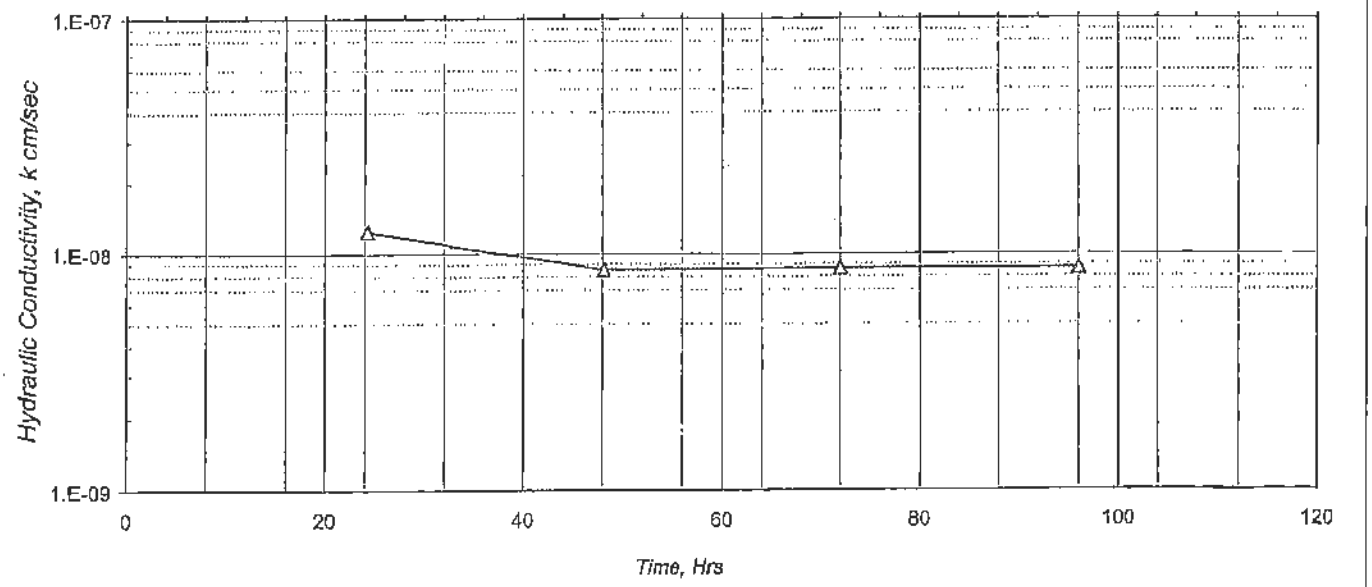
EAE

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-03-31	1179
Sample ID:	**Sample Location:**	**Report Date:**
1	RCS #3 - 1	May 7, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS #3 - 1	
	INITIAL	FINAL
HEIGHT, in.	2.9	2.9
DIAMETER, In.	2.7	2.7
WATER CONTENT, %	22.2	26.5
DRY DENSITY, pcf	99	98
SATURATION, %	85	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:
Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	4 - 4
IN / OUT RATIO:	0.87

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	1.2E-08
2	48.2	8.5E-09
3	72.1	8.6E-09
4	96.1	8.6E-09

AVERAGE LAST 4 : **9.6E-09**

Enviro-Ag Engineering, Inc.

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

LABORATORY SERVICES

EAE

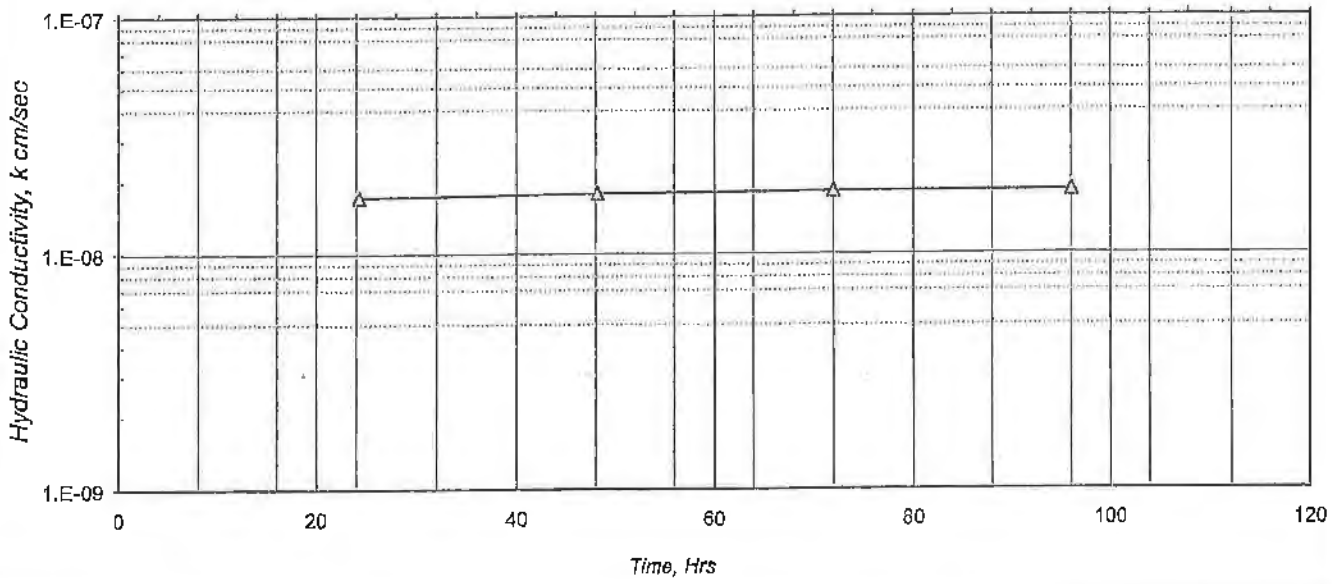
HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-03-31	1180
Sample ID:	**Sample Location:**	**Report Date:**
2	RCS #3 - 2	May 7, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS #3 - 2	
	INITIAL	FINAL
HEIGHT, in.	3.1	3.1
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	20.4	25.9
DRY DENSITY, pcf	101	99
SATURATION, %	83	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

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

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	1.7E-08
2	48.2	1.8E-08
3	72.1	1.8E-08
4	96.1	1.8E-08

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

COMMENTS:

Tap water used as permeant.

Enviro-Ag Engineering, Inc.

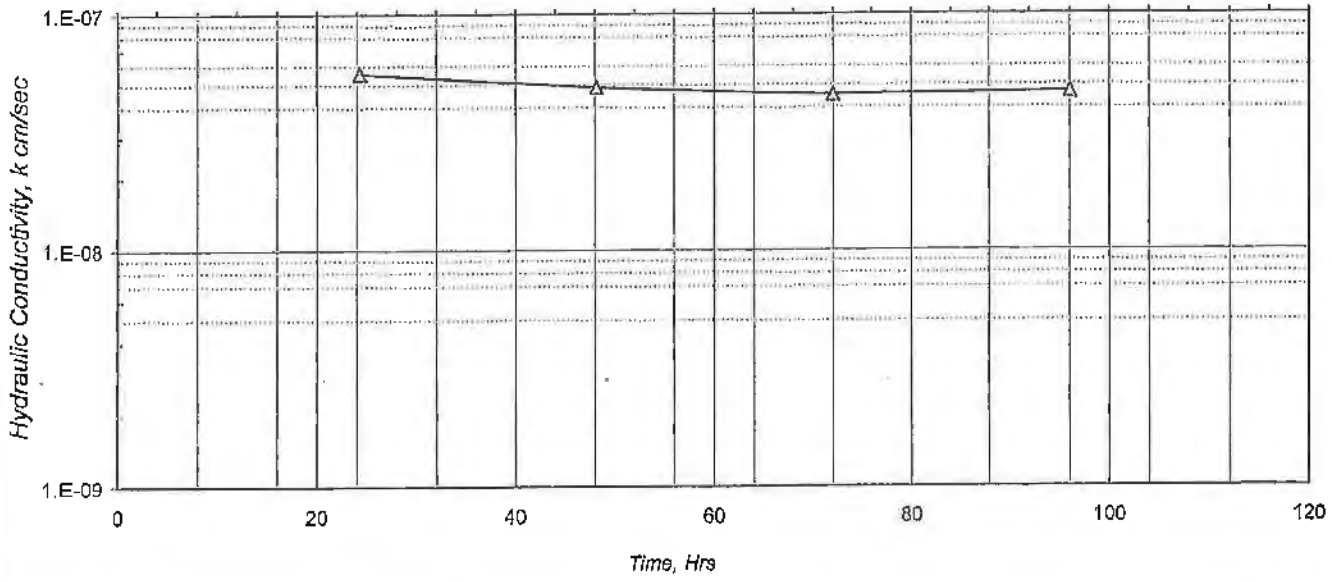
3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES

HYDRAULIC CONDUCTIVITY REPORT

ASTM D-5084, Method C

Client / Project Name:	Project No:	Lab Sample Number:
Horizon Dairy	09-03-31	1181
Sample ID:	**Sample Location:**	**Report Date:**
3	RCS #3 - 3	May 7, 2009

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	RCS #3 - 3	
	INITIAL	FINAL
HEIGHT, in.	3.6	3.6
DIAMETER, in.	2.9	2.9
WATER CONTENT, %	11.0	18.1
DRY DENSITY, pcf	116	113
SATURATION, %	66	100
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Dark Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS:	5 psi
GRADIENT RANGE:	2 - 3
IN / OUT RATIO:	1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY cm / sec
1	24.3	5.6E-08
2	48.2	4.9E-08
3	72.1	4.5E-08
4	96.1	4.7E-08

AVERAGE LAST 4 : **4.9E-08**

COMMENTS:
Tap water used as permeant.

ENVIRO-AG
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
Settling Basin #1 Liner Disturbance Certification

Two 3-inch Shelby tube core sample were collected from SB #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:

- SB #1-1 (Lab #2017) 1.2×10^{-8} cm/sec
- SB #1-2 (Lab #2018) 1.7×10^{-8} cm/sec

Based on the above documentation the liner in SB #1 is certified 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. This certification is to be maintained in the PPP for documentation.

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED
PROFESSIONAL ENGINEER

2/24/2011

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

(Supporting Documentation Attached)

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
Settling Basin #2 Liner Disturbance Certification

Two 3-inch Shelby tube core sample were collected from SB #2 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:

- SB #2-1 (Lab #2019) 3.4×10^{-8} cm/sec
- SB #2-2 (Lab #2020) 2.0×10^{-8} cm/sec

Based on the above documentation the liner in SB #2 is certified 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. This certification is to be maintained in the PPP for documentation.

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED
PROFESSIONAL ENGINEER

2/24/2011

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

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

ENVIRO-AG
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
Settling Basin #3 Liner Disturbance Certification

Three 3-inch Shelby tube core sample were collected from SB #3 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:

- SB #3-1 (Lab #2021) 2.4×10^{-8} cm/sec
- SB #3-2 (Lab #2022) 9.2×10^{-8} cm/sec
- SB #3-3 (Lab #2023) 5.0×10^{-8} cm/sec

Based on the above documentation the liner in SB #3 is certified 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. This certification is to be maintained in the PPP for documentation.

2/24/201

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

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

ENVIRO-AG
EAE
ENGINEERING, INC.

Horizon Dairy
Hamilton County, Texas
Settling Basin #4 Liner Disturbance Certification

Three 3-inch Shelby tube core sample were collected from SB #4 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:

- SB #4-1 (Lab #2024) 2.0×10^{-8} cm/sec
- SB #4-2 (Lab #2025) 7.1×10^{-8} cm/sec
- SB #4-3 (Lab #2026) 6.0×10^{-8} cm/sec

Based on the above documentation the liner in SB #4 is certified 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. This certification is to be maintained in the PPP for documentation.

STATE OF TEXAS
NORMAN H. MULLIN
66107
REGISTERED
PROFESSIONAL ENGINEER

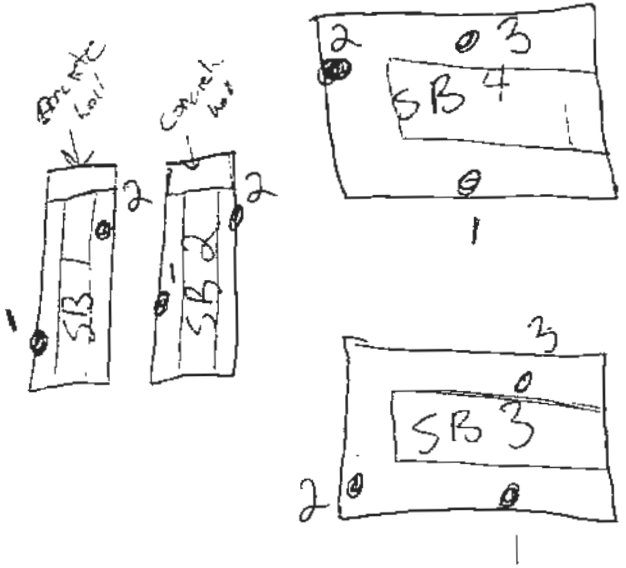
2/24/2011

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

(Supporting Documentation Attached)

3404 AIRWAY BLVD • AMARILLO, TEXAS 79118 • TEL (806) 353-6123 • FAX (806) 353-4132
www.enviroag.com

TRIAXIAL PERMEABILITY CHAIN of CUSTODY



STRUCTURE	PERM REPORT I.D.	LAB LOG

Facility Name: Horizon Dairy

Project Engineer: Nolan

Sampled by: Corey

Date Sampled: 1/24/11

Date to Lab:

Received:

EAE
302 Morgan Mill Road
Bldg C
Stephenville, TX 76401
(254) 965-3500
Fax: (254) 965-8000

4.0 WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN

4.1 Nutrient Utilization

Agronomic application of dairy 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. Attached are two NUP/NMP for crop year 2025, one for Phase 1 and one for Phase 2.

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. 4P Pastures, LLC 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

Executive Summary
Horizon Dairy
WQ0004842000

LMU Summary:

LMUs 1 and 17 are planted in corn and small grains. LMU's 1A, 2A, 2B, 2C, 3A, 3B, 3C, 5, 6, 7, 8, 9, 11, 13, 14 and 15 are established in coastal Bermudagrass overseeded with small grains for perennial coverage. LMU's 10, 16, 18, 20, 21, 23, Mayhugh 1, Mayhugh 2, Watson 1, and Watson 2 are planted in sorghum and small grains. LMU 4 is available for grazing.

Nutrient Summary:

LMU#	Max N Lb/ac Application Rates	Max P205 Lb/ac Application Rates	Planned N Lb/ac Application Rates	Planned P Lb/ac Application Rates
1	254	132	64	33
1A	400	227	200	114
2A	400	227	200	114
2B	401	209	100	52
2C	401	209	100	52
3A	400	227	200	114
3B	401	209	100	52
3C	401	209	100	52
4	400	227	200	114
5	600	341	300	170
6	600	341	300	170
7	600	341	300	170
8	600	341	300	170
9	600	341	300	170
10	400	227	200	114
11	400	227	200	114
13	400	227	200	114
14	400	227	200	114
15	400	227	200	114
16	401	209	100	52
17	440	229	110	57
18	400	227	200	114
20	400	227	200	114
21	400	227	200	114
23	401	209	100	52
Mayhugh 1	296	168	148	84
Mayhugh 2	296	168	148	84
Watson 1	296	168	148	84
Watson 2	296	168	148	84

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 remaining 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.

LMU 2 has been split into LMU's 2B and 2C and were originally sampled by TCEQ as one field. For this plan, LMU's 2B and 2C will utilize the Soil Analysis from LMU 2. LMU 3 has been split into LMU's 3B and 3C and were originally sampled by TCEQ as one filed. For this plan, LMU's 3B and 3C will utilize Soil Analysis from LMU 3. Additionally, at the time of this plan's creation, LMU's Mayhugh 1, Mayhugh 2, Watson 1 and Watson 2 have not been sampled by TCEQ. This plan will utilize the "worst case scenario" for those fields and set the Phosphorous levels to "200ppm". This plan will be updated once those fields have been sampled.

Waste Utilization and Nutrient Management Plan

Horizon Dairy
4483 E FM 219
Hico, TX 76457

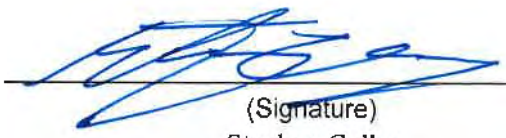
TCEQ Permit Number:
WQ0004842000

Owner
4P Pastures, LLC
4483 East FM 219
Hico, TX 76457
(254)918-3156

Operator
Horizon Dairy, LLC
4483 FM 219
Hico, TX 76457

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

Prepared By:



(Signature)
Stephen Colby
Certified Nutrient Management Specialist
Certificate Number = TX2025004
Expiration Date = December 31, 2025
Enviro-Ag Engineering
9855 FM 847
Dublin, TX 76446
(254)965-3500

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

8/18/25 3:15 PM

Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY: Permit #: WQ0004842000

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

See Attached Executive Summary

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Hamilton** 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 **2025** and will remain in effect until revision based on new soil or manure analysis or crop change (yield or crop) result in a new P-Index rating or plan classification (NMP-NUP). The waste has been stored in a **Dairy Lagoon** . Approximately **10000** head will be confined with the average weight of **1325** pounds. The animals will be confined **24** hours per day for **365** days per year.

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 #: WQ0004842000

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.

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

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

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

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

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

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

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.

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.

EFFLUENT AND SOLIDS STORAGE & TESTING: Permit #: WQ0004842000

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.

Waste Utilization and Nutrient Management Plan

RECORD KEEPING: Permit #: WQ0004842000

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

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

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

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

Date	Amount	Hauler or Recipient

Excess Remaining May be continued on additional sheets

Waste Utilization and Nutrient Management Plan

OPERATION AND MAINTENANCE: Permit #: WQ0004842000

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: **Stephen Colby** Date: **8/18/2025**

Plan Approved by: Date: 8/18/25

Producer Signature: Discussed with Producer Date: 8/18/25

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.

Waste Utilization and Nutrient Management Plan

Table 1 - Estimated Effluent and Solids Quantities Produced Permit #: WQ0004842000

Avg. Number of Animals	Type of Waste
10,000	Dairy Lagoon
	Other Solids

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

Estimated Acre Inches of Effluent to be Available Annually* 2,098

Estimated Tons Solids to be Land Applied Annually (on or off site)* 145,918.9

*From engineering design

Estimated Nutrient Availabilty Effluent

	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch	
N	62,762	1.10	29.9	**
P2O5	32,665	0.57	15.6	
K2O	199,697	3.51	95.2	

** Effluent Values Based on Analysis dated: June 18, 2025

Estimated Nutrient Availabilty Solids

	pounds / yr	pounds / ton	
N	658,246	4.5	**
P2O5	373,879	2.6	
K2O	647,621	4.4	

** Solids Values Based on Analysis dated: June 18, 2025

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

Waste Utilization and Nutrient Management Plan

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

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

P – Index Rating	Maximum TMDL Annual P Application Rate [5/]	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	Annual Nitrogen (N) Requirement	Annual Nitrogen (N) Requirement	2.0 Times Annual N Requirement
Medium	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual N Requirement
High [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.

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.

PI Index by Field

Printed on: 8/18/25 3:15 PM
This plan is based on: Nutrient Management Plan V 5.0
Permit #: WQ0004842000
Client Name: Horizon Dairy
Planner: Stephen Colby
Date: 8/18/2025
Location: Hamilton
Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P_2O_5 Appl Rate	Organic P_2O_5 Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
1	Silage - Corn16-20T;SG GreenChop-6-7T	1.3%	89	8	0	6	0	0.5	0	2	1.5	18	Medium	11/21/24
1A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.0%	78	8	0	6	0	4	1.25	1	1.5	21.75	Medium	11/21/24
2A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.0%	78	8	0	6	0	4	0	1	0	19	Medium	11/14/24
2B	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.5%	78	8	0	6	0	0.5	0	1	0	15.5	Medium	11/14/24
2C	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.5%	78	8	0	6	0	0.5	0	1	0	15.5	Medium	11/14/24
3A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.5%	78	8	0	6	0	4	2.5	2	0	22.5	Medium	11/13/24
3B	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.1%	78	8	0	6	0	0.5	2.5	2	0	19	Medium	11/13/24
3C	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.1%	78	8	0	6	0	0.5	2.5	2	0	19	Medium	11/13/24
4	Coastal graze 1 AU/1 ac, SG mod graze	1.9%	80	8	0	6	0	4	0	1	0	19	Medium	11/13/24
5	Coastal GC (30%DM) 21-23T; SG GC 6-7T	2.1%	78	8	0	6	0	4	5	2	0	25	High	11/13/24
6	Coastal GC (30%DM) 21-23T; SG GC 6-7T	2.7%	71	8	0	6	0	4	1.25	2	0	21.25	Medium	11/14/24
7	Coastal GC (30%DM) 21-23T; SG GC 6-7T	3.1%	71	8	0	6	0	4	1.25	2	0	21.25	Medium	11/14/24
8	Coastal GC (30%DM) 21-23T; SG GC 6-7T	1.0%	78	8	0	6	0	4	0	1	0	19	Medium	11/14/24
9	Coastal GC (30%DM) 21-23T; SG GC 6-7T	4.7%	78	8	0	6	0	4	0	4	0	22	Medium	11/21/24
10	Silage - Sorg-11-15 T;SG GreenChop-6-7T	4.5%	89	8	0	6	0	4	0	4	0	22	Medium	11/21/24
11	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.2%	78	8	0	6	0	4	0	2	0	20	Medium	11/21/24
13	Coastal GC (30%DM) 9-11T; SG GC 6-7T	5.7%	78	8	0	6	0	4	2.5	4	0	24.5	High	11/13/24
14	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.5%	78	8	0	6	0	4	5	2	0	25	High	11/13/24
15	Coastal GC (30%DM) 9-11T; SG GC 6-7T	5.1%	78	8	0	6	0	4	5	4	0	27	High	11/21/24
16	Silage - Sorg-11-15 T;SG GreenChop-6-7T	4.7%	89	8	0	6	0	4	1.25	4	1.5	24.75	High	11/14/24
17	Silage - Corn16-20T;SG GreenChop-6-7T	2.5%	89	8	0	6	0	0.5	1.25	4	1.5	21.25	Medium	11/14/24
18	Silage - Sorg-11-15 T;SG GreenChop-6-7T	3.7%	89	8	0	6	0	4	2.5	4	1.5	26	High	11/14/24
20	Silage - Sorg-11-15 T;SG GreenChop-6-7T	6.9%	89	8	0	6	0	4	0	4	1.5	23.5	High	11/14/24
21	Silage - Sorg-11-15 T;SG GreenChop-6-7T	5.7%	89	8	0	6	0	4	0	4	1.5	23.5	High	11/14/24
23	Silage - Sorg-11-15 T;SG GreenChop-6-7T	2.8%	89	8	0	6	0	0.5	0	4	1.5	20	Medium	11/14/24
Mayhugh 1	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD
Mayhugh 2	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD

PI Index by Field

Client Name: Horizon Dairy
Planner: Stephen Colby

Date: 8/18/2025
Location: Hamilton
Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P_2O_5 Appl Rate	Organic P_2O_5 Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
Watson 1	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD
Watson 2	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD

Waste Utilization and Nutrient Management Plan

Table 3 - Crop Removal Rates (For Information Only) Permit #: WQ0004842000

LMU or Field No.	Acres	Crop and P Index Level	TCEQ Plan Type	Actual Crop Analysis or Default	Total Est. N Removal lbs/Ac/Yr	Total Est. P_2O_5 Removal lbs/Ac/Yr	Total Est. K_2O Removal lbs/Ac/Yr
1	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	NUP	Default	341	132	214
1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	NMP	Default	300	90	267
5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	NMP	Default	503	155	320
6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NMP	Default	337	112	171
11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
15	58.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	NMP	Default	341	132	214
18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NMP	Default	337	112	171
Mayhugh 1	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Mayhugh 2	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171

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

Waste Utilization and Nutrient Management Plan

Table 4 - Maximum Solids Application per Field Permit #: WQ0004842000

Est. Solids Produced Annually (wet tons)	LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P2O5 lbs/acre	Annual/Biennial	Maximum Solids Allowable Tons/Acre	Maximum Allowable Application Per field (Tons)
145,919	1							
	1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	227	A	88.7	3192
	2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	227	A	88.7	5320
	2B							
	2C							
	3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	227	A	88.7	9222
	3B							
	3C							
	4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	227	A	88.7	4966
	5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	341	A	133.0	4921
	6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	341	A	133.0	8645
	7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	341	A	133.0	8645
	8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	341	A	133.0	11173
	9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	341	A	133.0	2660
	10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	227	A	88.7	10641
	11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	227	A	88.7	1951
	13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	227	A	88.7	7980
	14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	227	A	88.7	6828
	15	58.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	227	A	88.7	5143
	16							
	17							
	18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	227	A	88.7	10020
Total Solids Application Acres	20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	227	A	88.7	10641
	21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	227	A	88.7	2128
	23							
1606	Mayhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	4598
	Mayhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	6044
	Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	8211
Application Allowable on-site (tons)	Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	11036
143965.0								
Not Adequate								
Solids to be used off-site (tons)								
1,954.0								

End of Table 4

Waste Utilization and Nutrient Management Plan

Table 5 - Nutrients Applied/Needs at Maximum Solids Rates Permit #: WQ0004842000

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
1A	400	227	394	0	0	0	0
2A	400	227	394	0	0	0	0
2B							
2C							
3A	400	227	394	0	0	0	0
3B							
3C							
4	400	227	394	0	0	0	0
5	600	341	590	0	0	0	0
6	600	341	590	0	0	0	0
7	600	341	590	0	0	0	0
8	600	341	590	0	0	0	0
9	600	341	590	0	0	0	0
10	400	227	394	0	0	0	0
11	400	227	394	0	0	0	0
13	400	227	394	0	0	0	0
14	400	227	394	0	0	0	0
15	400	227	394	0	0	0	0
16							
17							
18	400	227	394	0	0	0	0
20	400	227	394	0	0	0	0
21	400	227	394	0	0	0	0
23							
Mayhugh 1	296	168	292	0	0	0	0
Mayhugh 2	296	168	292	0	0	0	0
Watson 1	296	168	292	0	0	0	0
Watson 2	296	168	292	0	0	0	0

Waste Utilization and Nutrient Management Plan

Table 6 - Planned Solids Application Rates Permit #: WQ0004842000

LMU or Field No.	Double crop	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Max Rate tons/ac	% of Maximum to apply	Planned Solids tons/ac	Planned Solids per field (tons)
1									
1A		36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	A	88.7	50	44.3	1596.1
2A		60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	A	88.7	50	44.3	2660.1
2B									
2C									
3A		104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	A	88.7	50	44.3	4610.9
3B									
3C									
4		56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	A	88.7	50	44.3	2482.8
5		37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	A	133.0	50	66.5	2460.6
6		65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	A	133.0	50	66.5	4322.7
7		65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	A	133.0	50	66.5	4322.7
8		84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	A	133.0	50	66.5	5586.3
9		20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	A	133.0	50	66.5	1330.1
10		120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	A	88.7	50	44.3	5320.3
11		22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	A	88.7	50	44.3	975.4
13		90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	A	88.7	50	44.3	3990.2
14		77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	A	88.7	50	44.3	3413.8
15		58.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	A	88.7	50	44.3	2571.5
16									
17									
18		113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	A	88.7	50	44.3	5009.9
20		120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	A	88.7	50	44.3	5320.3
21		24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	A	88.7	50	44.3	1064.1
23									
Mayhugh 1		70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	2299.2
Mayhugh 2		92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	3021.8
Watson 1		125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	4105.7
Watson 2		168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	5518.0
Acres		1606.0				Will the planned per acre application rates use all of the Solids?			71982.5
145919			Tons of wet solids produced Annually						NO
0			Tons to be used off-site at Max. rates			Tons to be used off-site at planned rates			73936

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at Planned Solids Rates Permit #: WQ0004842000

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
1A	200	114	197	155	20	0	0
2A	200	114	197	175	0	0	0
2B							
2C							
3A	200	114	197	145	0	0	0
3B							
3C							
4	200	114	197	125	0	0	0
5	300	170	295	270	0	0	0
6	300	170	295	255	0	0	0
7	300	170	295	265	0	0	0
8	300	170	295	260	0	0	0
9	300	170	295	270	0	0	0
10	200	114	197	140	0	0	0
11	200	114	197	175	20	0	0
13	200	114	197	175	0	0	0
14	200	114	197	165	0	0	0
15	200	114	197	165	0	0	0
16							
17							
18	200	114	197	140	0	0	0
20	200	114	197	105	0	0	0
21	200	114	197	135	0	0	0
23							
Mayhugh 1	148	84	146	50	0	0	0
Mayhugh 2	148	84	146	50	0	0	0
Watson 1	148	84	146	50	0	0	0
Watson 2	148	84	146	50	0	0	0

Waste Utilization and Nutrient Management Plan

Table 8 - Maximum Effluent Application Per Field Permit #: WQ0004842000

Est. Available Effluent (ac inches)	LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P_2O_5 (lbs/acre)	Annual/Biennial	Maximum Effluent Allowable (ac in/ac)	Maximum Effluent Allowable / Field (ac in)
2098	1	102.0		Silage - Corn16-20T;SG GreenChop-6-7T M	239	132	A	8.5	866
Source:	1A								
	2A								
	2B	105.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	208	A	13.4	1407
Dairy Lagoon	2C	73.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	208	A	13.4	978
	3A								
	3B	142.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	208	A	13.4	1903
	3C	38.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	208	A	13.4	509
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	13								
	14								
	15								
	16	85.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T H	91	208	A	13.4	1139
	17	85.0		Silage - Corn16-20T;SG GreenChop-6-7T M	116	229	A	14.7	1250
Total Effluent Application Acres	18								
	20								
	21								
	23	90.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	208	A	13.4	1206
720	Mayhugh								
	Mayhugh								
Maximum Effluent Application Allowable On-Site (ac in)	Watson 1								
	Watson 2								
9258									
Adequate									
Effluent to be used Off-Site (ac in)									
0									

End of Table 8

Waste Utilization and Nutrient Management Plan

Table 9 - Nutrients Applied/Needed at Maximum Effluent Rates Permit #: WQ0004842000

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	254	132	809	125	0	0	0
1A							
2A							
2B	401	209	1275	0	0	0	0
2C	401	209	1275	0	0	0	0
3A							
3B	401	209	1275	0	0	0	0
3C	401	209	1275	0	0	0	0
4							
5							
6							
7							
8							
9							
10							
11							
13							
14							
15							
16	401	209	1275	0	0	0	0
17	440	229	1399	15	0	0	0
18							
20							
21							
23	401	209	1275	0	0	0	0
Mayhugh 1							
Mayhugh 2							
Watson 1							
Watson 2							

Waste Utilization and Nutrient Management Plan

Table 10 - Planned Effluent Application Rates Permit #: WQ0004842000

LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Maximum Effluent (ac in/ac)	% of Maximum to apply	Planned Effluent (ac in/ac)	Planned Effluent / field (Ac. In)
1	102.0		Silage - Corn16-20T;SG GreenChop-6-7T M	239	A	8.5	**25.0**	2.1	216
1A									
2A									
2B	105.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	A	13.4	**25.0**	3.4	352
2C	73.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	A	13.4	**25.0**	3.4	245
3A									
3B	142.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	A	13.4	**25.0**	3.4	476
3C	38.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	A	13.4	**25.0**	3.4	127
4									
5									
6									
7									
8									
9									
10									
11									
13									
14									
15									
16	85.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T M	91	A	13.4	**25.0**	3.4	285
17	85.0		Silage - Corn16-20T;SG GreenChop-6-7T M	116	A	14.7	**25.0**	3.7	313
18									
20									
21									
23	90.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	A	13.4	**25.0**	3.4	302
Mayhugh									
Mayhugh									
Watson 1									
Watson 2									
Acres	**720.0**					**Will the planned application rates use all of the Effluent?**			**2315**
									YES

Waste Utilization and Nutrient Management Plan

Table 11 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #: WQ0004842000

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	64	33	202	315	0	0	0
1A							
2A							
2B	100	52	318	260	0	0	0
2C	100	52	318	260	0	0	0
3A							
3B	100	52	318	260	10	0	0
3C	100	52	318	260	10	0	0
4							
5							
6							
7							
8							
9							
10							
11							
13							
14							
15							
16	100	52	318	245	0	0	0
17	110	57	350	345	0	0	0
18							
20							
21							
23	100	52	318	245	0	0	0
Mayhugh 1							
Mayhugh 2							
Watson 1							
Watson 2							

Waste Utilization and Nutrient Management Plan

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

Permit #: WQ0004842000

LMU / Field #	AWC (inches)	Restrictive Texture
1	2.34	Gravelly Clay Loam
1A		
2A		
2B	2.34	Gravelly Clay Loam
2C	2.34	Gravelly Clay Loam
3A		
3B	2.34	Gravelly Clay Loam
3C	2.34	Gravelly Clay Loam
4		
5		
6		
7		
8		
9		
10		
11		
13		
14		
15		
16	2.125	)glesby Gravelly Cla
17	2.34	'idcokc Gravelly Cla
18		
20		
21		
23	3.36	Slidell Clay
Mayhugh 1		
Mayhugh 2		
Watson 1		
Watson 2		

LMU / Field #	AWC (inches)	Restrictive Texture

Waste Utilization and Nutrient Management Plan

Table 13 - Non Application Areas by Field Permit #: WQ0004842000

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

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded
1	0.0	0.0			
1A	0.0	0.0			
2A	0.0	0.0			
2B	0.0	0.0			
2C	0.0	0.0			
3A	0.0	0.0			
3B	0.0	0.0			
3C	0.0	0.0			
4	0.0	0.0			
5	0.0	0.0			
6	0.0	0.0			
7	0.0	0.0			
8	0.0	0.0			
9	0.0	0.0			
10	0.0	0.0			
11	0.0	0.0			
13	0.0	0.0			
14	0.0	0.0			
15	0.0	0.0			
16	0.0	0.0			
17	0.0	0.0			
18	0.0	0.0			
20	0.0	0.0			
21	0.0	0.0			
23	0.0	0.0			
Mayhugh	0.0	0.0			
Mayhugh	0.0	0.0			
Watson 1	0.0	0.0			
Watson 2	0.0	0.0			

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

See Application Map for location of buffers

Total 590-633 application acres: 2326.0

Totals	0.0	0.0	0.0	0.0	0.0

Total 590-633 Field Acres: 2326.0

Waste Utilization and Nutrient Management Data Entries

General Data

Date :	8/18/2025
Farmer Name :	Horizon Dairy
County in which the Land is located :	Hamilton
Type of Waste Plan :	Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients? Yes or No :	Yes
Is any field PERMITTED by TCEQ? Yes or No :	Yes
Permit # :	WQ0004842000

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year :	2025
Are you receiving waste from another producer?	No
Number of animals :	10000
Approximate Weight :	1325
Days per year in confinement :	365
Hours per day confined :	24
***ACRE FEET* of effluent to be irrigated* :**	174.83
Estimated annual gallons of effluent to be irrigated/applied annually :	56968005.84
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)* :	32394
Is this the first Year of the AFO-CAFO Operation? :	No

Analysis Information

Effluent Information

Date of Analysis:	6/18/2025
Manure Source:	Dairy Lagoon
Nitrogen % From Analysis:	0.0165
Phosphorus % From Analysis:	0.003
Potassium % From Analysis:	0.035
Moisture % From Analysis:	99.8

Manure / Solids Information

Date of Analysis:	6/18/2025	
Manure Source:	Other Solids	Explain Other:
Nitrogen % From Analysis:	1.27	Slurry
Phosphorus % From Analysis:	0.252	
Potassium % From Analysis:	0.833	
Moisture % From Analysis:	77.8	
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 Plan

Printed on: 8/18/25 3:15 PM

Field and Buffer Entries

Permit #: WQ0004842000

Printed on: 8/18/25 3:15 PM

Plan is based on: 590 Organic Nutrient Management Plan

FS = 393-Filter Strip, FB = 386-Field Border, RFB = 391-Riparian Forest Buffer, OLEA = Other Land Exclusiou Areas or non-application areas (i.e. headquarters, freq. flooded areas, wooded areas, water bodies, etc)
NOTE: Field Border (FB) is expressed in ACRES on this spreadsheet, but as LINEAR FEET on the CPO.

