Administrative Package Cover Page

This file contains the following documents:

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

Portada de Paquete Administrativo

Este archivo contiene los siguientes documentos:

1. Resumen en lenguaje sencillo (PLS, por sus siglas en inglés) de la actividad propuesta
   - Inglés
   - Idioma alternativo (español)
2. Primer aviso (NORI, por sus siglas en inglés)
   - Inglés
   - Idioma alternativo (español)
3. Solicitud original

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: -NICO JAAP DEBOER
2. Enter Customer Number: CN601180649
3. Name of facility: HILLTOP JERSEY FARM
4. Enter Regulated Entity Number: RN103920385
5. Provide your permit Number: NOT ISSUED YET
6. Facility Business: DAIRY MILK PRODUCTION. THIS FACILITY CONFINES 999 HEAD DAIRY CATTLE, OF WHICH 999 HEAD ARE MILKING COWS. THE FACILITY PRODUCTION AREA IS LOCATED 19008 FM 3079 CHANDLER TX 75758 7667. THE DAIRY FACILITY HAS 9 LAND MANAGEMENT UNITS (LMUS) WITH THE FOLLOWING ACREAGE: LMU #1 - 41, LMU # LMU #2 - 40, LMU #3 - 26, LMU #4 - 90, LMU #5 - 46, LMU #6 - 28, LMU #7 - 160, LMU #8 - 160 AND LMU #9 - 80, AND 3 RETENTION CONTROL STRUCTURES (RCSS), AND A CONCRETE SETTLING BASIN. THE RCSS TOTAL REQUIRED CAPACITIES WITHOUT FREEBOARD (ACRE-FEET) ARE RCS #1 - 1.68, RCS #2 - 3.70 AND RCS #3 - 5.28. THERE ARE ONSITE WATER WELLS (WELLS #1 THROUGH #5). THE FACILITY IS LOCATED IN THE DRAINAGE AREA OF THE LAKE PALESTINE IN SEGMENT NO. 0605.
7. Facility Location: 9008 FARM TO MARKET 3079 CHANDLER TX 75758 7667
8. Application Type: IP
9. Description of your request: APPLYING FOR A NEW IP
10. Potential pollutant sources at the facility include (list the pollutant sources): Manure, Wastewater, Dust, lubricants, Feed, Fuel Storage, Medicines, Cleaning Chemicals
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): MANURE WILL BE STORED WITHIN THE DRAINAGE AREA OF RCS #1. WASTEWATER WILL BE STORED IN RCS #1, RCS #2 AND RCS #3 UNTIL PROPERLY IRRIGATED THROUGH A DRAGHOSE SYSTEM IRRIGATION SYSTEMS. MANURE WILL BE HAULED TO THE APPROPRIATE LMUS, OFFSITE, IN ACCORDANCE WITH THE NUTRIENT MANAGEMENT PLAN. RCS #1, RCS #2AND RCS #3 WILL BE DESIGNED TO STORE AND MAINTAIN THE SLUDGE AND 25YR-24HR RAINFALL. ALL OTHER CLEANERS, LUBRICANTS, FUELS AND MEDICINES WILL BE MAINTAINED AND ALL MANUFACTURERS' DIRECTIONS FOLLOWED. DEAD COWS WILL BE BURIED WITHIN 72 HOURSClick or tap here to enter text.

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.

PLANTILLA DE IDIOMA ESPAÑOL PARA SOLICITUDES DE PERMISO CAFO

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Plan de Participación Pública y el Plan de Acceso al Idioma de la TCEQ. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación federal exigible de la solicitud de permiso.

1. Nombre del Solicitante: NICO JAAP DEBOER
2. Introduzca el Número de Cliente: CN601180649
3. Nombre de la Instalación: HILLTOP JERSEY FARM
4. Introduzca el Número de Entidad Regulada: RN103920385.
5. Proporcione su Número de Permiso: AÚN NO EMITIDO
6. Negocio de Instalación: PRODUCCIÓN DE LECHE. ESTA INSTALACIÓN CONFINA 999 CABEZAS DE GANADO LECHERO, DE LAS CUALES 999 SON VACAS DE ORDEÑO. EL ÁREA DE PRODUCCIÓN DE LA INSTALACIÓN ESTÁ UBICADA EN 19008 FM 3079 CHANDLER TX 75758 7667. LA INSTALACIÓN LÁCTEA CUENTA CON 9 UNIDADES DE GESTIÓN DE TIERRAS (LMUS) CON LA SIGUIENTE SUPERFICIE: LMU N.º 1 - 41, LMU N.º 2 - 40, LMU N.º 3 - 26, LMU N.º 4 - 90, LMU N.º 5 - 46, LMU N.º 6 - 28, LMU N.º 7 - 160, LMU N.º 8 - 160 Y LMU N.º 9 - 80, Y 3 ESTRUCTURAS DE CONTROL DE RETENCIÓN (RCSS) Y UN DEPÓSITO DE DESENREDO DE CONCRETO. LAS CAPACIDADES TOTALES REQUERIDAS POR EL RCSS SIN FRANCOBORDO (ACRE-PIES) SON RCS N.° 1: 1,68, RCS N.° 2: 3,70 Y RCS N.° 3: 5,28. HAY POZOS DE AGUA EN EL LUGAR (POZOS N.° 1 AL N.° 5). LA INSTALACIÓN ESTÁ UBICADA EN EL ÁREA DE DRENAJE DEL LAGO PALESTINE EN EL SEGMENTO N.° 0605.
7. Ubicación de la Instalación: 9008 DE LA GRANJA AL MERCADO 3079 CHANDLER TX 75758 7667
8. Tipo de Solicitud: IP
9. Descripción de su solicitud: SOLICITUD DE UNA NUEVA PROPIEDAD INTELECTUAL
10. Las fuentes potenciales de contaminantes en la instalación incluyen (liste las fuentes contaminantes): Estiércol, aguas residuales, polvo, lubricantes, piensos, almacenamiento de combustible, medicamentos, productos químicos de limpieza.
11. Las siguientes mejores prácticas de gestión se implementarán en el sitio para gestionar los contaminantes de las fuentes contaminantes listadas (describa las mejores prácticas de gestión que se utilizan): EL ESTIÉRCOL SE ALMACENARÁ DENTRO DEL ÁREA DE DRENAJE DE RCS N.° 1. LAS AGUAS RESIDUALES SE ALMACENARÁN EN RCS N.° 1, RCS N.° 2 Y RCS N.° 3 HASTA QUE SE RIGUEN CORRECTAMENTE A TRAVÉS DE UN SISTEMA DE RIEGO POR DRAGÓN. EL ESTIÉRCOL SE TRANSPORTARÁ AL LMUS CORRESPONDIENTE, FUERA DEL SITIO, DE ACUERDO CON EL PLAN DE GESTIÓN DE NUTRIENTES. RCS N.° 1, RCS N.° 2 Y RCS N.° 3 ESTARÁN DISEÑADOS PARA ALMACENAR Y MANTENER EL LODO Y LA LLUVIA DE 25 AÑOS A 24 HORAS. SE MANTENDRÁN TODOS LOS DEMÁS LIMPIADORES, LUBRICANTES,

COMBUSTIBLES Y MEDICAMENTOS Y SE SEGUIRÁN TODAS LAS INSTRUCCIONES DE LOS FABRICANTES. LAS VACAS MUERTAS SERÁN ENTERRADAS DENTRO DE LAS 72 HORAS

A menos que se limite lo contrario, el estiércol, los lodos o las aguas residuales no se descargarán de una unidad de gestión de la tierra (LMU, por sus siglas en inglés) o una estructura de control de retención (RCS, por sus siglas en inglés) hacia o adyacente al agua en el estado de una CAFO, excepto como resultado de cualquiera de las siguientes condiciones:

1) una descarga de estiércol, lodos o aguas residuales que el permisionario no pueda prevenir o controlar razonablemente como resultado de una condición catastrófica que no sea un evento de lluvia;

2) desbordamiento de estiércol, lodo o aguas residuales de un RCS como resultado de un evento de lluvia crónico/catastrófico; o

3) una descarga de lluvia crónica/catastrófica de una LMU que ocurre porque el permisionario toma medidas para desaguar el RCS si el RCS está en peligro de desbordamiento inminente.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

PROPOSED PERMIT NO. WQ0005475000

APPLICATION. Nico Jaap DeBoer, 19008 Farm-to-Market Road 3079, Chandler, Texas 75758, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Wastewater Permit No. WQ0005475000 (EPA I.D. No. TX0147290) for a Concentrated Animal Feeding Operation (CAFO) to authorize the operation of a 999 head count dairy cattle facility. The facility is located at 19008 Farm-to-Market Road 3079, near the city of Chandler, in Henderson County, Texas 75758. TCEQ received this application on December 31, 2024. The permit application will be available for viewing and copying at Henderson County Extension Office, Henderson County Courthouse, 100 East Tyler Street, 3rd Floor, Rooms 300 & 303, Athens, in Henderson 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=-95.537777,32.263611&level=18

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications.

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 Nico Jaap DeBoer at the address stated above or by calling Mr. Nico Jaap DeBoer, Owner, at 903-521-3095.

Issuance Date: February 18, 2025

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECEPCIÓN DE LA SOLICITUD Y
LA INTENCIÓN DE OBTENER CALIDAD DEL AGUA PERMISO

PERMISO NO. WQ0005475000

SOLICITUD. Nico Jaap DeBoer, 19008 Farm-to-Market Road 3079, Chandler, Texas 75758, ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para el propuesto Permiso No. WQ0005475000 (N.º EPA TX0147290) que autoriza al solicitante a operar una nueva operación de lecheras en una capacidad máxima de 999 animales. La instalación está ubicada en 19008 Farm-to-Market Road 3079, en el Condado de Henderson, Texas 75758. La TCEQ recibió esta solicitud el día 31 de diciembre de 2024. La solicitud para el permiso está disponible para leer y copiar en Oficina de extensión del condado de Henderson, Palacio de justicia del condado de Henderson, 100 East Tyler Street, 3.er piso, salas 300 y 303, Athens, Condado de Henderson, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications.
Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.537777,32.263611&level=18

AVISO DE IDIOMA ALTERNATIVO. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications.

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO. Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión. La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios.

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la

TCEQ.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para detalles sobre el estado de la solicitud, favor de visitar la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Para buscar en la base de datos, utilizar el número de permiso para esta solicitud que aparece en la parte superior de este aviso.

CONTACTOS E INFORMACIÓN DE LA TCEQ. Todos los comentarios escritos del público y los para pedidos una reunión deben ser presentados a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 o por el internet at www.tceq.texas.gov/about/comments.html. Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Si necesita más información en Español sobre esta solicitud para un permiso o el proceso del permiso, por favor llame a El Programa de Educación Pública de la TCEQ, sin cobro, al 1-800-687-4040. La información general sobre la TCEQ puede ser encontrada en nuestro sitio de la red: www.tceq.texas.gov.

También se puede obtener información adicional del Nico Jaap DeBoer a la dirección indicada arriba o llamando a Mr. Nico Japp DeBoer, al 903-521-3095 .

Fecha de emisión 18 de febrero de 2025

Leah Whallon

From: wyrick@suddenlink.net
Sent: Friday, February 7, 2025 10:10 AM
To: Leah Whallon
Subject: Hilltop Jersey Farm WQ0005475000
Attachments: Attachmnet.pdf; lables hilltop 1.doc; lables hilltop 2.doc; lables hilltop 3.doc; lables hilltop 4.doc; lables hilltop 5.doc; Nori (1) Hilltop.docx

Morning Leah:

Attached are comments on the Application for Application for Proposed Permit No.: WQ0005475000 (EPA I.D. No. TX0147290) Applicant Name: Nico Jaap DeBoer (CN601180649) Site Name: Hilltop Jersey Farm (RN103920385)

Item 6 was sent in a separate email

Jim

Attached are my responses to your comments for Application for Proposed Permit No.: WQ0005475000 (EPA I.D. No. TX0147290) Applicant Name: Nico Jaap DeBoer (CN601180649) Site Name: Hilltop Jersey Farm (RN103920385)

1. CAFO Application (TCEQ-00728) Section 3, Item D
The customer is an individual type, not a Sole Proprietorship (DBA). Please provide a revised page to indicate the customer type as individual and complete and provide Attachment 1 – Individual Information.

See attachment

2. CAFO Application (TCEQ-00728) Section 12 – Affected Landowner Information
• The affected landowner maps do not clearly show and label 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. Please provide an affected landowner map that clearly outlines and labels all applicant property boundaries, the 500-foot radius of their property boundaries, and all adjacent properties.
• Please provide the affected landowner list formatted for mailing labels (Avery 5160) in a Microsoft Word document.

See attachment and word document files

3. CAFO Application (TCEQ-00728) Section 13; Technical Information (TCEQ-00760) - Attachments
The maps in the application, including the USGS, SPIF, vicinity, site, runoff control, floodplain, soil, and LMU maps are not legible. Please provide a legible and full color electronic copy of each map that clearly shows and labels all required items.

See attachment

4. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

The NORI is correct

Thanks

Jim

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

Phone Number: 903 521 3095 Fax Number: Click here to enter text

E-mail Address: hilltopjersey@gmail.com

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: Click here to enter text

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: Click here to enter text

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

SECTION 4. CO-APPLICANT INFORMATION

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

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

Click here to enter text

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

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

Mailing Address: Click here to enter text

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

Phone Number: Fax Number: Click here to enter text

E-mail Address: Click here to enter text

Attachment 1
Individual Information

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

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

Full Legal Name, including middle name: Nico Jaap DeBoer

Driver's License or State Identification Number: [redacted]

State that Issued the License or Identification Number: Texas

Date of Birth: [redacted]

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

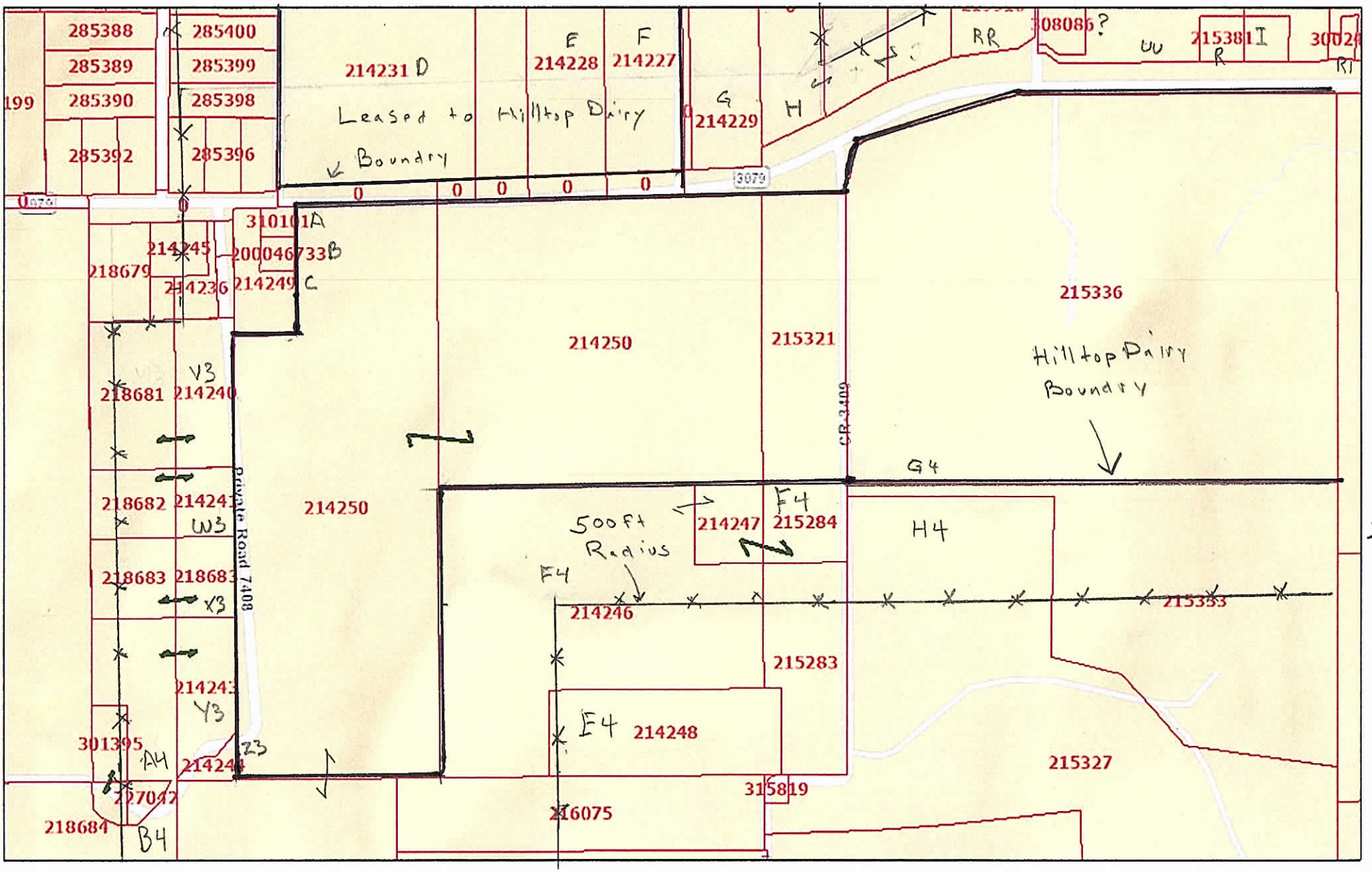
Phone Number: 903-521-3095 Fax Number: na

E-mail Address: hilltopjersey@gmail.com

For TCEQ Use Only

Customer Number _____
Regulated Entity Number _____
Permit Number _____

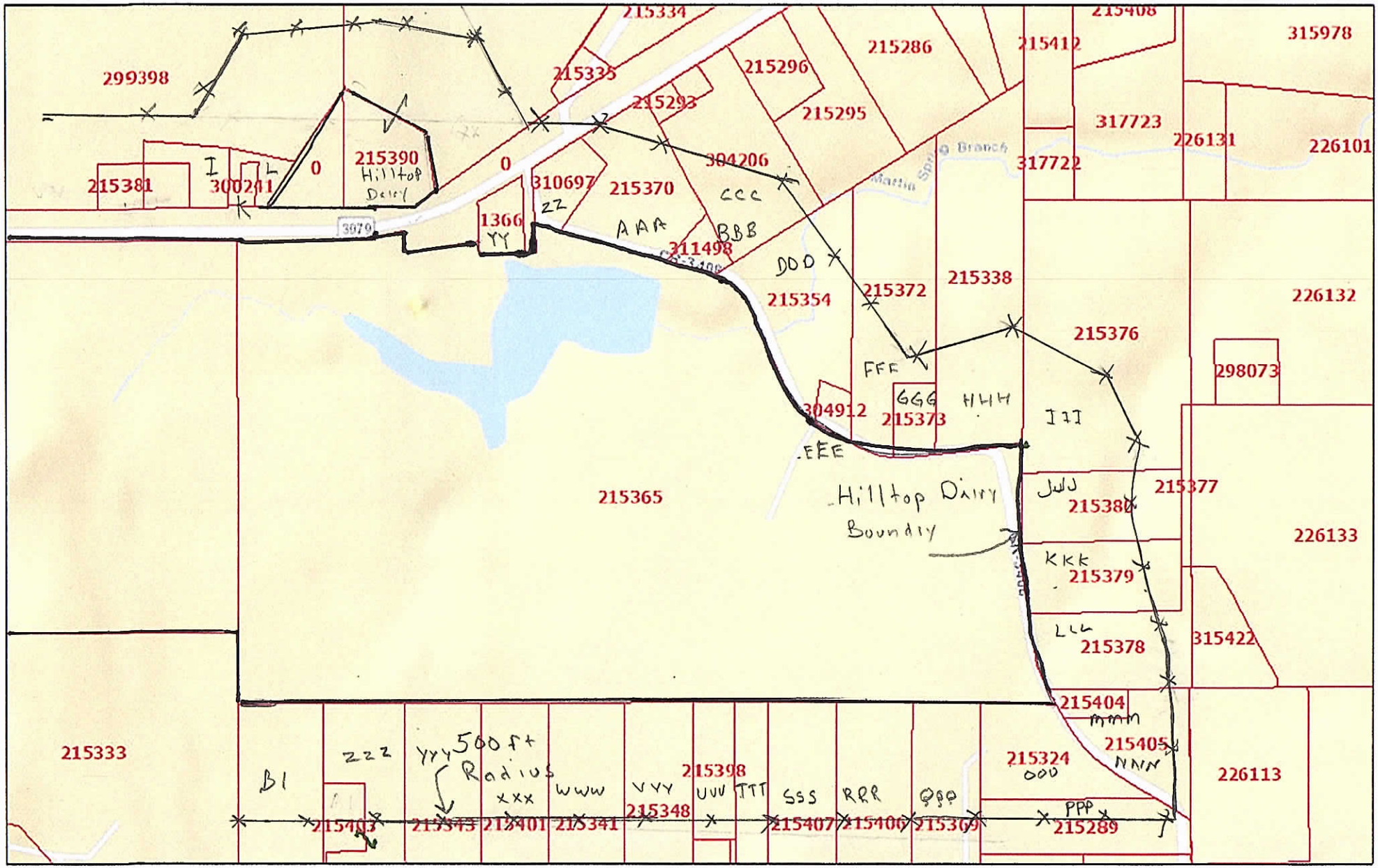
Henderson CAD Web Map A



Henderson County Appraisal District, BIS Consulting -

Disclaimer: This product is for informational purposes only and has not been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of boundaries