Field No.	Total LMU or Field Acres	FS	FB	RFB	OLEA	Total Buffer Acres	Actual Application Acres	This Column Intentionally Left Blank
1	102					0.0	102.0	
1A	36					0.0	36.0	
2A	60					0.0	60.0	
2B	105					0.0	105.0	
2C	73					0.0	73.0	
3A	104					0.0	104.0	
3B	142					0.0	142.0	
3C	38					0.0	38.0	
4	56					0.0	56.0	
5	37					0.0	37.0	
6	65					0.0	65.0	
7	65					0.0	65.0	
8	84					0.0	84.0	
9	20					0.0	20.0	
10	120					0.0	120.0	
11	22					0.0	22.0	
13	90					0.0	90.0	
14	77					0.0	77.0	
15	58					0.0	58.0	
16	85					0.0	85.0	
17	85					0.0	85.0	
18	113					0.0	113.0	
20	120					0.0	120.0	
21	24					0.0	24.0	
23	90					0.0	90.0	
Mayhugh	70					0.0	70.0	
Mayhugh	92					0.0	92.0	
Watson 1	125					0.0	125.0	
Watson 2	168					0.0	168.0	

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 8/18/25 3:15 PM Plan is based on: 590 Organic Nutrient Management Plan V 5.0 Permit #: WQ0004842000

Soil Test Analysis				This column only for Dry Poultry	LMU or Field #	Appl. Area Acres	Crop/Land-Use and P Index Runoff Potential VL - L; M; H; or VH	E = Effluent S = Solids	Plant Analysis (Y / N)	Plant Analysis & Yield (optional) Use Only When Crop Removal is Required			
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)							% N	% P	% K	Yield Air Dry Production (lbs/ac/yr)
61.626	239	2168			1	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	E	N				
21.561	40.5	342			1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
11.978	118	322			2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
21.097	126	949			2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
21.097	126	949			2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
27.942	82.5	370			3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
18.989	78.4	559			3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
18.989	78.4	559			3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
37.451	133	431			4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	S	N				
14.353	125	404			5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	S	N				
22.252	166	384			6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
17.364	194	326			7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
19.758	113	327			8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
15.687	102	289			9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
30.2	149	398			10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				
12.123	40	325			11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
13.687	123	327			13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
18.538	114	286			14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
16.354	70.6	340			15	58.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
28.268	91	361			16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	E	N				
23.653	116	411			17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	E	N				
30.846	111	483			18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
47.918	118	451			20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
33.211	31.4	243			21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
27.029	171	382			23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	E	N				
100	200	100			Mayhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				
100	200	100			Mayhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 8/18/25 3:15 PM Plan is based on: 590 Organic Nutrient Management Plan V 5.0 Permit #: WQ000484

Soil Test Analysis				This column only for Dry Poultry	LMU or Field #	Appl. Area Acres	Crop/Land-Use and P Index Runoff Potential VL - L; M; H; or VH	E = Effluent S = Solids	Plant Analysis (Y / N)	Plant Analysis & Yield (opti Only When Crop Removal is		
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)							% N	% P	% K
100	200	100			Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N			
100	200	100			Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N			

Solids Application Rate Entries

Solids - Set the Planned Application Rates

Permit #: WQ

145919 "Wet tons" of solids produced Annually

Will the planned rates use all of the

Tons to be used off-site at plann

LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Crop P_2O_5 Req.	Annual or Biennial Application Cycle	Maximum Solids Allowable Tons/Ac	Enter % of Maximum Planned to Apply
1							
1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	205	Annual	88.7	50.0
2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	205	Annual	88.7	50.0
2B							
2C							
3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	205	Annual	88.7	50.0
3B							
3C							
4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	175	Annual	88.7	50.0
5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	250	Annual	133.0	50.0
6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	250	Annual	133.0	50.0
7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	250	Annual	133.0	50.0
8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	250	Annual	133.0	50.0
9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	250	Annual	133.0	50.0
10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	155	Annual	88.7	50.0
11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	205	Annual	88.7	50.0
13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	205	Annual	88.7	50.0
14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	205	Annual	88.7	50.0
15	58.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	205	Annual	88.7	50.0
16							
17							
18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	155	Annual	88.7	50.0
20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	155	Annual	88.7	50.0
21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	155	Annual	88.7	50.0
23							
ayhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
ayhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
Watson	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
Watson	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0

Printed on: 8/18/25 3:15 PM

Plan is based on: 590 Organi

Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit # WQ0004842000

56968006	Gallons of Effluent to be used annually				Will the planned rates use all of the effluent?				Yes
2098	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	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	239	180	Annual	8.5	25.0	2.12	216
1A									
2A									
2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	205	Annual	13.4	25.0	3.35	352
2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	205	Annual	13.4	25.0	3.35	245
3A									
3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	205	Annual	13.4	25.0	3.35	476
3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	205	Annual	13.4	25.0	3.35	127
4									
5									
6									
7									
8									
9									
10									
11									
13									
14									
15									
16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	91	155	Annual	13.4	25.0	3.35	285
17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	116	180	Annual	14.7	25.0	3.68	313
18									
20									
21									
23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	155	Annual	13.4	25.0	3.35	302
layhugh									
layhugh									
Watson									
Watson									

Total Effluent This Page 2315

Printed on: 8/18/25 3:15 PM

Plan is based on: 590 Organic Nutrient Management Plan '

Available Water Capacity Entries

Printed on: 8/18/25 3:15 PM Plan is based on: 590 Organic Nutrient Management Pla Permit #: WQ0004842000

LMU or Fields receiving Effluent	Texture of the soil layer within the upper 24 inches of the soil profile that has the lowest permeability (Don't Abbreviate)	Depth of First Layer (inches)		AWC of First Layer (in/in)		Depth of Second Layer (inches)		AWC of Second Layer (in/in)		Depth of Third Layer (inches)		AWC of Third Layer (in/in)		Depth of Fourth Layer (inches)		AWC of Fourth Layer (in/in)		Available Water Holding Capacity (AWC) of the upper 24 inches of the soil profile (Inches)
EXAMPLE ENTRIES		0	3	0.12	0.2	3	14	0.16	0.21	14	18	0.08	0.12	18	24	0	0	
		Enter Data for the top 24" only																
1	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
2B	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
2C	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
3B	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
3C	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
16	glesby Gravelly Cl	0	17	0.1	0.15	17	35	0	0	35				0				2.13
17	idcoke Gravelly Cl	0	11	0.11	0.15	11	18	0.11	0.15	18	80	0	0	80				2.34
23	Slidell Clay	0	19	0.1	0.18	19	32	0.1	0.18	32				0				3.36

Available Water Capacity Entries

Printed on: 8/18/25 3:15 PM Plan is based on: 590 Organic Nutrient Management Pla Permit #: WQ0004842000

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

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	61.626	34.535
Phosphorus (extractable), ppm	239	25.6
Potassium (extractable), ppm	2168	921
Sodium (extractable), ppm	324	431
Magnesium (extractable), ppm	926	531
Calcium (extractable), ppm	15878	31431
Electrical Conductivity/Soluble Salts, dS/m	0.837	0.708
pH, SU	8.06	8.12

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.

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: David DeJong / Owner

Signature: [signature]

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 1A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	21.561	8.912
Phosphorus (extractable), ppm	40.5	7.78
Potassium (extractable), ppm	342	278
Sodium (extractable), ppm	98.0	133
Magnesium (extractable), ppm	361	228
Calcium (extractable), ppm	19518	32158
Electrical Conductivity/Soluble Salts, dS/m	0.407	0.453
pH, SU	7.74	7.88

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.

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: David DeJong / Owner

Signature: John Mulkins for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	21.097	4.042
Phosphorus (extractable), ppm	126	8.79
Potassium (extractable), ppm	949	441
Sodium (extractable), ppm	117	256
Magnesium (extractable), ppm	678	408
Calcium (extractable), ppm	16100	36379
Electrical Conductivity/Soluble Salts, dS/m	0.545	0.549
pH, SU	7.85	8.06

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.

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: David DeJong / Owner

Signature: John Mulle for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 2A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	11.978	4.939
Phosphorus (extractable), ppm	118	10.6
Potassium (extractable), ppm	322	322
Sodium (extractable), ppm	22.2	73.8
Magnesium (extractable), ppm	368	304
Calcium (extraetable), ppm	12451	29082
Electrical Conductivity/Soluble Salts, dS/m	0.449	0.508
pH, SU	7.56	7.78

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.

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: David DeJong / Owner

Signature: John Mallis for

Date: 5/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	16.989	3.136
Phosphorus (extractable), ppm	78.4	9.64
Potassium (extractable), ppm	559	312
Sodium (extractable), ppm	78.0	242
Magnesium (extractable), ppm	465	264
Calcium (extractable), ppm	14584	27793
Electrical Conductivity/Soluble Salts, dS/m	0.582	0.548
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.

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: David DeJong / Owner

Signature: John Mallin for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 3A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	27.942	12.688
Phosphorus (extractable), ppm	82.5	15.9
Potassium (extractable), ppm	370	333
Sodium (extractable), ppm	39.9	93.5
Magnesium (extractable), ppm	376	233
Calcium (extractable), ppm	16860	29485
Electrical Conductivity/Soluble Salts, dS/m	0.594	0.628
pH, SU	7.54	7.78

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	37.451	10.688
Phosphorus (extractable), ppm	133	23.7
Potassium (extractable), ppm	431	361
Sodium (extractable), ppm	32.6	50.2
Magnesium (extractable), ppm	423	274
Calcium (extractable), ppm	16797	26833
Electrical Conductivity/Soluble Salts, dS/m	0.697	0.736
pH, SU	7.43	7.52

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 5
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	14.353	1.732
Phosphorus (extractable), ppm	125	13.0
Potassium (extractable), ppm	404	296
Sodium (extractable), ppm	58.0	87.4
Magnesium (extractable), ppm	432	248
Calcium (extractable), ppm	14716	40168
Electrical Conductivity/Soluble Salts, dS/m	0.811	0.848
pH, SU	7.33	7.64

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.

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: David DeJong / Owner

Signature: John Mallie for →

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 6
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	22.252	2.912
Phosphorus (extractable), ppm	166	13.4
Potassium (extractable), ppm	384	276
Sodium (extractable), ppm	61.2	145
Magnesium (extractable), ppm	438	258
Calcium (extractable), ppm	16828	37976
Electrical Conductivity/Soluble Salts, dS/m	1.12	0.75
pH, SU	7.13	7.78

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 (mmbols/cm); SU = standard units.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 7
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	17.364	3.855
Phosphorus (extractable), ppm	194	15.3
Potassium (extractable), ppm	326	280
Sodium (extractable), ppm	54.7	203
Magnesium (extractable), ppm	468	285
Calcium (extractable), ppm	16124	38766
Electrical Conductivity/Soluble Salts, dS/m	0.679	0.869
pH, SU	7.23	7.69

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 8
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	19.758	3.794
Phosphorus (extractable), ppm	113	13.5
Potassium (extractable), ppm	327	247
Sodium (extractable), ppm	34.8	60.8
Magnesium (extractable), ppm	389	221
Calcium (extractable), ppm	13908	33904
Electrical Conductivity/Soluble Salts, dS/m	0.455	0.409
pH, SU	7.55	7.8

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 9
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	15.687	1.527
Phosphorus (extractable), ppm	102	6.73
Potassium (extractable), ppm	289	260
Sodium (extractable), ppm	14.9	57.5
Magnesium (extractable), ppm	315	212
Calcium (extractable), ppm	14579	33720
Electrical Conductivity/Soluble Salts, dS/m	0.377	0.343
pH, SU	7.48	7.79

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 10
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	30.2	16.28
Phosphorus (extractable), ppm	149	12.1
Potassium (extractable), ppm	398	222
Sodium (extractable), ppm	31.1	37.2
Magnesium (extractable), ppm	348	243
Calcium (extractable), ppm	16231	40367
Electrical Conductivity/Soluble Salts, dS/m	0.469	0.395
pH, SU	7.55	7.79

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.

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: David DeJong / Owner

Signature:

Date: 3/7/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 11
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	12.123	0.842
Phosphorus (extractable), ppm	40.0	3.90
Potassium (extractable), ppm	325	297
Sodium (extractable), ppm	68.8	159
Magnesium (extractable), ppm	372	220
Calcium (extractable), ppm	23514	36776
Electrical Conductivity/Soluble Salts, dS/m	0.482	0.667
pH, SU	7.68	7.84

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 13
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	13.687	3.014
Phosphorus (extractable), ppm	123	9.35
Potassium (extractable), ppm	327	288
Sodium (extractable), ppm	41.2	71.1
Magnesium (extractable), ppm	382	261
Calcium (extractable), ppm	19399	35100
Electrical Conductivity/Soluble Salts, dS/m	0.464	0.374
pH, SU	7.69	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.

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: David DeJong / Owner

Signature: For

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 14
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	18.538	4.811
Phosphorus (extractable), ppm	114	14.9
Potassium (extractable), ppm	286	268
Sodium (extractable), ppm	43.3	73.0
Magnesium (extractable), ppm	388	223
Calcium (extractable), ppm	16808	29438
Electrical Conductivity/Soluble Salts, dS/m	0.43	0.441
pH, SU	7.65	7.92

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 15
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	16.354	4.034
Phosphorus (extractable), ppm	70.6	5.16
Potassium (extractable), ppm	340	360
Sodium (extractable), ppm	57.4	78.9
Magnesium (extractable), ppm	364	224
Calcium (extractable), ppm	15899	27076
Electrical Conductivity/Soluble Salts, dS/m	0.343	0.486
pH, SU	7.68	7.85

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 16
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	28.268	28.268
Phosphorus (extractable), ppm	91.0	7.82
Potassium (extractable), ppm	361	226
Sodium (extractable), ppm	89.5	96.1
Magnesium (extractable), ppm	406	204
Calcium (extractable), ppm	16066	34351
Electrical Conductivity/Soluble Salts, dS/m	0.599	0.485
pH, SU	7.68	7.87

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 (mmbols/cm); SU = standard units.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 17
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	23.653	21.279
Phosphorus (extractable), ppm	116	4.63
Potassium (extractable), ppm	411	198
Sodium (extractable), ppm	105	111
Magnesium (extractable), ppm	451	202
Calcium (extractable), ppm	16927	36271
Electrical Conductivity/Soluble Salts, dS/m	0.591	0.559
pH, SU	7.9	7.78

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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 mooitoring 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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 18
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	30.846	30.09
Phosphorus (extractable), ppm	111	9.69
Potassium (extractable), ppm	483	258
Sodium (extractable), ppm	50.6	66.3
Magnesium (extractable), ppm	386	207
Calcium (extractable), ppm	15031	31133
Electrical Conductivity/Soluble Salts, dS/m	0.55	0.59
pH, SU	7.69	7.83

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 20
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, Hico, TX 76457

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

Soil Sample Paramcter	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 (NO_3-N), ppm	47.918	12.095
Phosphorus (extractable), ppm	118	12.7
Potassium (extractable), ppm	451	273
Sodium (extractable), ppm	84.7	227
Magnesium (extractable), ppm	416	306
Calcium (extractable), ppm	18265	34005
Electrical Conductivity/Soluble Salts, dS/m	0.621	1.57
pH, SU	7.73	7.75

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 21
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	33.211	12.528
Phosphorus (extractable), ppm	31.4	5.95
Potassium (extractable), ppm	243	177
Sodium (extractable), ppm	30.3	39.1
Magnesium (extractable), ppm	251	220
Calcium (extractable), ppm	24451	44769
Electrical Conductivity/Soluble Salts, dS/m	0.307	0.312
pH, SU	7.91	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.

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: David DeJong / Owner

Signature: Aor

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 23
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	27.029	19.769
Phosphorus (extractable), ppm	171	15.2
Potassium (extractable), ppm	382	278
Sodium (extractable), ppm	63.4	198
Magnesium (extractable), ppm	468	354
Calcium (extractable), ppm	18881	33468
Electrical Conductivity/Soluble Salts, dS/m	0.569	0.64
pH, SU	7.79	8

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55831

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254) 552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond	Analyses Requested	REMARKS
14506	-01	11-21-24	9:47							SLL RFA	LMU1 0-6
14507	-02	"	9:47								LMU1 6-24
14508	-03	"	9:30								LMU1A 0-6
14509	-04	"	9:30								LMU 1A 6-24
14510	-05	11-14-24	13 40								LMU 2 0-6
14511	-06	11-14-24	13:40								LMU 2 6-24
14512	-07	11-14-24	13 20								LMU 2A 0-6
14513	-08	11-14-24	13:20								LMU 2A 6-24
14514	-09	11-13-24	10 30								LMU 3 0-6
14515	-10	11-13-24	10 30								LMU 3 6-24

Relinquished by:	Date	Time	Received by:	For Laboratory Use:
	12/16 PM		12-17-24	
Relinquished by:	Date	Time	Received by:	Received on ice: Y N deg. C
Relinquished by:	Date	Time	Received by:	Preservatives: Y N
Relinquished by:	Date	Time	Received by:	COC Seal: Y N
Shipper name: Fed Ex	Shipper Number: 7108 0480 2757			Seals Intact: Y N

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055831a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055831

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.
14506	55831-01	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14507	55831-02	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14508	55831-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14509	55831-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14510	55831-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14511	55831-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14512	55831-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14513	55831-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14514	55831-09	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14515	55831-10	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl Extractable with Cd-Reduction Analyses NO3-N EXTRACTION - SWFTL0014RS.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: 055831a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055831

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14506	55831-01	239	ppm	2168	ppm	15878	ppm	926	ppm	147	ppm	324	ppm
14507	55831-02	25.6	ppm	921	ppm	31431	ppm	531	ppm	233	ppm	431	ppm
14508	55831-03	40.5	ppm	342	ppm	19518	ppm	361	ppm	145	ppm	98.0	ppm
14509	55831-04	7.78	ppm	278	ppm	32158	ppm	228	ppm	210	ppm	133	ppm
14510	55831-05	126	ppm	949	ppm	16100	ppm	674	ppm	131	ppm	117	ppm
14511	55831-06	8.79	ppm	441	ppm	36379	ppm	408	ppm	229	ppm	256	ppm
14512	55831-07	118	ppm	322	ppm	12451	ppm	368	ppm	101	ppm	22.2	ppm
14513	55831-08	10.6	ppm	322	ppm	29082	ppm	304	ppm	184	ppm	73.8	ppm
14514	55831-09	78.4	ppm	559	ppm	14584	ppm	465	ppm	111	ppm	78.0	ppm
14515	55831-10	9.64	ppm	312	ppm	27793	ppm	264	ppm	187	ppm	242	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14506	55831-01	1/26/2025	FMR	1/27/2025	JLP
14507	55831-02	1/26/2025	FMR	1/27/2025	JLP
14508	55831-03	1/26/2025	FMR	1/27/2025	JLP
14509	55831-04	1/26/2025	FMR	1/27/2025	JLP
14510	55831-05	1/26/2025	FMR	1/27/2025	JLP
14511	55831-06	1/26/2025	FMR	1/27/2025	JLP
14512	55831-07	1/26/2025	FMR	1/27/2025	JLP
14513	55831-08	1/26/2025	FMR	1/27/2025	JLP
14514	55831-09	1/26/2025	FMR	1/27/2025	JLP
14515	55831-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055831a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055831

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14506	55831-01	8.06	NA	0.837	dS/M	61.626	ppm
14507	55831-02	8.12	NA	0.708	dS/M	34.535	ppm
14508	55831-03	7.74	NA	0.407	dS/M	21.561	ppm
14509	55831-04	7.88	NA	0.453	dS/M	8.912	ppm
14510	55831-05	7.85	NA	0.545	dS/M	21.097	ppm
14511	55831-06	8.06	NA	0.549	dS/M	4.042	ppm
14512	55831-07	7.56	NA	0.449	dS/M	11.978	ppm
14513	55831-08	7.78	NA	0.508	dS/M	4.939	ppm
14514	55831-09	7.66	NA	0.582	dS/M	18.989	ppm
14515	55831-10	7.91	NA	0.548	dS/M	3.136	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14506	55831-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14507	55831-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14508	55831-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14509	55831-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14510	55831-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14511	55831-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14512	55831-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14513	55831-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14514	55831-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14515	55831-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055831a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055831

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14519	IC1049	54.3	ppm	326	ppm	2599	ppm	373	ppm	40.2	ppm	49.0	ppm
14520	IC1050	55.7	ppm	339	ppm	2635	ppm	385	ppm	40.4	ppm	50.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1049	1/26/2025	FMR	1/27/2025	JLP
IC1050	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055831a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055831

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14519	IC1049	6.2	na	0.135	dS/M	5.548	ppm	
14520	IC1050	6.1	na	0.128	dS/M	5.026	ppm	
	Mean IC	6.13	na	0.1315	dS/M	5.287	ppm	
14520spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1049	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1050	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55832

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: [redacted]42

Region:	Organization #:	PCA Code:	Program:	Sampler telephone number:
			WQ	(254) 552-1900

E-Mail ID:

Sampler: (signature) Vanessa Gardner

Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond	Analyses Requested	REMARKS
14516	-01	11/3/24	~~0945~~ 1005	5						See RTA	LMU3A 0-6
14517	-02	11/3/24	~~0945~~ 1005								LMU3A 6-24
14518	-03	11/3/24	0945								LMU4 0-6
14521	-04	11/3/24	0945								LMU4 6-24
14522	-05	11/3/24	1055								LMU5 0-6
14523	-06	11/3/24	1055								LMU5 6-24
14524	-07	11/4/24	1120								LMU6 0-6
14525	-08	11/4/24	1120								LMU6 6-24
14526	-09	11/4/24	1155								LMU7 0-6
14527	-10	11/4/24	1155							—	LMU7 6-24

Relinquished by:	Date	Time	Received by:	For Laboratory Use:
	12/16/24		12-17-24	
Relinquished by:	Date	Time	Received by:	Received on ice: Y N deg. C
Relinquished by:	Date	Time	Received by:	Preservatives: Y N
Relinquished by:	Date	Time	Received by:	COC Seal: Y N
Shipper name: Fed Ex	Shipper Number: 7708 0480 2707			Seals Intact: Y N

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055832a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055832

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.
14516	55832-01	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14517	55832-02	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14518	55832-03	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055832a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14516	55832-01	82.5	ppm	370	ppm	16860	ppm	376	ppm	131	ppm	39.9	ppm
14517	55832-02	15.9	ppm	333	ppm	29485	ppm	233	ppm	198	ppm	93.5	ppm
14518	55832-03	133	ppm	431	ppm	16797	ppm	423	ppm	145	ppm	32.6	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14516	55832-01	1/26/2025	FMR	1/27/2025	JLP
14517	55832-02	1/26/2025	FMR	1/27/2025	JLP
14518	55832-03	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID.	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14516	55832-01	7.54	NA	0.594	dS/M	27.942	ppm
14517	55832-02	7.78	NA	0.628	dS/M	12.688	ppm
14518	55832-03	7.43	NA	0.697	dS/M	37.451	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14516	55832-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14517	55832-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14518	55832-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055832a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055832

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14519	IC1049	54.3	ppm	326	ppm	2599	ppm	373	ppm	40.2	ppm	49.0	ppm
14520	IC1050	55.7	ppm	339	ppm	2635	ppm	385	ppm	40.4	ppm	50.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1049	1/26/2025	FMR	1/27/2025	JLP
IC1050	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832a-45700 Print Date: 12-Feb-25

Ouality Control Report TCEQ COC# 055832

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14519	IC1049	6.2	na	0.135	dS/M	5.548	ppm	
14520	IC1050	6.1	na	0.128	dS/M	5.026	ppm	
	Mean IC	6.13	na	0.1315	dS/M	5.287	ppm	
14520spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1049	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1050	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

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

Report ID: 055832b-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055832

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.
14521	55832-04	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14522	55832-05	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14523	55832-06	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14524	55832-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14525	55832-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14526	55832-09	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14527	55832-10	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 theo 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 KCl 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: 055832b-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14521	55832-04	23.7	ppm	361	ppm	26833	ppm	274	ppm	180	ppm	50.2	ppm
14522	55832-05	125	ppm	404	ppm	14716	ppm	432	ppm	141	ppm	58.0	ppm
14523	55832-06	13.0	ppm	296	ppm	40168	ppm	248	ppm	277	ppm	87.4	ppm
14524	55832-07	166	ppm	384	ppm	16828	ppm	438	ppm	181	ppm	61.2	ppm
14525	55832-08	13.4	ppm	276	ppm	37976	ppm	258	ppm	253	ppm	145	ppm
14526	55832-09	194	ppm	326	ppm	16124	ppm	468	ppm	165	ppm	54.7	ppm
14527	55832-10	15.3	ppm	280	ppm	38766	ppm	285	ppm	275	ppm	203	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14521	55832-04	1/26/2025	FMR	1/27/2025	JLP
14522	55832-05	1/26/2025	FMR	1/27/2025	JLP
14523	55832-06	1/26/2025	FMR	1/27/2025	JLP
14524	55832-07	1/26/2025	FMR	1/27/2025	JLP
14525	55832-08	1/26/2025	FMR	1/27/2025	JLP
14526	55832-09	1/26/2025	FMR	1/27/2025	JLP
14527	55832-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832b-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14521	55832-04	7.52	NA	0.736	dS/M	10.688	ppm
14522	55832-05	7.33	NA	0.811	dS/M	14.353	ppm
14523	55832-06	7.64	NA	0.848	dS/M	1.732	ppm
14524	55832-07	7.13	NA	1.12	dS/M	22.252	ppm
14525	55832-08	7.78	NA	0.75	dS/M	2.912	ppm
14526	55832-09	7.23	NA	0.679	dS/M	17.364	ppm
14527	55832-10	7.69	NA	0.869	dS/M	3.855	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14521	55832-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14522	55832-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14523	55832-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14524	55832-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14525	55832-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14526	55832-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14527	55832-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055832b-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055832

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14539	IC1051	51.4	ppm	321	ppm	2604	ppm	368	ppm	37.4	ppm	47.8	ppm
14540	IC1052	54.1	ppm	324	ppm	2647	ppm	376	ppm	38.8	ppm	48.5	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1051	1/26/2025	FMR	1/27/2025	JLP
IC1052	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832b-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055832

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14539	IC1051	6.1	na	0.143	dS/M	5.622	ppm	
14540	IC1052	6.2	na	0.14	dS/M	4.893	ppm	
	Mean IC	6.135	na	0.1415	dS/M	5.2575	ppm	
14540spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1051	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1052	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55833

Location: Horizon Dairy
(Do not fill in the shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254) 552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	Cl2	pH	Cond.	Analyses Requested	REMARKS
14457	-01	11-21-24	11:20							See RFA	LMU 8 0-6
14458	-02		11:20								LMU 8 6-24
14461	-03		11:45								LMU 9 0-6
14462	-04		11:48								LMU 9 6-24
14463	-05		10:10								LMU 10 0-6
14464	-06		10:10								LMU 10 6-24
14465	-07		10:40								LMU 11 0-6
14466	-08		10:40								LMU 11 6-24
14467	-09	11/13/24	1215								LMU 13 0-6
14468	-10	11/13/24	1215								LMU 13 6-24

Relinquished by:	Date	Time	Received by:
Vanessa Gardner	12/4/24	1200	12-17-24
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Shipper name: Fed Ex	Shipper Number: 7708 0468 5167		

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055833a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055833

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.
14457	55833-01	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14458	55833-02	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14457	55833-01	113	ppm	327	ppm	13908	ppm	389	ppm	108	ppm	34.8	ppm
14458	55833-02	13.5	ppm	247	ppm	33904	ppm	221	ppm	221	ppm	60.8	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14457	55833-01	1/26/2025	FMR	1/27/2025	JLP
14458	55833-02	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14457	55833-01	7.55	NA	0.455	dS/M	19.758	ppm
14458	55833-02	7.8	NA	0.409	dS/M	3.794	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14457	55833-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14458	55833-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055833a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055833

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14459	IC1043	54.4	ppm	330	ppm	2626	ppm	376	ppm	39.8	ppm	49.0	ppm
14460	IC1044	53.1	ppm	326	ppm	2744	ppm	376	ppm	39.9	ppm	45.2	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1043	1/26/2025	FMR	1/27/2025	JLP
IC1044	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055833

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14459	IC1043	6.1	na	0.135	dS/M	4.919	ppm	
14460	IC1044	6.1	na	0.145	dS/M	4.912	ppm	
	Mean IC	6.075	na	0.14	dS/M	4.9155	ppm	
14460spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1043	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1044	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