Henderson CAD Web Map B



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Parcels

Land Hooks

1:9,028

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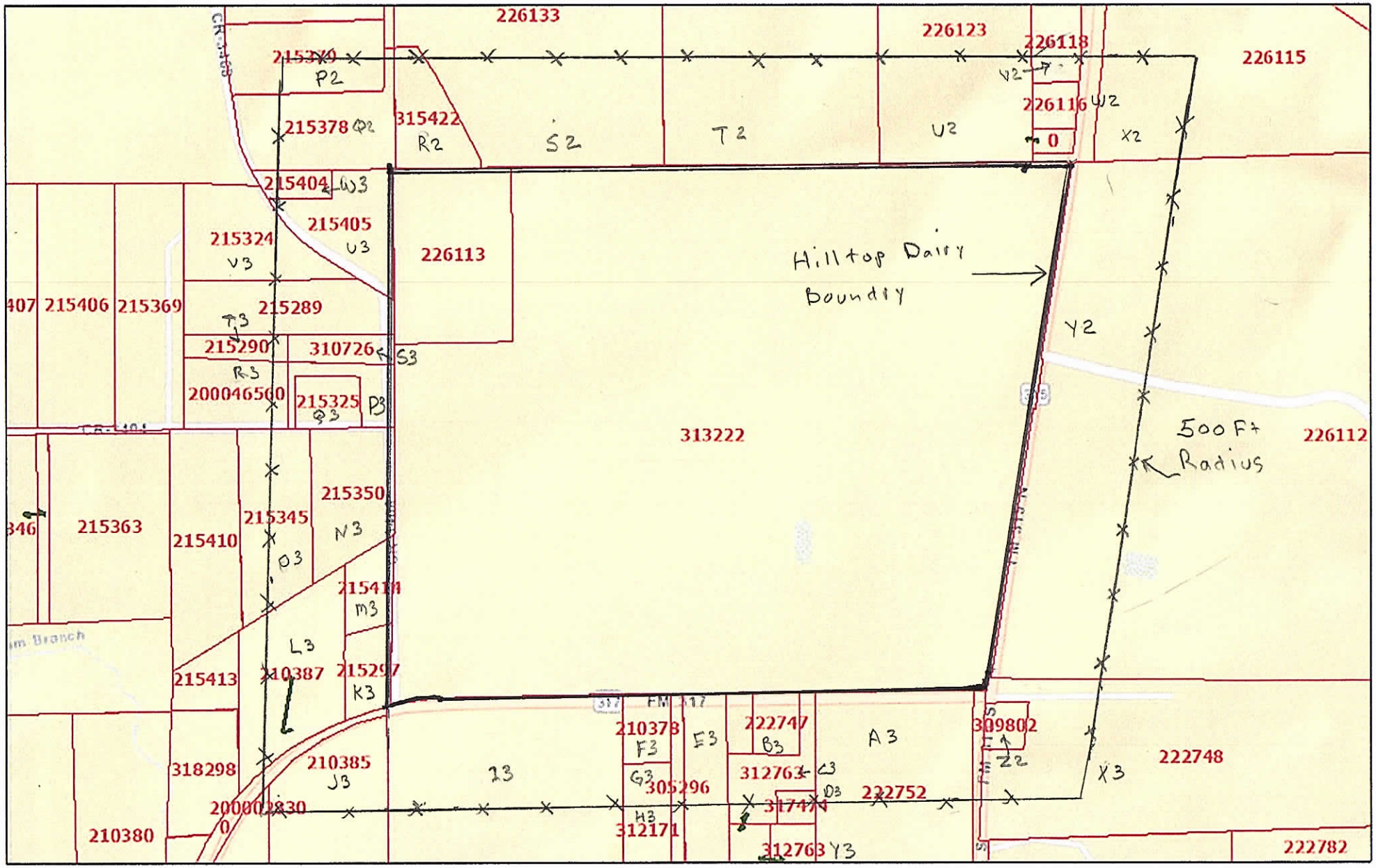
0 0.1 0.2 0.4 km

Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Disclaimer: This product is for informational purposes only and has not been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of boundaries

Henderson CAD Web Map C



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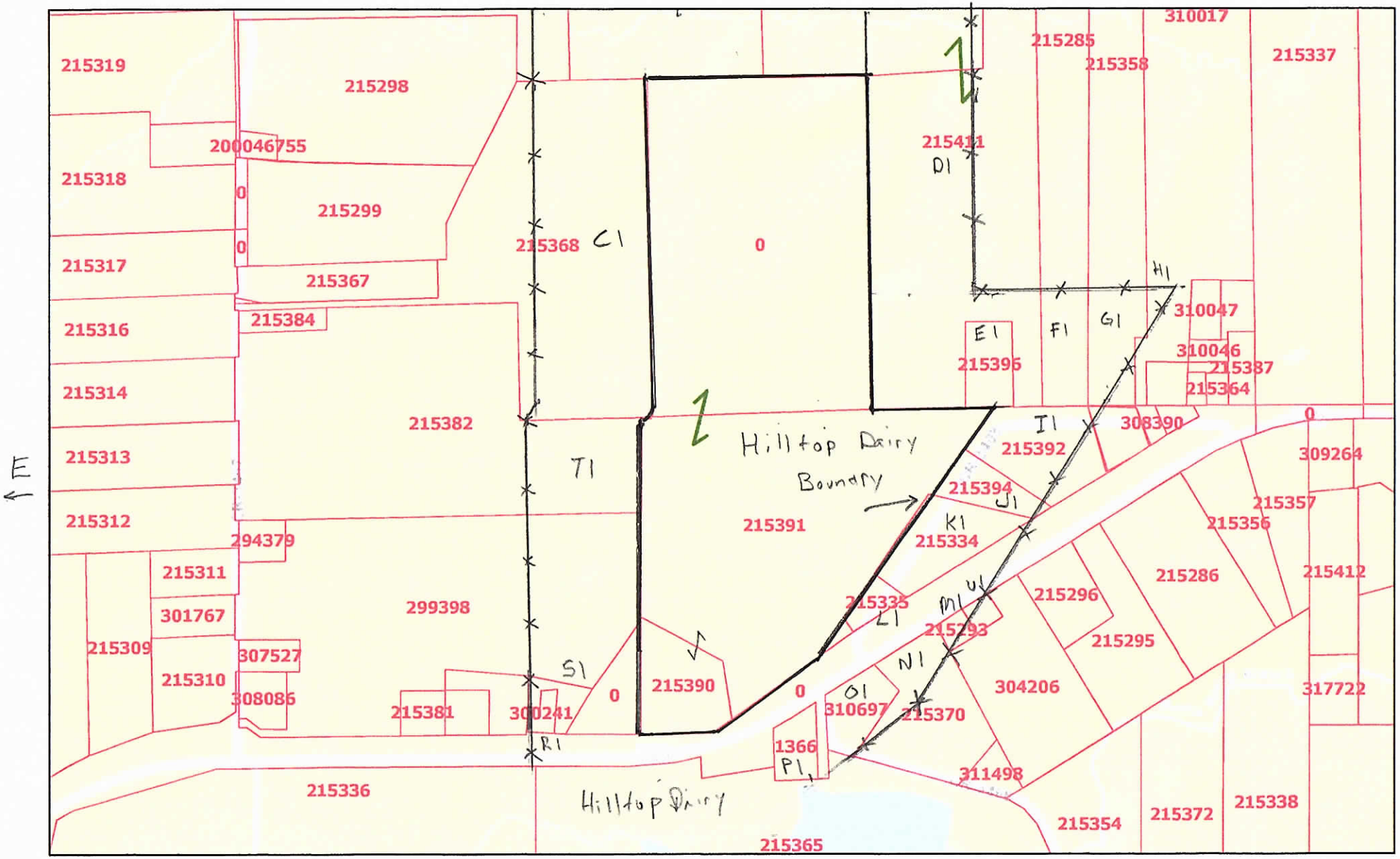
Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Parcels

Land Hooks

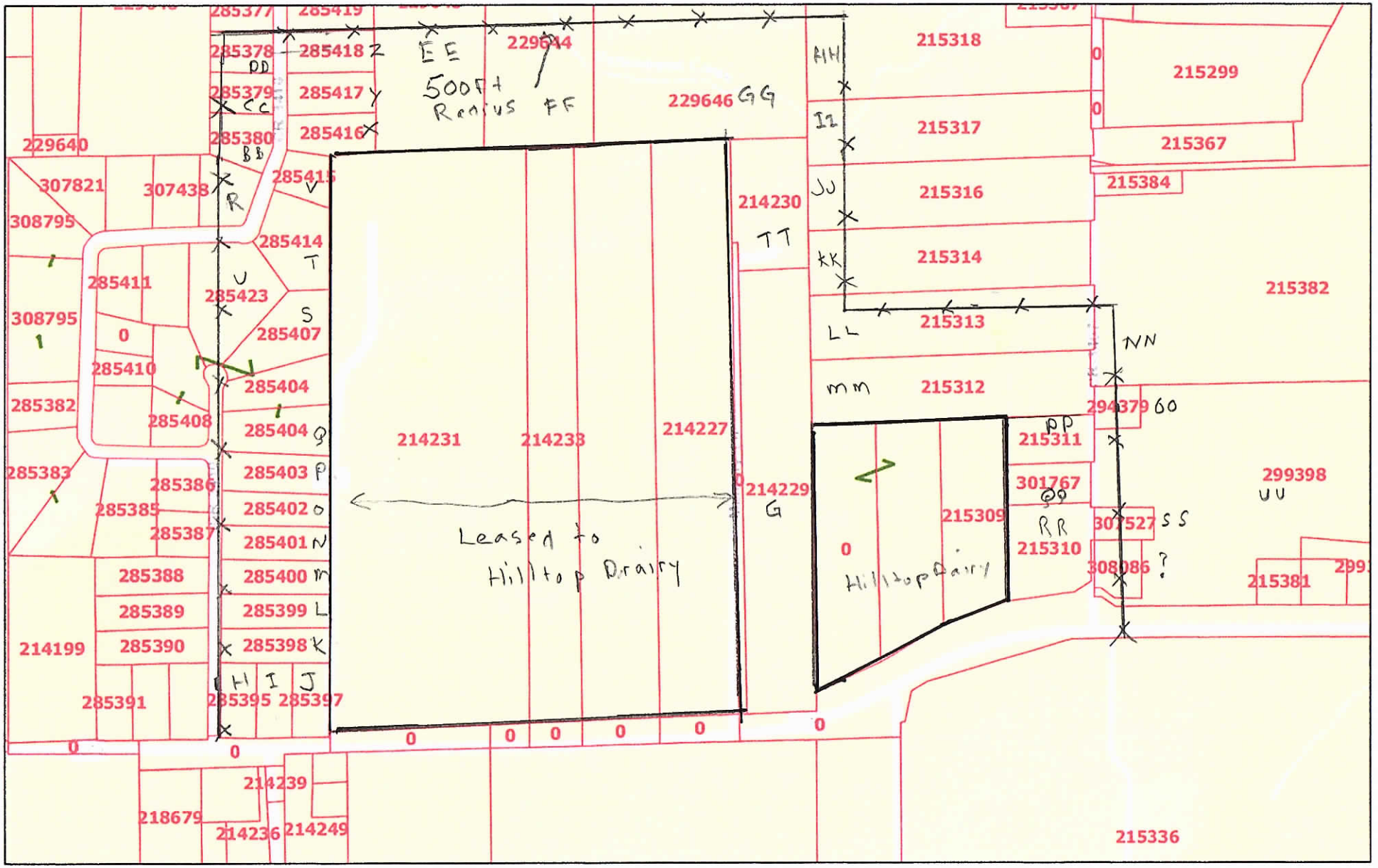
Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map d



Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map E



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Parcels

Land Hooks

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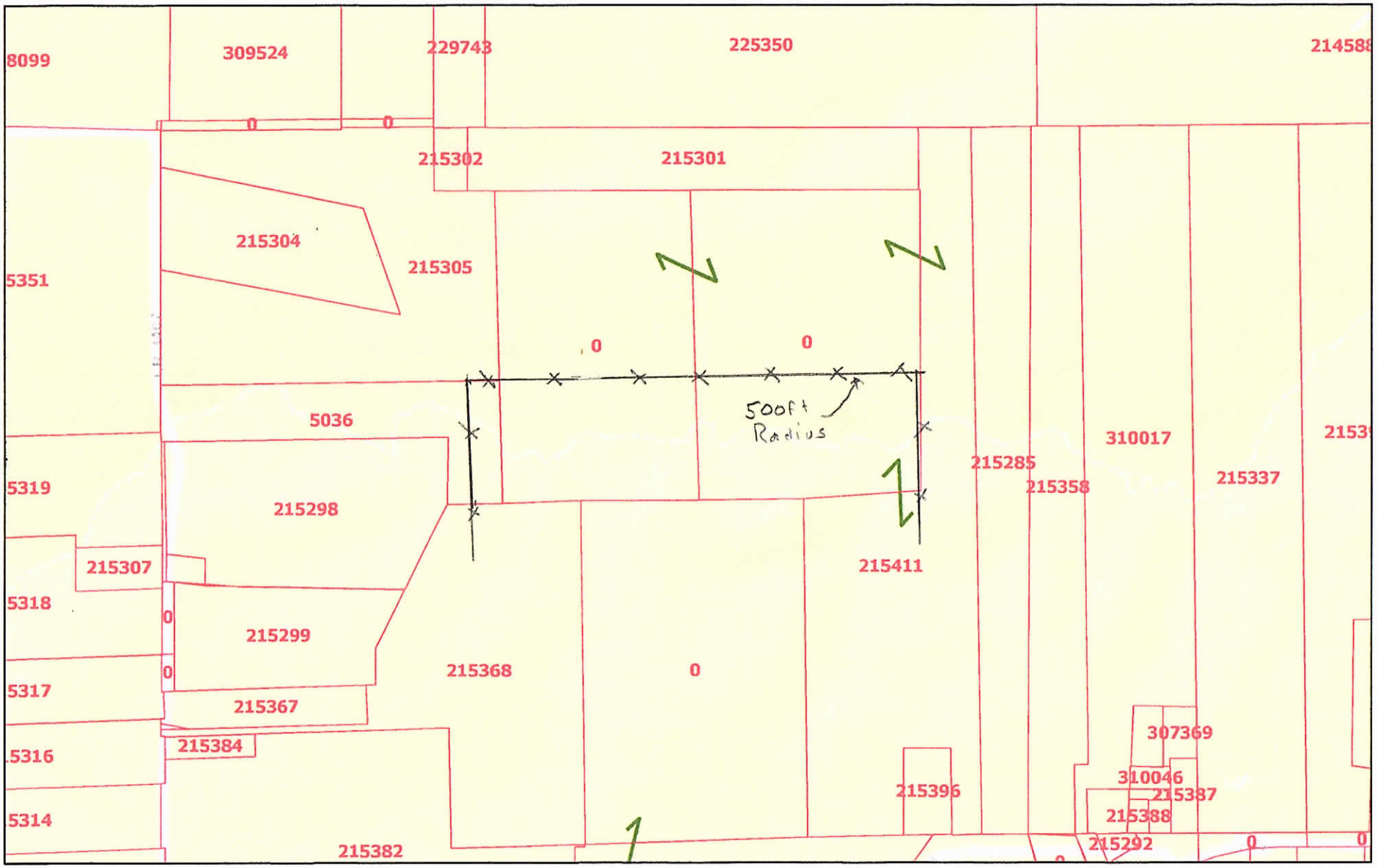
Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map F



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Parcels

Land Hooks

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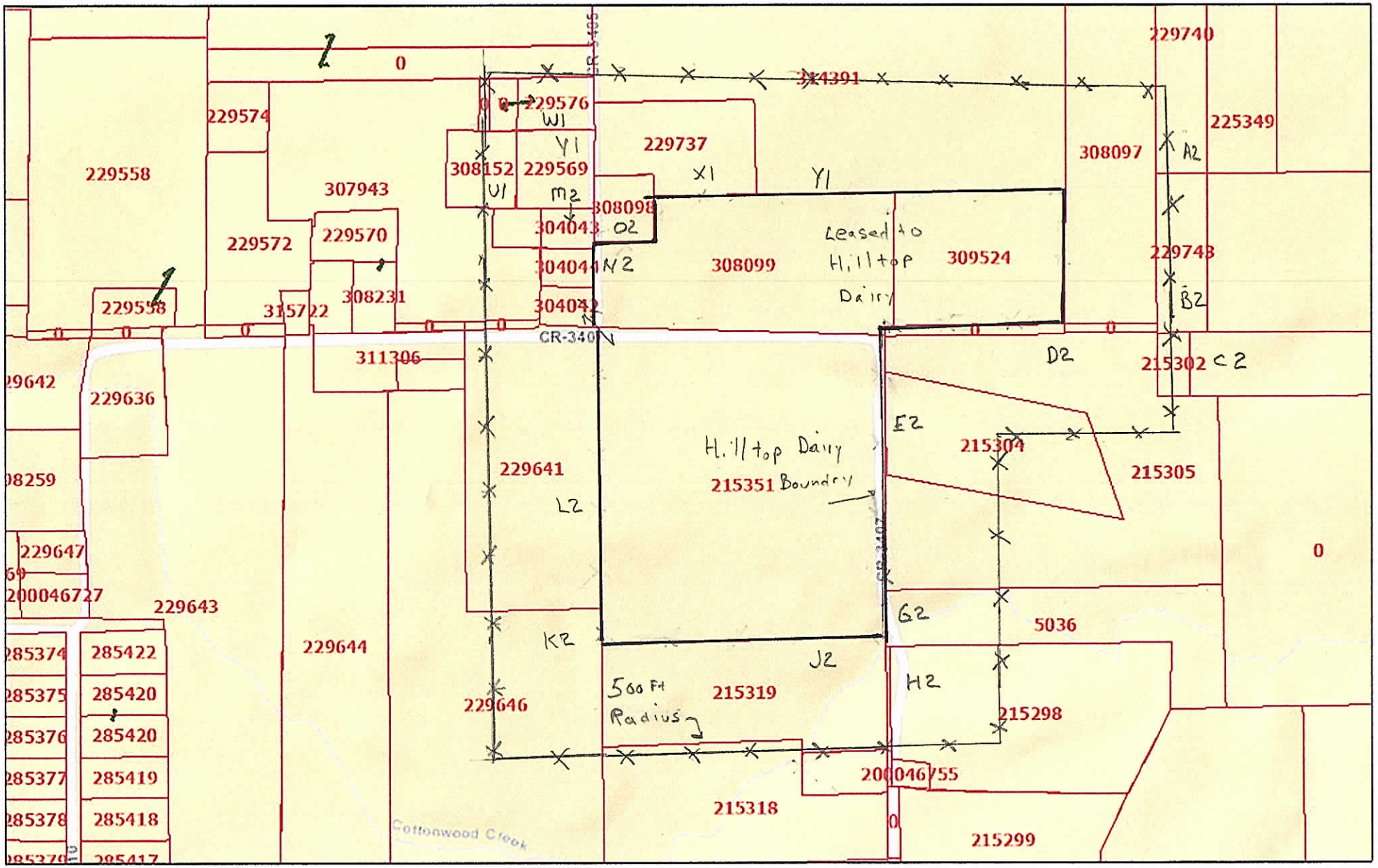
Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map



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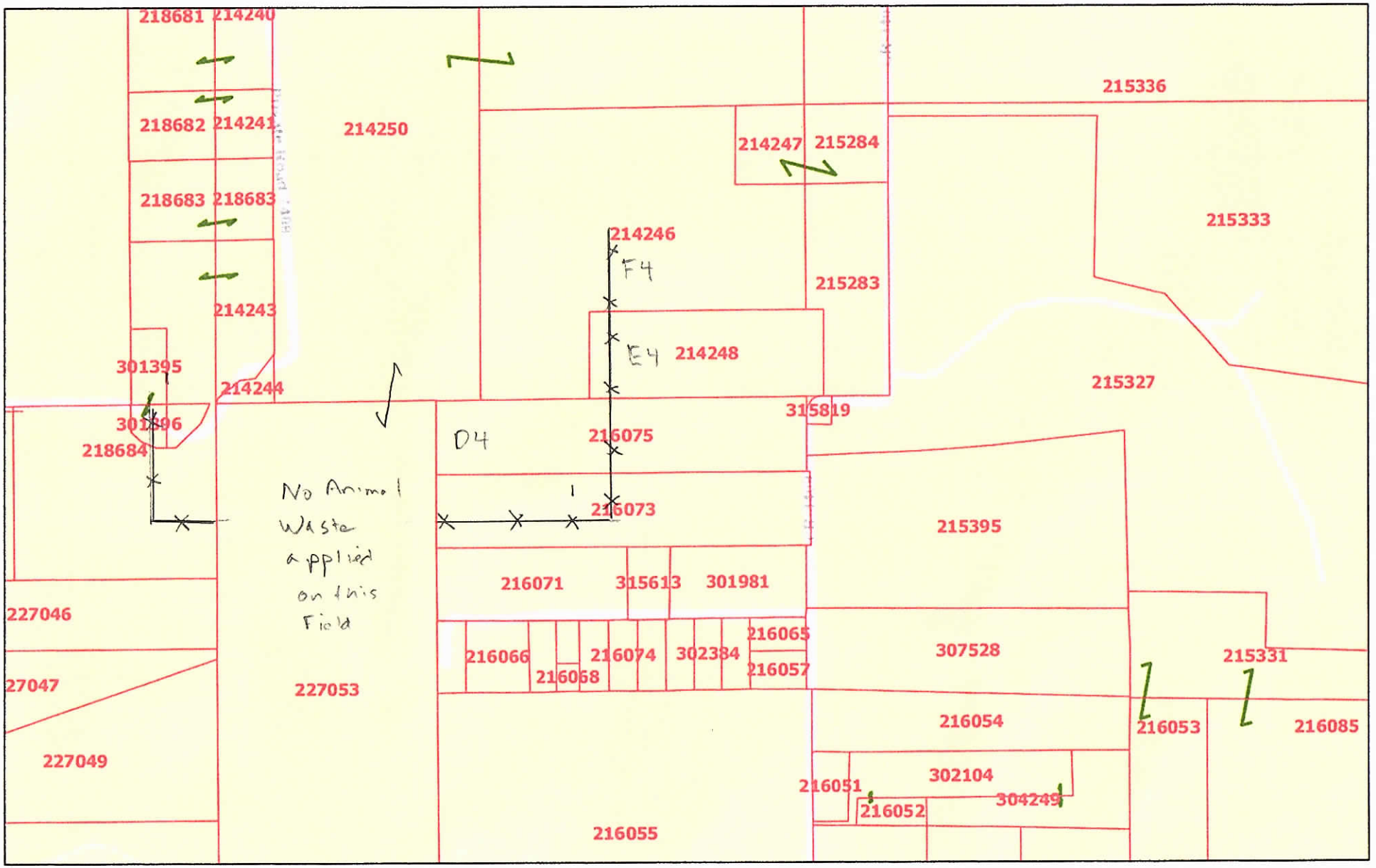
Parcels

Land Hooks

Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map H



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Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Hilltop Jersey Farm Land Owners Map

A	310,101	MARIA LEONOR 18400 FM 3079 CHANDLER TX 75758 TX 75758
B	200,046,733	SILVIA LEDESMA 184002 FM 3079 CHANDLER TX 75758 TX 75758
C	214,249	CESARIO & MARIA T LEDESMA 18274 FM 3079 CHANDLER TX 75758 TX 75758
D	214,231	LANA GAY GOODSON ETAL 7802 ABBEY CT TYLER TX 75703 TX 75703
E	214,228	CLAYTON R&P TRUST
F	214,227	RANDAL & PAMELA CLAYTON CO-TRUSTEES PO BOX 186 BROWNSBORO TX 75756
G	214,229	LARRY B DENNEY PO BOX 683 CHANDLER TX 75758 TX 75758
H	285,395	BLAKE DAVID L & ALICE M 18303 FM 3079 CHANDLER TX 75758
I	285,396	WAGNER JONATHAN & CANDICE
J	285,397	PO BOX 592 CHANDLER TX 75758
K	285,398	CUNNINGHAM LARRY GENE JR ETAL
L	285,399	8750 CR 3410 BROWNSBORO TX 75756
M	285,400	MILLER DENNIS ALLEN II 8776 CR 3410 BROWNSBORO TX 75756
N	285,401	GREENE JIMMY & SHANNON 8814 CR 3410 BROWNSBORO TX 75756
O	285,402	BOSLEY TOMMIE ALLEN 8830 CR 3410 BROWNSBORO TX 75756

P	285,403	ALFF MARISSA 19148 EAST 45TH PLACE DENVER CO 8024
Q	285,404	REGA MARCY ANDREA 259 SUSAN DR BULLARD TX 75757
R	285,381	HONEYCUTT DEWAYNE & CYNTHIA PO BOX 870 CHANDLER TX 75758
T	285,414	FORD THOMAS E & BILLIE J
U	285,423	3602 W WESTCOTT
V	285,414	GLENDALE AZ 85308
S	285,407	
X	285,416	SPRINGER JENNIFER & JOSEPH 9176 CR 3410 BROWNSBORO TX 75756
Y	285,417	CARPENTER AMANDA 9188 CR 3410 BROWNSBORO TX 75756
Z	285,418	MANCILLAS RAQUEL Y 3315 MARY ANN ST TYLER, TX 75708
BB	285,380	RACKLEY RANDY & MARY
CC	285,379	9187 CR 3410 BROWNSBORO TX 75756
DD	285,378	COLE MICKAEL & TONYA 9221 CR 3410 BROWNSBORO TX 75756
EE	229,643	ALLSIP NORA FAY 10311 CR 3407 BROWNSBORO TX 75756
FF	229,644	VAUGHN JULIE MCCRACKEN & MICHAEL 10215 CR 3407 BROWNSBORO TX 75756
GG	229,646	ALLISON DONNA FAYE 10121 CR 3407 BROWNSBORO TX 75756
HH	215,318	MAROZSAN SANDOR GEORGE & YVONNE 9245 COUNTY ROAD 3407 CHANDLER TX 75758

II	215,317	CARRICO MARGARET PO BOX 991 CHANDLER TX 75758
JJ	215,316	UTZ JODY D 15048 CR 1134 TYLER TX 75709
KK	215,314	CULLIPHER DANNY 9171 CR 3407 CHANDLER TX 75758
LL	215,313	MERIDA NATHAN W & KIMBERLY VELIZ 9061 CR 3407 CHANDLER TX 75758
MM	215,312	TRIPLETT DAVID ALAN 9021 CR 3407 CHANDLER TX 75758
NN	215,382	MORRIS GAIL PARMER 11036 HIDDEN HOLLOW LN TYLER TX 75703
OO	294,379	DARCEY SHEILA KAY 9020 CR 3407 CHANDLER TX 75758
SS		FITZGERALD SUSAN & MARTIN 8950 COUNTY ROAD 3407 CHANDLER TX 75758
UU	299,398	PARMER ODIS DELMAN 8980 CR 3407 CHANDLER TX 75758
TT	214,230	DENNEY LARRY B PO BOX 683 CHANDLER TX 75758
YY	1,366	?
ZZ	310,697	EUBANKS RENE ADAMS & THOMAS 19502 FM 3079 CHANDLER TX 75758
AAA	215,370	GOODSON KAYLA & FRED 179 VZ COUNTY ROAD 4819 CHANDLER TX 75758
BBB	311,498	GOODSON KAYLA 8774 CR 3408 CHANDLER TX 75758

CCC	304,206	PADRON CIRILO SAUCEDA & MARIATRAHAN 19576 FM 3079 CHANDLER TX 75758
DDD	215,354	MCCOY SANDA 8702 CR 3408 CHANDLER TX 75758
EEE	304,912	COPE JESSY 1631 DUNLAVY ST HOUSTON TX 77006
FFF	215,372	TAYLOR DEBORAH RENEE 8642 CR 3408 CHANDLER TX 75758
GGG	215,373	DURHAM REGINALD PAUL & ABBE 8630 CR 3408 CHANDLER TX 75758
HHH	215,338	SPRADLEY JOE A 8570 CR 3408 CHANDLER TX 75758
III	215,376	WEIMER PAULA J & DENNIS B 8480 CR 3408 CHANDLER TX 75758
JJJ	215,380	SCHMIDT LAURA LEE ET AL 419 4TH ST CHANDLER TX 75758
KKK	215,379	FORD MICHAEL EDWARD ESTATE PO BOX 264 CHANDLER TX 75758
LLL	215,378	TILLEY CELYA NICOLE 8382 CR 3408 CHANDLER TX 75758
MMM NNN	215,404 215,405	PATTERSON MICHAEL LEE & CLAIRE ANITA 8336 CR 3408 CHANDLER TX 75758
OOO PPP	215,324 215,289	ARMSTRONG LANCE E 8291 CR 3408 CHANDLER TX 75758
QQQ	215,369	CLARK CORRINNE 19819 CR 3404 CHANDLER TX 75758

RRR	215,406	SIGGELOW PAMELA RENEE TRUST
SSS	215,407	19783 COUNTY ROAD 3404
		CHANDLER TX 75758
TTT	312,905	THOMAS WILLIE
		19769 CR 3404
		CHANDLER TX 75758
UUU	215,398	GATES KIM
		19771 COUNTY ROAD 3404
VVV	215,348	BEAM KENNETH D & TONYA L
WWW	215,341	19731 CR 3404
		CHANDLER TX 75758
XXX	215,401	PONCE REYNALDO M
		19930 CR 3411
		CHANDLER TX 75758
YYY	215,343	HALL LEONARD & CHRISTINA
		19363 CR 3404
		CHANDLER TX 75758
ZZZ	215,340	DAVIS ARTHUR S & DORIS PAINTER
A1	215,340	C/O ARTHUR DAVIS 19260 CR 3404
		CHANDLER TX 75758
B1	215,411	LIMEHOUSE FAMILY TRUST
D1	215,411	19671 CR 3403
		CHANDLER TX 75758
C1	215,368	DIPPEL JAMES & LISA
		9200 CR 3407
		CHANDLER TX 75758
E1	215,396	DEAN WILLIAM C & KAREN D
		19651 CR 3403
F1	215,285	KNARR DONALD R
G1	215,35	736 FAIRMONT DR
		TYLER TX 75701
H1	310,017	PARMER MICHAEL SHANE
		19055 FM 3079
		CHANDLER TX 75758
I1	215,392	YARBROUGH BILLY F & KAREN L
		19820 CR 3403
		CHANDLER TX 75758

J1	215,394	POLLINGTON JANET PO BOX 544 CHANDLER TX 75758
K1	215,334	MOORE CATHY LYNN VICK 19609 FM 3079 CHANDLER TX 75758
L1	215,335	TUSTISON JIM PO BOX 158 CHANDLER TX 75758
M1	304,387	MEADE DEBORAH 19574 FM 3079 CHANDLER TX 75758
U1	215,293	BROOKS GREGORY N 1221 PECAN RIDGE CHANDLER TX 75758
N1	215,370	GOODSON KAYLA & FRED 179 VZ COUNTY ROAD 4819 CHANDLER TX 75758
O1	310,697	EUBANKS RENE ADAMS & THOMAS 19502 FM 3079 CHANDLER TX 75758
P1	1,366	MARTIN SPRINGS BAPTIST CHURCH
R1	300,241	VILLALOBOS CECILIA 19365 FM 3079 CHANDLER TX 75758
S1	299,397	PARMER ODIS DELMON & SHIRLEY K 8980 CR 3407 CHANDLER TX 75758
T1	215,382	MORRIS GAIL PARMER 11036 HIDDEN HOLLOW LN TYLER TX 75703
U1	308,152	?
V1	229,569	VICKERS EARLENE ANN 9883 CR 3405 BROWNSBORO TX 75756
W1	229,576	NUNN CHARLES KEITH & CARMEN M 9997 CR 3405 BROWNSBORO TX 75756

X1	229,737	CLAYTON FAMILY IRREVOCABLE TRUST C/O STEPHANIE GOLDY & CHARLES R CLAYTON 3902 RAVENBANK DR ROCKWALL TX 75756
X1	308,098	WILLIAMS BENITA G CLAYTON 9754 CR 3405 BROWNSBORO TX 75756
Y1	314,391	CLAYTON CHARLES RAY II 3902 RAVENBANK DR ROCKWALL TX 75757
Z1	308,097	CLAYTON R&P TRUST RANDAL & PAMELA CLAYTON CO-TRUSTEES PO BOX 186 BROWNSBORO TX 75756
A2	225,349	LAWRENCE RONALD WAYNE 10276 CR 3405 BROWNSBORO TX 75756
B2 C2 D2	229,743 215,302 215,305	LAWRENCE LARRY DON 9700 CR 3407 BROWNSBORO TX 75756
G2	5,036	?
H2	215,298	WAGNER GREGORY & CYNTHIA P O BOX 1475 CHANDLER TX 75758
J2	215,319	CLARK DONNA H 9495 BLUEBONNET DR SCURRY TX 75158
K2	229,646	ALLISON DONNA FAYE 10121 CR 3407 BROWNSBORO TX 75756
L2	229,641	DIJOY DAVID 9987 COUNTY ROAD 3407 BROWNSBORO TX 75756
N2 M2	304,044 304,043	WEXLER-ADAMS TAYLOR & ERIN 9835 CR 3405 BROWNSBORO TX 75756
O2	308,098	WILLIAMS BENITA G CLAYTON 9754 CR 3405 BROWNSBORO TX 75756

P2	215,405	PATTERSON MICHAEL LEE & CLAIRE ANITA 8336 CR 3408 CHANDLER TX 75758
Q2	215,378	TILLEY CELYA NICOLE 8382 CR 3408 CHANDLER TX 75758
R2	315,422	TILLEY CELYA NICOLE 630 MEADOW LANE TYLER TX 75703
S2	226,133	DEWS RUTHIE LEE ET AL
T2	226,103	115 DEWS DR WHITEHOUSE TX 75791
U2	226,123	FLETCHER OTTIS 8237 FM 315 N CHANDLER TX 75758
V2	226,118	MCCANN CHARLES W & DEE ANN 8793 PHOENIX SOUTH DR CHANDLER TX 75758
W2	226,116	MCCURLEY DON W 681 PECOS ST CHANDLER TX 75758
X2	226,115	KIDD PROPERTIES LP P 0 BOX 365 CHANDLER TX 75758
Y2	226,112	KIDD JOHN LUSTER P O BOX 365 CHANDLER TX 75758
Z2	309,802	?
X3	222,748	MCCURLEY DAVID FRANK & MARY LYNN 7962 FM 315 N CHANDLER TX 75758
A3	222,752	DENNIS MICHAEL & HOBIE & BELINDA DENNIS 2109 CHERRY HILL DR LEAGUE CITY TX 77573
B3	222,747	BARTON SHARONNE C LIFE ESTATE 20470 FM 317 CHANDLER TX 75758
C3	312,763	MARONGE DAVID & THERESA
Y3	312,763	20490 FM 317 CHANDLER TX 75758

D3	317,474	STRICKLAND LINDSEY M 20488 FM 317 CHANDLER TX 75758
E3	311,346	BURLEIGH GILBERT & CATHERINE 20466 FM 317 CHANDLER TX 75758
F3 H3	210,378 312,171	SCHMIDT LARRY L & RUTH ANN 20332 FM 317 CHANDLER TX 75758
G3	305,296	MCCALLIE RHONDA 701 CEDAR CREEK DR TYLER TX 75703

I3	210,384	TEXAS PECAN NURSERY INC BOX 306 CHANDLER TX 75758
J3	210,385	POWELL GREG S & TAMMEY 19221 CR 3411 CHANDLER TX 75758
K3	215,297	BROWN DYLAN L
M3	215,414	7959 CR 3408 CHANDLER TX 75758
L3	210,387	GUMBER MICHAEL 20047 FM 317 CHANDLER TX 75758
N3	215,350	TUCKER CLARK R 20036 CR 3404 CHANDLER TX 75758
O3	215,345	THOMPSON BRIAN & JERRI 20012 CR 3404 CHANDLER TX 75758
P3	200,046,561	ARMSTRONG LANCE JR
S3	310,726	20033 CR 3404
T3	215,289	CHANDLER TX 75758
V3	215,324	
Q3	215,325	
R3	200,046,560	EVETT JACEE BROOKE & HARLEY THOMAS 19933 CR 3404 CHANDLER TX 75758
U3	215,405	PATTERSON MICHAEL LEE & CLAIRE ANITA 8336 CR 3408 CHANDLER TX 75758
V3	214,240	GROSS LISA JO C/O DENNIS CRY PO BOX 1715 CHANDLER TX 75758
W3	214,241	SMITH LAURA ANN & KAVASCH KRIS I PO BOX 636 CHANDLER TX 75758
X3	218,683	WALL TRAVIS & KAREN 2135 FOX FIRE ST HIGHLANDS RANCH CO 80129
Y3	214,243	MARTIN CHESTER
B4	227,042	PO BOX 775 BROWNSBORO TX 75756

Z3 214,244 WELCH LAURA ANN
8330 PR 7408
CHANDLER TX 75758

A4 301,395 KELLEY JASON W
8275 PVT RD 7408
CHANDLER TX 75758

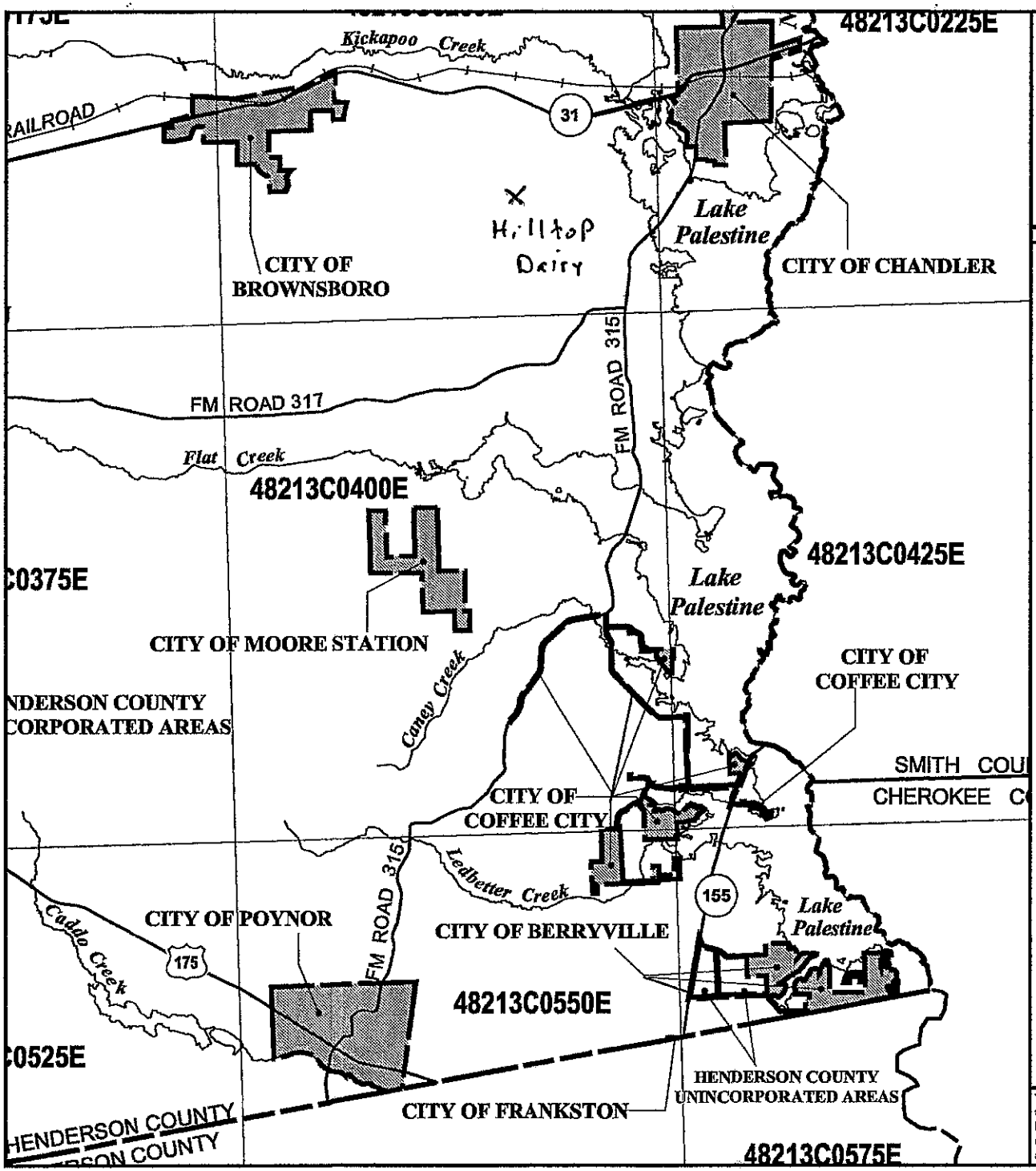
C4 216,075 MCELROY JOHNNY
D4 216,073 17619 WHITE OAK DR
CONROE TX 77306