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

Report ID: 055833a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055833

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.
14461	55833-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14462	55833-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14463	55833-05	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14464	55833-06	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14465	55833-07	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14466	55833-08	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14467	55833-09	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14468	55833-10	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14461	55833-03	102	ppm	289	ppm	14579	ppm	315	ppm	108	ppm	14.9	ppm
14462	55833-04	6.73	ppm	260	ppm	33720	ppm	212	ppm	212	ppm	57.5	ppm
14463	55833-05	149	ppm	398	ppm	16231	ppm	348	ppm	128	ppm	31.1	ppm
14464	55833-06	12.1	ppm	222	ppm	40367	ppm	243	ppm	265	ppm	37.2	ppm
14465	55833-07	40.0	ppm	325	ppm	23514	ppm	372	ppm	167	ppm	68.8	ppm
14466	55833-08	3.90	ppm	297	ppm	36776	ppm	220	ppm	270	ppm	159	ppm
14467	55833-09	123	ppm	327	ppm	19399	ppm	382	ppm	150	ppm	41.2	ppm
14468	55833-10	9.35	ppm	288	ppm	35100	ppm	261	ppm	235	ppm	71.1	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14461	55833-03	1/26/2025	FMR	1/27/2025	JLP
14462	55833-04	1/26/2025	FMR	1/27/2025	JLP
14463	55833-05	1/26/2025	FMR	1/27/2025	JLP
14464	55833-06	1/26/2025	FMR	1/27/2025	JLP
14465	55833-07	1/26/2025	FMR	1/27/2025	JLP
14466	55833-08	1/26/2025	FMR	1/27/2025	JLP
14467	55833-09	1/26/2025	FMR	1/27/2025	JLP
14468	55833-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14461	55833-03	7.48	NA	0.377	dS/M	15.687	ppm
14462	55833-04	7.79	NA	0.343	dS/M	1.527	ppm
14463	55833-05	7.55	NA	0.469	dS/M	30.2	ppm
14464	55833-06	7.79	NA	0.395	dS/M	16.28	ppm
14465	55833-07	7.68	NA	0.482	dS/M	12.123	ppm
14466	55833-08	7.84	NA	0.667	dS/M	0.842	ppm
14467	55833-09	7.69	NA	0.484	dS/M	13.687	ppm
14468	55833-10	7.91	NA	0.374	dS/M	3.014	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14461	55833-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14462	55833-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14463	55833-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14464	55833-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14465	55833-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14466	55833-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14467	55833-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14468	55833-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055833a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055833

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
11479	IC1045	51.0	ppm	312	ppm	2308	ppm	331	ppm	38.6	ppm	42.0	ppm
11480	IC1046	49.9	ppm	308	ppm	2149	ppm	325	ppm	37.2	ppm	40.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1045	1/26/2025	FMR	1/27/2025	JLP
IC1046	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055833

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
11479	IC1045	6.1	na	0.155	dS/M	5.361	ppm	
11480	IC1046	6.2	na	0.137	dS/M	5.081	ppm	
	Mean IC	6.15	na	0.146	dS/M	5.221	ppm	
11480spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1045	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1046	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55834

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254) 552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond	Analyses Requested	REMARKS
14469	-01	11/13/24	1135							See RFA	LMU 14 0-6
14470	-02	11/13/24	1135								LMU 14 6-24
14471	-03	11-21-24	12:20								LMU 15 0-6
14472	-04	11-21-24	12:20								LMU 15 6-24
14473	-05	11-14-24	10:34								LMU 16 0-6
14474	-06	11-14-24	10:34								LMU 16 6-24
14475	-07	11-14-24	10:15								LMU 17 0-6
14476	-08	11-14-24	10:18								LMU 17 6-24
14477	-09	11-14-24	10:55								LMU 18 0-6
14478	-10	11-14-24	10:55								LMU 18 6-24

	Date	Time		
Relinquished by: Vanessa Gardner	12/16/24	1200	Received by:	12-17-24
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Shipper name: FedEx	Shipper Number: 7708 0468 5167			

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055834a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055834

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.
14469	55834-01	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14470	55834-02	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14471	55834-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14472	55834-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14473	55834-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14474	55834-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14475	55834-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14476	55834-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14477	55834-09	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14478	55834-10	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055834a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055834

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14469	55834-01	114	ppm	286	ppm	16808	ppm	388	ppm	138	ppm	43.3	ppm
14470	55834-02	14.9	ppm	268	ppm	29438	ppm	223	ppm	210	ppm	73.0	ppm
14471	55834-03	70.6	ppm	340	ppm	15899	ppm	364	ppm	132	ppm	57.4	ppm
14472	55834-04	5.16	ppm	360	ppm	27076	ppm	224	ppm	206	ppm	78.9	ppm
14473	55834-05	91.0	ppm	361	ppm	16066	ppm	406	ppm	137	ppm	89.5	ppm
14474	55834-06	7.82	ppm	226	ppm	34351	ppm	204	ppm	254	ppm	96.1	ppm
14475	55834-07	116	ppm	411	ppm	16927	ppm	451	ppm	151	ppm	105	ppm
14476	55834-08	4.63	ppm	198	ppm	36271	ppm	202	ppm	277	ppm	111	ppm
14477	55834-09	111	ppm	483	ppm	15031	ppm	386	ppm	132	ppm	50.6	ppm
14478	55834-10	9.69	ppm	258	ppm	31133	ppm	207	ppm	236	ppm	66.3	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14469	55834-01	1/26/2025	FMR	1/27/2025	JLP
14470	55834-02	1/26/2025	FMR	1/27/2025	JLP
14471	55834-03	1/26/2025	FMR	1/27/2025	JLP
14472	55834-04	1/26/2025	FMR	1/27/2025	JLP
14473	55834-05	1/26/2025	FMR	1/27/2025	JLP
14474	55834-06	1/26/2025	FMR	1/27/2025	JLP
14475	55834-07	1/26/2025	FMR	1/27/2025	JLP
14476	55834-08	1/26/2025	FMR	1/27/2025	JLP
14477	55834-09	1/26/2025	FMR	1/27/2025	JLP
14478	55834-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055834a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055834

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14469	55834-01	7.65	NA	0.43	dS/M	18.538	ppm
14470	55834-02	7.92	NA	0.441	dS/M	4.811	ppm
14471	55834-03	7.68	NA	0.343	dS/M	16.354	ppm
14472	55834-04	7.85	NA	0.486	dS/M	4.034	ppm
14473	55834-05	7.68	NA	0.599	dS/M	28.268	ppm
14474	55834-06	7.87	NA	0.485	dS/M	12.808	ppm
14475	55834-07	7.9	NA	0.591	dS/M	23.653	ppm
14476	55834-08	7.78	NA	0.559	dS/M	21.279	ppm
14477	55834-09	7.69	NA	0.55	dS/M	30.846	ppm
14478	55834-10	7.83	NA	0.59	dS/M	30.09	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14469	55834-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14470	55834-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14471	55834-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14472	55834-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14473	55834-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14474	55834-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14475	55834-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14476	55834-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14477	55834-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14478	55834-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055834a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055834

Laboratory ID		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
11479	IC1045	51.0	ppm	312	ppm	2308	ppm	331	ppm	38.6	ppm	42.0	ppm
11480	IC1046	49.9	ppm	308	ppm	2149	ppm	325	ppm	37.2	ppm	40.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1045	1/26/2025	FMR	1/27/2025	JLP
IC1046	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055834a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055834

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
11479	IC1045	6.1	na	0.155	dS/M	5.361	ppm	
11480	IC1046	6.2	na	0.137	dS/M	5.081	ppm	
	Mean IC	6.15	na	0.146	dS/M	5.221	ppm	
11480spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1045	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1046	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55835

Location: Horizon Daily
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254)652-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) ~~2.~~ Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14528	-01	11-14-24	11:25							See EFA	Lmu 20 0-6
14529	-02		11:25								Lmu 20 6-24
14530	-03		12:20								Lmu 21 0-6
14531	-04		12:20								Lmu 21 6-24
14532	-05		12:40								Lmu 23 0-6
14533	-06		12:40								Lmu 23 6-24
	-07										
	-08										
	-09										
	-10										

Relinquished by:	Date: 12/16/24	Time:	Received by:	12-17-24
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	
Shipper name: Fed Ex	Shipper Number: 7708 0480 2707			

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055835a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address not provided

Standard Sample Report TCEQ COC# 055835

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.
14528	55835-01	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14529	55835-02	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14530	55835-03	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14531	55835-04	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14532	55835-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14533	55835-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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, KCl, 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: 055835a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055835

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14528	55835-01	118	ppm	451	ppm	18265	ppm	416	ppm	135	ppm	84.7	ppm
14529	55835-02	12.7	ppm	273	ppm	34005	ppm	306	ppm	441	ppm	227	ppm
14530	55835-03	31.4	ppm	243	ppm	24451	ppm	251	ppm	162	ppm	30.3	ppm
14531	55835-04	5.95	ppm	177	ppm	44769	ppm	220	ppm	259	ppm	39.1	ppm
14532	55835-05	171	ppm	382	ppm	18881	ppm	468	ppm	137	ppm	63.4	ppm
14533	55835-06	15.2	ppm	278	ppm	33468	ppm	354	ppm	232	ppm	198	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14528	55835-01	1/26/2025	FMR	1/27/2025	JLP
14529	55835-02	1/26/2025	FMR	1/27/2025	JLP
14530	55835-03	1/26/2025	FMR	1/27/2025	JLP
14531	55835-04	1/26/2025	FMR	1/27/2025	JLP
14532	55835-05	1/26/2025	FMR	1/27/2025	JLP
14533	55835-06	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055835a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055835

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14528	55835-01	7.73	NA	0.621	dS/M	47.918	ppm
14529	55835-02	7.75	NA	1.57	dS/M	12.095	ppm
14530	55835-03	7.91	NA	0.307	dS/M	33.211	ppm
14531	55835-04	8.01	NA	0.312	dS/M	12.528	ppm
14532	55835-05	7.79	NA	0.569	dS/M	27.029	ppm
14533	55835-06	8	NA	0.64	dS/M	19.769	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14528	55835-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14529	55835-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14530	55835-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14531	55835-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14532	55835-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14533	55835-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055835a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055835

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14539	IC1051	51.4	ppm	321	ppm	2604	ppm	368	ppm	37.4	ppm	47.8	ppm
14540	IC1052	54.1	ppm	324	ppm	2647	ppm	376	ppm	38.8	ppm	48.5	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1051	1/26/2025	FMR	1/27/2025	JLP
IC1052	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055835a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055835

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14539	IC1051	6.1	na	0.143	dS/M	5.622	ppm	
14540	IC1052	6.2	na	0.14	dS/M	4.893	ppm	
	Mean IC	6.135	na	0.1415	dS/M	5.2575	ppm	
14540spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1051	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1052	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

6921 S. Bell • Amarillo, TX 79109
www.servitech.com

Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No.: **4298**

LABORATORY ANALYSIS REPORT

Report Date: 06/30/2025 05:03 pm

Send To: 6224

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

Amy Meier
Data Review Coordinator

Results For: HORIZON DAIRY
Sample ID: SLURRY
Location HAMILTON COUNTY

Received: 06/19/2025
Sampled: 06/18/2025
Invoice No: 428535
P.O. #: RICHARD GEORGE

		Analysis (dry basis)	Analysis (as rec'd)	Total content lbs per Acre-In	Total content lbs per 1000 gal	Estimated available first year* lbs per Acre-In	Estimated available first year* lbs per 1000 gal
NUTRIENTS							
Nitrogen							
Total Nitrogen	%	1.27	0.282	2879.7	25.4	341.4	13.5
Organic Nitrogen	%	0.928	0.206	2103.6	18.5	169.5	6.7
Ammonium Nitrogen	%	0.3415	0.07582	774.3	6.8	171.9	6.8
Nitrate+Nitrite Nitrogen	%	<0.0045	<0.0010	0	<0.1	<0.1	<0.1
Major and Secondary Nutrients							
Phosphorus	%	0.252	0.056				
Phosphorus as P2O5	%	0.577	0.128	1307.1	11.5	261.2	10.4
Potassium	%	0.833	0.185				
Potassium as K2O	%	1.00	0.222	2267.0	20.0	503.3	20.0
OTHER PROPERTIES							
Moisture	%		77.8				
Total Solids	%		22.2	226700	1998		
Organic Matter	%	34.7	7.7	78630	693		
Ash	%		14.5		1305		
C:N Ratio	ratio		15.8				
Density	lbs/gal	42.3	9.4				

* Assumes 36% of organic nitrogen available during first crop year after application. Assumes 100% of ammonium and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.

ENVIRO-AG ENGINEERING, INC.
EAE
AMARILLO - STEPHENVILLE - ARTESIA

Enviro-Ag Engineering, Inc.
9855 FM 847, Dublin, TX 76446
Tel. 254-965-3500 Fax 254-965-8000

MANURE CHAIN OF CUSTODY RECORD

Producer/Facility: Horizon Dairy

County: Hamilton

Date Sampled: 6/18/2025

Date Shipped: 6/19/2025

Project Manager: Richard George

Sample Type	Sample ID	Number of Containers	Test Package	Proper Preservation	Matrix
Slurry 4298	Slurry	1	EAE TX CO KS SLURRY	Y	SL

Relinquished By: Ref. Internal COC — Relinquished By: Lisa Postmus — Relinquished By:

Company: EAE — Company: EAE — Company: ServiTech Lab

Date/Time: 6/19 1200

Received By:

6921 S. Bell • Amarillo, TX 79109
www.servitech.com

Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No: 4260

LABORATORY ANALYSIS REPORT

Report Date: 06/30/2025 04:38 pm

Send To: 6224

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

Amy Meier
Data Review Coordinator

Client Name:	HORIZON DAIRY	**Received:**	06/19/2025
Sample ID:	RCS 2A	**Sampled:**	06/18/2025
Location	HAMILTON COUNTY	**Invoice No:**	428535
		P.O. #:	RICHARD GEORGE

	Analysis results		lbs/acre-in	meq/L
NUTRIENTS				
Nitrogen				
Total Nitrogen	165	ppm	37	11.8
Organic Nitrogen	49	ppm	11	3.5
Ammonium Nitrogen	116.1	ppm	26	8.3
Nitrate+Nitrite Nitrogen	<0.20	ppm	0	0
Major and Secondary Nutrients				
Phosphorus	30	ppm		
Phosphorus as P2O5	70	ppm	16	
Potassium	350	ppm		9.0
Potassium as K2O	420	ppm	95	
OTHER PROPERTIES				
Moisture	99.8	%		
Total Solids	0.2	%	453	
Organic Matter	0.1	%	227	
Ash	<0.10	%		
C:N Ratio	3.5	ratio		

Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.

ENVIRO-AG ENGINEERING, INC.
EAE
AMARILLO · STEPHENVILLE · ARTESIA

Enviro-Ag Engineering, Inc.
9855 FM 847, Dublin, TX 76446
Tel. 254-965-3500 Fax 254-965-8000

WASTEWATER CHAIN OF CUSTODY RECORD

Producer/Facility: Horizon Dairy

County: Hamilton

Date Sampled: 6/18/2025

Date Shipped: 6/19/2025

Project Manager: Richard George

Sample Type	Sample ID	Number of Containers	Test Package	Proper Preservation	Matrix
Wastewater 4260	RCS #2A	2	EAE TX CO KS LAGOON	Y	OT
Wastewater 4261	RCS #2B	2	EAE TX CO KS LAGOON	Y	OT
Wastewater 4262	RCS #3	2	EAE TX CO KS LAGOON	Y	OT

Relinquished By: Ref. Internal COC — Company: EAE

Relinquished By: Lisa Postmus — Company: EAE — Date/Time: 6/19 1200

Relinquished By: _____ — Company: ServiTech Lab

Received By: [signature]

Executive Summary
Horizon Dairy (Phase II)
WQ0004842000

LMU Summary:

LMUs 1 and 17 are planted in corn and small grains. LMU's 1A, 2A, 2B, 2C, 3A, 3B, 3C, 5, 6, 7, 8, 9, 11, 13, 14 and 15 are established in coastal Bermudagrass overseeded with small grains for perennial coverage. LMU's 10, 16, 18, 20, 21, 23, Mayhugh 1, Mayhugh 2, Watson 1, and Watson 2 are planted in sorghum and small grains. LMU 4 is available for grazing.

Nutrient Summary:

LMU#	Max N Lb/ac Application Rates	Max P205 Lb/ac Application Rates	Planned N Lb/ac Application Rates	Planned P Lb/ac Application Rates
1	254	132	107	56
1A	400	227	200	114
2A	400	227	200	114
2B	401	209	168	87
2C	401	209	164	85
3A	400	227	200	114
3B	401	209	164	85
3C	401	209	164	85
4	400	227	200	114
5	600	341	300	170
6	600	341	300	170
7	600	341	300	170
8	600	341	300	170
9	600	341	300	170
10	400	227	200	114
11	400	227	200	114
13	400	227	200	114
14	400	227	200	114
15	400	227	200	114
16	401	209	168	87
17	440	229	185	96
18	400	227	200	114
20	400	227	200	114
21	400	227	200	114
23	401	209	168	87
Mayhugh 1	296	168	148	84
Mayhugh 2	296	168	148	84
Watson 1	296	168	148	84
Watson 2	296	168	148	84

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 remaining 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.

LMU 2 has been split into LMU's 2B and 2C and were originally sampled by TCEQ as one field. For this plan, LMU's 2B and 2C will utilize the Soil Analysis from LMU 2. LMU 3 has been split into LMU's 3B and 3C and were originally sampled by TCEQ as one filed. For this plan, LMU's 3B and 3C will utilize Soil Analysis from LMU 3. Additionally, at the time of this plan's creation, LMU's Mayhugh 1, Mayhugh 2, Watson 1 and Watson 2 have not been sampled by TCEQ. This plan will utilize the "worst case scenario" for those fields and set the Phosphorous levels to "200ppm". This plan will be updated once those fields have been sampled.

PI Index by Field

Printed on: 8/22/25 8:47 AM

This plan is based on: Nutrient Management Plan V 5.0

Permit #: WQ0004842000

Client Name: Horizon Dairy

Planner: Stephen Colby

Date: 8/22/2025

Location: Hamilton

Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P_2O_5 Appl Rate	Organic P_2O_5 Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
1	Silage - Corn16-20T;SG GreenChop-6-7T	1.3%	89	8	0	6	0	0.5	0	2	1.5	18	Medium	11/21/24
1A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.0%	78	8	0	6	0	4	1.25	1	1.5	21.75	Medium	11/21/24
2A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.0%	78	8	0	6	0	4	0	1	0	19	Medium	11/14/24
2B	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.5%	78	8	0	6	0	0.5	0	1	0	15.5	Medium	11/14/24
2C	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.5%	78	8	0	6	0	0.5	0	1	0	15.5	Medium	11/14/24
3A	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.5%	78	8	0	6	0	4	2.5	2	0	22.5	Medium	11/13/24
3B	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.1%	78	8	0	6	0	0.5	2.5	2	0	19	Medium	11/13/24
3C	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.1%	78	8	0	6	0	0.5	2.5	2	0	19	Medium	11/13/24
4	Coastal graze 1 AU/1 ac, SG mod graze	1.9%	80	8	0	6	0	4	0	1	0	19	Medium	11/13/24
5	Coastal GC (30%DM) 21-23T; SG GC 6-7T	2.1%	78	8	0	6	0	4	5	2	0	25	High	11/13/24
6	Coastal GC (30%DM) 21-23T; SG GC 6-7T	2.7%	71	8	0	6	0	4	1.25	2	0	21.25	Medium	11/14/24
7	Coastal GC (30%DM) 21-23T; SG GC 6-7T	3.1%	71	8	0	6	0	4	1.25	2	0	21.25	Medium	11/14/24
8	Coastal GC (30%DM) 21-23T; SG GC 6-7T	1.0%	78	8	0	6	0	4	0	1	0	19	Medium	11/14/24
9	Coastal GC (30%DM) 21-23T; SG GC 6-7T	4.7%	78	8	0	6	0	4	0	4	0	22	Medium	11/21/24
10	Silage - Sorg-11-15 T;SG GreenChop-6-7T	4.5%	89	8	0	6	0	4	0	4	0	22	Medium	11/21/24
11	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.2%	78	8	0	6	0	4	0	2	0	20	Medium	11/21/24
13	Coastal GC (30%DM) 9-11T; SG GC 6-7T	5.7%	78	8	0	6	0	4	2.5	4	0	24.5	High	11/13/24
14	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.5%	78	8	0	6	0	4	5	2	0	25	High	11/13/24
15	Coastal GC (30%DM) 9-11T; SG GC 6-7T	5.1%	78	8	0	6	0	4	5	4	0	27	High	11/21/24
16	Silage - Sorg-11-15 T;SG GreenChop-6-7T	4.7%	89	8	0	6	0	4	1.25	4	1.5	24.75	High	11/14/24
17	Silage - Corn16-20T;SG GreenChop-6-7T	2.5%	89	8	0	6	0	0.5	1.25	4	1.5	21.25	Medium	11/14/24
18	Silage - Sorg-11-15 T;SG GreenChop-6-7T	3.7%	89	8	0	6	0	4	2.5	4	1.5	26	High	11/14/24
20	Silage - Sorg-11-15 T;SG GreenChop-6-7T	6.9%	89	8	0	6	0	4	0	4	1.5	23.5	High	11/14/24
21	Silage - Sorg-11-15 T;SG GreenChop-6-7T	5.7%	89	8	0	6	0	4	0	4	1.5	23.5	High	11/14/24
23	Silage - Sorg-11-15 T;SG GreenChop-6-7T	2.8%	89	8	0	6	0	0.5	0	4	1.5	20	Medium	11/14/24
Mayhugh 1	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD
Mayhugh 2	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD

PI Index by Field

Client Name: Horizon Dairy
Planner: Stephen Colby

Date: 8/22/2025
Location: Hamilton
Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P_2O_5 Appl Rate	Organic P_2O_5 Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
Watson 1	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD
Watson 2	Silage - Sorg-11-15 T;SG GreenChop-6-7T	1.6%	89	8	0	6	0	4	0	2	1.5	21.5	Medium	TBD

Waste Utilization and Nutrient Management Plan

Horizon Dairy
4483 E FM 219
Hico, TX 76457
(Phase II Digester)

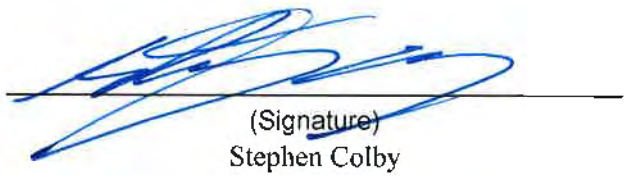
TCEQ Permit Number:
WQ0004842000

Owner
4P Pastures, LLC
4483 East FM 219
Hico, TX 76457
(254)918-3156

Operator
Horizon Dairy, LLC
4483 FM 219
Hico, TX 76457

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

Prepared By:



(Signature)
Stephen Colby
Certified Nutrient Management Specialist
Certificate Number = TX2025004
Expiration Date = December 31, 2025
Enviro-Ag Engineering
9855 FM 847
Dublin, TX 76446
(254)965-3500

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

8/22/25 3:42 PM

Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY: Permit #: WQ0004842000

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

See Attached Executive Summary

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Hamilton** 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 **2025** and will remain in effect until revision based on new soil or manure analysis or crop change (yield or crop) result in a new P-Index rating or plan classification (NMP-NUP). The waste has been stored in a **Dairy Lagoon** . Approximately **10000** head will be confined with the average weight of **1325** pounds. The animals will be confined **24** hours per day for **365** days per year.

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 he 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 hy 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.

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 bayland 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.

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

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

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

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

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

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

EFFLUENT APPLICATION: (cont) Permit #: WQ0004842000

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.

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.

EFFLUENT AND SOLIDS STORAGE & TESTING: Permit #: WQ0004842000

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.

Waste Utilization and Nutrient Management Plan

RECORD KEEPING: Permit #: WQ0004842000

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

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

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

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

Date	Amount	Hauler or Recipient

Excess Remaining ______ May be continued on additional sheets

OPERATION AND MAINTENANCE: Permit #: WQ0004842000

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: **Stephen Colby** Date: **8/22/2025**

Plan Approved by: Date: 8/22/25

Producer Signature: Discussed with Producer Date: 8/22/25

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.

Waste Utilization and Nutrient Management Plan

Table 1 - Estimated Effluent and Solids Quantities Produced Permit #: WQ0004842000

Avg. Number of Animals	Type of Waste
10,000	Dairy Lagoon
	Other Solids

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

Estimated Acre Inches of Effluent to be Available Annually* 3,831

Estimated Tons Solids to be Land Applied Annually (on or off site)* 145,918.9

*From engineering design.

Estimated Nutrient Availabilty Effluent

	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch	
N	114,604	1.10	29.9	**
P2O5	59,646	0.57	15.6	
K2O	364,648	3.51	95.2	

** Effluent Values Based on Analysis dated: June 18, 2025

Estimated Nutrient Availabilty Solids

	pounds / yr	pounds / ton	
N	658,246	4.5	**
P2O5	373,879	2.6	
K2O	647,621	4.4	

** Solids Values Based on Analysis dated: June 18, 2025

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

Waste Utilization and Nutrient Management Plan

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

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

P – Index Rating	Maximum TMDL Annual P Application Rate [5/]	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	Annual Nitrogen (N) Requirement	Annual Nitrogen (N) Requirement	2.0 Times Annual N Requirement
Medium	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual Crop P Requirement [3/]	2.0 Times Annual N Requirement
High [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.

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.

Waste Utilization and Nutrient Management Plan

Table 3 - Crop Removal Rates (For Information Only) Permit #: WQ0004842000

LMU or Field No.	Acres	Crop and P Index Level	TCEQ Plan Type	Actual Crop Analysis or Default	Total Est. N Removal lbs/Ac/Yr	Total Est. P_2O_5 Removal lbs/Ac/Yr	Total Est. K_2O Removal lbs/Ac/Yr
1	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	NUP	Default	341	132	214
1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	NMP	Default	300	90	267
5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	NMP	Default	503	155	320
6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	NMP	Default	503	155	320
10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NMP	Default	337	112	171
11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
15	47.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	NMP	Default	341	132	214
18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	NMP	Default	337	112	171
23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NMP	Default	337	112	171
Mayhugh 1	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Mayhugh 2	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171
Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	NUP	Default	337	112	171

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

Waste Utilization and Nutrient Management Plan

Table 4 - Maximum Solids Application per Field

Permit #: WQ0004842000

Est. Solids Produced Annually (wet tons)	LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P2O5 lbs/acre	Annual/Biennial	Maximum Solids Allowable Tons/Acre	Maximum Allowable Application Per field (Tons)
145,919	1							
	1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	227	A	88.7	3192
	2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	227	A	88.7	5320
	2B							
	2C							
	3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	227	A	88.7	9222
	3B							
	3C							
	4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	227	A	88.7	4966
	5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	341	A	133.0	4921
	6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	341	A	133.0	8645
	7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	341	A	133.0	8645
	8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	341	A	133.0	11173
	9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	341	A	133.0	2660
	10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	227	A	88.7	10641
	11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	227	A	88.7	1951
	13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	227	A	88.7	7980
	14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	227	A	88.7	6828
	15	47.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	227	A	88.7	4168
	16							
	17							
	18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	227	A	88.7	10020
Total Solids Application Acres	20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	227	A	88.7	10641
	21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	227	A	88.7	2128
	23							
1595	Mayhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	4598
	Mayhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	6044
	Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	8211
Application Allowable on-site (tons)	Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	168	A	65.7	11036
142989.6								
Not Adequate								
Solids to be used off site (tons)								
2,929.3								

End of Table 4

Waste Utilization and Nutrient Management Plan

Table 5 - Nutrients Applied/Needs at Maximum Solids Rates Permit #: WQ0004842000

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
1A	400	227	394	0	0	0	0
2A	400	227	394	0	0	0	0
2B							
2C							
3A	400	227	394	0	0	0	0
3B							
3C							
4	400	227	394	0	0	0	0
5	600	341	590	0	0	0	0
6	600	341	590	0	0	0	0
7	600	341	590	0	0	0	0
8	600	341	590	0	0	0	0
9	600	341	590	0	0	0	0
10	400	227	394	0	0	0	0
11	400	227	394	0	0	0	0
13	400	227	394	0	0	0	0
14	400	227	394	0	0	0	0
15	400	227	394	0	0	0	0
16							
17							
18	400	227	394	0	0	0	0
20	400	227	394	0	0	0	0
21	400	227	394	0	0	0	0
23							
Mayhugh 1	296	168	292	0	0	0	0
Mayhugh 2	296	168	292	0	0	0	0
Watson 1	296	168	292	0	0	0	0
Watson 2	296	168	292	0	0	0	0

Waste Utilization and Nutrient Management Plan

Table 6 - Planned Solids Application Rates Permit #: WQ0004842000

LMU or Field No.	Double crop	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Max Rate tons/ac	% of Maximum to apply	Planned Solids tons/ac	Planned Solids per field (tons)
1									
1A		36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	A	88.7	50	44.3	1596.1
2A		60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	A	88.7	50	44.3	2660.1
2B									
2C									
3A		104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	A	88.7	50	44.3	4610.9
3B									
3C									
4		56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	A	88.7	50	44.3	2482.8
5		37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	A	133.0	50	66.5	2460.6
6		65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	A	133.0	50	66.5	4322.7
7		65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	A	133.0	50	66.5	4322.7
8		84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	A	133.0	50	66.5	5586.3
9		20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	A	133.0	50	66.5	1330.1
10		120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	A	88.7	50	44.3	5320.3
11		22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	A	88.7	50	44.3	975.4
13		90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	A	88.7	50	44.3	3990.2
14		77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	A	88.7	50	44.3	3413.8
15		47.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	A	88.7	50	44.3	2083.8
16									
17									
18		113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	A	88.7	50	44.3	5009.9
20		120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	A	88.7	50	44.3	5320.3
21		24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	A	88.7	50	44.3	1064.1
23									
Mayhugh 1		70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	2299.2
Mayhugh 2		92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	3021.8
Watson 1		125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	4105.7
Watson 2		168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	A	65.7	50	32.8	5518.0
Acres		1595.0				Will the planned per acre application rates use all of the Solids?			71494.8
145919			Tons of wet solids produced Annually						NO
0			Tons to be used off-site at Max. rates			Tons to be used off-site at planned rates			74424

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at Planned Solids Rates Permit #: WQ0004842000

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1							
1A	200	114	197	155	20	0	0
2A	200	114	197	175	0	0	0
2B							
2C							
3A	200	114	197	145	0	0	0
3B							
3C							
4	200	114	197	125	0	0	0
5	300	170	295	270	0	0	0
6	300	170	295	255	0	0	0
7	300	170	295	265	0	0	0
8	300	170	295	260	0	0	0
9	300	170	295	270	0	0	0
10	200	114	197	140	0	0	0
11	200	114	197	175	20	0	0
13	200	114	197	175	0	0	0
14	200	114	197	165	0	0	0
15	200	114	197	165	0	0	0
16							
17							
18	200	114	197	140	0	0	0
20	200	114	197	105	0	0	0
21	200	114	197	135	0	0	0
23							
Mayhugh 1	148	84	146	50	0	0	0
Mayhugh 2	148	84	146	50	0	0	0
Watson 1	148	84	146	50	0	0	0
Watson 2	148	84	146	50	0	0	0

Waste Utilization and Nutrient Management Plan

Table 8 - Maximum Effluent Application Per Field Permit #: WQ0004842000

Est. Available Effluent (ac inches)	LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P_2O_5 (lbs/acre)	Annual/Biennial	Maximum Effluent Allowable (ac in/ac)	Maximum Effluent Allowable / Field (ac in)
3831	1	102.0		Silage - Corn16-20T;SG GreenChop-6-7T M	239	132	A	8.5	866
Source:	1A								
	2A								
	2B	105.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	208	A	13.4	1407
Dairy Lagoon	2C	73.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	208	A	13.4	978
	3A								
	3B	142.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	208	A	13.4	1903
	3C	38.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	208	A	13.4	509
	4								
	5								
	6								
	7								
	8								
	9								
	10								
	11								
	13								
	14								
	15								
	16	85.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T H	91	208	A	13.4	1139
	17	85.0		Silage - Corn16-20T;SG GreenChop-6-7T M	116	229	A	14.7	1250
Total Effluent Application Acres	18								
	20								
	21								
	23	90.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	208	A	13.4	1206
720	Mayhugh								
	Mayhugh								
Maximum Effluent Application Allowable On-Site (ac in)	Watson 1								
	Watson 2								
9258									
Adequate									
Effluent to be used Off-Site (ac in)									
0									

End of Table 8

Waste Utilization and Nutrient Management Plan

Table 9 - Nutrients Applied/Needed at Maximum Effluent Rates Permit #: WQ0004842000

	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	254	132	809	125	0	0	0
1A							
2A							
2B	401	209	1275	0	0	0	0
2C	401	209	1275	0	0	0	0
3A							
3B	401	209	1275	0	0	0	0
3C	401	209	1275	0	0	0	0
4							
5							
6							
7							
8							
9							
10							
11							
13							
14							
15							
16	401	209	1275	0	0	0	0
17	440	229	1399	15	0	0	0
18							
20							
21							
23	401	209	1275	0	0	0	0
Mayhugh 1							
Mayhugh 2							
Watson 1							
Watson 2							

Waste Utilization and Nutrient Management Plan

Table 10 - Planned Effluent Application Rates Permit #: WQ0004842000

LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Maximum Effluent (ac in/ac)	% of Maximum to apply	Planned Effluent (ac in/ac)	Planned Effluent / field (Ac. In)
1	102.0		Silage - Corn16-20T;SG GreenChop-6-7T M	239	A	8.5	**42.0**	3.6	364
1A									
2A									
2B	105.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	A	13.4	**42.0**	5.6	591
2C	73.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	A	13.4	**41.0**	5.5	401
3A									
3B	142.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	A	13.4	**41.0**	5.5	780
3C	38.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	A	13.4	**41.0**	5.5	209
4									
5									
6									
7									
8									
9									
10									
11									
13									
14									
15									
16	85.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T H	91	A	13.4	**42.0**	5.6	479
17	85.0		Silage - Corn16-20T;SG GreenChop-6-7T M	116	A	14.7	**42.0**	6.2	524
18									
20									
21									
23	90.0		Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	A	13.4	**42.0**	5.6	507
Mayhugh									
Mayhugh									
Watson 1									
Watson 2									
Acres	**720.0**					**Will the planned application rates use all of the Effluent?**			**3854** **YES**

Plan is based on: 590 Organic Nutrient Management Plan

Waste Utilization and Nutrient Management Plan

Table 11 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #: WQ0004842000

Red cells? Proceed to adjustment page and fix.