E4 214,248 WRIGHT PONDER JR
8141 CR 3409
CHANDLER TX 75758

F4 214,246 WRIGHT WANDA RUE
215,284 8570 CR 3409
214,247 CHANDLER TX 75758

G4 215,333 HARRIS LINDA JEAN COTTEN
8202 CR 3409
CHANDLER TX 75758

H4 215,327 COTTEN RICKY EUGENE
8158 CR 3409
CHANDLER TX 75758



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

HENDERSON COUNTY, TEXAS

AND INCORPORATED AREAS

(SEE LISTING OF COMMUNITIES TABLE)

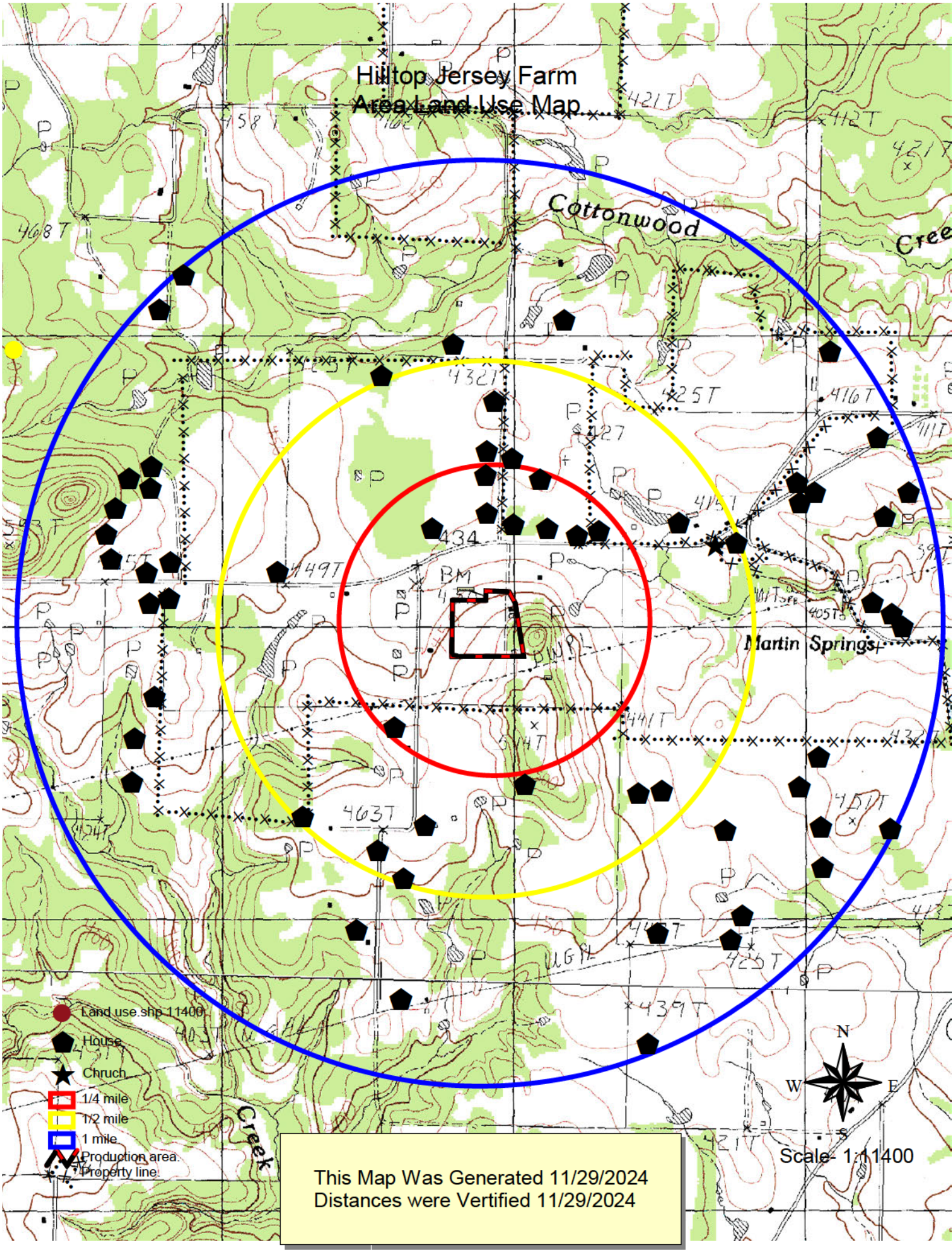
MAP INDEX

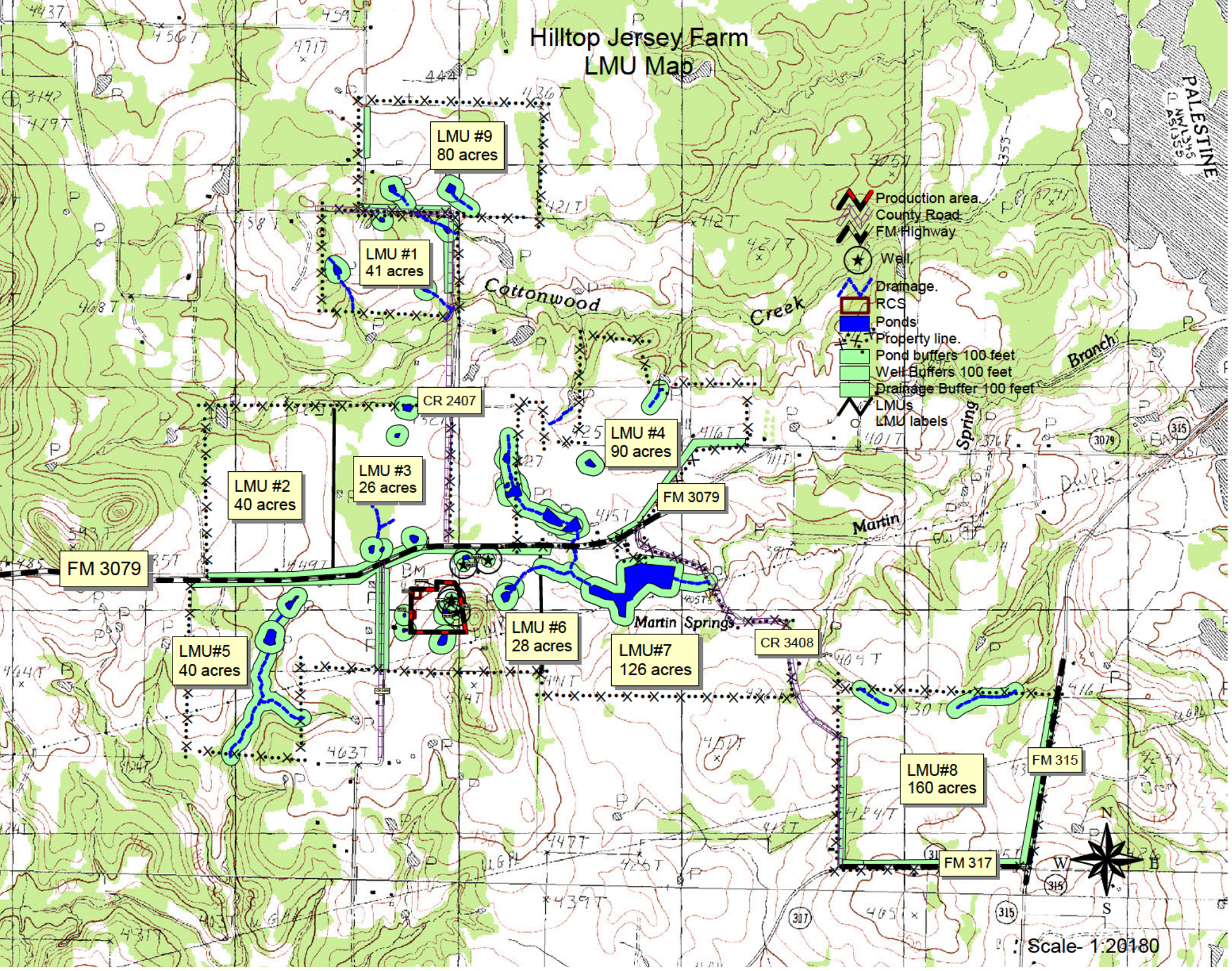
PANELS PRINTED: 25, 50, 60, 70, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300, 310, 320, 325, 330, 340, 350, 375, 400, 425, 450, 475, 500, 525, 550, 575

MAP NUMBER
48213CIND0A

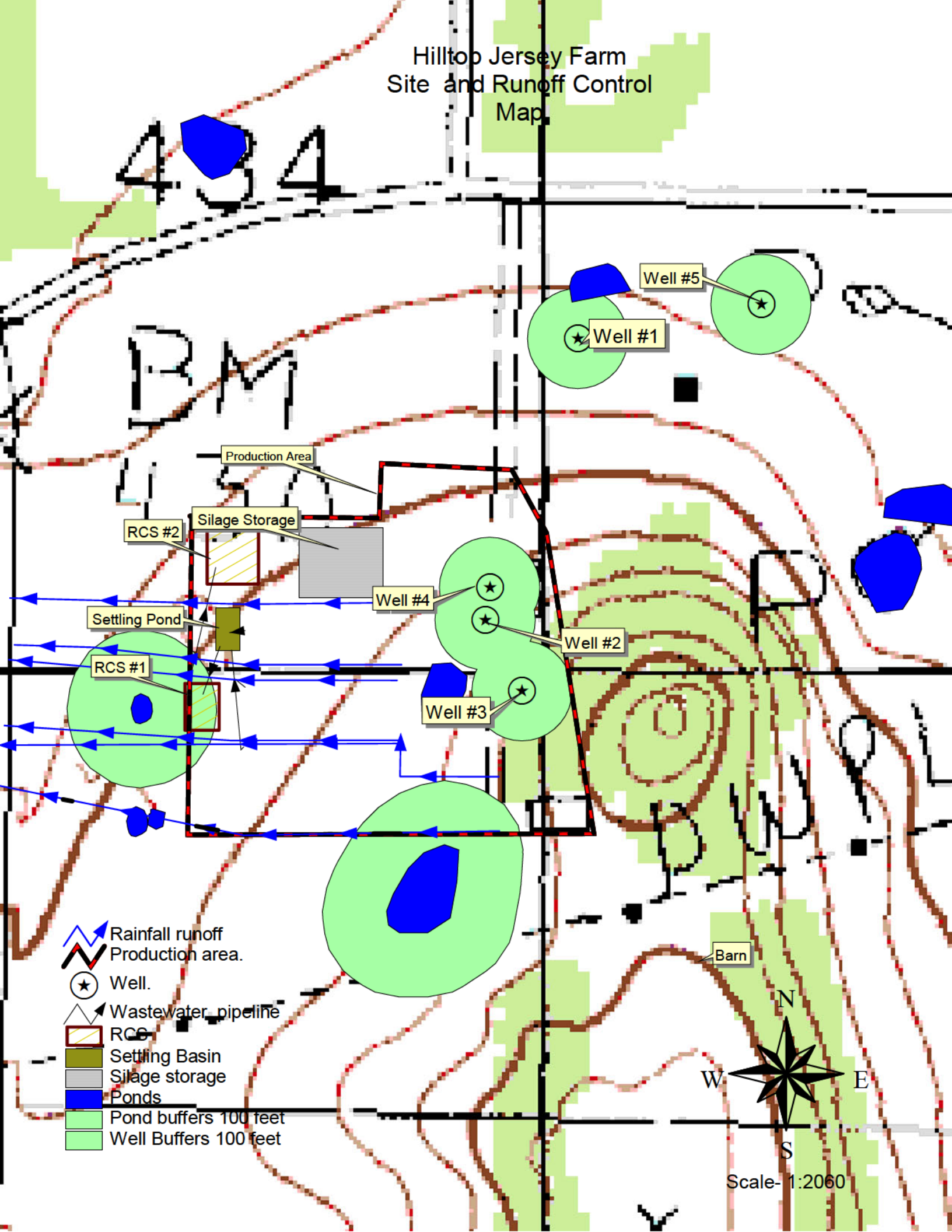
MAP REVISED
APRIL 5, 2010

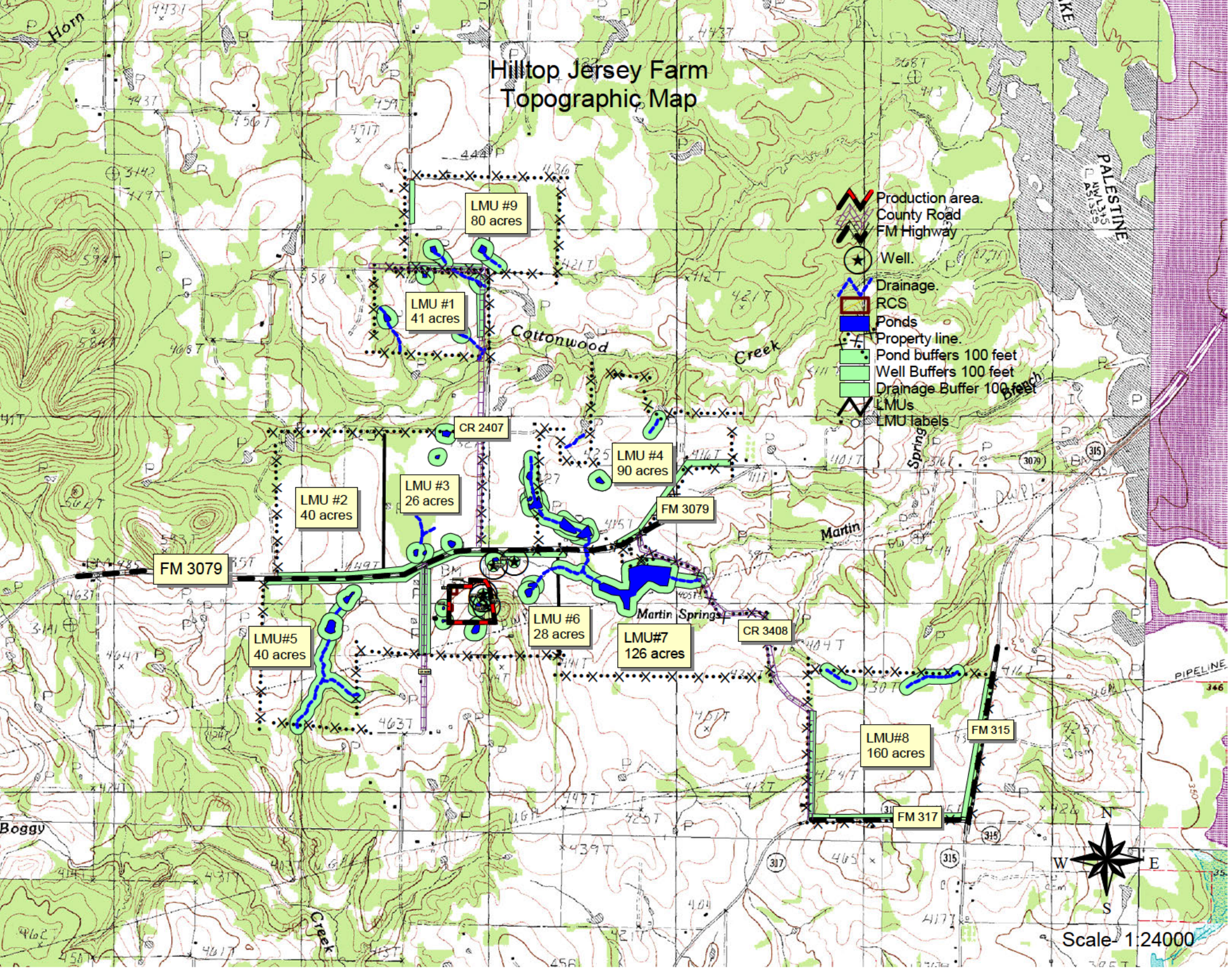
Federal Emergency Management Agency


Hilltop Jersey Farm
Area Land Use Map
Cottonwood
Martin Springs
Land use.shp 11400
House
Chruch
1/4 mile
1/2 mile
1 mile
Production area
Property line
N
W
E
S
Scale- 1:11400
This Map Was Generated 11/29/2024
Distances were Vertified 11/29/2024


Hilltop Jersey Farm
LMU Map
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
CR 3408
FM 3079
FM 315
FM 317
Cottonwood Creek
Martin Spring Branch
Martin Springs
PALESTINE
Production area.
County Road
FM Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
N
S
E
W
Scale- 1:20180

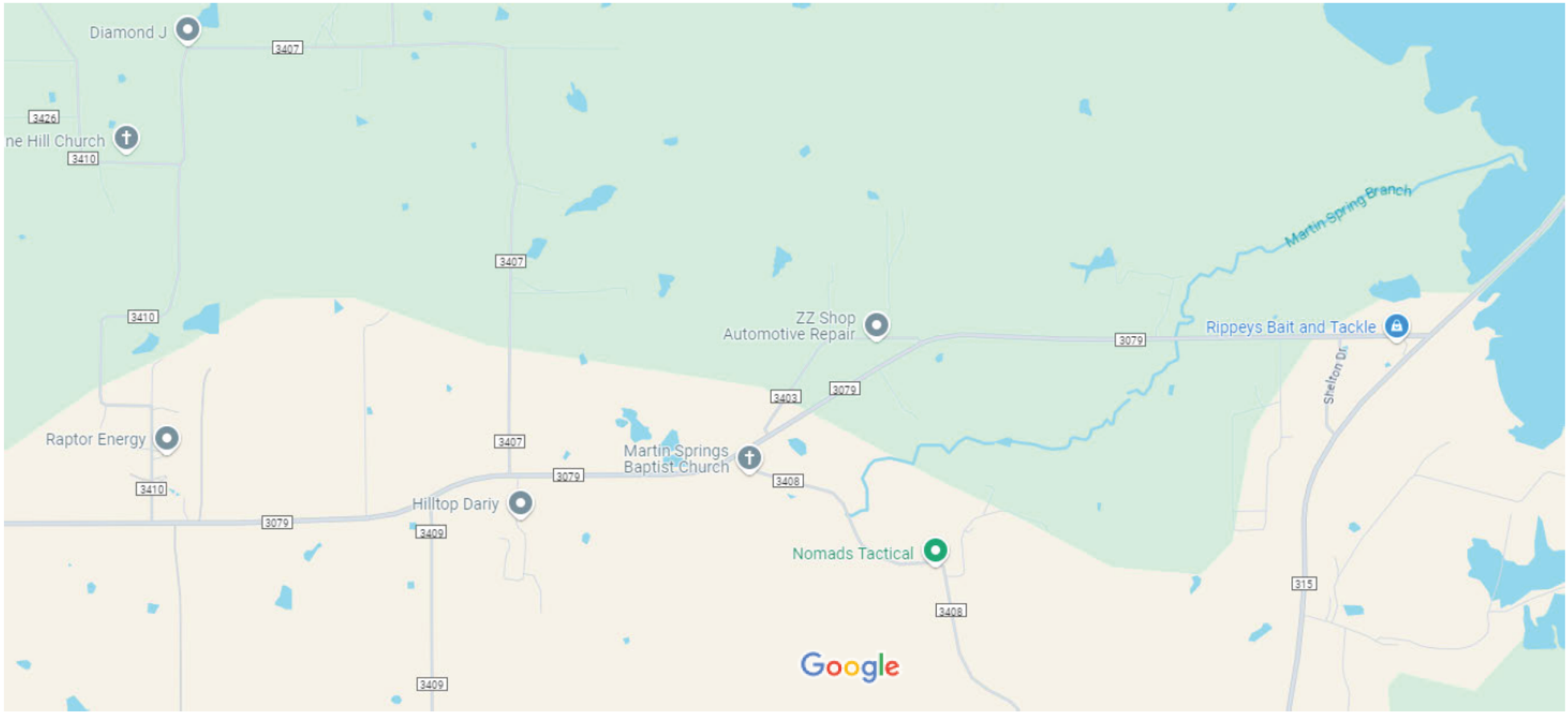
Hilltop Jersey Farm Site and Runoff Control Map




Hilltop Jersey Farm
Topographic Map
Production area.
County Road
FM Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
CR 3408
FM 3079
FM 315
FM 317
Cottonwood Creek
Martin Springs
Martin Spring Branch
PALESTINE
PIPELINE
Boggy Creek
N
S
E
W
Scale- 1:24000

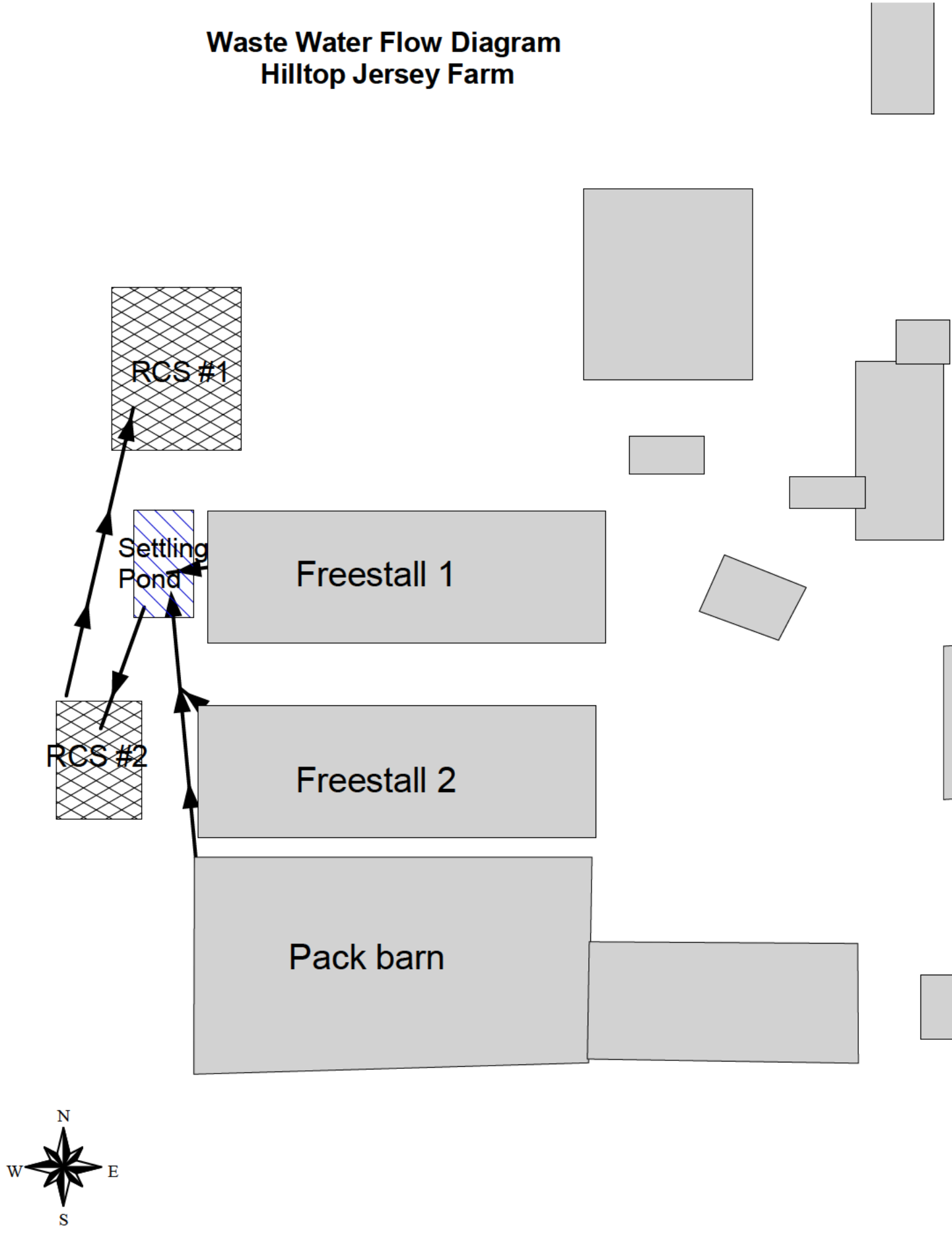
Google Maps

Hilltop Jersey Farm
Vicinity Map



Map data ©2024 1000 ft

Waste Water Flow Diagram
Hilltop Jersey Farm



Scale-1:2000

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: 4927
Check/Money Order Amount: $350.00
Name Printed on Check: Hilltop Jersey Farm

EPAY — Voucher Number: Click here to enter text
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: Click here to enter text

E. For existing permits:
What is the permit number? Not known
What is the EPA I.D. Number? TX Click here to enter text

SECTION 3. FACILITY OWNER (APPLICANT) INFORMATION

A. What is the legal name of the facility owner?
NICO JAAP DEBOER

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN 601180649

C. What is the contact information for the owner?

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

Phone Number: 903 521 3095 Fax Number: Click here to enter text.

E-mail Address: hilltopjersey@gmail.com

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: Click here to enter text.

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: Click here to enter text.

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

SECTION 4. CO-APPLICANT INFORMATION

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

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

Click here to enter text.

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

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

Mailing Address: Click here to enter text.

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

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

E-mail Address: Click here to enter text.

D. Indicate the type of customer:

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

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: Click here to enter text.

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

SECTION 5. APPLICATION CONTACT INFORMATION

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

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

Application Contact First and Last Name: Jim Wyrick

Title: Consultant Credentials: Professional Geoscientist

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr,

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903 243-0400 Fax Number: Click here to enter text.

E-mail Address: wyrick@suddenlink.net

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: Jim Wyrick

Title: Consultant Credentials: PG

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903-243-0400 Fax Number: na E-mail Address: wyrick@suddenlink.net

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

Permit Contact First and Last Name: NICO JAAP DEBOER

Title: Owner Credentials: Click here to enter text.

Company Name: HILLTOP JERSEY FARM

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

Phone Number: 903 521 3095 Fax Number: Click here to enter text. E-mail Address: hilltopjersey@gmail.com

SECTION 7. ANNUAL BILLING CONTACT INFORMATION

Please identify the individual for receiving the annual fee invoices.

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

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

NICO JAAP DEBOER

☐ No, complete this section

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

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

Company Name: Click here to enter text.

Mailing Address: Click here to enter text.

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

Phone Number: Click here to enter text. Fax Number: Click here to enter text. E-mail Address: Click here to enter text.

SECTION 8. LANDOWNER INFORMATION

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

Landowner Name: NICO JAAP DEBOER

B. Landowner of the land management units (LMUs)

Landowner Name: NICO JAAP DEBOER

SECTION 9. PUBLIC NOTICE INFORMATION

A. Individual responsible for publishing the notices in the newspaper

Prefix (Mr., Ms., Miss): Mr. First and Last Name: Jim Wyrick

Title: Consultant Credentials: PG

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903-243-0400 Fax Number: Click here to enter text. E-mail Address: wyrick@suddenlink.net

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

☐ E-mail: Click here to enter text.

☐ Fax Number: Click here to enter text.

☒ Regular Mail:

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

C. Contact person to be listed in the notice

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

First and Last Name: NICO JAAP DEBOER

Title: OWNER Credentials: Click here to enter text.

Company Name: HILLTOP JERSEY FARM

Phone Number: 903 521 3095

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: Henderson County Extension Office

Physical Address of Building: Courthouse, 3rd Floor, Room 300 & 303 100 East Tyler Street

City: Athens, County: Henderson

Phone Number: 903-675-6130

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? Spanish

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: HILLTOP JERSEY FARM

B. If this is an existing permitted site, provide the Regulated Entity Number (RN) issued to this site? RN 103920385

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: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER TX 75758 7667

Item 2: Site Location Description:

Location description: Click here to enter text.

City where the site is located or, if not in a city, what is the nearest city: Click here to enter text.

Zip Code where the site is located: Click here to enter text.

D. County or counties if more than 1: HENDERSON

E. Latitude: 32.2635 Longitude: -95.537716

F. Animal Type:

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

G. Existing Maximum Number of Animals: 999

Proposed Maximum Number of Animals: 999

H. What is the total LMU acreage? 637

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): Click here to enter text.

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). Click here to enter text.

E. Delinquent Fees and Penalties:

Do you owe fees to the TCEQ? Yes ☐ No ☒

Do you owe any penalties to the TCEQ? Yes ☐ No ☒

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

Click here to enter text.

SECTION 12. AFFECTED LANDOWNER INFORMATION

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

A. Landowner map. Attach a landowner map or drawing, with scale, that includes the following. Each landowner should be designated by a letter or number on both the list and the map.

- The applicant's property boundaries, including onsite and offsite LMUs; and
- The property boundaries of all landowners within 500 feet of the applicant's property.

B. Landowner list. Attach a separate list of the landowners' names and mailing addresses. The list must be cross-referenced to the landowners map.

C. Landowner list media. Indicate the format of the landowners list.

☐ Read/Writeable CD

☒ 4 sets of mailing labels

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

Henderson Co, Tax Appraisal District website

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)

D. Minor Amendment

Attach the following items if applicable:

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

SIGNATURE PAGE

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

Permit Number: not issued, Hilltop Jersey Farm

Applicant: NICO JAAP DEBOER

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: NICO JAAP DEBOER

Title: Owner

Signature: _____ Date: _____

SUBSCRIBED AND SWORN to before me by the said _____ on

this _____ day of _____, 20_____

My commission expires on the _____ day of _____, 20_____

_____

(Seal) Notary Public

_____

County, Texas

Attachment 1
Individual Information

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

Prefix (Mr., Ms., Miss): Click here to enter text.

Full Legal Name, including middle name: Click here to enter text.

Driver's License or State Identification Number: Click here to enter text.

State that Issued the License or Identification Number: Click here to enter text.

Date of Birth: Click here to enter text.

Mailing Address: Click here to enter text.

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

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

E-mail Address: Click here to enter text.

For TCEQ Use Only

Customer Number _____
Regulated Entity Number _____
Permit Number _____

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: NICO JAAP DEBOER
2. Permit Number: Click here to enter text EPA ID Number: Click here to enter text
3. Address of the project (location description that includes street/highway, city/vicinity, and county). 19008 FARM TO MARKET 3079 CHANDLER TX 75758 7667
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: Jim Wyrick

   Company Name: East Texas Environmental Services

   Mailing Address: 317 Highland Dr.

   City, State, and Zip Code: 75482

   Phone Number: 903-243-0400 Fax Number: Click here to enter text
5. County where the facility is located: HENDERSON CO.
6. If the property is publicly owned and the owner is different than the permittee/applicant, please identify the owner. NA
7. Identify the name of the water body (receiving waters) and TCEQ segment number that will receive the discharge. LAKE PALESTINE
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): NONE
12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances):

Aeriation of hayland, no-till of winter pasture, plowing and seeding

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

13. List construction dates of any buildings or structures on the property: unknown
14. Provide a brief history of the property, and name of the architect/builder, if known: unknown

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

15. List each Retention Control Structure and its required capacity (Acre Feet). SP-.65, RCS1-1.68 AND RCS#2-3.70
16. Provide the location and number of acres where wastewater and manure are land applied: LMU#1-75, LMU#2-44, LMU#3-39, LMU#4-64, LMU#5-30, LMU#6-41, LMU#7-38, LMU#8-37 AND LMU#9-109
17. List the maximum number of head to be permitted. 999

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit you APPLICATION FEE, if you are mailing your payment.

- Complete items 1 through 5 below:
- Staple your check in the space provided at the bottom of this document.
- Do not mail this form with your application form.
- Do not mail this form to the same address as your application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

Mail this form and your check to:

BY REGULAR U.S. MAIL
Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, TX 78711-3088

BY OVERNIGHT/EXPRESS MAIL
Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, TX 78753

Fee Code: WQP Wastewater Permit Number: WQ000unknown

1. Check / Money Order Number: 4927
2. Amount of Check/Money Order: 350.00n
3. Date of Check or Money Order: 12/6/24
4. Name on Check or Money Order: Hilltop Jersey Farm
5. APPLICATION INFORMATION

   If the check is for more than one application, attach a list of each Project/Site (RE) Name and Physical Address exactly as provided on the application.
   Project/Site (RE) Name: HilltopJersey Farm

   Project/Site (RE) Physical Address: 19008FM3079

Staple Check in This Space

INSTRUCTIONS FOR CAFO INDIVIDUAL PERMIT APPLICATION

Request for Electronic Reporting Waiver- Applicable to TPDES Large CAFOs Only.

Indicate if you want a waiver, temporary or permanent. If a waiver request is granted, the Applicant(s) seeking authorization or permittees that are authorized may continue to submit annual reports to TCEQ in paper format.

If you select "No", you must submit your and annual reports to TCEQ) electronically through STEERS.

Temporary Waivers

The final rule has the following requirements for temporary waivers from NPDES electronic reporting. The final rule outlines a process for these temporary waiver requests [see 40 CFR 127.15(b)].

1. It is the duty of the owner, operator, or duly authorized representative of the TPDES-regulated entity to initiate the process by submitting a temporary waiver request.
2. Each temporary waiver must not extend beyond five years. However, TPDES-regulated entities may re-apply for a new temporary waiver.
3. An approved temporary waiver is not transferrable to another owner or operator (as defined in 40 CFR 122.2)

Permanent Waivers

The final rule has the following requirements for permanent waivers from TPDES electronic reporting. The final rule outlines a process for these permanent waiver requests [see 40 CFR 127.15(c)].

1. It is the duty of the owner, operator, or duly authorized representative of the TPDES-regulated entity to initiate the process by submitting a permanent waiver request.
2. Permanent waivers are only 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).
3. An approved permanent waiver is not transferrable to another owner or operator (as defined in 40 CFR 122.2).

This application applies to CAFO facilities authorized under 30 TAC Chapter 321.

Who Should Apply?

The owner of the facility must be the applicant. If the owner of the land is a separate entity or individual, then the owner of the land must be included as the co-applicant. For all TPDES applications, the operator must be listed as a co-applicant. A Signature Page must be completed for each applicant.

A permit must be transferred when a change in ownership or operator occurs. A transfer application (TCEQ-20031) must be submitted at least 30 days before the proposed transfer date.

When Is the Application Submitted?

For **new and amendment** applications, the completed application must be submitted at least 180 days before the date of the proposed discharge or disposal. The discharge cannot begin

until a permit is issued.

For **renewal** applications, the completed application must be submitted at least 180 days before the expiration date of the current permit.

Where to Send the Application Form

One original and two copies of the application, including attachments, must be provided to the address below.

Also submit **one copy** of the application to the appropriate **TCEQ Regional Office**. Regional office addresses may be obtained on the TCEQ website at www.tceq.texas.gov. If information is submitted at a later date in response to a TCEQ request for further information, please forward a copy of the requested information to the TCEQ regional office as well.

Regular U.S. Mail:

Texas Commission on Environmental Quality
Applications Review and Processing Team, MC 148
PO Box 13087
Austin TX 78711-3087

For Express Mail or Hand Delivery:

Texas Commission on Environmental Quality
Applications Review and Processing Team, MC 148
Building F Room 2101
12100 Park 35 Circle
Austin TX 78753

TCEQ Contact List

Permit Information and Application Forms:	512-239-4671
Technical Information	512-239-4671
Environmental Law Division:	512-239-0600

Copies of records on file with the TCEQ may be obtained for a minimal fee from the Records Management Office at 512-239-2900.

Section 1. Application Fee

Minor Amendment - $150.00

Renewal - $315.00

New or Major Amendment - $350.00

You must pay the Application Fee to TCEQ for the application to be complete.

Payment and application must be mailed to separate addresses.

Mail the application fee to:

Texas Commission on Environmental Quality
Revenues Section, MC 214
PO Box 13088
Austin TX 78711-3088

You can pay online at http://www.tceq.texas.gov/goto/epay
Select Fee Type: Water Quality

To verify receipt of payment or any other questions you may have regarding payment of fees to the TCEQ, you may call the Revenues Section, Cashiers Office at (512) 239-0357.

Section 2. Type of Application

A. COVERAGE: Texas Pollutant Discharge Elimination System (TPDES) applies to a facility that meets the definition of a Large CAFO as defined in 30 Texas Administrative Code (TAC) §321.32(14)(A). State Only applies to a facility that meets the definition of State-only CAFO, as defined in 30 TAC §321.32(14)(B)-(D). Select the appropriate type of coverage for your facility.

B. MEDIA TYPE: Each authorization may be issued to provide coverage under the Texas Water Code (TWC) and the Texas Health and Safety Code. Select the appropriate media type for your facility.

   Water Quality: All CAFOs are required to seek and obtain authorization under a water quality permit, except for dry litter poultry CAFOs. Select this option if your facility has a separate air quality authorization through a Chapter 116 permit or Chapter 106 Standard Exemption.

   Air and Water Quality: Select this option if you are requesting air quality authorization under the air quality standard permit in lieu of separate air quality authorization through a Chapter 116 permit or Chapter 106 Standard Exemption. The air quality standard permit requirements are described in 30 TAC §321.43.

C. APPLICATION TYPE: There are four alternatives available to the applicant: new applications, major amendments to existing authorizations, minor amendments or modifications to existing authorizations, or renewals of existing authorizations. Each type is described below. Select the appropriate application type for your facility.

   New: For applicants requesting written authorization to operate a CAFO.

   Major Amendment: For applicants that currently operate under written authorization and are requesting to change a substantive term, provision, requirement, or a limiting parameter of the authorization such as to change animal type or head count; add a new RCS; add or increase the acreage of LMUs; change or add crops or yield goals that are not currently authorized.

   Minor Amendment: For applicants that currently operate under written authorization and are requesting to improve or maintain the permitted quality or method of disposal of waste if there is neither a significant increase of the quantity of waste nor a material change in the pattern or place of disposal.

   Renewal: For applicants that currently operate under written authorization and are requesting to renew that authorization.

D. For amendment applications, describe the proposed changes.
E. For renewal and amendment applications, provide the TCEQ permit number and for TPDES Large CAFO, the EPA I.D. number.

Section 3. Facility Owner (Applicant) Information

A. Provide the full legal name of the facility owner. It is the responsibility of the **Facility Owner** to apply for the permit. For all TPDES applications, the **operator** must be listed as a co-applicant.
B. If the facility owner is an existing TCEQ customer, provide the customer number (CN) for the facility owner. The Customer Number is available at the following website: http://www15.tceq.texas.gov/crpub/. If the facility owner is not an existing TCEQ customer,

leave blank.

C. Provide the following contact information for the facility owner: mailing address, phone number, fax number, and email address. The mailing address provided by the applicant should also be an address where permit correspondences can be received. The mailing address provided will be used on the permit.

D. Select the entity type for the facility owner. Identify the number of employees that work for the facility owner.

E. If the facility owner is an individual, complete Attachment 1: Individual Information.

F-H. If the facility owner is a corporation or limited partnership, provide the Tax ID number and Charter number. This information must show the applicant is in good standing with the Comptroller. If the applicant is not registered with the Texas Secretary of State or is not an individual, a copy of the agreement which formed the entity must be submitted. The agreement must be recorded in the county where the project is located. The application cannot be further processed unless the applicant is authorized to do business in the state of Texas. To obtain the certification, applicants may contact the Office of the State Comptroller of Public Accounts at www.cpa.state.tx.us or at 800-252-5555.

Section 4. Co-Applicant Information

A. Provide the full legal name of the co-applicant.

B. If the co-applicant is an existing TCEQ customer, provide the customer number (CN) for the co-applicant. The Customer Number is available at the following website: http://www15.tceq.texas.gov/crpub/. If the co-applicant is not an existing TCEQ customer, leave blank.

C. Provide the following contact information for the co-applicant: mailing address, phone number, fax number, and email address.

D. Select the entity type for the co-applicant. Identify the number of employees that work for the co-applicant.

If the co-applicant is an individual, complete Attachment 1: Individual Information.

F-H. If the co-applicant is a corporation or limited partnership, provide the Tax ID number and Charter number. This information must show the co-applicant is in good standing with the Comptroller. If the applicant is not registered with the Texas Secretary of State or is not an individual, a copy of the agreement which formed the entity must be submitted. The agreement must be recorded in the county where the project is located. The application cannot be further processed unless the applicant is authorized to do business in the state of Texas. To obtain the certification, applicants may contact the Office of the State Comptroller of Public Accounts at www.cpa.state.tx.us or at 800-252-5555.

Section 5. Application Contact Information

Provide the following information regarding the person that TCEQ will contact if additional information is needed about this application: first and last name, company name, mailing address, phone number, fax number, and email address.

Section 6. Permit Contact Information

Provide the following information for two individuals that TCEQ will contact if additional information is needed during the permit term (after the permit is issued): first and last name, company name, mailing address, phone number, fax number, and email address.

Section 7. Annual Billing Contact Information

Provide the following information regarding the person that TCEQ will send annual fee invoices: first and last name, company name, mailing address, phone number, fax number, and email address.

The water quality fee is assessed annually for each permit that is active on September 1.