	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	N Lb/ac	P_2O_5 Lb/ac	K_2O Lb/ac	Lime T/Ac
1	107	56	340	270	0	0	0
1A							
2A							
2B	168	87	535	190	0	0	0
2C	164	85	522	195	0	0	0
3A							
3B	164	85	522	200	0	0	0
3C	164	85	522	200	0	0	0
4							
5							
6							
7							
8							
9							
10							
11							
13							
14							
15							
16	168	87	535	175	0	0	0
17	185	96	588	270	0	0	0
18							
20							
21							
23	168	87	535	180	0	0	0
Mayhugh 1							
Mayhugh 2							
Watson 1							
Watson 2							

Waste Utilization and Nutrient Management Plan

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

Permit #: WQ0004842000

LMU / Field #	AWC (inches)	Restrictive Texture
1	2.34	Gravelly Clay Loam
1A		
2A		
2B	2.34	Gravelly Clay Loam
2C	2.34	Gravelly Clay Loam
3A		
3B	2.34	Gravelly Clay Loam
3C	2.34	Gravelly Clay Loam
4		
5		
6		
7		
8		
9		
10		
11		
13		
14		
15		
16	2.125	)glesby Gravelly Cla
17	2.34	?idcoke Gravelly Cla
18		
20		
21		
23	3.36	Slidell Clay
Mayhugh 1		
Mayhugh 2		
Watson 1		
Watson 2		

LMU / Field #	AWC (inches)	Restrictive Texture

Waste Utilization and Nutrient Management Plan

Table 13 - Non Application Areas by Field Permit #: WQ0004842000

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

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded
1	0.0	0.0			
1A	0.0	0.0			
2A	0.0	0.0			
2B	0.0	0.0			
2C	0.0	0.0			
3A	0.0	0.0			
3B	0.0	0.0			
3C	0.0	0.0			
4	0.0	0.0			
5	0.0	0.0			
6	0.0	0.0			
7	0.0	0.0			
8	0.0	0.0			
9	0.0	0.0			
10	0.0	0.0			
11	0.0	0.0			
13	0.0	0.0			
14	0.0	0.0			
15	0.0	0.0			
16	0.0	0.0			
17	0.0	0.0			
18	0.0	0.0			
20	0.0	0.0			
21	0.0	0.0			
23	0.0	0.0			
Mayhugh	0.0	0.0			
Mayhugh	0.0	0.0			
Watson 1	0.0	0.0			
Watson 2	0.0	0.0			

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

See Application Map for location of buffers

Total 590-633 application acres: 2315.0

Totals	0.0	0.0	0.0	0.0	0.0

Total 590-633 Field Acres: 2315.0

Waste Utilization and Nutrient Management Data Entries

General Data

Date :	8/22/2025
Farmer Name :	Horizon Dairy
County in which the Land is located :	Hamilton
Type of Waste Plan :	Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients? Yes or No :	Yes
Is any field PERMITTED by TCEQ? Yes or No :	Yes
Permit # :	WQ0004842000

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year :	2025
Are you receiving waste from another producer?	No
Number of animals :	10000
Approximate Weight :	1325
Days per year In confinement :	365
Hours per day confined :	24
ACRE FEET of effluent to be irrigated* :	319.24
Estimated annual gallons of effluent to be irrigated/applied annually :	104023715.5
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)* :	32394
Is this the first Year of the AFO-CAFO Operation? :	No

Analysis Information

Effluent Information

Date of Analysis:	6/18/2025
Manure Source:	Dairy Lagoon
Nitrogen % From Analysis:	0.0165
Phosphorus % From Analysis:	0.003
Potassium % From Analysis:	0.035
Moisture % From Analysis:	99.8

Manure / Solids Information

Date of Analysis:	6/18/2025	
Manure Source:	Other Solids	Explain Other:
Nitrogen % From Analysis:	1.27	Slurry
Phosphorus % From Analysis:	0.252	
Potassium % From Analysis:	0.833	
Moisture % From Analysis:	77.8	
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 Plar

Printed on: 8/22/25 3:42 PM

Field and Buffer Entries

Permit #: WQ0004842000

Printed on: 8/22/25 3:42 PM

Plan is based on: 590 Organic Nutrient Management Plan

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

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

Field No.	Total LMU or Field Acres	FS	FB	RFB	OLEA	Total Buffer Acres	Actual Application Acres	This Column Intentionally Left Blank
1	102					0.0	102.0	
1A	36					0.0	36.0	
2A	60					0.0	60.0	
2B	105					0.0	105.0	
2C	73					0.0	73.0	
3A	104					0.0	104.0	
3B	142					0.0	142.0	
3C	38					0.0	38.0	
4	56					0.0	56.0	
5	37					0.0	37.0	
6	65					0.0	65.0	
7	65					0.0	65.0	
8	84					0.0	84.0	
9	20					0.0	20.0	
10	120					0.0	120.0	
11	22					0.0	22.0	
13	90					0.0	90.0	
14	77					0.0	77.0	
15	47					0.0	47.0	
16	85					0.0	85.0	
17	85					0.0	85.0	
18	113					0.0	113.0	
20	120					0.0	120.0	
21	24					0.0	24.0	
23	90					0.0	90.0	
Mayhugh	70					0.0	70.0	
Mayhugh	92					0.0	92.0	
Watson 1	125					0.0	125.0	
Watson 2	168					0.0	168.0	

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 8/22/25 3:42 PM Plan is based on: 590 Organic Nutrient Management Plan V 5.0 Permit #: WQ0004842000

Soil Test Analysis				This column only for Dry Poultry	LMU or Field #	Appl. Area Acres	Crop/Land-Use and P Index Runoff Potential VL - L; M; H; or VH	E = Effluent S = Solids	Plant Analysis (Y / N)	Plant Analysis & Yield (optional) Use Only When Crop Removal is Required			
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)							% N	% P	% K	Yield Air Dry Production (lbs/ac/yr)
61.626	239	2168			1	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	E	N				
21.561	40.5	342			1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
11.978	118	322			2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
21.097	126	949			2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
21.097	126	949			2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
27.942	82.5	370			3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
18.989	78.4	559			3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
18.989	78.4	559			3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	E	N				
37.451	133	431			4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	S	N				
14.353	125	404			5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	S	N				
22.252	166	384			6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
17.364	194	326			7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
19.758	113	327			8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
15.687	102	289			9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	S	N				
30.2	149	398			10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				
12.123	40	325			11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	S	N				
13.687	123	327			13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
18.538	114	286			14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
16.354	70.6	340			15	47.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	S	N				
28.268	91	361			16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	E	N				
23.653	116	411			17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	E	N				
30.846	111	483			18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
47.918	118	451			20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
33.211	31.4	243			21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	S	N				
27.029	171	382			23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	E	N				
100	200	100			Mayhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				
100	200	100			Mayhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N				

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 8/22/25 3:42 PM Plan is based on: 590 Organic Nutrient Management Plan V 5.0 Permit #: WQ000484

Soil Test Analysis				This column only for Dry Poultry	LMU or Field #	Appl. Area Acres	Crop/Land-Use and P Index Runoff Potential VL - L; M; H; or VH	E = Effluent S = Solids	Plant Analysis (Y / N)	Plant Analysis & Yield (opti Only When Crop Removal is		
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)							% N	% P	% K
100	200	100			Watson 1	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N			
100	200	100			Watson 2	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	S	N			

Solids Application Rate Entries

Solids - Set the Planned Application Rates

Permit #: WQ

145919 "Wet tons" of solids produced Annually						Will the planned rates use all of the Tons to be used off-site at plann	
LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Crop P_2O_5 Req.	Annual or Biennial Application Cycle	Maximum Solids Allowable Tons/Ac	Enter % of Maximum Planned to Apply
1							
1A	36.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	41	205	Annual	88.7	50.0
2A	60.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	118	205	Annual	88.7	50.0
2B							
2C							
3A	104.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	83	205	Annual	88.7	50.0
3B							
3C							
4	56.0	Coastal graze 1 AU/1 ac, SG mod graze M	133	175	Annual	88.7	50.0
5	37.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T H	125	250	Annual	133.0	50.0
6	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	166	250	Annual	133.0	50.0
7	65.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	194	250	Annual	133.0	50.0
8	84.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	113	250	Annual	133.0	50.0
9	20.0	Coastal GC (30%DM) 21-23T; SG GC 6-7T M	102	250	Annual	133.0	50.0
10	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	149	155	Annual	88.7	50.0
11	22.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	40	205	Annual	88.7	50.0
13	90.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	123	205	Annual	88.7	50.0
14	77.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	114	205	Annual	88.7	50.0
15	47.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	71	205	Annual	88.7	50.0
16							
17							
18	113.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	111	155	Annual	88.7	50.0
20	120.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	118	155	Annual	88.7	50.0
21	24.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	31	155	Annual	88.7	50.0
23							
layhugh	70.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
layhugh	92.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
Watson	125.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0
Watson	168.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	200	155	Annual	65.7	50.0

Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit #: WQ0004842000

104023716	Gallons of Effluent to be used annually				Will the planned rates use all of the effluent?				Yes
3831	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	102.0	Silage - Corn16-20T;SG GreenChop-6-7T M	239	180	Annual	8.5	42.0	3.57	364
1A									
2A									
2B	105.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	205	Annual	13.4	42.0	5.63	591
2C	73.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	126	205	Annual	13.4	41.0	5.49	401
3A									
3B	142.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	205	Annual	13.4	41.0	5.49	780
3C	38.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	78	205	Annual	13.4	41.0	5.49	209
4									
5									
6									
7									
8									
9									
10									
11									
13									
14									
15									
16	85.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T H	91	155	Annual	13.4	42.0	5.63	479
17	85.0	Silage - Corn16-20T;SG GreenChop-6-7T M	116	180	Annual	14.7	42.0	6.17	524
18									
20									
21									
23	90.0	Silage - Sorg-11-15 T;SG GreenChop-6-7T M	171	155	Annual	13.4	42.0	5.63	507
layhugh									
layhugh									
Watson									
Watson									

Total Effluent This Page: 3854

Printed on: 8/22/25 3:42 PM

Plan is based on: 590 Organic Nutrient Management Plan

Available Water Capacity Entries

Printed on: 8/22/25 3:42 PM Plan is based on: 590 Organic Nutrient Management Pla Permit #: WQ0004842000

LMU or Fields receiving Effluent	Texture of the soil layer within the upper 24 inches of the soil profile that has the lowest permeability (Don't Abbreviate)	Depth of First Layer (inches)		AWC of First Layer (in/in)		Depth of Second Layer (inches)		AWC of Second Layer (in/in)		Depth of Third Layer (inches)		AWC of Third Layer (in/in)		Depth of Fourth Layer (inches)		AWC of Fourth Layer (in/in)		Available Water Holding Capacity (AWC) of the upper 24 inches of the soil profile (Inches)
EXAMPLE ENTRIES		0	3	0.12	0.2	3	14	0.16	0.21	14	18	0.08	0.12	18	24	0	0	
		Enter Data for the top 24" only																
1	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
2B	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
2C	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
3B	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
3C	Gravelly Clay Loan	0	11	0.11	0.15	11	18	0.11	0.15	18	24	0	0	24				2.34
16	glesby Gravelly Cl	0	17	0.1	0.15	17	35	0	0	35				0				2.13
17	dcoke Gravelly Cl	0	11	0.11	0.15	11	18	0.11	0.15	18	80	0	0	80				2.34
23	Slidell Clay	0	19	0.1	0.18	19	32	0.1	0.18	32				0				3.36

Available Water Capacity Entries

Printed on: 8/22/25 3:42 PM Plan is based on: 590 Organic Nutrient Management Pla Permit #: WQ0004842000

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

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	61.626	34.535
Phosphorus (extractable), ppm	239	25.6
Potassium (extractable), ppm	2168	921
Sodium (extractable), ppm	324	431
Magnesium (extractable), ppm	926	531
Calcium (extractable), ppm	15878	31431
Electrical Conductivity/Soluble Salts, dS/m	0.837	0.708
pH, SU	8.06	8.12

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.

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: David DeJong / Owner

Signature: [signature]

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 1A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	21.561	8.912
Phosphorus (extractable), ppm	40.5	7.78
Potassium (extractable), ppm	342	278
Sodium (extractable), ppm	98.0	133
Magnesium (extractable), ppm	361	228
Calcium (extractable), ppm	19518	32158
Electrical Conductivity/Soluble Salts, dS/m	0.407	0.453
pH, SU	7.74	7.88

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.

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: David DeJong / Owner

Signature: John Mullin for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	21.097	4.042
Phosphorus (extractable), ppm	126	8.79
Potassium (extractable), ppm	949	441
Sodium (extractable), ppm	117	256
Magnesium (extractable), ppm	678	408
Calcium (extractable), ppm	16100	36379
Electrical Conductivity/Soluble Salts, dS/m	0.545	0.549
pH, SU	7.85	8.06

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.

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: David DeJong / Owner

Signature: John Mullen for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 2A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	11.978	4.939
Phosphorus (extractable), ppm	118	10.6
Potassium (extractable), ppm	322	322
Sodium (extractable), ppm	22.2	73.8
Magnesium (extractable), ppm	368	304
Calcium (extractable), ppm	12451	29082
Electrical Conductivity/Soluble Salts, dS/m	0.449	0.508
pH, SU	7.56	7.78

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.

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: David DeJong / Owner

Signature: John Mallie for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	18.989	3.136
Phosphorus (extractable), ppm	78.4	9.64
Potassium (extractable), ppm	559	312
Sodium (extractable), ppm	78.0	242
Magnesium (extractable), ppm	465	264
Calcium (extractable), ppm	14584	27793
Electrical Conductivity/Soluble Salts, dS/m	0.582	0.548
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.

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: David DeJong / Owner

Signature: John Mallin for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 3A
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	27.942	12.688
Phosphorus (extractable), ppm	82.5	15.9
Potassium (extractable), ppm	370	333
Sodium (extractable), ppm	39.9	93.5
Magnesium (extractable), ppm	376	233
Calcium (extractable), ppm	16860	29485
Electrical Conductivity/Soluble Salts, dS/m	0.594	0.628
pH, SU	7.54	7.78

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon 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: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	37.451	10.688
Phosphorus (extractable), ppm	133	23.7
Potassium (extractable), ppm	431	361
Sodium (extractable), ppm	32.6	50.2
Magnesium (extractable), ppm	423	274
Calcium (extractable), ppm	16797	26833
Electrical Conductivity/Soluble Salts, dS/m	0.697	0.736
pH, SU	7.43	7.52

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 5
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	14.353	1.732
Phosphorus (extractable), ppm	125	13.0
Potassium (extractable), ppm	404	296
Sodium (extractable), ppm	58.0	87.4
Magnesium (extractable), ppm	432	248
Calcium (extractable), ppm	14716	40166
Electrical Conductivity/Soluble Salts, dS/m	0.811	0.848
pH, SU	7.33	7.64

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.

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: David DeJong / Owner

Signature: John Mallie by →

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 6
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	22.252	2.912
Phosphorus (extractable), ppm	166	13.4
Potassium (extractable), ppm	384	276
Sodium (extractable), ppm	61.2	145
Magnesium (extractable), ppm	438	258
Calcium (extractable), ppm	16828	37976
Electrical Conductivity/Soluble Salts, dS/m	1.12	0.75
pH, SU	7.13	7.78

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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 aud 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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 7
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	17.364	3.855
Phosphorus (extractable), ppm	194	15.3
Potassium (extractable), ppm	326	280
Sodium (extractable), ppm	54.7	203
Magnesium (extractable), ppm	468	285
Calcium (extractable), ppm	16124	38766
Electrical Conductivity/Soluble Salts, dS/m	0.679	0.869
pH, SU	7.23	7.69

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 8
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	19.758	3.794
Phosphorus (extractable), ppm	113	13.5
Potassium (extractable), ppm	327	247
Sodium (extractable), ppm	34.8	60.8
Magnesium (extractable), ppm	389	221
Calcium (extractable), ppm	13908	33904
Electrical Conductivity/Soluble Salts, dS/m	0.455	0.409
pH, SU	7.55	7.8

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 9
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	15.687	1.527
Phosphorus (extractable), ppm	102	6.73
Potassium (extractable), ppm	289	260
Sodium (extractable), ppm	14.9	57.5
Magnesium (extractable), ppm	315	212
Calcium (extractable), ppm	14579	33720
Electrical Conductivity/Soluble Salts, dS/m	0.377	0.343
pH, SU	7.48	7.79

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.

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: David DeJong / Owner

Signature:

Date: 3/3/25

Telephone Number: (254) 918-3156

D. How to Submit

The soil monitoring report with attached soil analyses should he 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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 10
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	30.2	16.28
Phosphorus (extractable), ppm	149	12.1
Potassium (extractable), ppm	398	222
Sodium (extractable), ppm	31.1	37.2
Magnesium (extractable), ppm	348	243
Calcium (extractable), ppm	16231	40367
Electrical Conductivity/Soluble Salts, dS/m	0.469	0.395
pH, SU	7.55	7.79

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

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: David DeJong / Owner

Signature:

Date: 3/7/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 11
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	12.123	0.842
Phosphorus (extractable), ppm	40.0	3.90
Potassium (extractable), ppm	325	297
Sodium (extractable), ppm	68.8	159
Magnesium (extractable), ppm	372	220
Calcium (extractable), ppm	23514	36776
Electrical Conductivity/Soluble Salts, dS/m	0.482	0.667
pH, SU	7.68	7.84

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.

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: David DeJong / Owner

Signature: Lik Ann for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 13
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	13.687	3.014
Phosphorus (extractable), ppm	123	9.35
Potassium (extractable), ppm	327	288
Sodium (extractable), ppm	41.2	71.1
Magnesium (extractable), ppm	382	261
Calcium (extractable), ppm	19399	35100
Electrical Conductivity/Soluble Salts, dS/m	0.464	0.374
pH, SU	7.69	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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/13/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 14
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	18.538	4.811
Phosphorus (extractable), ppm	114	14.9
Potassium (extractable), ppm	286	268
Sodium (extractable), ppm	43.3	73.0
Magnesium (extractable), ppm	388	223
Calcium (extractable), ppm	16808	29438
Electrical Conductivity/Soluble Salts, dS/m	0.43	0.441
pH, SU	7.65	7.92

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/21/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 15
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	16.354	4.034
Phosphorus (extractable), ppm	70.6	5.16
Potassium (extractable), ppm	340	360
Sodium (extractable), ppm	57.4	78.9
Magnesium (extractable), ppm	364	224
Calcium (extractable), ppm	15899	27076
Electrical Conductivity/Soluble Salts, dS/m	0.343	0.486
pH, SU	7.68	7.85

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 16
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	28.268	28.268
Phosphorus (extractable), ppm	91.0	7.82
Potassium (extractable), ppm	361	226
Sodium (extractable), ppm	89.5	96.1
Magnesium (extractable), ppm	406	204
Calcium (extractable), ppm	16066	34351
Electrical Conductivity/Soluble Salts, dS/m	0.599	0.485
pH, SU	7.68	7.87

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

D. How to Submit

The soil monitoring report with attached soil analyses should be ineluded 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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 17
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	23.653	21.279
Phosphorus (extractable), ppm	116	4.63
Potassium (extractable), ppm	411	198
Sodium (extractable), ppm	105	111
Magnesium (extractable), ppm	451	202
Calcium (extractable), ppm	16927	36271
Electrical Conductivity/Soluble Salts, dS/m	0.591	0.559
pH, SU	7.9	7.78

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 18
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	30.846	30.09
Phosphorus (extractable), ppm	111	9.69
Potassium (extractable), ppm	483	258
Sodium (extractable), ppm	50.6	66.3
Magnesium (extractable), ppm	386	207
Calcium (extractable), ppm	15031	31133
Electrical Conductivity/Soluble Salts, dS/m	0.55	0.59
pH, SU	7.69	7.83

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.

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: David DeJong / Owner

Signature: for

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 20
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	47.918	12.095
Phosphorus (extractable), ppm	118	12.7
Potassium (extractable), ppm	451	273
Sodium (extractable), ppm	84.7	227
Magnesium (extractable), ppm	416	306
Calcium (extractable), ppm	18265	34005
Electrical Conductivity/Soluble Salts, dS/m	0.621	1.57
pH, SU	7.73	7.75

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 21
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	33.211	12.528
Phosphorus (extractable), ppm	31.4	5.95
Potassium (extractable), ppm	243	177
Sodium (extractable), ppm	30.3	39.1
Magnesium (extractable), ppm	251	220
Calcium (extractable), ppm	24451	44769
Electrical Conductivity/Soluble Salts, dS/m	0.307	0.312
pH, SU	7.91	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.

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: David DeJong / Owner

Signature: Aor

Date: 3/31/25

Telephone Number: (254) 918-3156

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: 2024 Sample Collection Date: 11/14/2024

B. Facility Information

1) Permit Number: WQ0004842000
2) Site Name: Horizon Dairy
3) Name of LMU (**LMU Name should correspond to field designation located on the Map included in the PPP**): 23
4) Name of Owner/Operator: David DeJong
5) Mailing Address for Owner/Operator: 4483 East FM 219, 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 (NO_3-N), ppm	27.029	19.769
Phosphorus (extractable), ppm	171	15.2
Potassium (extractable), ppm	382	278
Sodium (extractable), ppm	63.4	198
Magnesium (extractable), ppm	468	354
Calcium (extractable), ppm	18881	33468
Electrical Conductivity/Soluble Salts, dS/m	0.569	0.64
pH, SU	7.79	8

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.

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: David DeJong / Owner

Signature: for

Date: 3/3/25

Telephone Number: (254) 918-3156

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55831

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region: | Organization #: | PCA Code: | Program: WQ

Sampler telephone number: (254) 552-1900

E-Mail ID: | Sampler (signature): Vanessa Gardner | Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond	Analyses Requested	REMARKS
14506	-01	11-21-24	9:47							SEE RFA	LMU1 0-6
14507	-02	"	9:47								LMU1 6-24
14508	-03	"	9:30								LMU1A 0-6
14509	-04	"	9:30								LMU 1A 6-24
14510	-05	11-14-24	13 40								LMU 2 0-6
14511	-06	11-14-24	13:40								LMU 2 6-24
14512	-07	11-14-24	13 20								LMU 2A 0-6
14513	-08	11-14-24	13:20								LMU 2A 6-24
14514	-09	11-13-24	10 30								LMU 3 0-6
14515	-10	11-13-24	10 30								LMU 3 6-24

	Date	Time		
Relinquished by:	12/16	PM	Received by:	12-17-24
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	

Shipper name: Fed Ex | Shipper Number: 7708 0480 2715

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055831a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055831

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.
14506	55831-01	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14507	55831-02	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14508	55831-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14509	55831-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14510	55831-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14511	55831-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14512	55831-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14513	55831-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14514	55831-09	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14515	55831-10	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055831a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055831

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14506	55831-01	239	ppm	2168	ppm	15878	ppm	926	ppm	147	ppm	324	ppm
14507	55831-02	25.6	ppm	921	ppm	31431	ppm	531	ppm	233	ppm	431	ppm
14508	55831-03	40.5	ppm	342	ppm	19518	ppm	361	ppm	145	ppm	98.0	ppm
14509	55831-04	7.78	ppm	278	ppm	32158	ppm	228	ppm	210	ppm	133	ppm
14510	55831-05	126	ppm	949	ppm	16100	ppm	674	ppm	131	ppm	117	ppm
14511	55831-06	8.79	ppm	441	ppm	36379	ppm	408	ppm	229	ppm	256	ppm
14512	55831-07	118	ppm	322	ppm	12451	ppm	368	ppm	101	ppm	22.2	ppm
14513	55831-08	10.6	ppm	322	ppm	29082	ppm	304	ppm	184	ppm	73.8	ppm
14514	55831-09	78.4	ppm	559	ppm	14584	ppm	465	ppm	111	ppm	78.0	ppm
14515	55831-10	9.64	ppm	312	ppm	27793	ppm	264	ppm	187	ppm	242	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14506	55831-01	1/26/2025	FMR	1/27/2025	JLP
14507	55831-02	1/26/2025	FMR	1/27/2025	JLP
14508	55831-03	1/26/2025	FMR	1/27/2025	JLP
14509	55831-04	1/26/2025	FMR	1/27/2025	JLP
14510	55831-05	1/26/2025	FMR	1/27/2025	JLP
14511	55831-06	1/26/2025	FMR	1/27/2025	JLP
14512	55831-07	1/26/2025	FMR	1/27/2025	JLP
14513	55831-08	1/26/2025	FMR	1/27/2025	JLP
14514	55831-09	1/26/2025	FMR	1/27/2025	JLP
14515	55831-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055831a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055831

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14506	55831-01	8.06	NA	0.837	dS/M	61.626	ppm
14507	55831-02	8.12	NA	0.708	dS/M	34.535	ppm
14508	55831-03	7.74	NA	0.407	dS/M	21.561	ppm
14509	55831-04	7.88	NA	0.453	dS/M	8.912	ppm
14510	55831-05	7.85	NA	0.545	dS/M	21.097	ppm
14511	55831-06	8.06	NA	0.549	dS/M	4.042	ppm
14512	55831-07	7.56	NA	0.449	dS/M	11.978	ppm
14513	55831-08	7.78	NA	0.508	dS/M	4.939	ppm
14514	55831-09	7.66	NA	0.582	dS/M	18.989	ppm
14515	55831-10	7.91	NA	0.548	dS/M	3.136	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14506	55831-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14507	55831-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14508	55831-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14509	55831-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14510	55831-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14511	55831-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14512	55831-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14513	55831-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14514	55831-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14515	55831-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055831a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055831

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14519	IC1049	54.3	ppm	326	ppm	2599	ppm	373	ppm	40.2	ppm	49.0	ppm
14520	IC1050	55.7	ppm	339	ppm	2635	ppm	385	ppm	40.4	ppm	50.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1049	1/26/2025	FMR	1/27/2025	JLP
IC1050	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055831a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055831

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14519	IC1049	6.2	na	0.135	dS/M	5.548	ppm	
14520	IC1050	6.1	na	0.128	dS/M	5.026	ppm	
	Mean IC	6.13	na	0.1315	dS/M	5.287	ppm	
14520spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1049	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1050	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55832

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: [redacted]42

Region: | Organization #: | PCA Code: | Program: WQ

Sampler telephone number: (254) 552-1900

E-Mail ID:

Sampler: (signature) Vanessa Gardner

Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond	Analyses Requested	REMARKS
14516	-01	11/3/24	~~0945~~	1005						See RTA	LMU3A 0-6
14517	-02	11/3/24	~~0945~~ 1005								LMU3A 6-24
14518	-03	11/3/24	0945								LMU4 0-6
14521	-04	11/3/24	0945								LMU4 6-24
14522	-05	11/3/24	1055								LMU5 0-6
14523	-06	11/3/24	1055								LMU5 6-24
14524	-07	11/14/24	1120								LMU6 0-6
14525	-08	11/14/24	1120								LMU6 6-24
14526	-09	11/14/24	11~~20~~55								LMU7 0-6
14527	-10	11/14/24	1155							—	LMU7 6-24

	Date	Time		
Relinquished by:	12/16/24		Received by:	12-17-24
Relinquished by:	Date	Time	Received by:	For Laboratory Use:
Relinquished by:	Date	Time	Received by:	Received on ice: Y N deg. C
Relinquished by:	Date	Time	Received by:	Preservatives: Y N
				COC Seal: Y N
Shipper name: Fed Ex	Shipper Number: 7708 0480 2707			Seals Intact: Y N

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055832a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055832

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.
14516	55832-01	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14517	55832-02	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14518	55832-03	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl Extractable with Cd-Reduction Analyses NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP

Keeney, D.R. and O.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: 055832a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14516	55832-01	82.5	ppm	370	ppm	16860	ppm	376	ppm	131	ppm	39.9	ppm
14517	55832-02	15.9	ppm	333	ppm	29485	ppm	233	ppm	198	ppm	93.5	ppm
14518	55832-03	133	ppm	431	ppm	16797	ppm	423	ppm	145	ppm	32.6	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14516	55832-01	1/26/2025	FMR	1/27/2025	JLP
14517	55832-02	1/26/2025	FMR	1/27/2025	JLP
14518	55832-03	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14516	55832-01	7.54	NA	0.594	dS/M	27.942	ppm
14517	55832-02	7.78	NA	0.628	dS/M	12.688	ppm
14518	55832-03	7.43	NA	0.697	dS/M	37.451	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14516	55832-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14517	55832-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14518	55832-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055832a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055832

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14519	IC1049	54.3	ppm	326	ppm	2599	ppm	373	ppm	40.2	ppm	49.0	ppm
14520	IC1050	55.7	ppm	339	ppm	2635	ppm	385	ppm	40.4	ppm	50.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1049	1/26/2025	FMR	1/27/2025	JLP
IC1050	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055832

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14519	IC1049	6.2	na	0.135	dS/M	5.548	ppm	
14520	IC1050	6.1	na	0.128	dS/M	5.026	ppm	
	Mean IC	6.13	na	0.1315	dS/M	5.287	ppm	
14520spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1049	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1050	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

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

Report ID: 055832b-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055832

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.
14521	55832-04	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14522	55832-05	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14523	55832-06	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14524	55832-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14525	55832-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14526	55832-09	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14527	55832-10	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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_KCl 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: 055832b-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14521	55832-04	23.7	ppm	361	ppm	26833	ppm	274	ppm	180	ppm	50.2	ppm
14522	55832-05	125	ppm	404	ppm	14716	ppm	432	ppm	141	ppm	58.0	ppm
14523	55832-06	13.0	ppm	296	ppm	40168	ppm	248	ppm	277	ppm	87.4	ppm
14524	55832-07	166	ppm	384	ppm	16828	ppm	438	ppm	181	ppm	61.2	ppm
14525	55832-08	13.4	ppm	276	ppm	37976	ppm	258	ppm	253	ppm	145	ppm
14526	55832-09	194	ppm	326	ppm	16124	ppm	468	ppm	165	ppm	54.7	ppm
14527	55832-10	15.3	ppm	280	ppm	38766	ppm	285	ppm	275	ppm	203	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14521	55832-04	1/26/2025	FMR	1/27/2025	JLP
14522	55832-05	1/26/2025	FMR	1/27/2025	JLP
14523	55832-06	1/26/2025	FMR	1/27/2025	JLP
14524	55832-07	1/26/2025	FMR	1/27/2025	JLP
14525	55832-08	1/26/2025	FMR	1/27/2025	JLP
14526	55832-09	1/26/2025	FMR	1/27/2025	JLP
14527	55832-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832b-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055832

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14521	55832-04	7.52	NA	0.736	dS/M	10.688	ppm
14522	55832-05	7.33	NA	0.811	dS/M	14.353	ppm
14523	55832-06	7.64	NA	0.848	dS/M	1.732	ppm
14524	55832-07	7.13	NA	1.12	dS/M	22.252	ppm
14525	55832-08	7.78	NA	0.75	dS/M	2.912	ppm
14526	55832-09	7.23	NA	0.679	dS/M	17.364	ppm
14527	55832-10	7.69	NA	0.869	dS/M	3.855	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14521	55832-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14522	55832-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14523	55832-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14524	55832-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14525	55832-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14526	55832-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14527	55832-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055832b-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055832

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14539	IC1051	51.4	ppm	321	ppm	2604	ppm	368	ppm	37.4	ppm	47.8	ppm
14540	IC1052	54.1	ppm	324	ppm	2647	ppm	376	ppm	38.8	ppm	48.5	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1051	1/26/2025	FMR	1/27/2025	JLP
IC1052	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055832b-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055832

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14539	IC1051	6.1	na	0.143	dS/M	5.622	ppm	
14540	IC1052	6.2	na	0.14	dS/M	4.893	ppm	
	Mean IC	6.135	na	0.1415	dS/M	5.2575	ppm	
14540spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1051	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1052	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55833

Location: Horizon Dairy
(Do not fill in the shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254) 552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14457	-01	11-21-24	11:20							See RFA	LMU 8 0-6
14458	-02		11:20								LMU 8 6-24
14461	-03		11:45								LMU 9 0-6
14462	-04		11:48								LMU 9 6-24
14463	-05		10:10								LMU 10 0-6
14464	-06		10:10								LMU 10 6-24
14465	-07		10:40								LMU 11 0-6
14466	-08		10:40								LMU 11 6-24
14467	-09	11/13/24	1215								LMU 13 0-6
14468	-10	11/13/24	1215							—	LMU 13 6-24

Relinquished by: Vanessa Gardner	Date 11/14/24	Time 1200	Received by:	12-17-24
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Shipper name: Fed Ex	Shipper Number: 7708 0468 5167			

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10085 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055833a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055833

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.
14457	55833-01	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14458	55833-02	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14457	55833-01	113	ppm	327	ppm	13908	ppm	389	ppm	108	ppm	34.8	ppm
14458	55833-02	13.5	ppm	247	ppm	33904	ppm	221	ppm	221	ppm	60.8	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14457	55833-01	1/26/2025	FMR	1/27/2025	JLP
14458	55833-02	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14457	55833-01	7.55	NA	0.455	dS/M	19.758	ppm
14458	55833-02	7.8	NA	0.409	dS/M	3.794	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14457	55833-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14458	55833-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055833a-45700 Print Date: 12-Feb-25
Ouality Control Report TCEQ COC# 055833

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14459	IC1043	54.4	ppm	330	ppm	2628	ppm	376	ppm	39.8	ppm	49.0	ppm
14460	IC1044	53.1	ppm	326	ppm	2744	ppm	376	ppm	39.9	ppm	46.2	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1043	1/26/2025	FMR	1/27/2025	JLP
IC1044	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055833

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14459	IC1043	6.1	na	0.135	dS/M	4.919	ppm	
14460	IC1044	6.1	na	0.145	dS/M	4.912	ppm	
	Mean IC	6.075	na	0.14	dS/M	4.9155	ppm	
14460spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1043	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1044	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

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

Report ID: 055833a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055833

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.
14461	55833-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14462	55833-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14463	55833-05	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14464	55833-06	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14465	55833-07	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14466	55833-08	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14467	55833-09	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14468	55833-10	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14461	55833-03	102	ppm	289	ppm	14579	ppm	315	ppm	108	ppm	14.9	ppm
14462	55833-04	6.73	ppm	260	ppm	33720	ppm	212	ppm	212	ppm	57.5	ppm
14463	55833-05	149	ppm	398	ppm	16231	ppm	348	ppm	128	ppm	31.1	ppm
14464	55833-06	12.1	ppm	222	ppm	40367	ppm	243	ppm	265	ppm	37.2	ppm
14465	55833-07	40.0	ppm	325	ppm	23514	ppm	372	ppm	167	ppm	68.8	ppm
14466	55833-08	3.90	ppm	297	ppm	36776	ppm	220	ppm	270	ppm	159	ppm
14467	55833-09	123	ppm	327	ppm	19399	ppm	382	ppm	150	ppm	41.2	ppm
14468	55833-10	9.35	ppm	288	ppm	35100	ppm	261	ppm	235	ppm	71.1	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID.	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14461	55833-03	1/26/2025	FMR	1/27/2025	JLP
14462	55833-04	1/26/2025	FMR	1/27/2025	JLP
14463	55833-05	1/26/2025	FMR	1/27/2025	JLP
14464	55833-06	1/26/2025	FMR	1/27/2025	JLP
14465	55833-07	1/26/2025	FMR	1/27/2025	JLP
14466	55833-08	1/26/2025	FMR	1/27/2025	JLP
14467	55833-09	1/26/2025	FMR	1/27/2025	JLP
14468	55833-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055833

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14461	55833-03	7.48	NA	0.377	dS/M	15.687	ppm
14462	55833-04	7.79	NA	0.343	dS/M	1.527	ppm
14463	55833-05	7.55	NA	0.469	dS/M	30.2	ppm
14464	55833-06	7.79	NA	0.395	dS/M	16.28	ppm
14465	55833-07	7.68	NA	0.482	dS/M	12.123	ppm
14466	55833-08	7.84	NA	0.667	dS/M	0.842	ppm
14467	55833-09	7.69	NA	0.464	dS/M	13.687	ppm
14468	55833-10	7.91	NA	0.374	dS/M	3.014	ppm

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

Laboratory ID:	TCEQ/client Sample ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
		Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14461	55833-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14462	55833-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14463	55833-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14464	55833-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14465	55833-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14466	55833-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14467	55833-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14468	55833-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055833a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055833

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
11479	IC1045	51.0	ppm	312	ppm	2308	ppm	331	ppm	38.6	ppm	42.0	ppm
11480	IC1046	49.9	ppm	308	ppm	2149	ppm	325	ppm	37.2	ppm	40.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1045	1/26/2025	FMR	1/27/2025	JLP
IC1046	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055833a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055833

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
11479	IC1045	6.1	na	0.155	dS/M	5.361	ppm	
11480	IC1046	6.2	na	0.137	dS/M	5.081	ppm	
	Mean IC	6.15	na	0.146	dS/M	5.221	ppm	
11480spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1045	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1046	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55834

Location: Horizon Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254) 552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14469	-01	11/13/24	1135							See RFA	LMU 14 0-6
14470	-02	11/13/24	1135								LMU 14 6-24
14471	-03	11-21-24	12:20								LMU 15 0-6
14472	-04	11-21-24	12:20								LMU 15 6-24
14473	-05	11-14-24	10:34								LMU 16 0-6
14474	-06	11-14-24	10:34								LMU 16 6-24
14475	-07	11-14-24	10:15								LMU 17 0-6
14476	-08	11-14-24	10:19								LMU 17 6-24
14477	-09	11-14-24	10:55								LMU 18 0-6
14478	-10	11-14-24	10:55								LMU 18 6-24

Relinquished by:	Date	Time	Received by:
Vanessa Gardner	12/16/24	1200	12-17-24
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Shipper name: FedEx	Shipper Number: 7708 0468 5167		

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055834a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055834

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.
14469	55834-01	0-6	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14470	55834-02	6-24	11/13/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14471	55834-03	0-6	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14472	55834-04	6-24	11/21/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14473	55834-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14474	55834-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14475	55834-07	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14476	55834-08	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14477	55834-09	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14478	55834-10	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 KCl 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: 055834a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055834

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14469	55834-01	114	ppm	286	ppm	16808	ppm	388	ppm	138	ppm	43.3	ppm
14470	55834-02	14.9	ppm	268	ppm	29438	ppm	223	ppm	210	ppm	73.0	ppm
14471	55834-03	70.6	ppm	340	ppm	15899	ppm	364	ppm	132	ppm	57.4	ppm
14472	55834-04	5.16	ppm	360	ppm	27076	ppm	224	ppm	206	ppm	78.9	ppm
14473	55834-05	91.0	ppm	361	ppm	16066	ppm	406	ppm	137	ppm	89.5	ppm
14474	55834-06	7.82	ppm	226	ppm	34351	ppm	204	ppm	254	ppm	96.1	ppm
14475	55834-07	116	ppm	411	ppm	16927	ppm	451	ppm	151	ppm	105	ppm
14476	55834-08	4.63	ppm	198	ppm	36271	ppm	202	ppm	277	ppm	111	ppm
14477	55834-09	111	ppm	483	ppm	15031	ppm	386	ppm	132	ppm	50.6	ppm
14478	55834-10	9.69	ppm	258	ppm	31133	ppm	207	ppm	236	ppm	66.3	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14469	55834-01	1/26/2025	FMR	1/27/2025	JLP
14470	55834-02	1/26/2025	FMR	1/27/2025	JLP
14471	55834-03	1/26/2025	FMR	1/27/2025	JLP
14472	55834-04	1/26/2025	FMR	1/27/2025	JLP
14473	55834-05	1/26/2025	FMR	1/27/2025	JLP
14474	55834-06	1/26/2025	FMR	1/27/2025	JLP
14475	55834-07	1/26/2025	FMR	1/27/2025	JLP
14476	55834-08	1/26/2025	FMR	1/27/2025	JLP
14477	55834-09	1/26/2025	FMR	1/27/2025	JLP
14478	55834-10	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055834a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055834

Laboratory ID:	TCEQ/client Sample ID	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14469	55834-01	7.65	NA	0.43	dS/M	18.538	ppm
14470	55834-02	7.92	NA	0.441	dS/M	4.811	ppm
14471	55834-03	7.68	NA	0.343	dS/M	16.354	ppm
14472	55834-04	7.85	NA	0.486	dS/M	4.034	ppm
14473	55834-05	7.68	NA	0.599	dS/M	28.268	ppm
14474	55834-06	7.87	NA	0.485	dS/M	12.808	ppm
14475	55834-07	7.9	NA	0.591	dS/M	23.653	ppm
14476	55834-08	7.78	NA	0.559	dS/M	21.279	ppm
14477	55834-09	7.69	NA	0.55	dS/M	30.846	ppm
14478	55834-10	7.83	NA	0.59	dS/M	30.09	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14469	55834-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14470	55834-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14471	55834-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14472	55834-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14473	55834-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14474	55834-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14475	55834-07	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14476	55834-08	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14477	55834-09	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14478	55834-10	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055834a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055834

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
11479	IC1045	51.0	ppm	312	ppm	2308	ppm	331	ppm	38.6	ppm	42.0	ppm
11480	IC1046	49.9	ppm	308	ppm	2149	ppm	325	ppm	37.2	ppm	40.1	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk225	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1045	1/26/2025	FMR	1/27/2025	JLP
IC1046	1/26/2025	FMR	1/27/2025	JLP
blk225	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055834a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055834

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
11479	IC1045	6.1	na	0.155	dS/M	5.361	ppm	
11480	IC1046	6.2	na	0.137	dS/M	5.081	ppm	
	Mean IC	6.15	na	0.146	dS/M	5.221	ppm	
11480spike	Spiked sample	-	-	-	-	4.0	ppm	79.5
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk225	-	na	0	dS/M	0.029	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1045	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1046	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk225	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Chain of Custody Record

55835

Location: Horizon Daily
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4842

Region:	Organization #:	PCA Code:	Program: WQ	Sampler telephone number: (254)552-1900
E-Mail ID:	Sampler: (signature) Vanessa Gardner			Sampler: (please print clearly) ~~2.~~ Vanessa Gardner

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14528	-01	11-14-24	11:25							See EFA	LMU 20 0-6
14529	-02		11:25								LMU 20 6-24
14530	-03		12:20								LMU 21 0-6
14531	-04		12:20								LMU 21 6-24
14532	-05		12:40								LMU 23 0-6
14533	-06		12:40								LMU 23 6-24
	-07										
	-08										
	-09										
	-10										

Relinquished by:	Date 12/16/24	Time	Received by:	12-17-24
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Shipper name: Fed Ex	Shipper Number: 7708 0480 2707			

For Laboratory Use:

Received on ice:	Y	N	deg. C
Preservatives:	Y	N	
COC Seal:	Y	N	
Seals Intact:	Y	N	

TCEQ-10065 (11/02) White (Original) -Lab Yellow-Lab Pink-Contract Lab Manager Goldenrod-Collector Copy

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

Report ID: 055835a-45700
Print Date: 12-Feb-25

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: Horizon Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055835

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.
14528	55835-01	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14529	55835-02	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14530	55835-03	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14531	55835-04	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14532	55835-05	0-6	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	TLP
14533	55835-06	6-24	11/14/2024	Vanessa Gardner	4	12/17/2024	soil	12/17/2024	12/31/2024	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 material 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 pulverized 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 KCl 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: 055835a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055835

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14528	55835-01	118	ppm	451	ppm	18265	ppm	416	ppm	135	ppm	84.7	ppm
14529	55835-02	12.7	ppm	273	ppm	34005	ppm	306	ppm	441	ppm	227	ppm
14530	55835-03	31.4	ppm	243	ppm	24451	ppm	251	ppm	162	ppm	30.3	ppm
14531	55835-04	5.95	ppm	177	ppm	44769	ppm	220	ppm	259	ppm	39.1	ppm
14532	55835-05	171	ppm	382	ppm	18881	ppm	468	ppm	137	ppm	63.4	ppm
14533	55835-06	15.2	ppm	278	ppm	33468	ppm	354	ppm	232	ppm	198	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14528	55835-01	1/26/2025	FMR	1/27/2025	JLP
14529	55835-02	1/26/2025	FMR	1/27/2025	JLP
14530	55835-03	1/26/2025	FMR	1/27/2025	JLP
14531	55835-04	1/26/2025	FMR	1/27/2025	JLP
14532	55835-05	1/26/2025	FMR	1/27/2025	JLP
14533	55835-06	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055835a-45700 Print Date: 12-Feb-25

Standard Sample Report TCEQ COC# 055835

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14528	55835-01	7.73	NA	0.621	dS/M	47.918	ppm
14529	55835-02	7.75	NA	1.57	dS/M	12.095	ppm
14530	55835-03	7.91	NA	0.307	dS/M	33.211	ppm
14531	55835-04	8.01	NA	0.312	dS/M	12.528	ppm
14532	55835-05	7.79	NA	0.569	dS/M	27.029	ppm
14533	55835-06	8	NA	0.64	dS/M	19.769	ppm

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

Laboratory ID:	TCEQ/client	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Sample ID	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14528	55835-01	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14529	55835-02	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14530	55835-03	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14531	55835-04	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14532	55835-05	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
14533	55835-06	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

Report ID: 055835a-45700 Print Date: 12-Feb-25
Quality Control Report TCEQ COC# 055835

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14539	IC1051	51.4	ppm	321	ppm	2604	ppm	368	ppm	37.4	ppm	47.8	ppm
14540	IC1052	54.1	ppm	324	ppm	2647	ppm	376	ppm	38.8	ppm	48.5	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	49.8	ppm	268.0	ppm	2047.0	ppm	318.0	ppm	30.0	ppm	33.0	ppm
	IC Upper	55.7	ppm	375.0	ppm	2701.0	ppm	388.0	ppm	48.0	ppm	49.0	ppm
	blk226	<0.007280	ppm	<0.142	ppm	<2.49	ppm	<0.341	ppm	<0.0100	ppm	<0.1000	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.0129	ppm	0.1073	ppm	0.1073	ppm	0.0577	ppm	0.0001	ppm	0.1575	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1051	1/26/2025	FMR	1/27/2025	JLP
IC1052	1/26/2025	FMR	1/27/2025	JLP
blk226	1/26/2025	FMR	1/27/2025	JLP

Report ID: 055835a-45700 Print Date: 12-Feb-25

Quality Control Report TCEQ COC# 055835

Laboratory ID:		pH	pH units	Conducitity conc.	Conducitity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14539	IC1051	6.1	na	0.143	dS/M	5.622	ppm	
14540	IC1052	6.2	na	0.14	dS/M	4.893	ppm	
	Mean IC	6.135	na	0.1415	dS/M	5.2575	ppm	
14540spike	Spiked sample	-	-	-	-	4.0	ppm	80.9
	IC lower	6.010	na	0.113	dS/M	3.7	ppm	
	IC Upper	6.200	na	0.161	dS/M	5.7	ppm	
	blk226	-	na	0	dS/M	0.001	ppm	

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

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1051	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
IC1052	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW
blk226	1/26/2025	TLP	1/27/2025	TLP	1/27/2025	TLP	1/26/2025	FMR	1/27/2025	JW

servi tech
6921 S. Bell • Amarillo, TX 79109
www.servitech.com

Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No.: **4298**

LABORATORY ANALYSIS REPORT

Report Date: 06/30/2025 05:03 pm

Send To: 6224

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

Amy Meier
Data Review Coordinator

Results For:	HORIZON DAIRY	**Received:**	06/19/2025
Sample ID:	SLURRY	**Sampled:**	06/18/2025
Location	HAMILTON COUNTY	**Invoice No:**	428535
		P.O. #:	RICHARD GEORGE

				Total content		Estimated available first year*	
		Analysis (dry basis)	Analysis (as rec'd)	lbs per Acre-In	lbs per 1000 gal	lbs per Acre-In	lbs per 1000 gal
NUTRIENTS							
Nitrogen							
Total Nitrogen	%	1.27	0.282	2879.7	25.4	341.4	13.5
Organic Nitrogen	%	0.928	0.206	2103.6	18.5	169.5	6.7
Ammonium Nitrogen	%	0.3415	0.07582	774.3	6.8	171.9	6.8
Nitrate+Nitrite Nitrogen	%	<0.0045	<0.0010	0	<0.1	<0.1	<0.1
Major and Secondary Nutrients							
Phosphorus	%	0.252	0.056				
Phosphorus as P2O5	%	0.577	0.128	1307.1	11.5	261.2	10.4
Potassium	%	0.833	0.185				
Potassium as K2O	%	1.00	0.222	2267.0	20.0	503.3	20.0
OTHER PROPERTIES							
Moisture	%		77.8				
Total Solids	%		22.2	226700	1998		
Organic Matter	%	34.7	7.7	78630	693		
Ash	%		14.5		1305		
C:N Ratio	ratio		15.8				
Density	lbs/gal	42.3	9.4				

* Assumes 36% of organic nitrogen available during first crop year after application. Assumes 100% of ammonium and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.

ENVIRO-AG ENGINEERING, INC.
EAE
AMARILLO · STEPHENVILLE · ARTESIA

Enviro-Ag Engineering, Inc.
9855 FM 847, Dublin, TX 76446
Tel. 254-965-3500 Fax 254-965-8000

MANURE CHAIN OF CUSTODY RECORD

Producer/Facility: Horizon Dairy

County: Hamilton

Date Sampled: 6/18/2025

Date Shipped: 6/19/2025

Project Manager: Richard George

Sample Type	Sample ID	Number of Containers	Test Package	Proper Preservation	Matrix
Slurry	4298 Slurry	1	EAE TX CO KS SLURRY	Y	SL

Relinquished By: Ref. Internal COC — Company: EAE

Relinquished By: Lisa Postmus — Company: EAE — Date/Time: 6/19 1200

Relinquished By: — Company: ServiTech Lab — Received By:

servi tech
6921 S. Bell • Amarillo, TX 79109
www.servitech.com

Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No: **4260**

LABORATORY ANALYSIS REPORT

Report Date: 06/30/2025 04:38 pm

Send To:
6224

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

Amy Meier
Data Review Coordinator

Client Name:	HORIZON DAIRY	**Received:**	06/19/2025
Sample ID:	RCS 2A	**Sampled:**	06/18/2025
Location	HAMILTON COUNTY	**Invoice No:**	428535
		P.O. #:	RICHARD GEORGE

	Analysis results		lbs/acre-in	meq/L
NUTRIENTS				
Nitrogen				
Total Nitrogen	165	ppm	37	11.8
Organic Nitrogen	49	ppm	11	3.5
Ammonium Nitrogen	116.1	ppm	26	8.3
Nitrate+Nitrite Nitrogen	<0.20	ppm	0	0
Major and Secondary Nutrients				
Phosphorus	30	ppm		
Phosphorus as P2O5	70	ppm	16	
Potassium	350	ppm		9.0
Potassium as K2O	420	ppm	95	
OTHER PROPERTIES				
Moisture	99.8	%		
Total Solids	0.2	%	453	
Organic Matter	0.1	%	227	
Ash	<0.10	%		
C:N Ratio	3.5	ratio		

ENVIRO-AG ENGINEERING, INC.
EAE
AMARILLO · STEPHENVILLE · ARTESIA

Enviro-Ag Engineering, Inc.
9855 FM 847, Dublin, TX 76446
Tel. 254-965-3500 Fax 254-965-8000

WASTEWATER CHAIN OF CUSTODY RECORD

Producer/Facility: Horizon Dairy

County: Hamilton

Date Sampled: 6/18/2025

Date Shipped: 6/19/2025

Project Manager: Richard George

Sample Type	Sample ID	Number of Containers	Test Package	Proper Preservation	Matrix
Wastewater 4260	RCS #2A	2	EAE TX CO KS LAGOON	Y	OT
Wastewater 4261	RCS #2B	2	EAE TX CO KS LAGOON	Y	OT
Wastewater 4262	RCS #3	2	EAE TX CO KS LAGOON	Y	OT

Relinquished By: Ref. Internal COC — Company: EAE

Relinquished By: Lisa Postmus — Company: EAE — Date/Time: 6/19 1200

Relinquished By: _____ — Company: ServiTech Lab

Received By: [signature]

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

5.1 General

This recharge feature certification report was authorized by Mr. David DeJong representing 4P Pastures, LLC. 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

4P Pastures, LLC is applying for a major amendment of current TPDES WQ0004842000 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 3,307 acres in Hamilton County, Texas.

5.4 Definition of Waste Production

The sources of process-generated wastewater is wash water from the milking parlor operations and the water generated from the production of biogas. The flow of the process-generated wastewater can be found on Figures 2.1A-B. The freestall barns are vacuumed for manure removal.

The second process of wastewater production involves the accumulation of manure solids in the open confinement lots. 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 and into an 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 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 significant hydrologic connection (or pathway) between the ground surface and the underlying groundwater within an aquifer."*

The guidance document also defines a "significant pathway" as: *"A significant pathway between the land surface and the subsurface has the ability to transmit waste, wastewater, or precipitation mixed with waste to groundwater. The wastewater may impact the groundwater quality within an aquifer or migrate laterally to discharge as seeps that may impact surface water quality. Recharge features with significant pathways include geomorphologic, geologic, soil, and artificial features. Agricultural practices may also enhance existing recharge features."*

EVALUATION OF NATURAL FEATURES

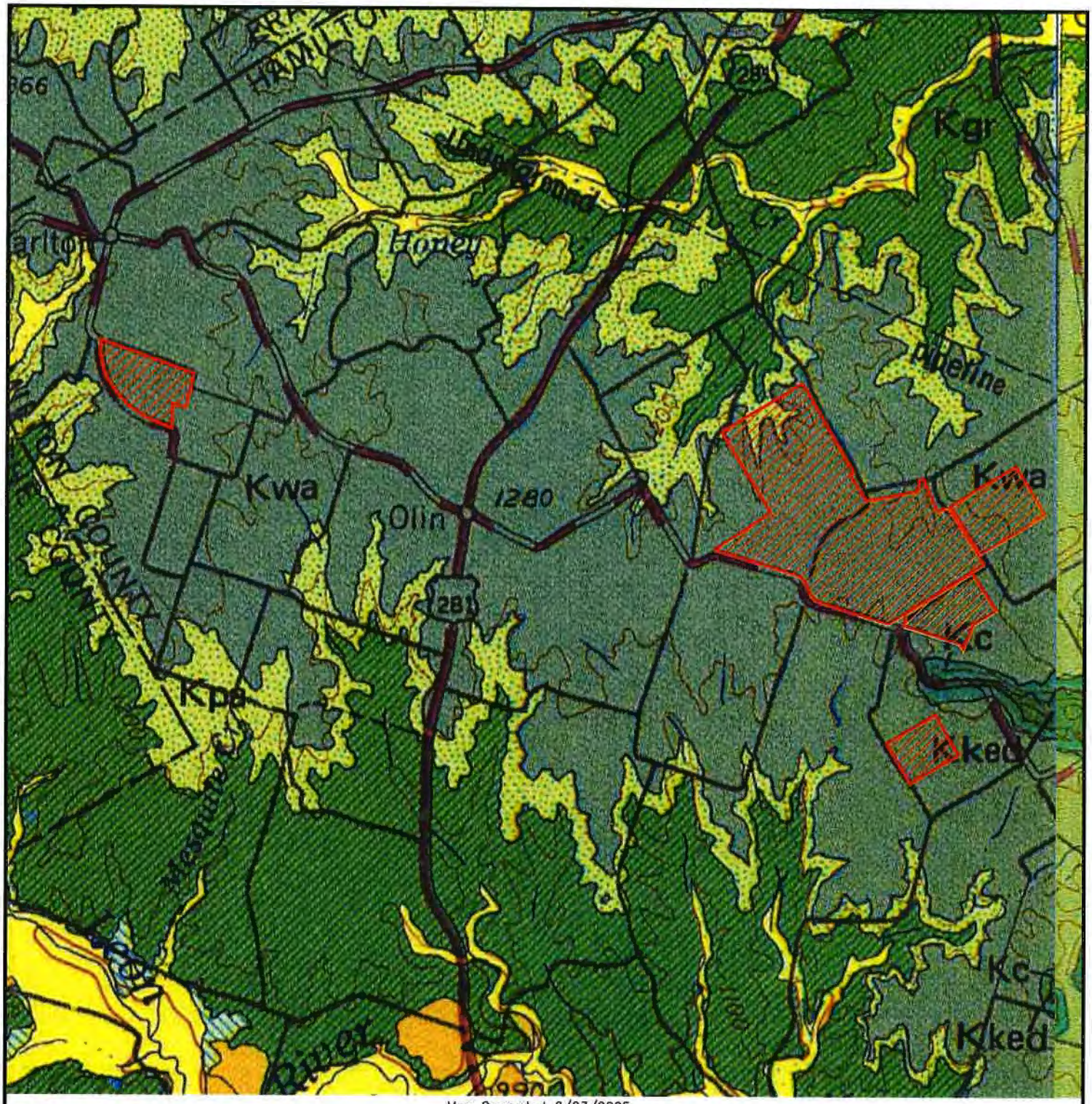
5.6 Geomorphologic/Geologic Features

The clay loam soils in this area of Hamilton County are immediately underlain primarily by the Paluxy and Glen Rose Formations and by recently deposited Alluvium in the areo of the North Bosque River, as shown in Figure 5.1, Geologic Atlas. Allluvium consists of floodplain deposits, including low terrace deposits near floodplain level and bedrock locally in stream channels; gravel, sand, silt, clay and organic matter up to 35 feet thick. The Paluxy Formation consists of sandstone interbedded with claystone and siltstone, up to 100 feet thick, thinning southward. The Glen Rose Formation of Cretaceous-age consists of alternating limestone and claystone with some sandstone, up to 250 feet thick in the southeastern area of the formation. (Geologic Atlas, 1976).

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 breaking 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. Underlying the Paluxy, the Glen Rose Formatian forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. Paluxy bedrock outcrops along the northeast portion 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 Mountains and Travis Peak formatians, which are laterally separated by a facies change. To the north, the Twin Mountains Formation consists mainly of medium-to coarse-grained sands, silty clays, and conglomerates (Ashworth, 1995).



Map Generated 6/23/2025

Legend:
Denotes Horizon Dairy
KwA – Cretaceous Walnut Formation
KpA – Cretaceous Paluxy Formation

N
W E
S

No Scale

Source: Geologic Atlas of Texas, Brownwood Sheet (1976).

Horizon Dairy, LLC Hico, Texas Hamilton County	Geologic Atlas of Texas Figure 5.1 Page 33	ENVIRO–AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

5.6.1 Outcrops/Stream Interception

An inspection of the CAFO property and review of the USGS topographic map of the area shows intermittent streams of Dry Fork are located in LMUs 1A, 2A, 8, 10 and 11. These areas are protected from the application with the required buffers. Intermittent streams for Long Branch are located in LMUs 13, 14 and 15. These areas are protected from land application with the required buffers. Intermittent streams for Indian Creek are located in LMUs Mayhugh 1 and Mayhugh 2. These areas are protected form land application with the required buffers. Intermittent streams for Rocky Creek are located in LMUs Watson 1 and Watson 2. These areas are protected form application with the required buffers. The freshwater ponds located in LMUs 1A, 2A, 3A, 13, 18, 21, Watson 2, Mayhugh 1 and Mayhugh 2 are all protected from land application with the required buffers. The caliche pits located in LMU 20 and Mayhugh 2 are protected from land application with the required buffer. The caliche pit located in LMU 21 sits uphill; therefore, a buffer is not required in this LMU. The caliche pit that was located in LMU 8, the freshwater pond that was located in the northern portion of LMU 23 and the freshwater pond that was located in eastern portion of LMU 20 have been backfilled in with dirt and are no longer there. The grass waterway located in LMU 2 is maintained to meet NRCS specifications as indicated in Special Provision R in the current TPDES permit.

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 Figures 6.1A1-2, B & C (Refer to Section 6) are submitted with this application for TCEQ approval.

5.6.5 Aquifer

The Trinity aquifer consists of early Cretaceous age formations of the Trinity Group where they occur in a band extending through the central part of the state in all or parts of 55 counties, from the Red River in North Texas to the Hill Country of South-Central Texas.

Formations comprising the Trinity Group are (from youngest to oldest) Paluxy, Glen Rose, and Twin Mountains-Travis peak. Updip, where the Glen Rose thins or is missing, the Paluxy and Twin Mountains coalesce to form the Antlers Formation. The Antlers consists of up to 900 feet of sand and gravel, with clay beds in the middle section. Water from the Antlers is mainly used for irrigation in the outcrop area of North and Central Texas (Ashworth and Hopkins, 1995).

The aquifer is underlain and confined by low-permeability rocks that range in age from Precambrian to Jurassic. Where the aquifer does not crop out, it is confined above by the Walnut Formation in most of the area.

Recharge to the Trinity aquifer is generally as precipitation that falls on aquifer outcrop areas and as seepage from streams and ponds where the head gradient is downward. In the Hill Country, water might flow laterally into the Trinity aquifer from the adjacent Edwards-Trinity aquifer. The aquifer discharges by evapotranspiration, spring 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 Hamilton 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 Hamilton County available on the NRCS Web Soil Survey.

5.7.1 Production Area

Soils underlying the pen and pond areas are predominately of the Brackett-Maloterre complex (BxD), Pidcoke (PkB), Slidell (SsB) and Topsey (ToC) series. The RCSs 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 Brackett-Maloterre (BxD), Cho (ChB), Brackett-Pidcoke (ByC), Krum (KrB), Nuff (NuC), Oglesby (OgB), Pidcoke (PkB), San Saba (SaB), Slidell (SsB), and Topsey (ToC) 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.

Figures 5.2A-C shows the soils underlying the property as delineated from the electronic NRCS Soil Survey map for Hamilton 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.

Table 5.1: Estimated Soil Properties

Soil Series (Map ID)	Slope (%)	HSG	Depth (in)	USDA Soil Texture	Permeability / Infiltration Rate (in/hr)	Available Water Capacity (in/in of soil)
BtC: Brackett	1-5	D	0-6	Gravelly Clay Loam	0.6-2.0	0.08-0.12
			6-16		0.6-2.0	0.11-0.16
			16-80		0.06-2.0	—
BxD: Brackett	—	C	0-4	Gravelly Clay Loam	0.6-2.0	0.11-0.16
			4-14		0.6-2.0	0.08-0.16
	—	D	14-60	Gravelly Clay Loam	0.06-2.0	-----
Maloterre			0-5		0.6-2.0	0.11-0.13
			5-80		0.06-0.6	—
ByC: Brackett	1-5	C	0-6	Gravelly Clay Loam	0.6-2.0	0.11-0.16
			6-16		0.6-2.0	0.08-0.16
Pidcoke	1-5	D	16-60		0.06-2.0	—
			0-11	Gravelly Clay Loam	0.6-2.0	0.11-0.15
			11-18		0.6-2.0	0.11-0.15
			18-80		0.06-0.6	—
CHB: Cha	1-3	D	0-14	Gravelly Clay Loam	0.6-2.0	0.07-0.12
			14-19		0.06-2.0	-----
			19-62		0.6-2.0	0.05-0.10
DnB: Denton	1-3	C	0-13	Silty Clay	0.06-0.20	0.10-0.18
			13-19		0.06-0.6	0.10-0.18
			19-36		0.20-2.0	0.10-0.14
KrB: Krum	1-5	C	0-8	Silty Clay	0.06-0.20	0.13-0.20
			8-36		0.06-0.20	0.12-0.18
NuB: Nuff	1-3	C	0-5	Silty Clay	0.06-0.20	0.12-0.18
			5-13		0.06-0.20	0.12-0.18
			13-23		0.06-0.20	0.11-0.16
			23-33		0.06-0.20	0.11-0.16
NuC: Nuff	2-6	C	0-5	Silty Clay Loam	0.6-2.0	0.08-0.11
			5-13		0.20-0.6	0.07-0.11
			13-23		0.06-0.20	0.11-0.16
			23-33		0.06-0.20	0.11-0.16
OgB: Oglesby	1-3	D	0-17	Gravelly Silty Clay	0.06-0.20	0.10-0.15
			17-35		0.06-2.0	—

PkB: Pidcoke	1-3	D	0-11 11-18 18-24	Gravelly Clay Loam	0.6-2.0 0.6-2.0 0.06-0.6	0.11-0.15 0.11-0.15 -----
ReB: Real	1-3	D	0-5 5-12 12-14 14-80	Gravelly Clay Loam	0.6-2.0 0.6-2.0 0.20-2.0 0.20-2.0	0.07-0.09 0.01-0.06 ----- -----
SaB: San Saba	1-3	D	0-11 11-30	Clay	0.001-0.06 0.001-0.06	0.10-0.18 0.10-0.18
SsB: Slidell	1-3	D	0-19 19-32	Clay	0.001-0.06 0.001-0.06	0.10-0.18 0.10-0.18
ToC: Topsey	1-5	C	0-12 12-18 18-32	Clay Loam	0.6-2.0 0.6-2.0 0.20-2.0	0.12-0.20 0.10-0.20 0.10-0.20
ToD: Topsey	5-8	C	0-12 12-32	Clay Loam	0.6-2.0 0.6-2.0	0.12-0.17 0.12-0.17
WSC: Wise	3-5	C	0-5 5-11 11-26	Clay Loam	0.6-2.0 0.6-2.0 0.6-2.0	0.15-0.20 0.15-0.24 0.15-0.24

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, 1A, 2B, 2C, 3B, 4, 8, 17, Mayhugh 2	Pidcoke (PkB)
2A, 3A, 10,	Brackett-Maloterre (BxD)
3C, 5, 11, 13, 14, 15, 20, 23, Mayhugh 1	Slidell (SsB)
6, 7,	Topsey (ToC)
9, 21	Nuff (NuC)
16, 18	Oglesby (OgB)
Watson 1, Watson 2	Cho (ChB)

Table 5.3: Potential Soil Limitations for Land Application

Soil Series	Potential Soil Limitations	Best Management Practices
BtC: Brackett ByC: Brackett-Pidcoke ReB: Real BxD: Brackett-Maloterre PkB: Pidcoke	Droughty Depth to Bedrock	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils. -All RCSs have been certified as meeting TCEQ liner requirements.
ChB: Cho ReB: Real	Depth to Cemented Pan Droughty	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
KrB: Krum NuB: Nuff SaB: San Saba SsB: Slidell DnB: Denton	Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -No land application to inundated soils. -All RCSs have been certified as meeting TCEQ liner requirements.
NuC: Nuff	Large Stones on the Surface Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -No land application to inundated soils.
OgB: Oglesby	Droughty Depth to Bedrock Slow Water Movement	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain caver crops in LMUs.