Pursuant to 30 TAC, Section 305.66, failure to pay fees is good cause for permit denial or revocation. If an applicant has outstanding fees, a proposed permit application will not be considered for approval by the Commission or Executive Director. For account balance information, contact the Financial Administration Division, Revenue Section, at (512) 239-0344.

Section 8. Landowner Information

Provide the name of the landowner of the production area and the land management units.

Section 9. Notice Information

The applicant will be required to publish 2 public notices in a newspaper of largest general circulation in the county where the facility is or will be located (not applicable for minor amendments applications; however, completion of **9.C. Contact in the Notice** is still required). Detailed information may be obtained by referring to TCEQ's web site and *30 TAC Chapters 39, 50, 55, and 281* regarding notice, public comments, and response to comment procedures.

The first notice, the "Notice of Receipt of Application and Intent to Obtain a Water Quality Permit" (NORI) must be published within 30 days of the application being declared Administratively Complete.

The second notice, "Notice of Application and Preliminary Decision" (NAPD) must be published within 30 days of a draft permit being filed with the Office of Chief Clerk (OCC). All information necessary to publish the second notice, as well as proof of publication, will be mailed by the OCC. The address to mail the required information back to the TCEQ will be included in the information from the OCC.

A. Provide the following information for the person that will publish the public notices: first and last name, company name, mailing address, phone number, fax number, and email address. This individual may be contacted by the public to answer general and specific questions about all aspects of the permit application.

B. Select the preferred method for receiving the public notice package for the Notice of Receipt and Intent. Options include email, fax, overnight or priority mail, or regular mail. The day the application is declared Administratively Complete the notice package will be sent to person identified in Section 9.A. via the method selected. The notice package includes the TCEQ declaration of completeness, a notice ready for publication, instructions for publishing the notice, and a publication affidavit.

C. Provide the following information for the person that will be identified in the public notice for the public to contact if they have questions about the permit application: first and last name, company name, and phone number.

D. Identify the public facility (library, courthouse, city hall) where the complete application, draft permit, and Fact Sheet must be made available for viewing and copying by the general public by the date the first notice is published. A location must be identified for each

county where the facility is located. *(Note: This site must be in the county where the proposed activity is or will be located.)* Provide the building name, building address, city, county, and phone number for the public location where the application can be reviewed by the public.

E. For the Bilingual Notice Requirement Section, answer the questions in order to determine if the public notice must be published in an alternative language. Bilingual notice may be required for new, major amendment and renewal applications. Bilingual notice is not required for minor amendment applications.

   Complete the Template and Instructions for the Plain Language Summary for a Concentrated Animal Feeding Operation (CAFO) Permit Application and submit with this application. This template is a guide for developing a plain language summary for a CAFO permit application as required by the TCEQ Public Participation Plan and Language Access Plan. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed site or facility; (2) the expected output of the proposed site or facility; (3) the expected pollutants that may be emitted or discharged by the proposed site or facility; and (4) how the applicant will control those pollutants, so that the proposed or existing CAFO facility will not have an adverse impact on human health or the environment.

   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 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 for new, renewal, major and minor amendments.

   Download a copy of the template from the TCEQ website at https://www.tceq.texas.gov/permitting/wastewater/review/maintenance_forms.html.

F. 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. This form is not required for renewal or minor amendment applications. Download a copy of this form using the TCEQ Form Lookup feature at

   https://www.tceq.texas.gov/publications/search_forms.html

Section 10. Regulated Entity (Site) Information

A. Provide the name of the site as known by the public in the area where the facility is located.

B. If the site is currently regulated by TCEQ, provide the regulated entity reference number (RN) for the site. The RN is available at the following website: http://www15.tceq.texas.gov/crpub/. If the site is not currently regulated by TCEQ, leave blank.

C. Provide the physical address of the site. If a physical address is not available, provide a location description, the city or nearest city, and zip code where the site is located. An example location description is provided in the application form.

D. Provide the county or counties in which the site is located.

E. Provide the latitude and longitude for the production area.

F. Select the type or types of animals at the site.

G. Provide the maximum number of animals currently authorized at the site and the proposed maximum number of animals that will be authorized at the site. For a new application, provide the maximum number of animals to be authorized.

H. Provide the total acreage of all land management units.

Section 11. Miscellaneous Information

A. Provide the name of each person that was previously employed by TCEQ and who was paid for services regarding this application.

B. Identify if the facility is located on Indian Country Lands. If the answer is yes, TCEQ does not have jurisdiction to process this application. Do not submit this application to TCEQ. Contact EPA Region 6 to obtain authorization.

C. Identify if the production area is located within the protection zone of a sole source drinking water supply.

D. Identify if any permanent school fund land is affected by this application. If yes, provide the location and potential impacts on the school fund land.

E. Indicate if the facility owner or co-applicant(s) owe fees or penalties to TCEQ. If yes, provide the amount owed, the type of fee or penalty, and the account number for fees or the TCEQ Docket number for penalties. Please note: The TCEQ will not issue, amend, or renew permits, registrations, certifications, or licenses to an entity or person who is delinquent on a penalty or fee owed to the TCEQ. The TCEQ will not declare any application administratively complete that is submitted by a person or entity who is delinquent on a fee or penalty until the fee or penalty is paid, or if on an approved installment plan, that payments under the plan are current. The TCEQ will withhold final action on an application until the fee or penalty is paid and the account is current, if after the application is considered administratively complete, we discover that the owner or entity who submitted the application is delinquent on a fee or penalty.

The following TCEQ website will help you determine if you owe any fees or penalties to the TCEQ and how to make a payment: https://www.tceq.texas.gov/agency/fees/delin/index.html. For questions about delinquent fees and penalties, contact the Financial Administration Division, Revenue Section, at 512-239-0354.

Section 12. Affected Landowner Information

This section is only required for new and major amendment applications. If the application is for a renewal or minor amendment, skip to Section 13.

A. Attach a landowner map or drawing, with scale, that shows 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. Each landowner should be designated by a letter or number on both the list and the map.

B. Attach a separate list of the landowners' names and mailing addresses. The list must be cross-referenced to the landowners map.

C. Provide the mailing list in one of the following formats: either 1) submit the mailing list electronically on a readable/writeable compact disk (CD-RW) using Microsoft Word or 2) provide four sets of pre-printed labels of the list. Each name and corresponding address

must appear only once on the mailing labels or compact disk even if the entity owns more than one tract of land identified on the landowners map.

If providing the mailing labels on CD-RW, please ensure the names and mailing addresses are in Avery 5160 label format. Please label the CD-RW with the applicant's name and permit number. Within the file stored on the CD-RW, identify the permit number and applicant's name on the top of the document. The mailing list should be the only item on the CD-RW.

If providing the mailing list on pre-printed labels, it must be on Avery 5160 label format (3 columns across, 10 columns down, for a total of 30 labels per page). Provide four (4) complete sets of labels.

Names and addresses must be typed in the format indicated below according to US Postal Service regulations for machine readability. Each letter in the name and address must be capitalized, contain no punctuation, and the appropriate two-character abbreviation must be used for the state. Each entity listed must be blocked and spaced consecutively as shown below.

EXAMPLES:

JANE SMITH	MR AND MRS JOHN DOE
1405 APPLE LN	PO BOX 249
SEA TX 76724 1405	SEA TX 76710-0249

Provide the source of the landowners' names and mailing addresses.

Section 13. Attachments

Provide the attachments based on the application type.

Signature Page

A separate signature page must be provided for the facility owner and each co-applicant. The signature page must bear an original signature and the seal of a notary public. The date signed by the applicant must be the same as the date notarized. The signature page will not be acceptable if the dates are different.

In accordance with 30 Texas Administrative Code §305.44 relating to Signatories to Applications, all applications shall be signed as follows:

For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the

agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

Attachment 1. Individual Information

If the facility owner or co-applicant is an individual, provide the prefix, full legal name (including first, middle, and last name), driver's license number or state identification number, the state that issued the license or identification number, date of birth, mailing address, phone number, fax number, and email address.

Supplemental Permit Information Form

This form, located after the signature page, must be completed and submitted with all TPDES applications. This form will be sent to other agencies. Answers cannot simply refer to information provided on the application form.

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECEPCIÓN DE LA SOLICITUD Y LA INTENCIÓN DE OBTENER CALIDAD DEL AGUA PERMISO
NUEVO

PERMISO NO. WQoo05475000

SOLICITUD. NICO JAAP DEBOER, 19008 FM 3079 CHANDLER TX 75758 7667 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para el propuesto Permiso No. WQoo05475000 que autoriza al solicitante a operar un nuevo operación de lecheras: en un capacidad máxima de 999 animales.

El sitio de aplicación al suelo está ubicado en 13 miles to Chandler en el Condado de Henderson, Texas. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.
https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications.

La TCEQ recibió esta solicitud el día 01/10/2025 . La solicitud para el permiso está disponible para leer y copiar en Courthouse, 3rd Floor, Room 300 & 303 100 East Tyler Street . La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications.

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o

hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO. Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión. La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. Si se concede una audiencia, el tema de la audiencia estará

limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios.

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

CONTACTOS E INFORMACIÓN DE LA TCEQ. Todos los comentarios escritos del público y los para pedidos una reunión deben ser presentados a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 o por el internet at www.tceq.texas.gov/about/comments.html. Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Si necesita más información en Español sobre esta solicitud para un permiso o el proceso del permiso, por favor llame a El Programa de Educación Pública de la TCEQ, sin cobro, al 1-800-687-4040. La información general sobre la TCEQ puede ser encontrada en nuestro sitio de la red: www.tceq.texas.gov.

También se puede obtener información adicional del NICO JAAP DEBOER a la dirección indicada arriba o llamando a Jim C. Wyrick al 903-521-3095 .

Fecha de emisión not issued

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 601180649		RN 103920385

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	9/3/2024

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)*	*If new Customer, enter previous Customer below:*
NICO JAAP DEBOER	

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*

11. Type of Customer:	☐ Corporation	☐ Individual	Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☒ Sole Proprietorship	☐ Other:

12. Number of Employees	13. Independently Owned and Operated?
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other:

☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address:	19008 FM 3079 CHANDLER TX 75758 7667						
	City	CHANDLER	State	TX	ZIP	75758	ZIP + 4	7667

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(903) 521-3095		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

HILLTOP JERSEY FARM

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	19008 FM 3079							
	City	CHANDLER	**State**	TX	**ZIP**	75758	**ZIP + 4**	7667
24. County	Henderson							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**
CHANDLER			TX		75758

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			32.2635	**28. Longitude (W) In Decimal:**		-95.537716
Degrees	Minutes	Seconds		Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
0241			

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

MILK PRODUCTION

34. Mailing Address:	**19008 FM 3079**							
	City	**CHANDLER**	**State**	**TX**	**ZIP**	**75758**	**ZIP + 4**	**7667**

35. E-Mail Address:	**hilltopjersey@gmail.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(903) 855-2748		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☒ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jim C. Wyrick	**41. Title:**	Consultant

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(903) 521-3095		( ) -	wyrick@suddenlink.net

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	East Texas Environmental Services	**Job Title:**	Consultant
Name *(In Print):*	Jim C, Wyrick	**Phone:**	(903) 243- **400**
Signature:		**Date:**	11/20/2024

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

☐ 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

☒ 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

☒ Texas Pollutant Discharge Elimination System (TPDES)

- ☒ Texas Land Application Permit (TLAP)
- ☐ 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

Provide a brief description of planned activities.

Application for an Individual Permit.

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.

Chandler

(City)

Henderson

(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

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

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

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

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

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?

☐ Yes ☒ No

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

☐ Yes ☒ 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) County Extension Office

Section 7. Voluntary Submittal

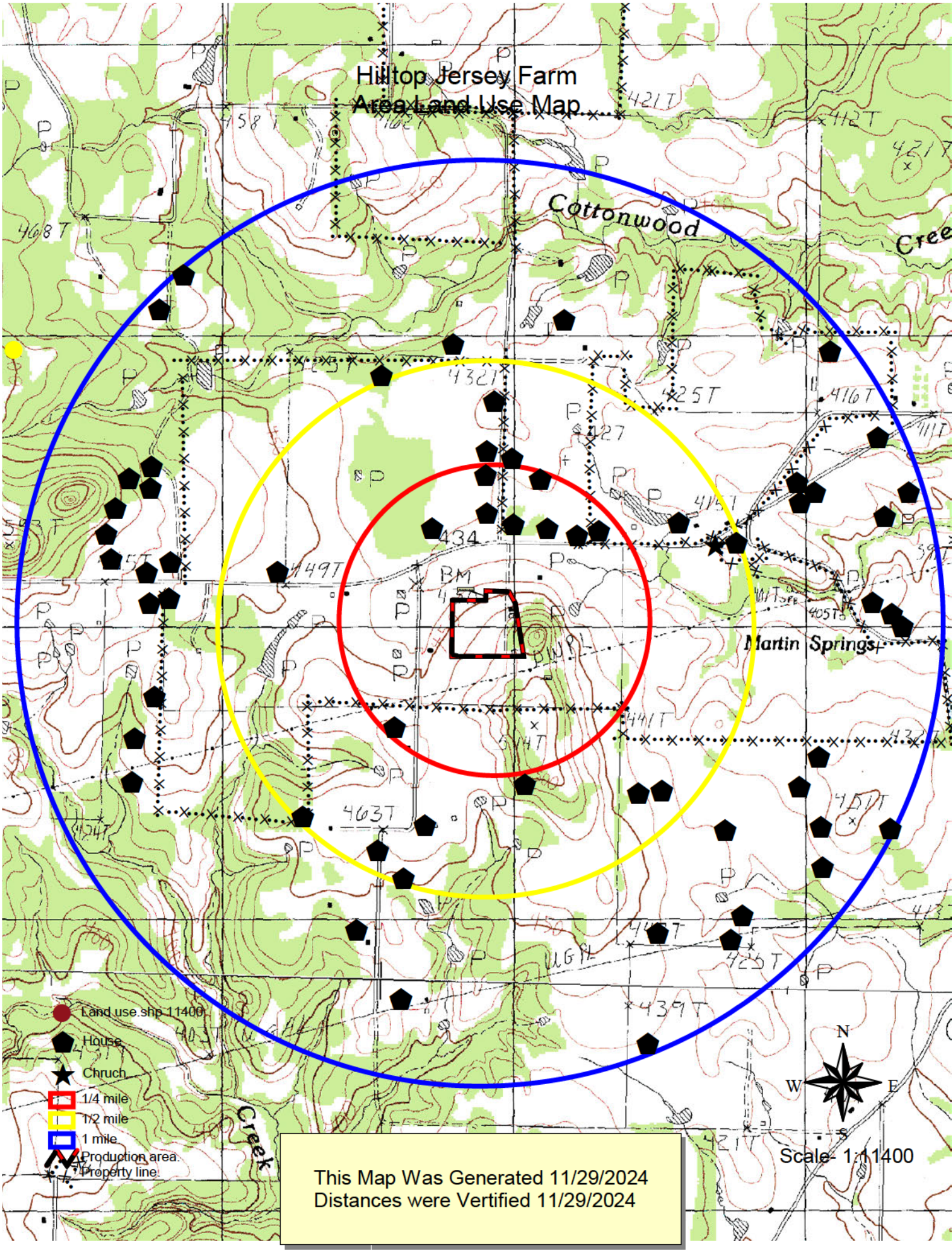
For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

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

☒ Yes ☐ 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) Local Newspaper


Hilltop Jersey Farm
Area Land Use Map
Cottonwood
Martin Springs
Land use.shp 11400
House
Chruch
1/4 mile
1/2 mile
1 mile
Production area
Property line
N
W
E
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Scale- 1:11400
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Distances were Vertified 11/29/2024

TECHNICAL INFORMATION PACKET FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS)

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

Name of Site: HILLTOP JERSEY FARM

TCEQ Permit Number, if assigned: WQ000 Click here to enter text.

Date Prepared: 11/26/24

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	Manure generated in the freestalls is flushed into the settling basin then into RCS #1 and irrigated to the LMUs with the irrigation water. Very limited amount will be stockpiled at end of the freestalls and hauled to LMUs.
Wastewater	All wastewater gravity flows from the freestalls into the settling basin then into RCS #. Where it is stored until there is a crop demand for water and nutrients, and then applied to LMUs at an agronomic rate
Sludge	Sludge will be cleaned from the RCSs before the sludge volume reaches the designed capacity. A system of irrigation and vacuum tanks will be used to with the sludge from the RCSs
Compost	NA
Feed and Bedding	Feed when spoiled, will be applied to LMUs. When applied it will be applied at a rate similar to that of manure.
Silage stockpiles	Most of the silage is stored under plastic. The plastic will be removed and disposed of in the appropriate waste containers. If the silage is not covered, any ruined silage will be land applied
Dead animals	All dead animals are collected within 24-hours and properly buried within 72 hours of death following TCEQ guidelines.
Dust	Water will be applied to the until the conductions for dust have passed.
Lubricants	All oil and lubricant products will be stored in a covered storage area in covered, waterproof container. Empty containers are to be disposed of following all precautionary guidelines on the container or placing in a commercial garbage

Potential Pollutant Source	Best Management Practices
Pesticides	All pesticides and herbicides application is contracted to an applicator and no chemicals are stored on the property. All pesticides will be used and disposed in accordance with the label rules
Bulk cleaning chemicals	Use and disposal of empty containers will be according to direction on the product label.
Inorganic fertilizers	NA
Fuel storage tanks	All fuels are stored in a properly maintained storage tank, away from wells. Care will be so spills do not occur when equipment is being filled. If a spill occurs, it will be immediately cleaned up and not allowed to flow from the tank area
Other, specify: Click here to enter text.	NA

SECTION 2. RETENTION CONTROL STRUCTURE DESIGN

A. Design Summary

1) Design Standards, Characteristic, and Values Sources Used

- ☒ Natural Resource Conservation Service
- ☐ American Society of Agricultural and Biological Engineers
- ☐ Other; specify: Click here to enter text.

2) Total Number of Animals:
In Open Lots: 0 In Buildings: 999

3) Animal Housing Location, hours/day:
Open Lots: 0 Buildings: 24

4) Average Liveweight, pounds per head: 975

5) Volatile Solids Removed by Separator System: 0

6) Volatile Solids Loading Rate, lbs/day/1000 ft^3: 0

7) Spilled Drinking Water, gallons/day: 1998

8) Water for Cleanup, gallons/day: 2697

9) Water for Manure Removal, gallons/day: 14318

10) Recycled Wastewater, gallons/day: 131153

B. Wastewater Runoff

1) Design Rainfall Amount, inches: 8.00

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
SP	0	.65	0	0	0	.64	.65
RCS#1	.19	.62	0	.52	.36	1.68	1.69
RCS#2	.50	0	0	1.32	1.22	3.06	6.04

Indicate which RCSs are in-series: SP, RCS#1 AND RCS#2 are in series

D. RCS Liner or Lack of Hydrologic Connection Certification

Table 3: RCS Hydrologic Connection

RCS Name	Construction Date	Type of Hydrologic Connection Certification
SP	7/13/2007	concrete
RCS#1	7/13/2007	In-situ Soils – Certified 09/17/08
RCS#2	7/13/2007	In-situ Soils – Certified 09/17/08

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: Click here to enter text.
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: Click here to enter text.
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: 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)
LMU #1	41	Silage - Corn21-25T;SG Silage-8-9T	.38 Ac-ft/Ac/Year
LMU #2	40	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year
LMU #3	26	Coastal Hay 4 cut, SG mod graze	.56 Ac-ft/Ac/Year
LMU #4	90	Silage - Corn21-25T;SG Silage-8-9T	.50 Ac-ft/Ac/Year
LMU #5	46	Silage - Corn21-25T;SG Silage-8-9T	2.64 Ac-ft/Ac/Year
LMU #6	28	Coastal Hay 4 cut, SG mod graze	2.73 Ac-ft/Ac/Year
LMU #7	126	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year
LMU #8	160	Silage - Corn21-25T;SG Silage-8-9T	3.41 Ac-ft/Ac/Year
LMU #9	80	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year

1) Wastewater production, ac-in/year: 22.60
2) Estimated Wastewater application, ac-in/year: 22.60
3) Manure production, tons/year: 262
4) Estimated manure application, tons/year: 0 Dry Tons/yr – included in Slurry application Click here to enter text.
5) Estimated manure transferred to other persons, tons/year: 0

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. Click here to enter text.