Soil Series	Potential Soil Limitations	Best Management Practices
		-Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
ToC: Topsey ToD: Topsey WsC: Wise	Depth to Soft Bedrock	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.
ToD: Topsey	Slope	- Land application not to exceed agronomic rates and soil infiltration rates (refer to the nutrient management plan) - Maintain cover crops in LMUs. -Manage irrigation events to maintain soil moisture levels within the range of the available water holding capacity of the LMU. -No land application to inundated soils.

5.7.3 Erosion

Figures 5.2A1-2, B & C shows the onsite soils classified by NRCS as Highly Erodible Land (HEL), including Cho (ChB), Oglesby (OgB), Pidcoke (PkB), Real (ReB), San Saba (SaB) and Topsey (ToD). 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 oreas 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.

Map Generated 6/23/2025

LEGEND:

Denotes Production Area

For specifics on soils, refer to Table 5.2.

N

W E

S

1200' 0 1200' 2400'

SCALED AS SHOWN

Source: USDA–NRCS Soil Survey, Soil Survey Geographic Database for (Hamilton County, TX). Available at: http://websoilsurvey.nrcs.usda.gov. Accessed May 2025

- Refer to Figures 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	NRCS Soils Map Phase 1 Figure 5.2A Page 40	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 352-4132

Map Generated 6/23/2025

LEGEND:

Denotes Production Area

For specifics on soils, refer to Table 5.2.

N

W E

S

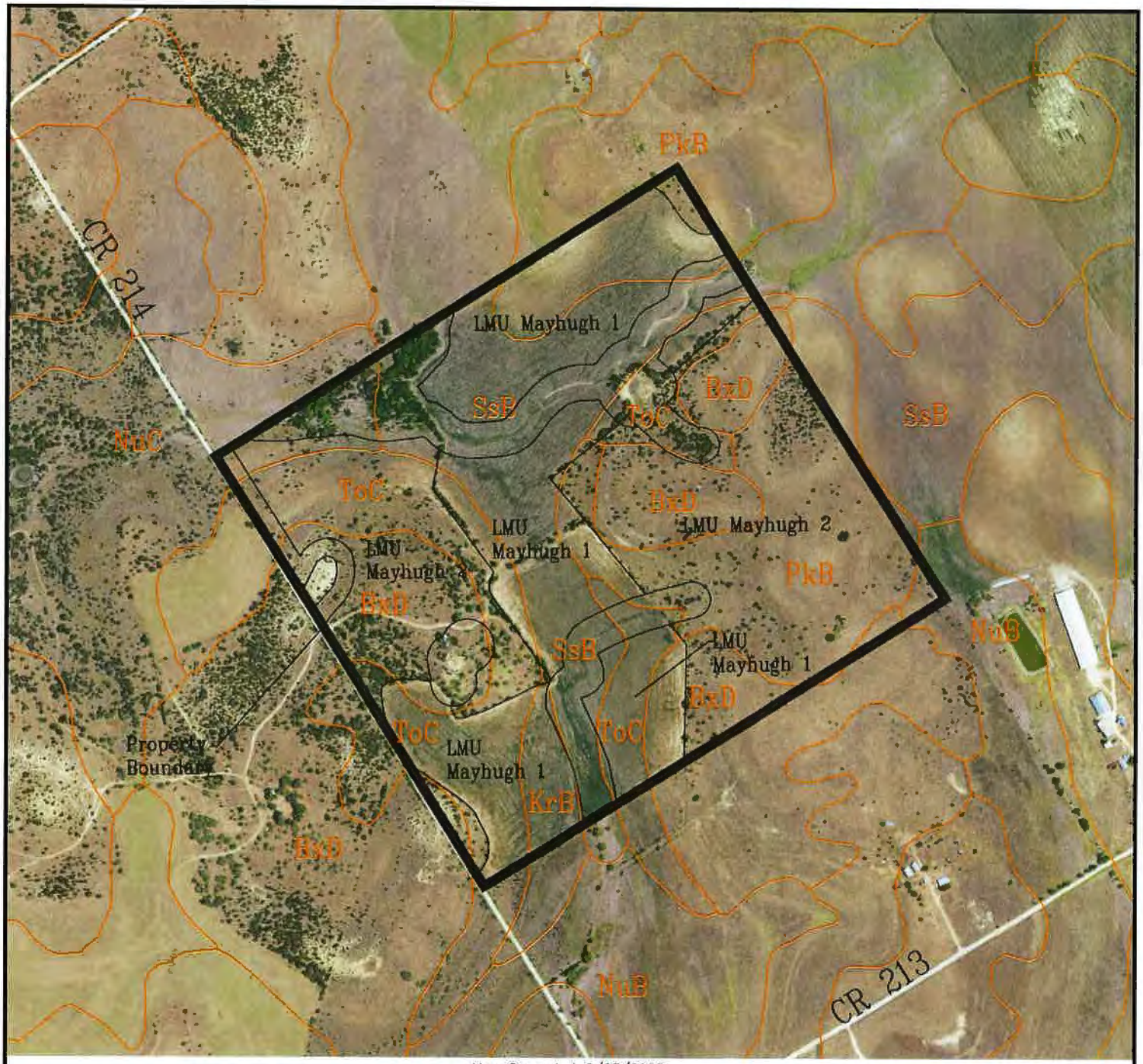
1200' 0 1200' 2400'

SCALED AS SHOWN

Source: USDA–NRCS Soil Survey, Soil Survey Geographic Database for (Hamilton County, TX). Available at: http://websoilsurvey.nrcs.usda.gov. Accessed May 2025

- Refer to Figures 1.3 & 1.4 for overall facility maps.

Horizon Dairy, LLC Hico, Texas Hamilton County	NRCS Soils Map - Phase 2 Figure 5.2A Page 41	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

For specifics on soils, refer to Table 5.2.

N
W E
S

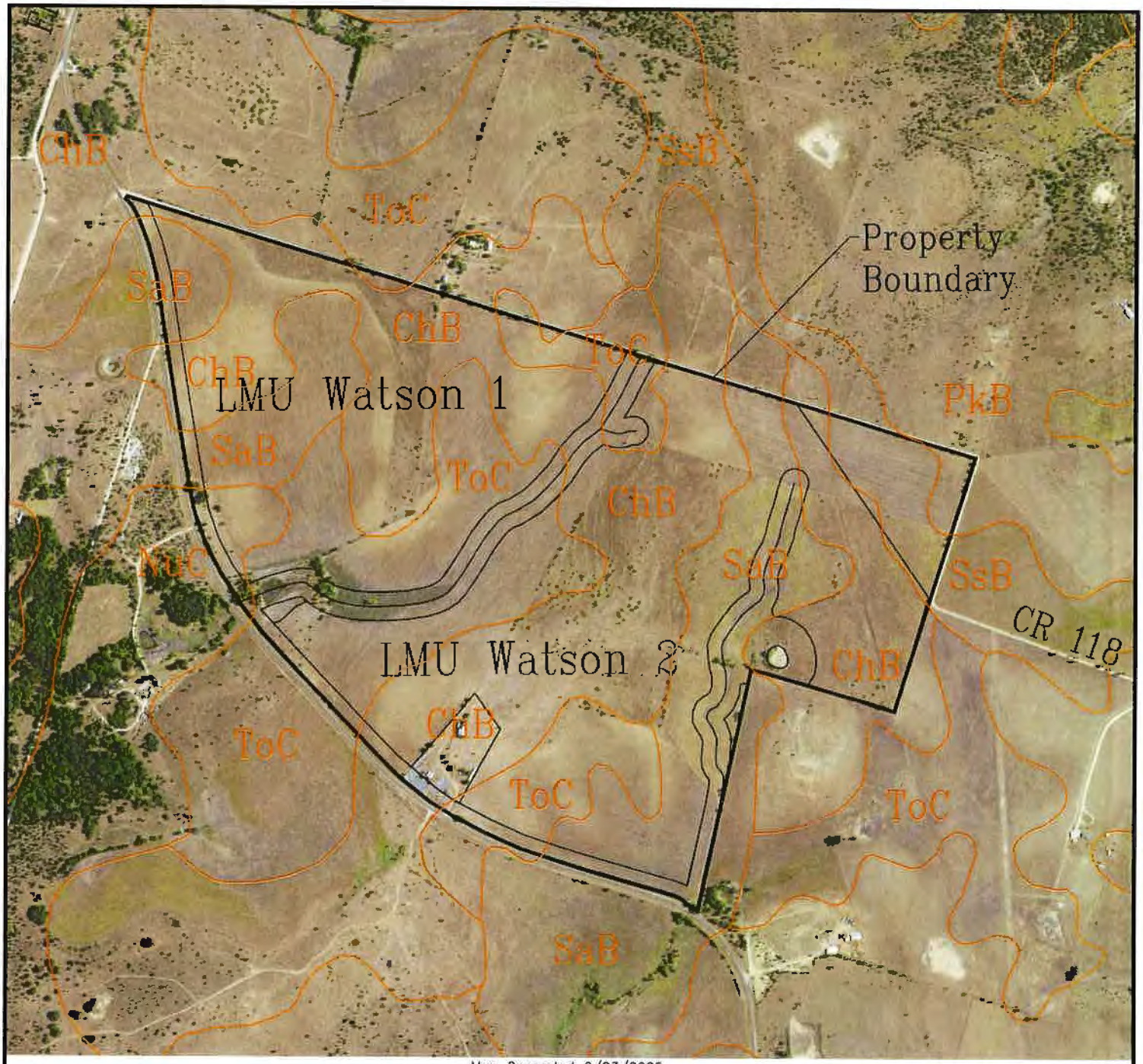
400' 0 400' 800'

SCALED AS SHOWN

Source: USDA–NRCS Soil Survey, Soil Survey Geographic Database for (Hamilton County, TX). Available at: http://websoilsurvey.nrcs.usda.gov. Accessed May 2025

• Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	NRCS Soils Map Figure 5.2B Page 42	ENVIRO–AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



Map Generated 6/23/2025

For specifics on soils, refer to Table 5.2.

N
W E
S

500' 0 500' 1000'

SCALED AS SHOWN

Source: USDA–NRCS Soil Survey, Soil Survey Geographic Database for (Hamilton County, TX). Available at: http://websoilsurvey.nrcs.usda.gov. Accessed May 2025

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	NRCS Soils Map Figure 5.2C Page 43	ENVIRO–AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

ARTIFICIAL FEATURES

5.8 Railroad Commission Records

A search of the RRC database files was performed. 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

There is no groundwater conservation district for Hamilton County; therefore, no data is available at this time. Should an abandoned penetration be encountered anywhere on the subject property at any time, the penetration will be marked, inspected and properly sealed to prevent a potential impact to the underlying aquifer. Appropriate well plugging reports shall be submitted as required to the Texas Department of Licensing and Regulation (TDLR) and will be maintained in the onsite PPP.

5.10 GeoSearch

GeoSearch was not utilized in this application.

5.11 Texas Water Development Board Water Data Interactive (WDI)

The TWDB WDI online database was reviewed for artificial penetrations. The database revealed 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 Hamilton County (2006) was reviewed for locations of potential recharge features. No potential recharge features were identified.

5.13 Other Artificial Features

Numerous features, such as stock ponds, exist on the subject property and are shown to be buffered on Figures 5.3A1-2, B & C. These areas shall be buffered during land application events or backfilled prior to the first land application event. The location of the burial pit on the property meets the NRCS soil recommendations for large animal mortality burial. The silage storage area to the west of the burial pit will have a berm and the burial pit site is located upgradient from any land application.

5.14 Previous/Current Land Owner

Mr. David DeJong was contacted regarding then presence of any potential recharge features on the property. The DeJong family has owned the subject property for many years and is considered the most knowledgeable about specifics on the property. No previous landowner is available. Mr. DeJong confirmed the locations of the 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 are shown on Figures 5.3A1-2, B & C. 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 Figures 5.3A1-2, B & C, 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 Figures 5.3A1-2, B & C. 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

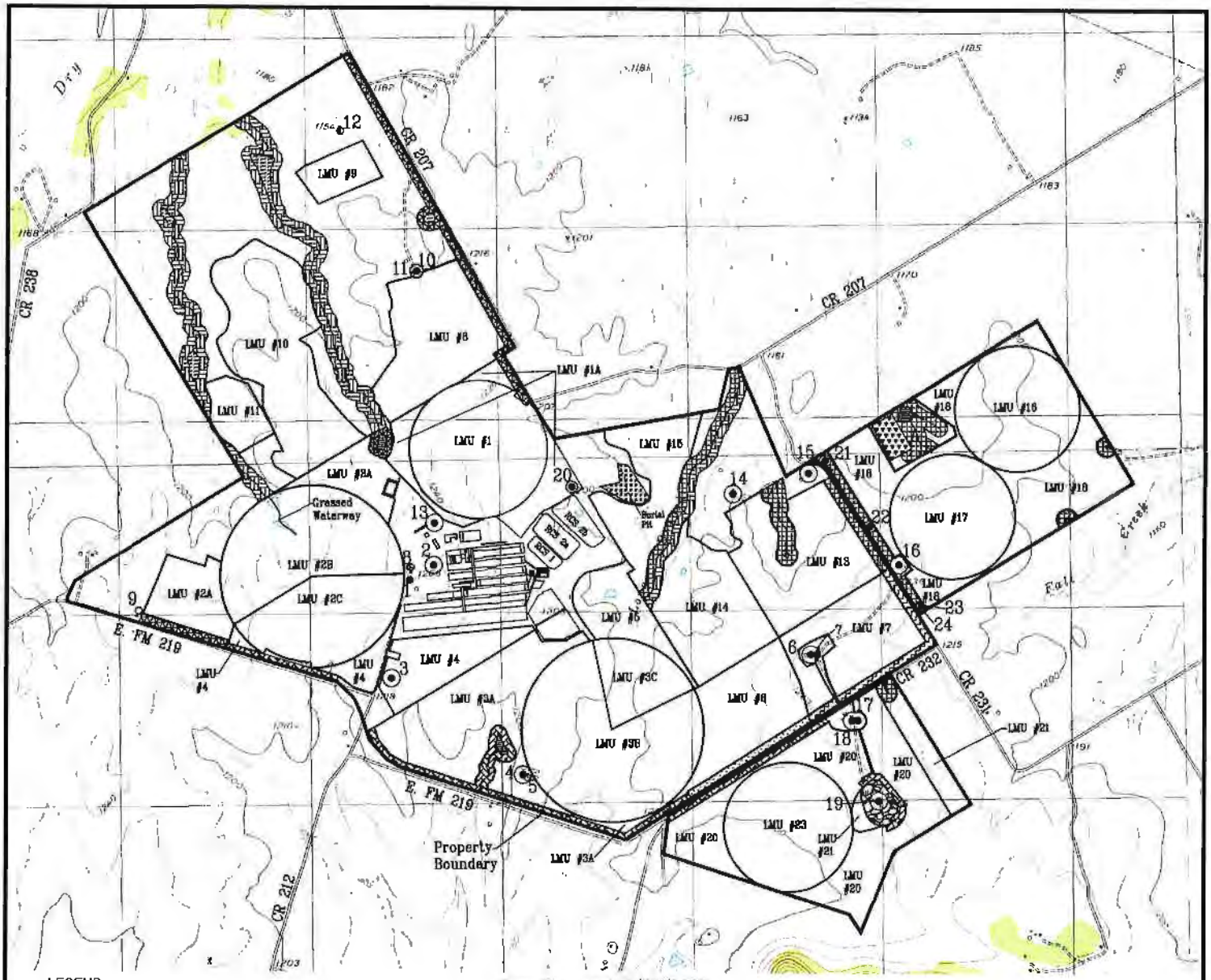
Map No.	Well ID	Best Management Practices
1	-	-See Attached Well Buffer Exception
2	-	-Maintain 150-ft Buffer
3	51340	- Maintain 150-ft Buffer
4	-	-Maintain 150-ft Buffer
5	52024	-See Attached Plugging Report
6	-	-Maintain 150-ft Buffer
7	-	-No Evidence of Well; See Attached due diligence letter from Associated Well Services.
8	-	-See Attached Plugging Report
9	52025	-See Attached Plugging Report
10	-	-Maintain 100-ft Buffer
11	51736	-See Attached Plugging Report
12	51735	- See Attached Plugging Report
13	347272	- Maintain 150-ft Buffer
14	-	- Maintain 150-ft Buffer
15	-	- Maintain 150-ft Buffer
16	623130	- Maintain 150-ft Buffer
17	-	- Maintain 150-ft Buffer
18	-	- Maintain 150-ft Buffer

Map No.	Well ID	Best Management Practices
19	-	- Maintain 150-ft Buffer
20	608308	- Maintain 100-ft Buffer
21	622277	- Maintain 100-ft Buffer
22	-	- Maintain 100-ft Buffer
23	622766	- Maintain 100-ft Buffer
24	225180	-See Attached Plugging Report
M1	655732	- Maintain 150-ft Buffer
W1	-	- Maintain 150-ft Buffer

Note: A copy of the well logs for onsite wells are attached.

No public water supply wells are located within 500 feet of the property boundary. All off-site wells within the required buffer distances required by this authorization are shown (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.



Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N W E S

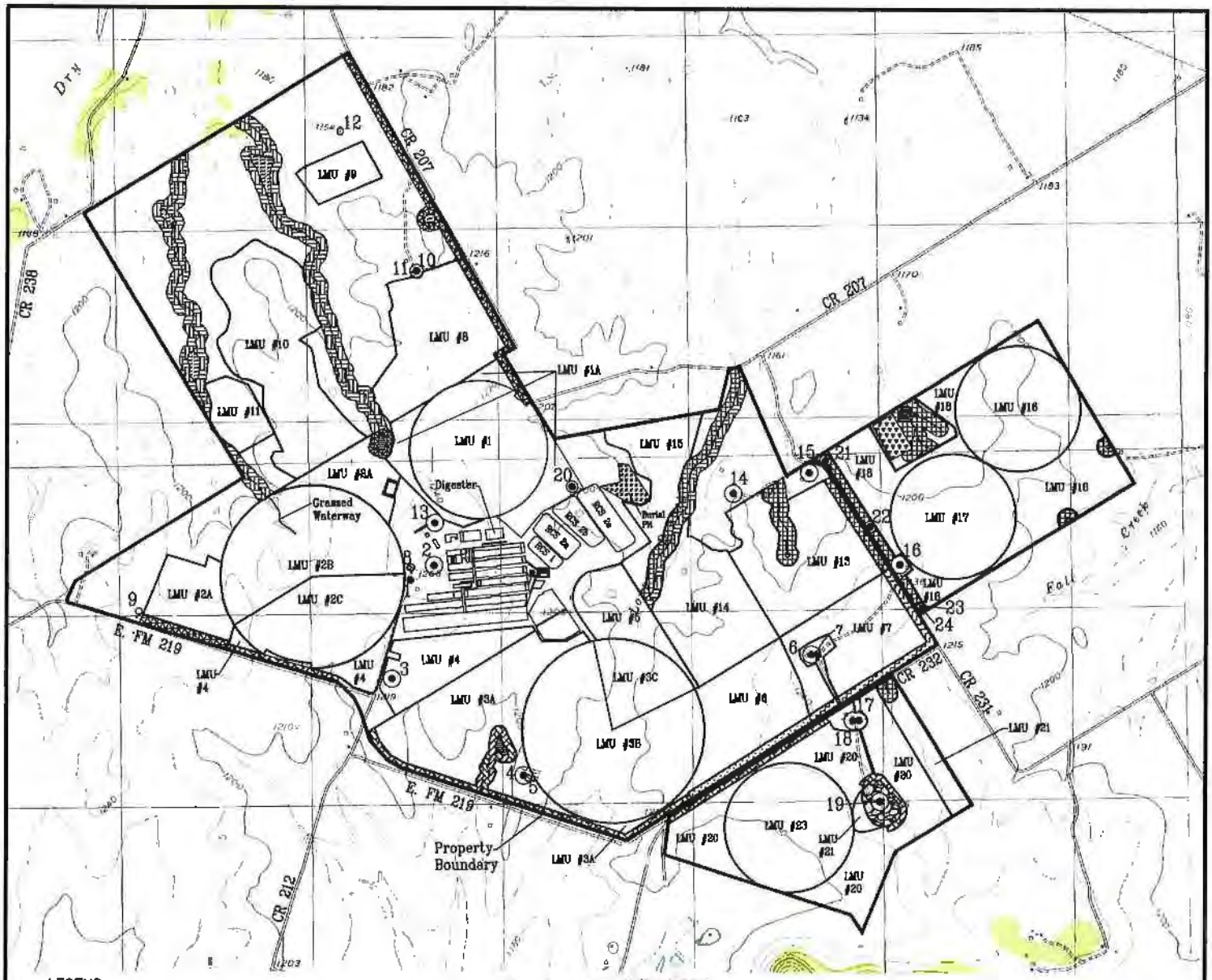
1300' 0 1300' 2600'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Recharge Feature Map - Phase 1 Figure 5.3A Page 47	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-8123 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N
W E
S

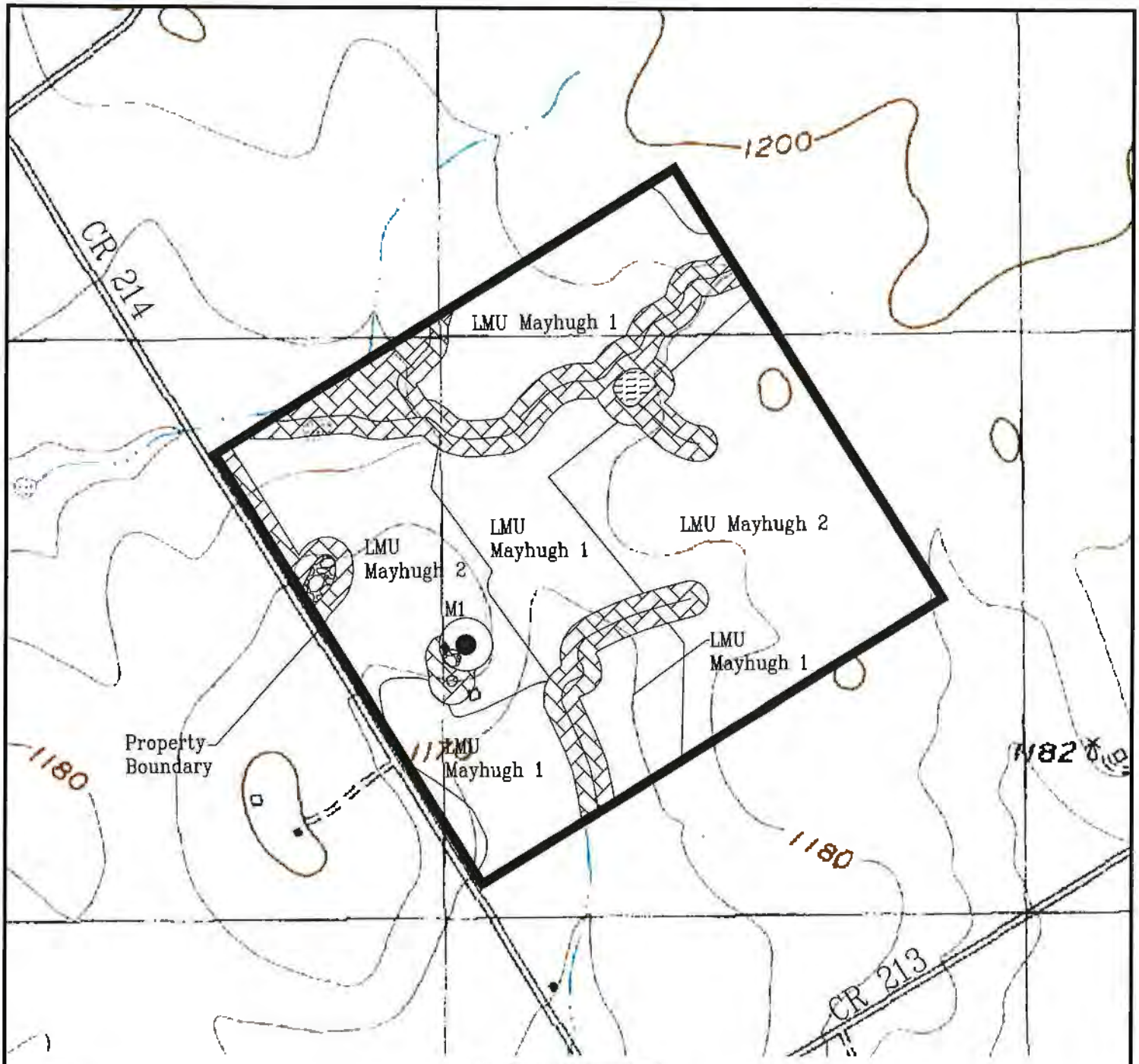
1300' 0 1300' 2600'

SCALED AS SHOWN

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

• Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Recharge Feature Map - Phase 2 Figure 5.3A Page 48	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

Map Generated 6/23/2025

N
W E
S

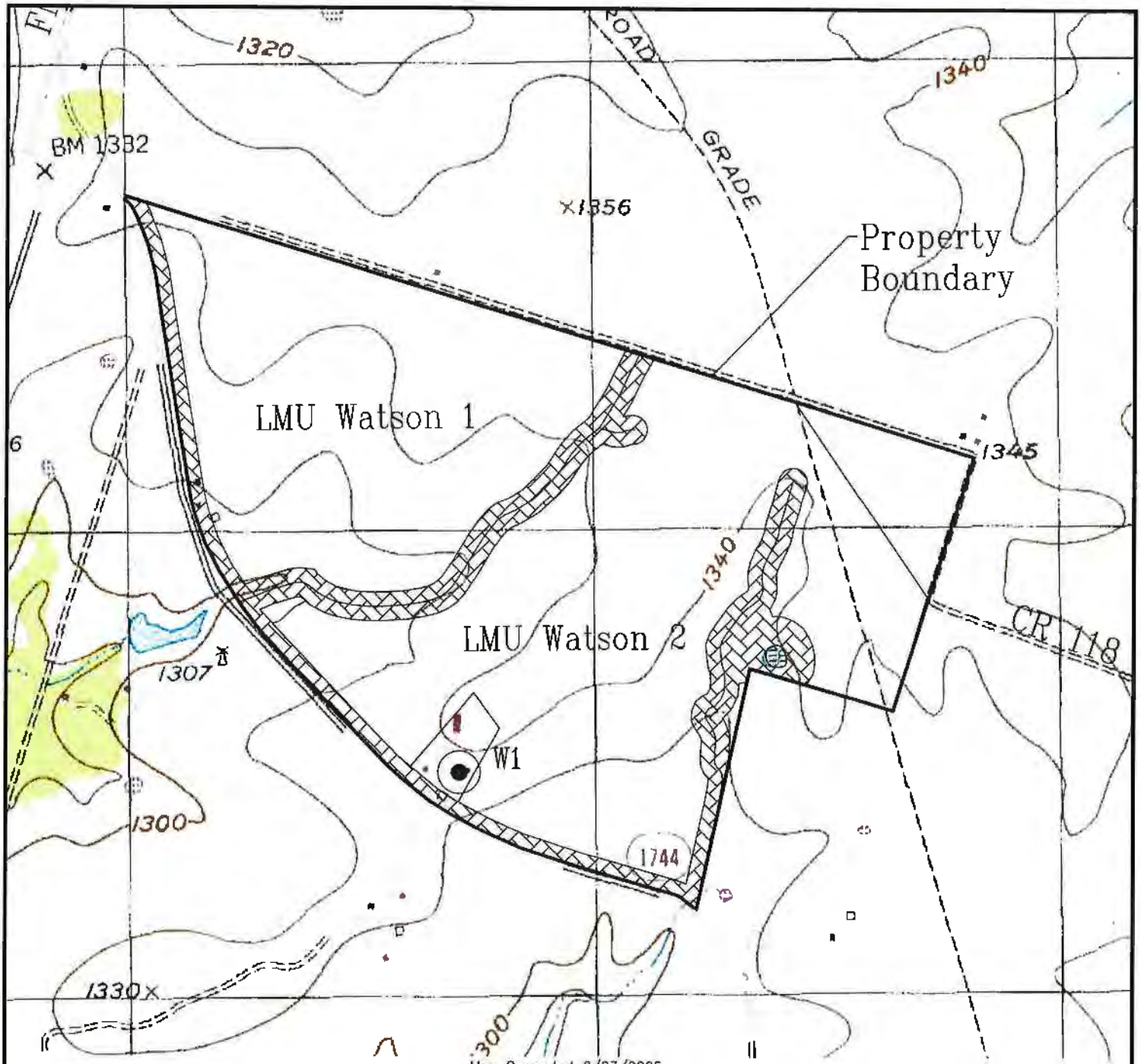
400' 0 400' 800'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Recharge Feature Map Figure 5.3B Page 49	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

N
W E
S

500' 0 500' 1000'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Recharge Feature Map Figure 5.3C Page 50	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

REFERENCES

Ashworth and Hopkins, November 1995. Aquifers of Texas. Report 345, Texas Water Development Board.

Bureau of Economic Geology, The University of Texas at Austin, Geologic Atlas of Texas – Brownwood Sheet, 1976.

DeJong, David. Current Landowner Interview, August 2025.

Evans, Steve. USDA-ARS Bushland, Texas - Telephone Interview, 1996.

Hill, Robert T., 1901. Geography and Geology of the Black and Grand Prairies, Texas with Detailed Descriptions of the Cretaceous Formations and Special Reference to Artesian Waters. Twenty-first Annual Report of the United States Geological Survey, Part VII – Texas.

Knowles, T., Nordstrom, P., Klemt, W. B., Report 288, "Evaluating the Ground Water Resources of the High Plains of Texas". Texas Department of Water Resources, Volume 1, Moy 1984.

Sweeten, J.M. 1990. Cattle Feedlot Waste Management Practices for Water and Air Pollution Control. B-1671, Texas Agricultural Extension Service, Texas A&M University System, 24 pp.

Texas Railroad Commission Files Search, August 2025.

Texas Railroad Commission, GIS Data Viewer, Accessed August 2025.

TCEQ and Texas Water Development Board, Files Search, August 2025.

Texas Water Development Board. Water Data Interactive. Retrieved August 2025, from https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer

USDA NRCS, Soil Survey of Hamilton County, Texas, 2006.

USDA NRCS, National Soil Database, SSURGO digital soil data for Hamilton County, Texas, Retrieved August 2025. http://www.ftw.nrcs.usda.gov/ssur_data.html

USDA-NRCS Electronic Field Office Technical Guide, Soil Information Database – Hamilton County, Texas, Retrieved August 2025. http://www.nrcs.usda.gov/technical/efotg.