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

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

F. Soil Limitations

Table 5: Soil Limiting Characteristics and Best Management Practices

Soil Types	Limiting Characteristics	Best Management Practices
	See atachment	

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
Well #1	Domestic	Producing	Cased	Maintain 150' Buffer
Well #2	Domestic	Producing	Cased	Maintain 150' Buffer
Well #3	Domestic	Producing	Cased	Maintain 150' Buffer
Well #4	Domestic	Producing	Cased	Maintain 150' Buffer
Well #5	Domestic	Producing	Cased	Maintain 150' 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: 9

¼ - ½ mile: 14

½ - 1 mile: 39

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

RECHARGE FEATURE CERTIFICATION STATEMENT

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

Certification Signature:_____ Seal and Date:_____

INSTRUCTIONS FOR TECHNICAL INFORMATION PACKET

Section 1. Pollutant Sources Management

For each potential pollutant source identified, describe the best management practices that you will use or are using to reduce the potential impact of the pollutant on the environment. If a pollutant source does not apply to your facility enter "Not Applicable".

Section 2. Retention Control Structure Design

A. Identify the design criteria used to calculate the required size of the control facilities (collection ditches, conduits, and swales for the collection of manure, sludge, or wastewater, and all retention control structures (RCS)). Information for completing the section will be found in the design calculations provided by a licensed Texas Professional Engineer.

B. Provide the design rainfall event amount, (inches), and the design rainfall event based on the location of the facility, animal type, and margin of safety (if required). Identify the source of the design rainfall event.

C. Provide the volume allocations for each RCS. This table is a summary of the specific volumes allocated to the sources of inputs to the RCS system. Information to complete this table will be found in the design calculations provided by a licensed Texas Professional Engineer.

   If applicable, identify which RCSs act in-series (i.e. an RCS that has a natural or artificial method of overflowing into another RCS).

D. For each RCS, provide the date that it was constructed and the type of hydrologic connection certification (i.e. liner certification or certification that no hydrologic connection exists).

E. Indicate if playa lakes are used for RCSs. Use of playas as RCSs for operations that were in existence prior to July 10, 1991, and that meet other conditions.

Section 3. Manure, Sludge and Wastewater Handling

A. Provide the method used to manage manure. If land application is used, indicate the location of the land application areas (i.e. on-site or off-site). Off-site is considered to be land that is owned, operated, controlled, rented or leased by the applicant that is detached from the production area. If composting is used, indicate the location of the compost facility.

B. Provide the method used to manage sludge. If land application is used, indicate the location of the land application areas (i.e. on-site or off-site). Off-site is considered to be land that is owned, operated, controlled, rented or leased by the applicant that is detached from the production area.

C. Provide the method used to manage wastewater. If land application is used, indicate the location of the land application areas (i.e. on-site or off-site). Off-site is considered to be land that is owned, operated, controlled, rented or leased by the applicant that is detached from the production area.

D. Complete this section using information from the nutrient management plan (NMP) that was submitted with the application. Provide the acreage, crop, yield goal, and estimated application rate for each land management unit (LMU).

   Provide the estimated amount of wastewater and manure produced, land applied and transferred annually to other persons, including third-party fields. These values should be taken from the RCS design calculations and NMP. The tons of manure generated, land applied and transferred must be represented either in wet or dry basis.

E. Indicate if part of the production area is in a 100-year floodplain. If yes, describe the best management practices used to protect the site from inundation and provide certification by a licensed Texas Professional Engineer that the facility is protected from inundation during a 100-year flood.

   Indicate if land application or temporary storage of solids is in a 100-year floodplain or near a water course. If yes, describe the best management practices used to minimize an impact to water in the state.

F. For each soil type that has limitations to land application of manure or wastewater, provide the name of the soil type, the characteristics of those soils that may limit land application of manure or wastewater, and the best management practice used to mitigate the limitation. Limiting characteristics include, but are not limited to, texture, permeability, depth to high water table, ponding, slope, depth to bedrock, depth to cemented pan, sodium adsorption ratio, flooding, stoniness, and soil pH. For more information on soil limitations, consult the NRCS National Soil Survey Handbook, Part 620.

G. For each on-site well, provide an identification number and the type of well (drinking water, irrigation water, oil, etc.). Indicate if the well is producing or non-producing; open, cased, or plugged; and the best management practice used to minimize impacts to groundwater.

Section 4. Air Authorization Summary

A. Indicate the type of air authorization this facility is seeking. All facilities must have air authorization. To determine if your facility qualifies for the Air Standard Permit, refer to 30 TAC §321.43.

B. If you selected Air Standard Permit, identify when the AFO started or plans to start operations, then select one option for meeting the buffer requirement of the Air Standard Permit.

C. Identify the number of odor receptors within each distance of permanent odor sources at the facility. Those odor sources that may emit odors 24 hours per day. Permanent odor sources include, but are not limited to, pens, confinement buildings, lagoons, retention control structures, manure stockpile areas, and solid separators. Permanent odor sources **do not** include any feed handling facilities, land application equipment, or land management units.

Section 5. Attachments

The following items must be attached to the Technical Information Packet prior to submittal to the TCEQ.

A. Maps

1) Site map. This map must show the layout of the production area and the location of all wells, water in the state, and required buffer zones in the production area.

2) Land Management Unit map. This map must show the location of all LMUs in relation to the production area. Identify the location of all wells, water in the state, and required buffer zones in the LMUs. Indicate the LMU number and the number of acres available for land application in each LMU. The map must show topographical features, such as waterways and roads.

3) Vicinity map. This map must be a general highway map that shows the location of the CAFO in relation to the nearest town or to the nearest intersection of two major (non-county) roads. All roads should be labeled.

4) Original United States Geological Survey 7.5-minute Quadrangle map. This map must show the location of the production area and LMUs in relation to topographic features within 1 mile of the property boundary.

5) 100-year floodplain map. This is a Federal Emergency Management Agency (FEMA) map which shows the extent of a 100-year flood in relation to the production area. If a FEMA map is not available, a licensed Professional Engineer may be required to certify that the production area is not located in or is protected from a 100-year flood.

6) Runoff Control map. This map must show the direction of runoff flow in the production area and how stormwater is diverted from the production area. The runoff flow may be shown in conjunction with the site map.

7) Natural Resource Conservation Service Soil Survey Map. This map must show the location of the production area and LMUs in relation to the soil types located on the facility. This map may be included as part of the Recharge Feature Certification supporting documents.

B. Professional Certifications. The Recharge Feature Certification Statement, RCS Design Calculations, RCS as-built capacity, and RCS hydrologic connection certifications must be certified by a licensed Texas professional engineer or licensed Texas professional geoscientist, in accordance with the 30 TAC 321, Subchapter B.

C. Land Application

1) Nutrient Management Plan (NMP) – Submit a NMP with this application. A plan based on the NRCS Practice Standard Nutrient Management Code 590, to address the amount (rate), source, placement (method of application), and timing of the application of plant nutrients and soil amendments. The NMP must be developed and certified by a Certified Nutrient Management Specialist or other approved person as listed in 30 TAC 321, Subchapter B. This plan must be developed using the NRCS 590 software.

2) Nutrient Utilization Plan (NUP) - A NMP to evaluate and address site specific characteristics of a LMU to ensure that the beneficial use of manure, sludge, or wastewater is conducted in a manner to prevent adverse impacts on water quality. It is required when the soil phosphorus level exceeds 200 ppm phosphorus in zone 1 of an LMU. If a NUP has already been approved by the TCEQ, attach the approval letter only. A NUP must be developed and certified by a Certified Nutrient

Management Specialist or other approved person as listed in 30 TAC 321, Subchapter B. This plan must be developed using the NRCS 590 software.

3) Provide a copy of the annual soil sampling analyses for each LMU that were used to calculate the application rates.

4) Provide a copy of the annual manure and wastewater analyses used to calculate the application rates.

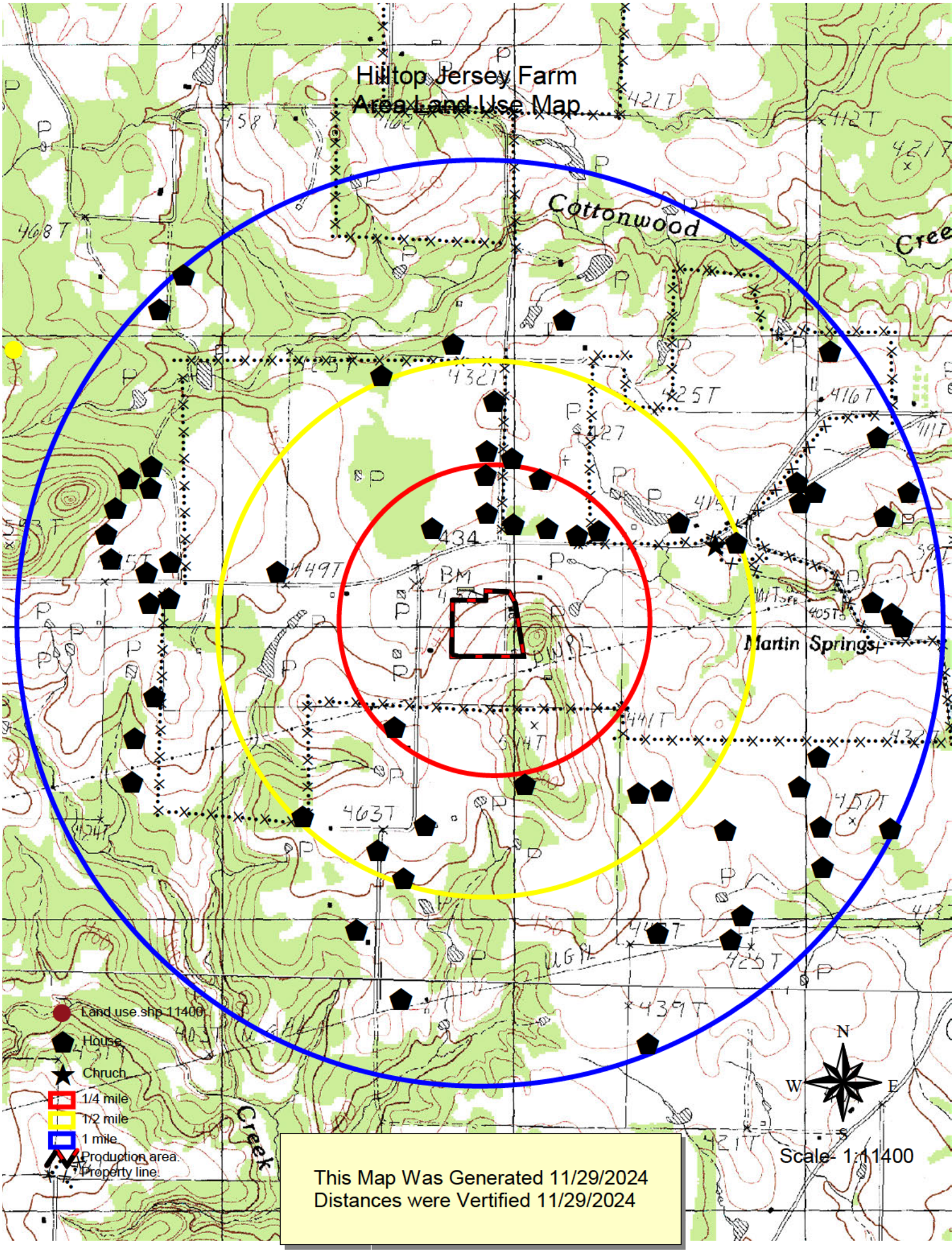
D. Air Standard Permit Documentation. This attachment is only required if you are requesting air authorization under the Air Standard Permit. To determine if you qualify for the Air Standard Permit, refer to 30 TAC 321.43.

1) Area Land Use map. A map that identifies property lines, permanent odor sources, and distances and direction to any occupied residence or business structure, school (including associated recreational areas), permanent structure containing a place of worship, or public park within a one-mile radius of the permanent odor sources at the AFO. The map must include a north arrow, scale of map, buffer zones, and the date the map was generated and the date the distances were verified.

2) Odor Control Plan. This plan identifies best management practices used by the CAFO to minimize odors and nuisance conditions. It is only required if you choose a buffer option that includes an odor control plan.

3) Written Consent Letters. These letters may be used in lieu of the buffer requirements, in accordance with 30 TAC 321.43.

E. Groundwater Monitoring. If groundwater monitoring is required in the existing authorization, attach the groundwater monitoring plan and the previous year's groundwater sampling analyses.


Hilltop Jersey Farm
Area Land Use Map
Cottonwood
Martin Springs
Land use.shp 11400
House
Chruch
1/4 mile
1/2 mile
1 mile
Production area
Property line
N
W
E
S
Scale- 1:11400
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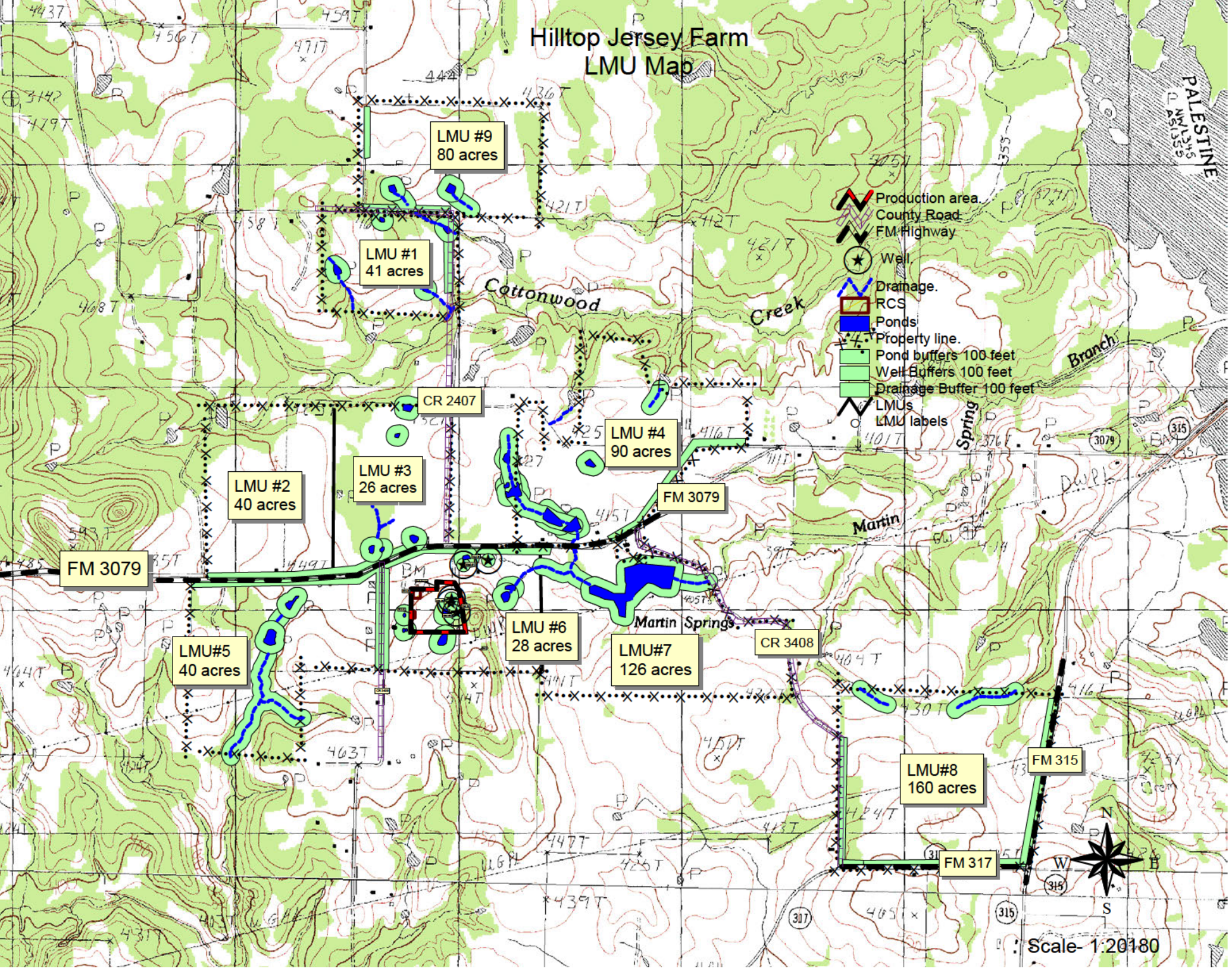
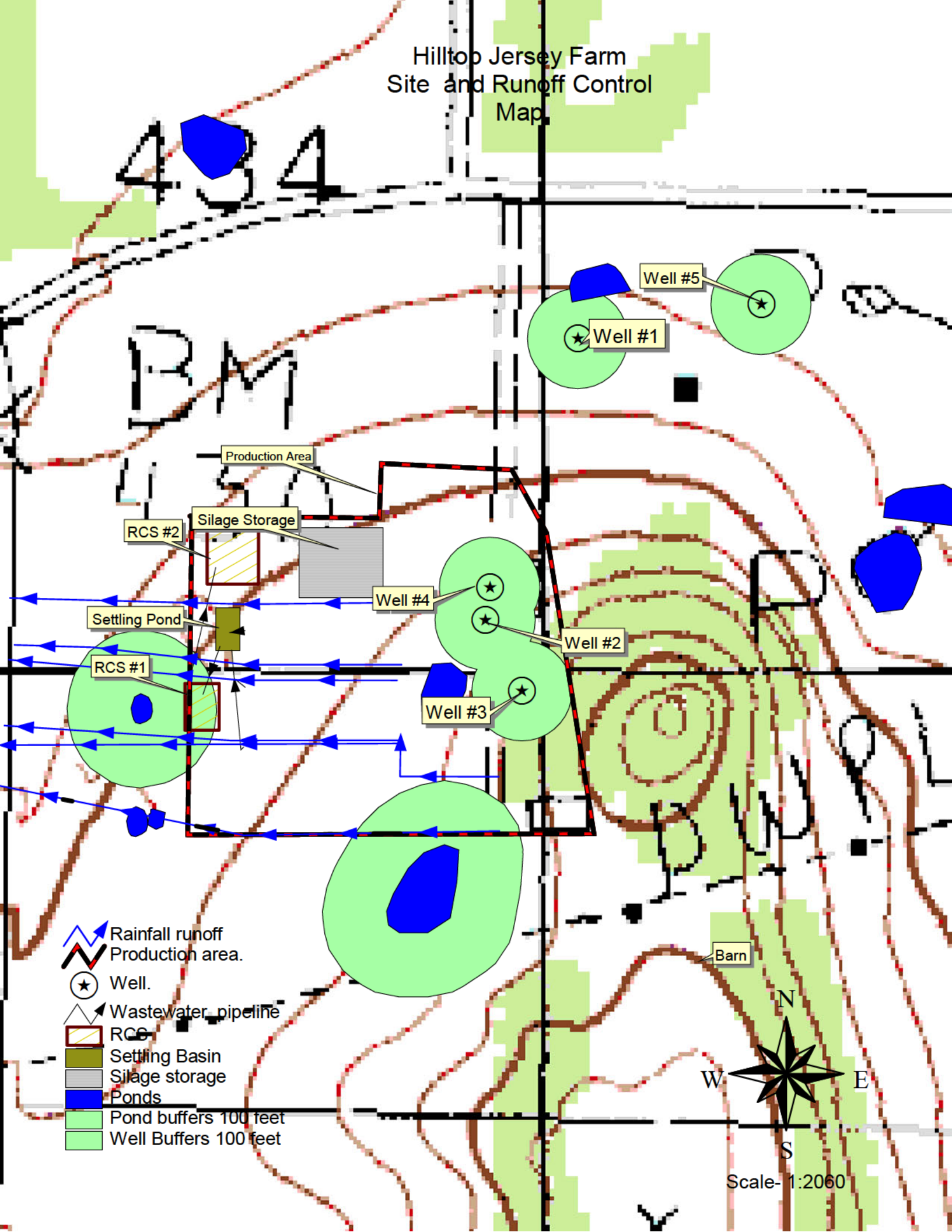
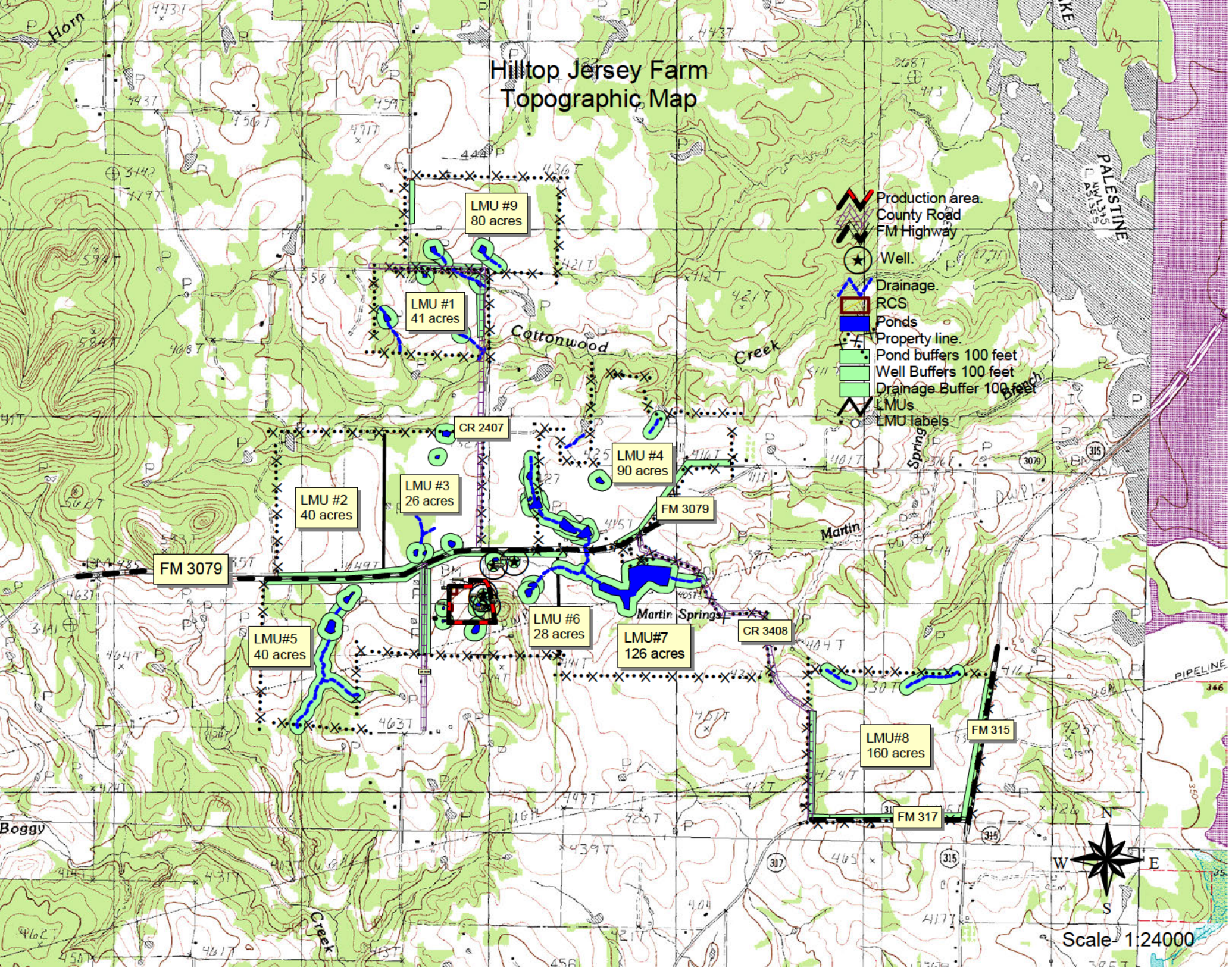
Distances were Vertified 11/29/2024