USGS. Groundwater Atlas of the United States. Oklahoma and Texas. HA_730E. http://capp.water.usgs.gov/gwa/ch_e/E_text8.html, March 2003.

Supporting Documentation

USDA Soil Descriptions & Limitations

Texas Railroad Commission Map

Water District Well Location Map (if available)

Onsite Well Logs (if available)

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.

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

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
BtC—Brackett gravelly clay loam, 1 to 5 percent slopes														
Brackett	0-6	20-39-45	20-32-49	27-29-35	1.00-1.50	4.00-14.00	0.08-0.12	1.3-4.7	1.0-3.5	.10	.20	2	5	56
	6-16	20-34-50	15-40-67	10-26-35	1.30-1.55	4.00-14.00	0.11-0.16	0.0-4.7	0.1-1.0	.32	.32			
	16-80	—	—	—	—	0.42-14.00	—	—	—					
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes														
Brackett	0-4	20-32-45	20-40-53	27-28-35	1.25-1.40	4.00-14.00	0.11-0.16	2.1-5.4	1.0-3.0	.24	.24	2	4L	86
	4-14	20-35-45	20-40-53	20-25-35	1.40-1.46	4.00-14.00	0.08-0.16	0.5-5.1	0.5-2.0	.32	.32			
	14-60	—	—	—	—	0.42-14.00	—	—	—					
Maloterre	0-5	22-31-42	26-39-50	28-30-34	1.36-1.47	4.00-14.00	0.11-0.13	2.4-4.3	0.5-1.0	.15	.28	1	5	56
	5-80	—	—	—	—	0.42-4.00	—	—	—					

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
ByC—Brackett-Pidcoke gravelly clay loams, 1 to 5 percent slopes														
Brackett	0-6	20-32-45	20-40-53	27-28-35	1.25-1.40	4.00-14.00	0.11-0.16	1.5-4.6	1.0-3.0	.15	.24	2	5	56
	6-16	20-35-45	20-40-53	20-25-35	1.40-1.46	4.00-14.00	0.08-0.16	0.5-5.1	0.5-2.0	.32	.32			
	16-60	—	—	—	—	0.42-14.00	—	—	—					
Pidcoke	0-11	22-34-44	22-37-50	28-29-35	1.28-1.39	4.00-14.00	0.11-0.15	2.5-5.1	1.0-3.0	.17	.24	1	5	56
	11-18	5-34-44	21-37-60	28-29-35	1.37-1.52	4.00-14.00	0.11-0.15	1.7-4.3	0.5-1.0	.24	.32			
	18-80	—	—	—	—	0.42-4.00	—	—	—					
ChB—Cho gravelly clay loam, 1 to 3 percent slopes														
Cho	0-14	-34-	-37-	20-29-35	1.30-1.50	4.00-14.00	0.07-0.12	0.0-2.9	1.0-2.0	.10	.24	1	5	56
	14-19	—	—	—	—	0.42-14.00	—	—	—					
	19-62	-38-	-36-	20-26-35	1.40-1.60	4.00-14.00	0.05-0.10	0.0-2.9	0.1-1.0	.15	.32			
DnB—Denton silty clay, 1 to 3 percent slopes														
Denton	0-13	0-6-20	40-44-60	40-50-57	1.18-1.32	0.42-1.40	0.10-0.18	6.0-15.0	1.0-4.0	.20	.20	3	4	86
	13-19	0-7-20	40-43-63	35-50-55	1.28-1.50	0.42-4.00	0.10-0.18	6.0-12.0	1.0-3.0	.24	.24			
	19-36	5-15-30	40-60-75	20-25-40	1.40-1.65	1.40-14.00	0.10-0.14	0.8-5.4	0.1-1.5	.43	.43			
	36-52	5-15-30	40-60-83	12-25-40	1.40-1.65	1.40-14.00	0.08-0.12	0.1-5.1	0.1-1.0	.49	.49			
	52-80	—	—	—	—	0.42-14.00	—	—	—					

Physical Soil Properties—Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
KrB—Krum silty clay, cool, 1 to 5 percent slopes														
Krum, cool	0-8	2- 7- 15	40-48- 58	40-45- 55	1.00-1.40	0.42-1.40	0.13-0.20	5.5-13.6	1.0-5.0	.28	.28	5	4	86
	8-36	2- 5- 33	25-45- 58	40-50- 60	1.15-1.45	0.42-1.40	0.12-0.18	4.8-12.5	1.0-4.0	.24	.24			
	36-48	2- 5- 33	25-45- 58	40-50- 60	1.15-1.50	0.42-1.40	0.12-0.18	4.5-10.8	0.1-2.0	.28	.28			
	48-80	2- 5- 33	25-48- 63	35-47- 60	1.30-1.55	0.42-4.00	0.07-0.18	3.1-10.2	0.1-1.0	.32	.32			
NuB—Nuff silty clay, 1 to 3 percent slopes														
Nuff	0-5	3- 8- 13	40-50- 57	40-42- 57	1.25-1.31	0.42-1.40	0.12-0.18	6.1-11.8	2.0-4.0	.24	.24	5	4	86
	5-13	2- 7- 12	40-49- 58	40-44- 58	1.36-1.39	0.42-1.40	0.12-0.18	5.2-11.4	1.5-2.5	.32	.32			
	13-23	1- 6- 11	40-48- 59	40-46- 59	1.41-1.47	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1- 6- 11	40-48- 59	40-46- 59	1.41-1.47	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26- 31	10-29- 39	40-45- 60	1.31-1.44	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes														
Nuff	0-5	10-17- 20	40-49- 59	27-34- 40	1.28-1.39	4.00-14.00	0.08-0.11	1.6-4.7	2.0-4.0	.10	.28	5	6	48
	5-13	10-19- 20	40-45- 59	27-36- 40	1.29-1.43	1.40-4.00	0.07-0.11	1.6-4.5	1.5-2.5	.10	.32			
	13-23	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26- 31	10-29- 39	40-45- 60	1.31-1.45	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
OgB—Oglesby gravelly silty clay, 1 to 3 percent slopes														
Oglesby	0-17	-7-	-48-	40-45- 50	1.25-1.45	0.42-1.40	0.10-0.15	6.0-8.9	1.0-3.0	.15	.28	1	5	56
	17-35	—	—	—	—	0.42-14.00	—	—	—					
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes														
Pidcoke	0-11	22-34- 44	22-37- 50	28-29- 35	1.28-1.39	4.00-14.00	0.11-0.15	2.6-5.8	1.0-3.0	.17	.24	1	5	56
	11-18	5-34- 44	21-37- 60	28-29- 35	1.37-1.52	4.00-14.00	0.11-0.15	2.0-5.5	0.5-1.0	.24	.32			
	18-80	—	—	—	—	0.42-4.00	—	—	—					
ReB—Real gravelly clay loam, 1 to 3 percent slopes														
Real	0-5	22-35- 44	22-34- 48	28-31- 34	1.04-1.36	4.00-14.00	0.07-0.09	2.5-4.2	2.0-10.0	.10	.15	2	5	56
	5-12	22-36- 44	23-34- 50	22-30- 33	1.08-1.39	4.00-14.00	0.01-0.06	0.4-3.7	1.0-8.0	.05	.24			
	12-14	—	—	—	—	1.40-14.00	—	—	—					
	14-80	—	—	—	—	1.40-14.00	—	—	—					

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
SaB—San Saba clay, 1 to 3 percent slopes														
San saba	0-11	5-15-35	20-35-40	45-50-60	1.20-1.45	0.01-0.42	0.10-0.18	7.6-14.4	1.0-4.0	.24	.24	2	4	86
	11-30	5-15-35	20-35-50	45-50-60	1.20-1.45	0.01-0.42	0.10-0.18	7.1-14.4	0.5-3.0	.28	.28			
	30-80	—	—	—	—	0.42-14.00	—	—	—					
SsB—Slidell clay, 1 to 3 percent slopes														
Slidell	0-19	0-22-35	20-28-40	40-50-60	1.10-1.45	0.01-0.42	0.10-0.18	7.0-16.0	1.0-4.0	.17	.17	5	4	86
	19-32	0-22-35	20-28-60	40-50-60	1.10-1.45	0.01-0.42	0.10-0.18	6.6-17.0	1.0-3.0	.24	.24			
	32-49	0-22-35	20-28-60	40-50-60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-13.0	0.1-1.0	.24	.24			
	49-80	0-22-35	20-28-60	40-50-60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-10.8	0.1-1.0	.24	.24			
ToC—Topsey clay loam, 1 to 5 percent slopes														
Topsey	0-12	20-30-45	24-40-53	27-30-35	1.32-1.50	4.00-14.00	0.12-0.20	1.1-4.5	2.0-5.0	.15	.15	3	4L	86
	12-18	10-30-45	20-40-65	20-30-35	1.32-1.50	4.00-14.00	0.10-0.20	0.3-4.5	1.0-3.0	.28	.28			
	18-32	10-30-45	20-40-68	20-30-40	1.50-1.65	1.40-14.00	0.10-0.20	0.3-5.4	1.0-2.0	.32	.32			
	32-80	5-15-30	24-47-65	30-38-50	1.65-1.90	1.40-4.00	0.02-0.10	0.6-5.9	0.5-1.0	.32	.32			

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
ToD—Topsey clay loam, 5 to 8 percent slopes														
Topsey	0-12	21-34-44	22-37-51	28-29-35	1.08-1.38	4.00-14.00	0.12-0.17	2.4-5.5	2.0-8.0	.17	.17	3	4L	86
	12-32	15-34-44	21-37-59	20-29-35	1.26-1.48	4.00-14.00	0.12-0.17	0.0-4.8	1.0-2.0	.28	.28			
	32-80	15-17-44	26-51-55	30-32-50	1.68-1.71	1.40-4.00	0.08-0.10	0.1-6.4	0.5-1.0	.37	.37			
W—Water														
Water	—	—	—	—	—	—	—	—	—					
WsC—Wise clay loam, 3 to 5 percent slopes, moderately eroded														
Wise, moderately eroded	0-5	20-29-45	26-43-53	27-28-35	1.30-1.46	4.00-14.00	0.15-0.20	3.0-4.3	0.5-2.0	.32	.32	3	4L	86
	5-11	15-32-50	15-40-68	15-28-35	1.41-1.46	4.00-14.00	0.15-0.24	1.3-3.8	0.5-1.0	.37	.37			
	11-26	15-32-50	15-40-68	15-28-35	1.36-1.58	4.00-14.00	0.15-0.24	1.3-3.7	0.2-0.5	.43	.43			
	26-80	15-30-80	5-50-83	2-20-35	1.66-1.75	1.40-14.00	0.01-0.14	0.0-4.3	0.1-0.5	.55	.55			

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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.

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

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
ChB—Cho gravelly clay loam, 1 to 3 percent slopes														
Cho	0-14	-34-	-37-	20-29- 35	1.30-1.50	4.00-14.00	0.07-0.12	0.0-2.9	1.0-2.0	.10	.24	1	5	56
	14-19	—	—	—	—	0.42-14.00	—	—	—					
	19-62	-38-	-36-	20-26- 35	1.40-1.60	4.00-14.00	0.05-0.10	0.0-2.9	0.1-1.0	.15	.32			
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes														
Nuff	0-5	10-17- 20	40-49- 59	27-34- 40	1.28-1.39	4.00-14.00	0.08-0.11	1.6-4.7	2.0-4.0	.10	.28	5	6	48
	5-13	10-19- 20	40-45- 59	27-36- 40	1.29-1.43	1.40-4.00	0.07-0.11	1.6-4.5	1.5-2.5	.10	.32			
	13-23	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26- 31	10-29- 39	40-45- 60	1.31-1.45	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes														
Pidcoke	0-11	22-34- 44	22-37- 50	28-29- 35	1.28-1.39	4.00-14.00	0.11-0.15	2.6-5.8	1.0-3.0	.17	.24	1	5	56
	11-18	5-34- 44	21-37- 60	28-29- 35	1.37-1.52	4.00-14.00	0.11-0.15	2.0-5.5	0.5-1.0	.24	.32			
	18-80	—	—	—	—	0.42-4.00	—	—	—					

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
SaB—San Saba clay, 1 to 3 percent slopes														
San saba	0-11	5-15- 35	20-35- 40	45-50- 60	1.20-1.45	0.01-0.42	0.10-0.18	7.6-14.4	1.0-4.0	.24	.24	2	4	86
	11-30	5-15- 35	20-35- 50	45-50- 60	1.20-1.45	0.01-0.42	0.10-0.18	7.1-14.4	0.5-3.0	.28	.28			
	30-80	—	—	—	—	0.42-14.00	—	—	—					
SsB—Slidell clay, 1 to 3 percent slopes														
Slidell	0-19	0-22- 35	20-28- 40	40-50- 60	1.10-1.45	0.01-0.42	0.10-0.18	7.0-16.0	1.0-4.0	.17	.17	5	4	86
	19-32	0-22- 35	20-28- 60	40-50- 60	1.10-1.45	0.01-0.42	0.10-0.18	6.6-17.0	1.0-3.0	.24	.24			
	32-49	0-22- 35	20-28- 60	40-50- 60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-13.0	0.1-1.0	.24	.24			
	49-80	0-22- 35	20-28- 60	40-50- 60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-10.8	0.1-1.0	.24	.24			
ToC—Topsey clay loam, 1 to 5 percent slopes														
Topsey	0-12	20-30- 45	24-40- 53	27-30- 35	1.32-1.50	4.00-14.00	0.12-0.20	1.1-4.5	2.0-5.0	.15	.15	3	4L	86
	12-18	10-30- 45	20-40- 65	20-30- 35	1.32-1.50	4.00-14.00	0.10-0.20	0.3-4.5	1.0-3.0	.28	.28			
	18-32	10-30- 45	20-40- 68	20-30- 40	1.50-1.65	1.40-14.00	0.10-0.20	0.3-5.4	1.0-2.0	.32	.32			
	32-80	5-15- 30	24-47- 65	30-38- 50	1.65-1.90	1.40-4.00	0.02-0.10	0.6-5.9	0.5-1.0	.32	.32			

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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.

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

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes														
Brackett	0-4	20-32-45	20-40-53	27-28-35	1.25-1.40	4.00-14.00	0.11-0.16	2.1-5.4	1.0-3.0	.24	.24	2	4L	86
	4-14	20-35-45	20-40-53	20-25-35	1.40-1.46	4.00-14.00	0.08-0.16	0.5-5.1	0.5-2.0	.32	.32			
	14-60	—	—	—	—	0.42-14.00	—	—	—					
Maloterre	0-5	22-31-42	26-39-50	28-30-34	1.36-1.47	4.00-14.00	0.11-0.13	2.4-4.3	0.5-1.0	.15	.28	1	5	56
	5-80	—	—	—	—	0.42-4.00	—	—	—					
KrB—Krum silty clay, cool, 1 to 5 percent slopes														
Krum, cool	0-8	2-7-15	40-48-58	40-45-55	1.00-1.40	0.42-1.40	0.13-0.20	5.5-13.6	1.0-5.0	.28	.28	5	4	86
	8-36	2-5-33	25-45-58	40-50-60	1.15-1.45	0.42-1.40	0.12-0.18	4.8-12.5	1.0-4.0	.24	.24			
	36-48	2-5-33	25-45-58	40-50-60	1.15-1.50	0.42-1.40	0.12-0.18	4.5-10.8	0.1-2.0	.28	.28			
	48-80	2-5-33	25-48-63	35-47-60	1.30-1.55	0.42-4.00	0.07-0.18	3.1-10.2	0.1-1.0	.32	.32			

Physical Soil Properties—Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
NuB—Nuff silty clay, 1 to 3 percent slopes														
Nuff	0-5	3-8-13	40-50-57	40-42-57	1.25-1.31	0.42-1.40	0.12-0.18	6.1-11.8	2.0-4.0	.24	.24	5	4	86
	5-13	2-7-12	40-49-58	40-44-58	1.36-1.39	0.42-1.40	0.12-0.18	5.2-11.4	1.5-2.5	.32	.32			
	13-23	1-6-11	40-48-59	40-46-59	1.41-1.47	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1-6-11	40-48-59	40-46-59	1.41-1.47	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26-31	10-29-39	40-45-60	1.31-1.44	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes														
Nuff	0-5	10-17-20	40-49-59	27-34-40	1.28-1.39	4.00-14.00	0.08-0.11	1.6-4.7	2.0-4.0	.10	.28	5	6	48
	5-13	10-19-20	40-45-59	27-36-40	1.29-1.43	1.40-4.00	0.07-0.11	1.6-4.5	1.5-2.5	.10	.32			
	13-23	1-6-11	40-48-59	40-46-59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1-6-11	40-48-59	40-46-59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26-31	10-29-39	40-45-60	1.31-1.45	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes														
Pidcoke	0-11	22-34-44	22-37-50	28-29-35	1.28-1.39	4.00-14.00	0.11-0.15	2.6-5.8	1.0-3.0	.17	.24	1	5	56
	11-18	5-34-44	21-37-60	28-29-35	1.37-1.52	4.00-14.00	0.11-0.15	2.0-5.5	0.5-1.0	.24	.32			
	18-80	—	—	—	—	0.42-4.00	—	—	—					

Physical Soil Properties–Hamilton County, 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 group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
SsB—Slidell clay, 1 to 3 percent slopes														
Slidell	0-19	0-22-35	20-28-40	40-50-60	1.10-1.45	0.01-0.42	0.10-0.18	7.0-16.0	1.0-4.0	.17	.17	5	4	86
	19-32	0-22-35	20-28-60	40-50-60	1.10-1.45	0.01-0.42	0.10-0.18	6.6-17.0	1.0-3.0	.24	.24			
	32-49	0-22-35	20-28-60	40-50-60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-13.0	0.1-1.0	.24	.24			
	49-80	0-22-35	20-28-60	40-50-60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-10.8	0.1-1.0	.24	.24			
ToC—Topsey clay loam, 1 to 5 percent slopes														
Topsey	0-12	20-30-45	24-40-53	27-30-35	1.32-1.50	4.00-14.00	0.12-0.20	1.1-4.5	2.0-5.0	.15	.15	3	4L	86
	12-18	10-30-45	20-40-65	20-30-35	1.32-1.50	4.00-14.00	0.10-0.20	0.3-4.5	1.0-3.0	.28	.28			
	18-32	10-30-45	20-40-68	20-30-40	1.50-1.65	1.40-14.00	0.10-0.20	0.3-5.4	1.0-2.0	.32	.32			
	32-80	5-15-30	24-47-65	30-38-50	1.65-1.90	1.40-4.00	0.02-0.10	0.6-5.9	0.5-1.0	.32	.32			

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BtC—Brackett gravelly clay loam, 1 to 5 percent slopes								
Brackett	81	197	D	.20	2	38.6	32.4	29.0
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes								
Brackett	55	161	D	.24	2	32.0	40.0	28.0
Maloterre	30	200	D	.28	1	31.0	39.0	30.0
ByC—Brackett-Pidcoke gravelly clay loams, 1 to 5 percent slopes								
Brackett	45	180	D	.24	2	32.0	40.0	28.0
Pidcoke	40	298	D	.24	1	34.0	37.0	29.0
ChB—Cho gravelly clay loam, 1 to 3 percent slopes								
Cho	100	200	D	.24	1	34.0	37.0	29.0
DnB—Denton silty clay, 1 to 3 percent slopes								
Denton	85	298	C	.20	3	6.0	44.0	50.0
KrB—Krum silty clay, cool, 1 to 5 percent slopes								
Krum, cool	85	200	C	.28	5	7.0	48.0	45.0
NuB—Nuff silty clay, 1 to 3 percent slopes								
Nuff	85	200	C	.24	5	8.0	50.0	42.0

RUSLE2 Related Attributes--Hamilton County, Texas								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes								
Nuff	85	180	C	.28	5	17.0	48.0	34.0
OgB—Oglesby gravelly silty clay, 1 to 3 percent slopes								
Oglesby	100	200	D	.28	1	7.2	47.8	45.0
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes								
Pidcoke	85	200	D	.24	1	34.0	37.0	29.0
ReB—Real gravelly clay loam, 1 to 3 percent slopes								
Real	80	200	D	.15	2	35.0	34.0	31.0
SaB—San Saba clay, 1 to 3 percent slopes								
San Saba	90	200	D	.24	2	15.0	35.0	50.0
SsB—Slidell clay, 1 to 3 percent slopes								
Slidell	85	298	D	.17	5	22.0	28.0	50.0
ToC—Topsey clay loam, 1 to 5 percent slopes								
Topsey	85	200	C	.15	3	30.0	40.0	30.0
ToD—Topsey clay loam, 5 to 8 percent slopes								
Topsey	80	141	C	.17	3	34.0	37.0	29.0
WsC—Wise clay loam, 3 to 5 percent slopes, moderately eroded								
Wise, moderately eroded	85	151	C	.32	3	29.0	43.0	28.0

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes								
Brackett	55	161	D	.24	2	32.0	40.0	28.0
Maloterre	30	200	D	.28	1	31.0	39.0	30.0
KrB—Krum silty clay, cool, 1 to 5 percent slopes								
Krum, cool	85	200	C	.28	5	7.0	48.0	45.0
NuB—Nuff silty clay, 1 to 3 percent slopes								
Nuff	85	200	C	.24	5	8.0	50.0	42.0
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes								
Nuff	85	180	C	.28	5	17.0	49.0	34.0
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes								
Pidcoke	85	200	D	.24	1	34.0	37.0	29.0
SsB—Slidell clay, 1 to 3 percent slopes								
Slidell	85	298	D	.17	5	22.0	28.0	50.0
ToC—Topsey clay loam, 1 to 5 percent slopes								
Topsey	85	200	C	.15	3	30.0	40.0	30.0

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
ChB—Cho gravelly clay loam, 1 to 3 percent slopes								
Cho	100	200	D	.24	1	34.0	37.0	29.0
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes								
Nuff	85	180	C	.28	5	17.0	49.0	34.0
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes								
Pidcoke	85	200	D	.24	1	34.0	37.0	29.0
SaB—San Saba clay, 1 to 3 percent slopes								
San Saba	90	200	D	.24	2	15.0	35.0	50.0
SsB—Slidell clay, 1 to 3 percent slopes								
Slidell	85	298	D	.17	5	22.0	28.0	50.0
ToC—Topsey clay loam, 1 to 5 percent slopes								
Topsey	85	200	C	.15	3	30.0	40.0	30.0

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas

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
BtC—Brackett gravelly clay loam, 1 to 5 percent slopes							
Brackett	81	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Seepage	0.50
		Seepage, porous bedrock	0.50			Slope	0.08
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes							
Brackett	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.68
		Seepage, porous bedrock	0.50			Seepage	0.50
		Too steep for surface application	0.32				
Maloterre	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.08
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				

Selected Soil Interpretations–Hamilton County, Texas							
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
ByC—Brackett-Pidcoke gravelly clay loams, 1 to 5 percent slopes							
Brackett	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Seepage	0.50
		Seepage, porous bedrock	0.50			Slope	0.32
		Too steep for surface application	0.08				
Pidcoke	40	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	0.50
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
ChB—Cho gravelly clay loam, 1 to 3 percent slopes							
Cho	100	Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Droughty	1.00	Droughty	1.00	Seepage	0.50
		Seepage, porous bedrock	0.50				
DnB—Denton silty clay, 1 to 3 percent slopes							
Denton	85	Very limited		Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	1.00	Seepage	0.50
		Seepage, porous bedrock	0.50			Depth to hard bedrock	0.26
KrB—Krum silty clay, cool, 1 to 5 percent slopes							
Krum, cool	85	Very limited		Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.08
		Seepage, porous bedrock	0.30				

Selected Soil Interpretations–Hamilton County, Texas							
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
NuB—Nuff silty clay, 1 to 3 percent slopes							
Nuff	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes							
Nuff	85	Very limited		Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00	Large stones	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.32
		Too steep for surface application	0.08				
OgB—Oglesby gravelly silty clay, 1 to 3 percent slopes							
Oglesby	100	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
		Slow water movement	1.00	Slow water movement	1.00		
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes							
Pidcoke	85	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	0.50
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
ReB—Real gravelly clay loam, 1 to 3 percent slopes							
Real	80	Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Depth to cemented pan	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Seepage	0.27
		Seepage, porous bedrock	0.50				

Selected Soil Interpretations–Hamilton County, Texas

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
SaB—San Saba clay, 1 to 3 percent slopes							
San saba	90	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Depth to hard bedrock	1.00
		Droughty	0.46	Droughty	0.46		
		Depth to bedrock	0.46	Depth to bedrock	0.46		
SsB—Slidell clay, 1 to 3 percent slopes							
Slidell	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
ToC—Topsey clay loam, 1 to 5 percent slopes							
Topsey	85	Somewhat limited		Somewhat limited		Very limited	
		Droughty	0.40	Droughty	0.40	Depth to soft bedrock	1.00
		Slow water movement	0.37	Slow water movement	0.37	Seepage	0.50
		Depth to bedrock	0.29	Depth to bedrock	0.29	Slope	0.08
				Shallow to densic materials	0.29		
ToD—Topsey clay loam, 5 to 8 percent slopes							
Topsey	80	Somewhat limited		Somewhat limited		Very limited	
		Too steep for surface application	0.92	Slow water movement	0.37	Depth to soft bedrock	1.00
		Slow water movement	0.37	Depth to bedrock	0.29	Slope	1.00
		Depth to bedrock	0.29	Droughty	0.29	Seepage	0.50
		Droughty	0.29	Shallow to densic materials	0.29		
		Too steep for sprinkler application	0.03				
W—Water							
Water	100	Not rated		Not rated		Not rated	

Selected Soil Interpretations–Hamilton County, Texas							
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
WsC—Wise clay loam, 3 to 5 percent slopes, moderately eroded							
Wise, moderately eroded	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.80	Depth to bedrock	0.80	Depth to soft bedrock	1.00
		Droughty	0.17	Shallow to densic materials	0.79	Seepage	0.50
		Too steep for surface application	0.08	Droughty	0.17	Slope	0.32

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas							
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
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes							
Brackett	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.68
		Seepage, porous bedrock	0.50			Seepage	0.50
		Too steep for surface application	0.32				
Maloterre	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.08
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
KrB—Krum silty clay, cool, 1 to 5 percent slopes							
Krum, cool	85	Very limited		Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.08
		Seepage, porous bedrock	0.30				

Selected Soil Interpretations–Hamilton County, Texas							
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
NuB—Nuff silty clay, 1 to 3 percent slopes							
Nuff	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes							
Nuff	85	Very limited		Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00	Large stones	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.32
		Too steep for surface application	0.08				
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes							
Pidcoke	85	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	0.50
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
SsB—Slidell clay, 1 to 3 percent slopes							
Slidell	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
ToC—Topsey clay loam, 1 to 5 percent slopes							
Topsey	85	Somewhat limited		Somewhat limited		Very limited	
		Droughty	0.40	Droughty	0.40	Depth to soft bedrock	1.00
		Slow water movement	0.37	Slow water movement	0.37	Seepage	0.50
		Depth to bedrock	0.29	Depth to bedrock	0.29	Slope	0.08
				Shallow to densic materials	0.29		

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

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–Hamilton County, Texas							
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
ChB—Cho gravelly clay loam, 1 to 3 percent slopes							
Cho	100	Very limited		Very limited		Very limited	
		Depth to cemented pan	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Droughty	1.00	Droughty	1.00	Seepage	0.50
		Seepage, porous bedrock	0.50				
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes							
Nuff	85	Very limited		Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00	Large stones	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.32
		Too steep for surface application	0.08				
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes							
Pidcoke	85	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	0.50
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				

Selected Soil Interpretations–Hamilton County, Texas							
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
SaB—San Saba clay, 1 to 3 percent slopes							
San saba	90	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Depth to hard bedrock	1.00
		Droughty	0.46	Droughty	0.46		
		Depth to bedrock	0.46	Depth to bedrock	0.46		
SsB—Slidell clay, 1 to 3 percent slopes							
Slidell	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
ToC—Topsey clay loam, 1 to 5 percent slopes							
Topsey	85	Somewhat limited		Somewhat limited		Very limited	
		Droughty	0.40	Droughty	0.40	Depth to soft bedrock	1.00
		Slow water movement	0.37	Slow water movement	0.37	Seepage	0.50
		Depth to bedrock	0.29	Depth to bedrock	0.29	Slope	0.08
				Shallow to densic materials	0.29		

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 21, Aug 30, 2024

STATE OF TEXAS WELL REPORT for Tracking #51340

Owner:	DAVID DEJONG	Owner Well #:	No Data
Address:	RT 4 BOX 32 HICO, TX 76457	Grid #:	41-16-2
Well Location:	No Data	Latitude:	31° 51' 54" N
		Longitude:	098° 02' 44" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Irrigation

Drilling Start Date: 11/10/2004 Drilling End Date: 11/12/2004

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	11	0	625

Drilling Method: Air Rotary

Borehole Completion: Filter Packed

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	540	625	Gravel	

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	35	31
	530	530	3

Seal Method: CONVENTIONAL

Sealed By: COMPANY

Distance to Property Line (ft.): No Data

Distance to Septic Field or other concentrated contamination (ft.): No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Surface Completion: Alternative Procedure Used

Water Level: 540 ft. below land surface on 2004-11-12 Measurement Method: Unknown

Packers: No Data

Type of Pump: No Data

Well Tests: Estimated Yield: 120 GPM with 5 ft. drawdown after .25 hours

	Static Depth (ft.)	Water Type
Water Quality:	No Data	No Data

Chemical Analysis Made: Unknown

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: BENNETT WATER WELL DRILLING, INC.
7300 W. HWY 377
TOLAR, TX 76476

Driller Name: JEFF BENNETT License Number: 4605

Comments: No Data

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	10	CLAY
10	21	LIME
21	40	SHALE
40	91	LIME
91	120	SHALE
120	190	LIME
190	260	SHALE
260	380	LIME
380	390	SHALE
390	520	LIME
520	530	SAND
530	540	CLAY
540	565	SAND TAN
565	625	CLAY RED

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From (ft.)
8-5/8	NEW	STEEL	0 - 525
8-5/8	NEW	SCREEN	565 - 625

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-6540

STATE OF TEXAS PLUGGING REPORT for Tracking #52024

Owner:	**Horizon Dairy**	Owner Well #:	**No Data**
Address:	**4483 E FM 219 Hico, TX 76457**	Grid #:	**41-16-3**
Well Location:	**4483 E FM 219 Hico, TX 76457**	Latitude:	**31° 51' 37" N**
		Longitude:	**098° 02' 14" W**
Well County:	**Hamilton**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company:	**No Data**	Date Drilled:	**No Data**
Driller:	**No Data**	License Number:	**No Data**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
4		**500**

Plugging Information

Date Plugged: **12/8/2008** Plugger: **Joel Sanders/Assoc. Well Ser.**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4	**0**	**500**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**30**	**3**
30	**500**	**10**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Associated Well Services Inc.**

PO Box 16
Stephenville, TX 76401

Driller Name: **Joel Sanders** License Number: **58216**

Comments: **^EO**

Associated Well Services, Inc

#7

To whom it may concern,

Associated Well Services, Inc. has plugged 4 wells at Horizon Dairy in December of 08' and we attempted to plug a 5th well that we were unable to locate. We went out to the location with a medal detector and scraped the surface of the ground around were the well should have been. Also, we called Dalton Drilling out of Hamilton to inquire about the wells since they drilled the replacement well a long time ago. He stated they moved over a few feet and drilled a new well, but he couldn't remember if it was open, closed or plugged. The location of the existing well in question is: N 31 51 56.11 W 98 01 15.94

Sincerely,

Gary Aardal 1/12/09

Gary Aardal, Secretary

Water Well Drilling & Pumps
*Sales * Service * Installation * Repair*
PO Box 16 -- 950 E. South Loop -- Stephenville, TX 76401
866-965-5924 Phone 254-965-6969 Fax
www.associatedwellservices.com

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P.O. Box 12157 Austin, Texas 78711 (512)463-7880 FAX (512)463-8616
Email address: water.well@license.state.tx.us

This form must be completed and filed with the department within 30 days following the plugging of the well.

PLUGGING REPORT

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
Horizon Dairy	4483 East FM 219	Hico	Tex	76457

2) WELL LOCATION

County	Physical Address	City	State	Zip
Hamilton	4483 East FM 219	Hico	Tex	76457

3) Owner's Well No.	Long.	Lat.	Grid #
8	31 | 52 | 07	98 | 02 | 29	45

4) Type of Well ☒ Water ☐ Monitor ☐ Injection ☐ De-Watering

5) NT

Drill. Pump Installer, or Landowner performing the plugging operations must locate and identify the location of the well within a specific grid on a full scale gridded map available from Texas Natural Resource Information Service. The location of the well should be denoted within the grid by placing a corresponding dot in the square to the right. The legal description is optional.

B. HISTORICAL DATA ON WELL TO BE PLUGGED (If available)

6) Driller	License No.
UK	—

7) Drilled	8) Diameter of hole	9) Total depth of well
UK	3" Inches	26 feet.

C. CURRENT PLUGGING DATA

10) Date well plugged 4 / 23 / 08

12) Name of Driller/Pump Installer or Well Owner performing the plugging
David DeJong Owner

License No. N/A

11) REMOVE ALL REMOVEABLE CASING
Please check box beside the method of plugging used

- ☐ Tremmie pipe cement from bottom to top.
- ☐ Tremmie pipe bentonite from bottom to 2 feet from From surface, cement top 2 feet.
- ☐ Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet.
- ☐ Large diameter well filled with clay material from top to bottom.

13) CASING AND CEMENTING DATA RELATIVE TO THE PLUGGING OPERATIONS

CASING LEFT IN WELL

DIAMETER (inches)	FROM (feet)	TO (feet)
3"	0	26

CEMENT/BENTONITE PLUG(S) PLACED IN WELL

FROM (feet)	TO (feet)	SACKS
0	26	12

COMMENTS

D. VALIDATION OF INFORMATION INCLUDED IN FORM

I certify that I plugged this well (or the well was plugged under my supervision) and that all of the statements herein are true and correct. I understand that failure to complete items 1 through 13 will result in the report(s) being returned for completion and resubmitted.

Company or individual's Name (type or print) David DeJong

Address	City	State	Zip
4483 East FM 219	Hico	TX	76457

Signature of Licensed Driller/Pump Installer	Date	Signature of Approved Trainee	Date
[signature]	4/23/08		/ /

TDLR FORM a004WWD *White - TDLR Yellow - Owner Pink - Driller/Pump Installer*

STATE OF TEXAS PLUGGING REPORT for Tracking #52025

Owner:	**Horizon Dairy**	Owner Well #:	**No Data**
Address:	**4483 E FM 219 Hico, TX 76457**	Grid #:	**41-16-2**
Well Location:	**4483 E FM 219 Hico, TX 76457**	Latitude:	**31° 52' 07" N**
		Longitude:	**098° 03' 31" W**
Well County:	**Hamilton**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company:	**No Data**	Date Drilled:	**No Data**
Driller:	**No Data**	License Number:	**No Data**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
4		200

Plugging Information

Date Plugged: **12/8/2008** Plugger: **Joel Sanders/Assoc. Well Ser.**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4	3	200

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	2	1
2	200	3

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Associated Well Services Inc.**

PO Box 16
Stephenville, TX 76401

Driller Name: **Joel Sanders** License Number: **58216**

Comments: **^EO**

STATE OF TEXAS PLUGGING REPORT for Tracking #51736

Owner:	**Horizon Dairy**	Owner Well #:	**No Data**
Address:	**4483 E FM 219 Hico, TX 76457**	Grid #:	**41-08-8**
Well Location:	**4483 E FM 219 Hico, TX 76457**	Latitude:	**31° 53' 03" N**
		Longitude:	**098° 02' 34" W**
Well County:	**Hamilton**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company:	**No Data**	Date Drilled:	**No Data**
Driller:	**No Data**	License Number:	**No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4**		**500**

Plugging Information

Date Plugged: **12/8/2008** Plugger: **Joel Sanders**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4	**2**	**500**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**20**	**2**
20	**500**	**10**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Associated Services**

PO Box 16
Stephenville, TX 76401

Driller Name: **Joel Sanders** License Number: **58216**

Comments: **^EO**

STATE OF TEXAS PLUGGING REPORT for Tracking #51735

Owner:	**Horizon Dairy**	Owner Well #:	**No Data**
Address:	**4483 E FM 219 Hico, TX 76457**	Grid #:	**41-08-8**
Well Location:	**4483 E FM 219 Hico, TX 76457**	Latitude:	**31° 53' 28" N**
		Longitude:	**098° 02' 48" W**
Well County:	**Hamilton**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company:	**No Data**	Date Drilled:	**No Data**
Driller:	**No Data**	License Number:	**No Data**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
4		100

Plugging Information

Date Plugged: **12/9/2008** Plugger: **Joel Sanders**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4	2	100

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	4	1 Cement
4	100	2

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Associated Services**

PO Box 16
Stephenville, TX 76401

Driller Name: **Joel Sanders** License Number: **58216**

Comments: **^EO**

STATE OF TEXAS WELL REPORT for Tracking #347272

Owner:	Horizon Dairy	Owner Well #:	Well Log 3093
Address:	4483 East FM 219 Hico, TX 76457	Grid #:	41-16-2
Well Location:	4483 E FM 219 Hico, TX 76457	Latitude:	31° 52' 20" N
		Longitude:	098° 02' 30" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Irrigation

Drilling Start Date: 9/9/2013 Drilling End Date: 9/12/2013

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	14	0	5
	12.25	5	620

Drilling Method: Mud (Hydraulic) Rotary

Borehole Completion: Filter Packed

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	400	620	Gravel	12/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (Number of sacks & material)
Annular Seal Data:	0	400	115 prtland cmt

Seal Method: Pumped

Sealed By: Basic Energy

Distance to Property Line (ft.): 100+

Distance to Septic Field or other concentrated contamination (ft.): 150+

Distance to Septic Tank (ft.): No Data

Method of Verification: Customer Verified

Surface Completion: Surface Slab Installed

Water Level: 400 ft. below land surface on 2013-09-12 Measurement Method: Unknown

Packers: No Data

Type of Pump: Submersible Pump Depth (ft.): 500

Well Tests: Jetted Yield: 100 GPM after 1 hours, no drawdown specified

	Strata Depth (ft.)	Water Type
Water Quality:	342-599	Trinity

Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: Associated Well Services Inc-Russell Langford

PO Box 16
Stephenville, TX 76401

Driller Name: Russell Langford License Number: 55062

Comments: *LA

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	18	tan clay and shale
18	101	grey clay, shale and limestone
101	148	grey sandy clay with streaks of sand and sandstone
148	330	grey clay, shale and limestone
330	342	grey and blue sandy clay with streaks of sand
342	445	sand with streaks of blue sandy clay
445	485	sand and gravel
485	490	red and blue clay
490	495	blue sandy clay, sand and gravel
495	510	red and blue clay
510	525	blue sandy clay, sand and gravel
525	550	red clay
550	599	blue sandy clay, sand and gravel
599	620	yellow clay and shale

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
8.625 New Blank Steel 0 40 .250
8.625 New 0.020" Pipe Base SS Screen 40 600 .020
8.625 New Blank Steel 600 620 .250

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #623130

Owner:	Horizon Dairy	Owner Well #:	2
Address:	4483 E FM 219 Hico, TX 76457	Grid #:	41-16-3
Well Location:	CR 207 Hico, TX 76457	Latitude:	31° 52' 11.07" N
		Longitude:	098° 01' 00.13" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: 10/7/2022 Drilling End Date: 10/12/2022

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
18	0	5
13.5	5	625

Drilling Method: Air Rotary

Borehole Completion: Filter Packed

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
375	625	Sand	12/20

Annular Seal Data:

Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
0	375	Cement 157 Bags/Sacks

Seal Method: Pumped

Sealed By: Driller

Distance to Property Line (ft.): 10+

Distance to Septic Field or other concentrated contamination (ft.): 150+

Distance to Septic Tank (ft.): 50+

Method of Verification: Customer

Surface Completion: Steel Cased

Surface Completion by Driller

Water Level: 483 ft. below land surface on 2022-10-12

Packers: No Data

Type of Pump: Submersible

Pump Depth (ft.): 588

Well Tests: Jetted Yield: 70 GPM with Unknown ft. drawdown after 1 hours

Water Quality:

Strata Depth (ft.)	Water Type
391 - 510	2nd Trinity

Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: Associated Well Services, Inc.
PO BOX 16
STEPHENVILLE, TX 76401

Driller Name: Justin Moore License Number: 58346

Comments: No Data

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	2	Brown lam clay
2	12	Yellow sandy clay
12	25	Yellow caliche and Rock
25	120	Gray Clay, Shale, Limestone
120	155	Sand, Sandy Gray Clay
155	349	Gray Clay, Shale, Limestone
349	391	Gray Sandy Shale
391	445	Blue, Gray Sandy Clay
445	505	Sand, Tiny Gravel, Blue Sandy Clay
505	520	Red Clay
520	530	Sandy Blue Clay
530	550	Red Clay
550	610	Sand, Gravel, Sandy Blue Clay
610	625	Yellow Clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch/Gage	Top (ft.)	Bottom (ft.)
8	Blank	New Steel	.250	0	485
8	Screen	New Steel	0.020	485	605
8	Blank	New Steel	.250	605	625

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #608308

Owner:	**Horizon Dairy**	Owner Well #:	**No Data**
Address:	**4483 East FM 219 Hico, TX 76457**	Grid #:	**41-16-3**
Well Location:	**4483 East FM 219 Hico, TX 76457**	Latitude:	**31° 52' 27.86" N**
		Longitude:	**098° 02' 02.83" W**
Well County:	**Hamilton**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Irrigation**

Drilling Start Date: **6/7/2022** Drilling End Date: **6/13/2022**

Borehole:	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
	18	0	5
	13.5	5	600

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
	390	600	Sand	12/20

Annular Seal Data:	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
	0	395	Cement; 160 Bags/Sacks

Seal Method: **Positive Displacement** Distance to Property Line (ft.): **100+**

Sealed By: **Driller** Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **Customer**

Surface Completion: **Steel Cased** **Surface Completion by Driller**

Water Level: **438 ft. below land surface on 2022-06-13**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **546**

Well Tests: **Jetted** **Yield: 150+ GPM with Unknown ft. drawdown after 8 hours**

Water Quality:

Stack Depth (ft.)	Water Type
338 - 578	2nd Trinity

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Well Services, Inc.**
PO Box 16
Stephenville, TX 76401

Driller Name: **Curtis Sanders** License Number: **60404**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	2	Topsoil
2	15	Yellow Caliche
15	65	Gray Clay, Shale, Limestone
65	115	White, Gray Sandy Clay, Sand, Streaks Of Sandstone
115	312	Gray Clay, Sandy Shale, Limestone
312	336	Blue, Gray Sandy Clay, Sand, Streaks Of Sandstone
336	425	Blue Sandy Clay, Sand, Streaks Of sandstone
425	490	Blue Sandy Clay, Sand, Gravel, Streaks Of Sandstone
490	508	Red, Blue Clay
508	513	Blue Sandy Clay, Sand, Gravel, Streaks Of Sandstone
513	518	Red, Blue Clay
518	562	Blue Sandy Clay, Sand, Gravel, Streaks Of Sandstone
562	578	Sand, Sandstone, Gravel
578	600	Yellow, Purple Clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch/Gage	Top (ft.)	Bottom (ft.)
8.625	Blank	New Steel	250	0	459
8.625	Screen	New Red Base Stainless Steel	0.020	459	579
8.625	Blank	New Steel	250	579	600

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-6540

STATE OF TEXAS WELL REPORT for Tracking #622277

Owner:	David DeJong (Horizon Dairy)	Owner Well #:	3
Address:	4483 E FM 219 Hico, TX 76457	Grid #:	41-08-9
Well Location:	4483 E FM 219 Hico, TX 76457	Latitude:	31° 52' 30.18" N
		Longitude:	098° 01' 13.11" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Irrigation

Drilling Start Date: 10/18/2022 Drilling End Date: 10/21/2022

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
18	0	5
13.5	5	611

Drilling Method: Air Rotary

Borehole Completion: Filter Packed

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
305	611	Sand	

Annular Seal Data:

Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
0	300	Cement 135

Seal Method: Pumped

Sealed By: Driller

Distance to Property Line (ft.): 50+

Distance to Septic Field or other concentrated contamination (ft.): 150+

Distance to Septic Tank (ft.): 50+

Method of Verification: Customer

Surface Completion: Steel Cased

Surface Completion by Driller

Water Level: 438 ft. below land surface on 2022-10-20

Packers: No Data

Type of Pump: Submersible

Pump Depth (ft.): 588

Well Tests: Jetted Yield: 50 GPM with Unknown ft. drawdown after 1 hours

Water Quality:

Strata Depth (ft.)	Water Type
375 - 590	2nd Trinity

Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Data: The driller certified that the driller drilled this well (or this well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: Associated Well Services, Inc

PO BOX 16
STEPHENVILLE, TX 76401

Driller Name: Justin Moore License Number: 59348

Comments: No Data

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	2	Brown clay
2	10	Yellow clay
10	25	Yellow caliche clay
25	120	Gray shale & Limestone
120	156	Sand & Sandy grey clay
156	329	Limestone shale & Grey clay
329	375	Sandy grey clay & Shale
375	415	Sandy blue clay
415	455	Sandy & Tiny gravel
455	480	Red & blue sandy clay
480	490	Sandy blue sand
490	525	Red clay
525	590	Sand blue clay & Sand & Gravel & Sandstone
590	611	Yellow clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch/Gage	Top (ft.)	Bottom (ft.)
8	Blank	New Steel	250	0	433
8	Screen	New Steel	0.020	433	493
8	Blank	New Steel	250	493	513
8	Screen	New Steel	0.020	513	593
8	Blank	New Steel	250	593	611

STATE OF TEXAS WELL REPORT for Tracking #622766

Owner:	David DeJong (Horizon Dairy)	Owner Well #:	No Data
Address:	4483 E FM 219 Hico, TX 76457	Grid #:	41-16-3
Well Location:	CR 207 Hico, TX 76457	Latitude:	31° 53' 03.88" N
		Longitude:	098° 00' 54.5" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Irrigation

Drilling Start Date: 9/23/2022 Drilling End Date: 10/4/2022

Boreholes:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
18	0	5
13.5	5	620

Drilling Method: Air Rotary

Borehole Completion: Filter Packed

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
365	620	Gravel	12/20

Annular Seal Data: No Data

Seal Method: Poured

Sealed By: Driller

Distance to Property Line (ft.): 100+

Distance to Septic Field or other concentrated contamination (ft.): 100+

Distance to Septic Tank (ft.): 100+

Method of Verification: Customer

Surface Completion: Steel Cased

Surface Completion by Driller

Water Level: 452 ft. below land surface on 2022-10-04

Packers: No Data

Type of Pump: Submersible

Pump Depth (ft.): 580

Well Tests: Jetted

Yield: 50+ GPM with Unknown ft. drawdown after unspecified hours

Water Quality:

Strata Depth (ft.)	Water Type
310 - 580	2nd Trinity

Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: Associated Well Services, Inc

PO Box 18
Stephenville, TX 76401

Driller Name: Hunter Corbell License Number: 61098

Comments: No Data

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	10	Yellow caliche clay
10	180	Grey clay shale limestone
180	200	Grey sandy clay
200	310	Grey clay shale limestone
310	490	Blue sandy clay sand
490	490	Red clay
490	550	Sand blue sandy clay gravel
550	620	Yellow and purple

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gauge	Top (ft.)	Bottom (ft.)
8	Blank	New Steel	.250	0	480
8	Screen	New Steel	0.020	480	500
8	Blank	New Steel	.250	500	620

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #225180

Owner:	**Horizon Dairy**	Owner Well #:	**1**
Address:	**4483 E FM 219 Hico, TX 76457**	Grid #:	**41-16-3**
Well Location:	**CR 207 Hico, TX 76457**	Latitude:	**31° 52' 03.38" N**
		Longitude:	**098° 00' 54.22" W**
Well County:	**Hamilton**	Elevation:	**No Data**
Well Type:	**Irrigation**		

Drilling Information

Company: **Associated Well Services, Inc** Date Drilled: **9/23/2022**

Driller: **Hunter Corbell** License Number: **61098**

Well Report Tracking #623132

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
18	0	5
13.5	5	620

Plugging Information

Date Plugged: **9/23/2022** Plugger: **Hunter Corbell**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
4	0	620

Plug(s) Placed in Well:

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	20	Cement 10
20	620	Bentonite 47

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Associated Well Services, Inc**

PO Box 16
Stephenville, TX 76401

Driller Name: **Hunter Corbell** License Number: **61098**

Comments: **No Data**

Well # m1

STATE OF TEXAS WELL REPORT for Tracking #655732

Owner:	Brian Uffelman	Owner Well #:	No Data
Address:	10527 Pebble Xing Katy, TX 77494	Grid #:	41-18-3
Well Location:	5254 Honey Creek Pass Hico, TX 76457	Latitude:	31° 50' 10.01" N
		Longitude:	098° 01' 21.42" W
Well County:	Hamilton	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: 12/15/2023 Drilling End Date: 12/15/2023

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
11	0	5
8	5	20
7	20	455

Drilling Method: Air Rotary

Borehole Completion: Filter Packed

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
200	455	Sand	12/20

Annular Seal Data:

Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
0	5	Cement 2 Bags/Sacks
5	200	Bentonite 7 Bags/Sacks

Seal Method: Pumped

Sealed By: Driller

Distance to Property Line (ft.): 50+

Distance to Septic Field or other concentrated contamination (ft.): 150+

Distance to Septic Tank (ft.): 50+

Method of Verification: Customer

Surface Completion: Surface Sleeve Installed — Surface Completion by Driller

Water Level: 311 ft. below land surface on 2023-12-18

Packers: No Data

Type of Pump: Submersible — Pump Depth (ft.): 420

Well Tests: Jetted — Yield: 40 GPM with Unknown ft. drawdown after 1 hours

Water Quality:

Strata Depth (ft.)	Water Type
219 - 455	2nd Trinity

Chemical Analysis Made: No

Did the driller knowingly penetrate any strata which contained injurious constituents?: No

Certification Date: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: Associated Well Services, Inc.
PO BOX 16
STEPHENVILLE, TX 76401

Driller Name: Justin Moore — License Number: 59346

Comments: No Data

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	21	Yellow Caliche, Rock
21	178	Gray Clay, Shale, Limestone
178	219	Sandy Gray Clay, Shale
219	290	Sandy Blue Clay, Sand, Gravel
290	315	Sand, Pea Gravel
315	355	Red Clay
355	390	Sandy Blue Clay, Sand, Red Clay
390	445	Sand, Gravel
445	455	Yellow Clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch/Wage	Top (ft.)	Bottom (ft.)
4	Blank	New Plastic (PVC)	SCH 40	0	355
4	Screen	New Plastic (PVC)	0.020	355	455

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Horizon Dairy - A

Texas Water Development Board

July 1, 2025

Plugging Reports
Well Reports
TWDB Groundwater

0 0.3 0.6 1.2 mi
0 0.47 0.95 1.9 km
1:36,112

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Horizon Dairy - B

Texas Water Development Board

July 1, 2025

Plugging Reports
Well Reports
TWDB Groundwater

0 0.15 0.3 0.6 mi
0 0.23 0.45 0.9 km
1:18,056

Source: Esri, Maxar, Earthstar Geographics and the GIS User Community

Horizon Dairy - C

Texas Water Development Board

July 1, 2025

Plugging Reports
Well Reports
TWDB Groundwater

0 0.15 0.3 0.6 mi
0 0.23 0.45 0.9 km
1:18,056

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

July 1, 2025

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Maxar

Public GIS Viewer Legend

Well Number

Well Locations

- Permitted Location
- Dry Hole
- Oil
- Gas
- Oil / Gas
- Plugged Oil
- Plugged Gas
- Canceled / Abandoned Location
- Plugged Oil / Gas
- Injection / Disposal
- Core Test
- Sulfur Test
- Storage from Oil
- Storage from Gas
- Shut-In Oil
- Shut-In Gas
- Injection / Disposal from Oil
- Injection / Disposal from Gas
- Injection / Disposal from Oil / Gas
- Geothermal
- Brine Mining
- Water Supply
- Water Supply from Oil
- Water Supply from Gas
- Water Supply from Oil / Gas
- Observation
- Observation from Oil
- Observation from Gas
- Observation from Oil / Gas
- Storage
- Service
- Service from Oil
- Service from Gas
- Service from Oil / Gas
- Storage from Oil / Gas
- Injection / Disposal from Storage
- Injection / Disposal from Storage / Oil
- Injection / Disposal from Storage / Gas
- Injection / Disposal from Storage / Oil / Gas
- Observation from Storage
- Observation from Storage / Oil
- Observation from Storage / Gas
- Observation from Storage / Oil / Gas
- Service from Storage
- Service from Storage / Oil
- Service from Storage / Gas
- 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
- 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
- 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
- Observation from Storage / Brine Mining
- Observation from Storage / Brine Mining / Oil
- Observation from Storage / Brine Mining / Gas
- Observation from Storage / Brine Mining / Oil / Gas
- Plugged Storage / Brine Mining
- Plugged Storage / Brine Mining / Oil
- Plugged Storage / Brine Mining / Gas
- Plugged Storage / Brine Mining / Oil / Gas

Orphan Wells

Commercial Disposal

Injection/Disposal

HCTS Deeper than 15,000 ft.

Public GIS Viewer Legend

High Cost Tight Sands

EOR H13 Oil Wells

Well Logs

Horiz/Dir Surface Locations

- Horizontal Well
- Directional Well

Horizontal/Directional Lines

LPGAS Sites

QPipelines

Pipelines

Bay Tracts

Offshore Areas

Offshore Tracts

Water Lines

Subdivisions

Railroads

Surveys

Quads

Alert Areas

Water

City Limits

Counties

Operator Cleanup Program Sites

- Active
- Closed

Voluntary Cleanup Program Sites

- VCP, Accepted
- VCP, Closed

Brownfield Response Program Sites

- Brownfield, Accepted
- Brownfield, Closed

Commercial Waste Disposal Sites & Discharge Permits

- Commercial Waste Disposal
- Discharge Permits

Oil and Gas Districts

AED Districts

Pipeline Safety Regions

6.0 SURFACE WATER & TMDL ASSESSMENT

6.1 Surface Water Assessment

Figures 6.1A1-2, B & C, 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 (2016). The buffer zones and LMU boundaries in Figures 6.1A1-2, B & C are submitted with this application for TCEQ approval.

6.2 TMDL Assessment

Horizon Dairy is located in Segment 1221 and 1226, Leon River Below Proctor Lake and the North Bosque River, Brazos River Basin, which is a 303(d)-listed watershed. To demonstrate that Horizon Dairy 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. Scrape freestalls and cattle lanes to reduce or eliminate the need for flushing
    b. Excluding extraneous drainage areas from the RCSs (roof areas, etc.)

c. 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

Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N

W E

S

1300' 0 1300' 2600'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS - Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Aerial Photograph - Phase 1 Figure 6.1A Page 55	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3601 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

Map Generated 6/23/2025

LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- Denotes No Evidence Well
- Denotes Well w/100-ft Buffer
- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes 124' Buffer Zone
- Denotes 128' Buffer Zone
- Denotes 133' Buffer Zone
- Denotes 136' Buffer Zone
- Denotes 142' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit
- Denotes Irrigation Reservoir
- Denotes Burial Location

N

W E

S

1300' 0 1300' 2600'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Aerial Photograph - Phase 2 Figure 6.1A Page 56	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL. (806) 353-6723 FAX (806) 353-4132

LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

Map Generated 6/23/2025

N
W E
S

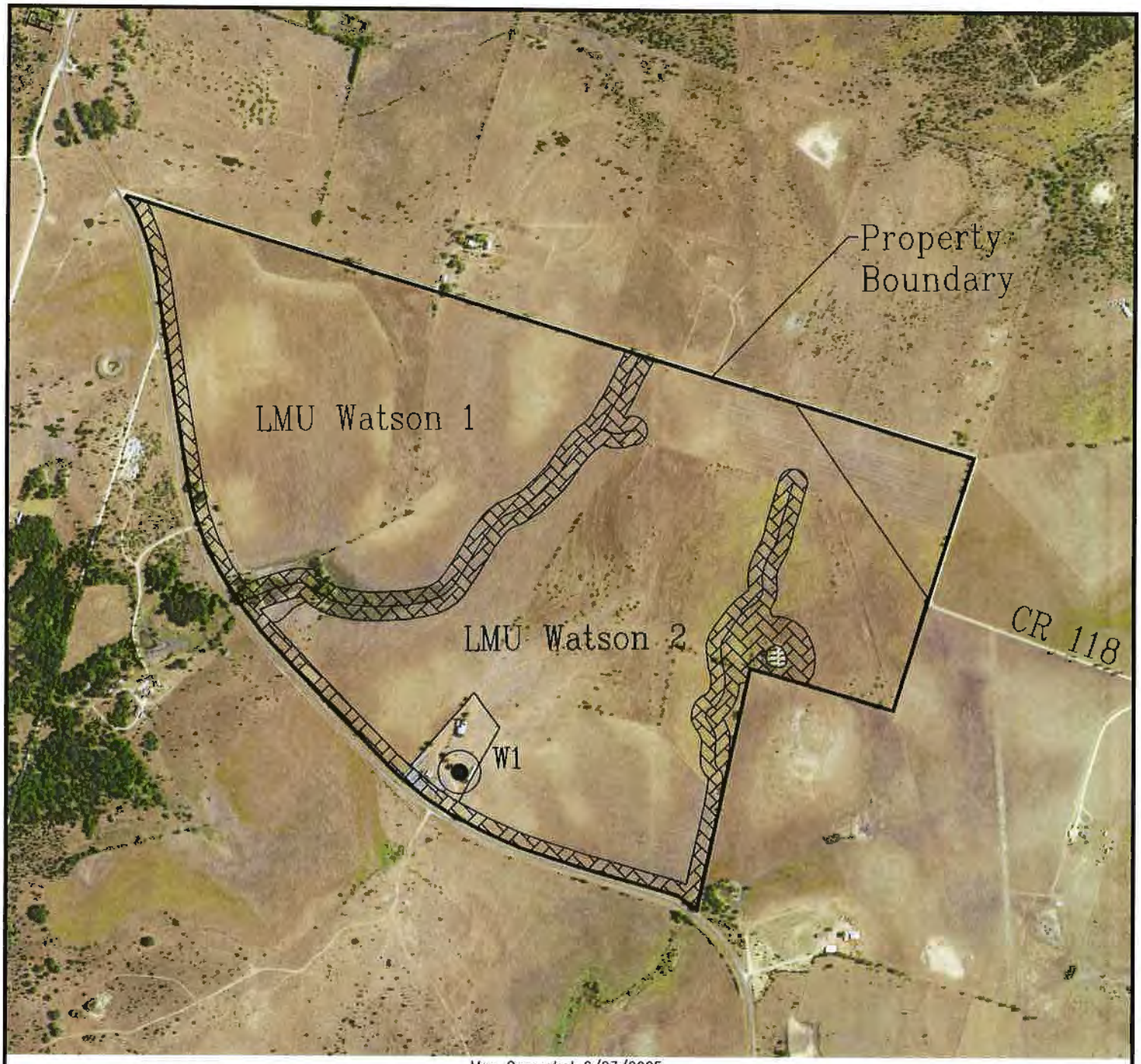
400' 0 400' 800'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Aerial Photograph Figure 6.1B Page 57	ENVIRO-AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6128 FAX (806) 353-4132



Map Generated 6/23/2025

LEGEND:

- Denotes Well w/150-ft Buffer
- Denotes 100' Buffer Zone
- Denotes Fresh Water Pond
- Denotes Caliche Pit

N
W E
S

500' 0 500' 1000'

SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. Digital Raster Graphic County Mosaic by NRCS – Accessed March 2015.

- Refer to Figure 1.4 for a production area map.

Horizon Dairy, LLC Hico, Texas Hamilton County	Aerial Photograph Figure 6.1C Page 58	ENVIRO-AG EAE ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO, TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132

7.0 AIR STANDARD PERMIT REQUIREMENTS

7.1 Permit Requirements

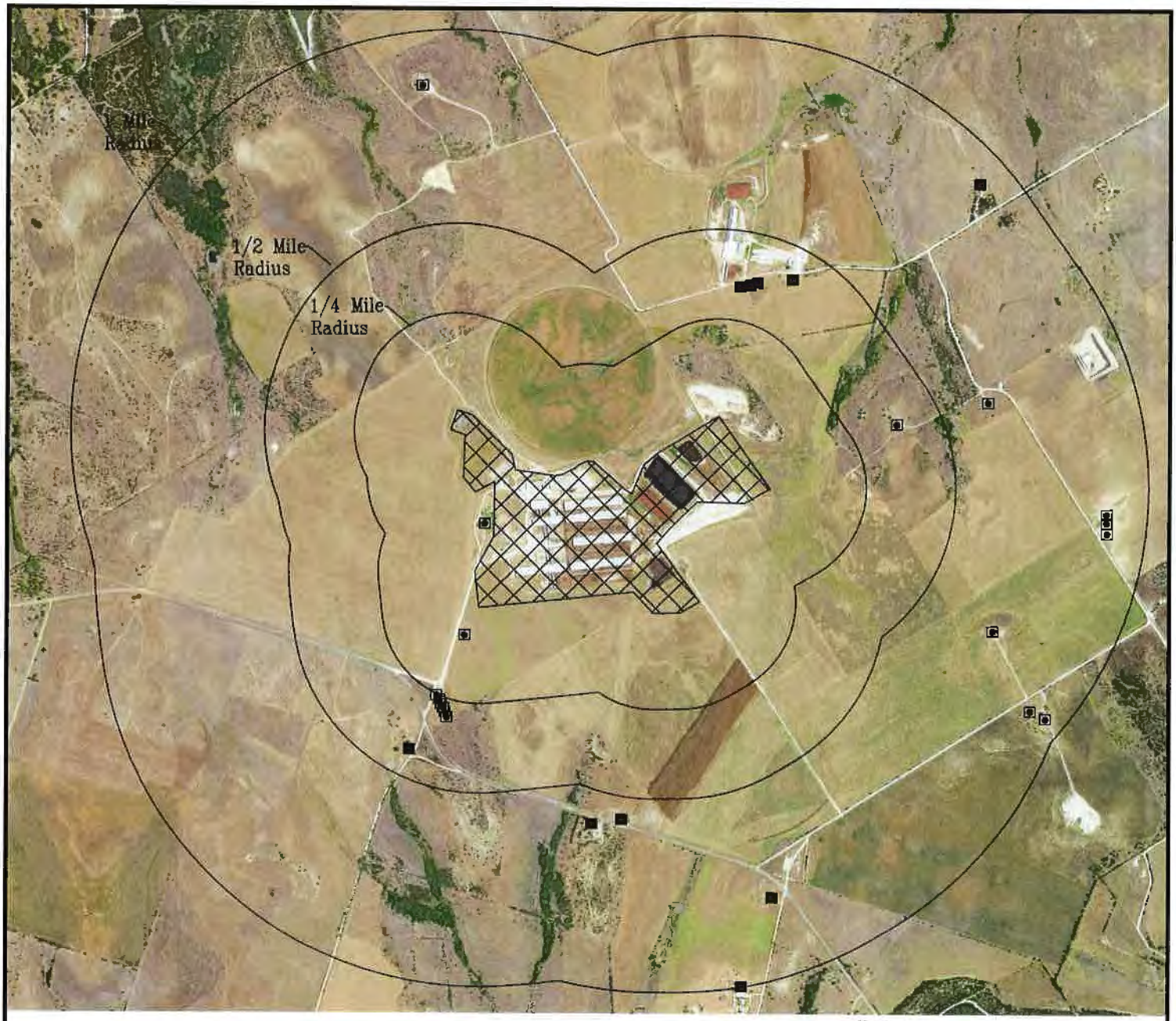
This facility was constructed prior to August 19, 1998. The facility meets the ¼-mile buffer option required in 30 TAC §321.43(j)(2) for facility expansion. The facility is designed, and will be operated, in accordance with the provisions and emissions limitations of the air standard permit in 30 TAC §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 Horizon Dairy.

- 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 ¼-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 on-site burial within 3 days.
- Maintain required treatment volume in the treatment pond.

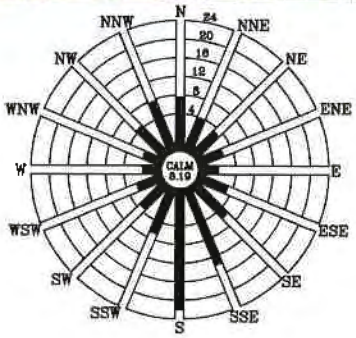


1000' 0 1000' 2000'

SCALED AS SHOWN

Legend:
- ■ Denotes Occupied Structure
- ⊡ Denotes Applicant Owned Structure

Site Visit – 6/18/2025
Map Generated – 6/23/2025



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

Source: USDA–NRCS. Geospatial Data Gateway. Available at: http://datagateway.nrcs.usda.gov/. National Ag. Imagery Program Mosaic–Accessed Nov., 2017.

Note:
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.

Horizon Dairy, LLC Hico, Texas Hamilton County	Area Land Use Map Figure 7.1 Page 60	ENVIRO–AG ENGINEERING, INC. Enviro-Ag Engineering, Inc. ENGINEERING CONSULTANTS 3404 Airway Blvd. AMARILLO TEXAS 79118 TEL (806) 353-6123 FAX (806) 353-4132