Hilltop Jersey Farm
LMU Map
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
CR 3408
FM 3079
FM 315
FM 317
Cottonwood Creek
Martin Spring Branch
Martin Springs
PALESTINE
Production area.
County Road
FM Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
N
S
E
W
Scale- 1:20180

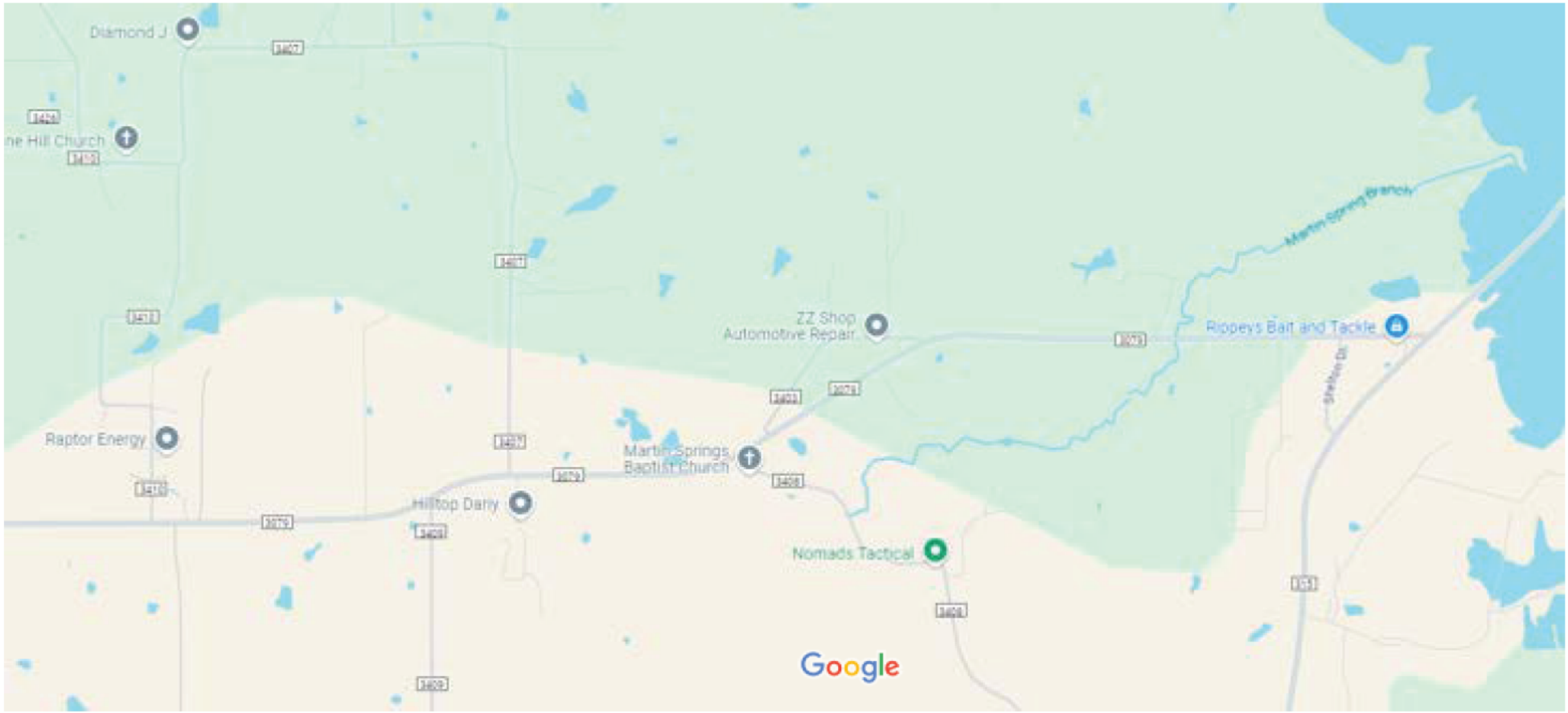
Hilltop Jersey Farm Site and Runoff Control Map




Hilltop Jersey Farm
Topographic Map
Production area.
County Road
FM Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
CR 3408
FM 3079
FM 315
FM 317
Cottonwood Creek
Martin Springs
Martin Spring Branch
PALESTINE
PIPELINE
Boggy Creek
N
S
E
W
Scale- 1:24000

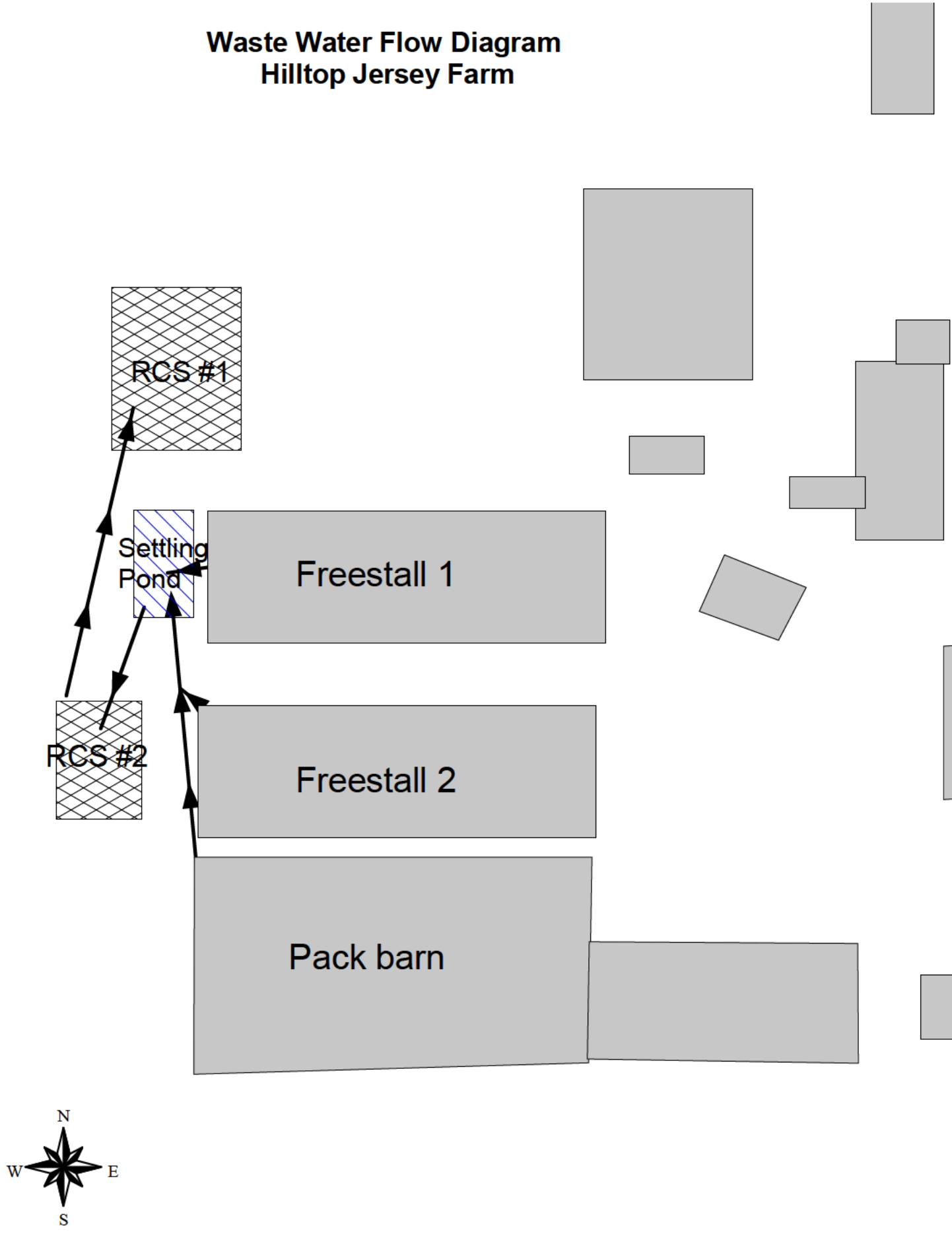
Google Maps

Hilltop Jersey Farm
Vicinity Map



Map data ©2024 1000 ft

Waste Water Flow Diagram
Hilltop Jersey Farm



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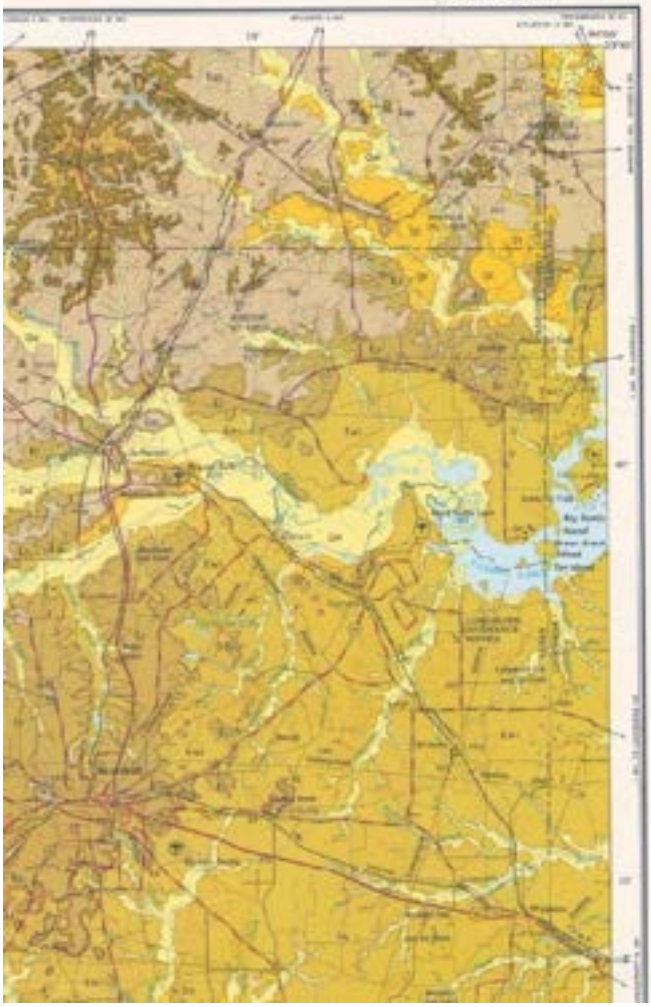
GEOLOGIC ATLAS OF TEXAS

TYLER SHEET



EXPLANATION

Alluvium

Fluviatile terrace deposits undivided

Beaumont Clay

Weches Formation

Queen City Sand

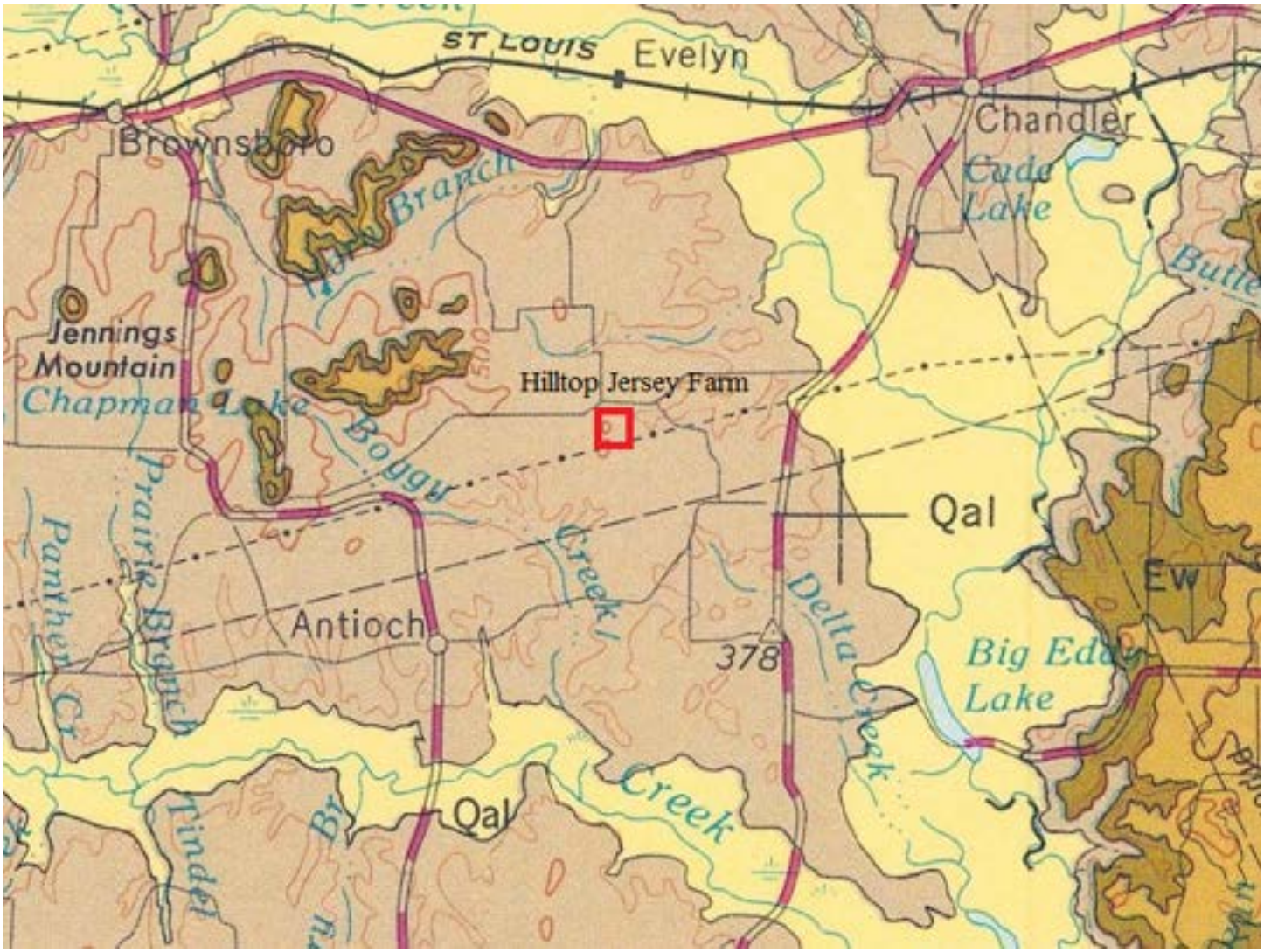
Sabine Formation

Carrizo Sand

Wilcox Group undivided

Eocene and Paleocene rocks undivided

Wills Point Formation


ST LOUIS
Evelyn
Brownsboro
Chandler
Cuda Lake
Jennings Mountain
Chapman Lake
Hilltop Jersey Farm
Boggy Creek
Qal
Ew
Antioch
378
Delta Creek
Big Eddy Lake
Prairie Branch
Panther Cr
Qal
Creek

RECHARGE FEATURE CERTIFICATION
FOR
HILLTOP JERSEY FARM

GENERAL REMARKS:

Hilltop Jersey Farm is applying for a TCEQ Individual Permit for a concentrated animal feeding operation. The herd size will be 999 animals of which 999 are milking cows and will be kept in confinement. This recharge feature evaluation and associated certification was conducted at the request of Nico Debore. Jim C. Wyrick, Professional Geoscientist, compiled the findings and recommendations, contained herein.

PURPOSE OF REPORT:

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 wastewater from the retention control structure or land application site into the underlying aquifer as required in 30 TAC subchapter B: §§321.31-321.47 requirements. The following records and/or maps from the following entities/agencies were reviewed to locate any recharge features: (a) Texas Railroad Commission, (b) well driller, (c) TCEQ, (d) USDA-Natural Resource Conservation Service, (e) owner of site, (f) an on-site inspection and (g). Neches and Trinity Valleys Ground Water Conservation District. There are no previous landowners available to contact.

AREA OF EVALUATION

The property under evaluation consists of approximately 637 acres in Henderson County. The site includes milking parlor, drip shed, pack barn, two freestall barns, settling basin, a Transfer pond (TP), RCS#1 and RCS #2. The wastewater application areas are (LMU#1, LMU#2, LMU#3, LMU #4, LMU #5, LMU #6, LMU #7, LMU #8 and LMU#9). The facility is located on a topographic ridge with uncontaminated surface the runoff generally draining via overland flow and shallow concentrated flows south and southwest into an unnamed tributary then in Boggy Creek. The elevation of the dairy property ranges from approximately 420 to 510 feet above mean sea level (AMSL). The current land use of the property is agricultural (forage crops). All waste application areas are located on the property, and off-site manure and wastewater application areas will not be used by this facility. The site plan map shows the locations of the dairy barn, Settling basin, Transfer pond and RCS#1. The LMU map identifies the wastewater application areas. The 7.5 mm USGS map shows the general topography of the area.

SITE DESCRIPTIONS

The existing Transfer pond, RCS#1 and RCS #2 are located west and down slope of the freestall barns. These RCSs will catch and contain all wastewater generated from the dairy. All manure and wastewater from the freestall barns will be flushed into the Transfer pond and RCS. Manure will be applied to the LMUs mixed with the wastewater. Wastewater flows from the dairy facility into the settling basin. The excess then goes to RCS #2 and the Transfer pond. RCS #1 catches runoff from Freestall south and flows to RCS #2. Wastewater is transferred between RCSs and Transfer pond through a six-inch PVC pipe. RCS#1, RCS #2 and Transfer pond will be dewatered using a 6000-gallon tanker and/or pumped into a drag hose system. On occupations solid manure is scraped from area and hauled offsite.

DEFINITION OF RECHARGE ZONE FEATURE

For the purpose of this report, the definition of "recharge feature" shall be the same as the definition described by TCEQ rules. *Recharge feature is defined as those natural or artificial features either on or beneath the ground surface at the site under evaluation that provide or create significant hydrologic connections 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 connection includes, but are not limited to faults; fractures; sinkholes or other macro pores that allow direct surface infiltration; a permeable or a shallow soil material that overlies an aquifer, exposed geologic formations that are identified as an aquifer;* or a water course bisecting an aquifer

LOCAL GEOLOGY AND GROUND WATER

The site is located in the northern part of the East Texas Basin. Geologic units near the site crop out in bands running generally in an east-west direction. The fine sandy lawns and foams of the Cuthbert, Freestone, Bernard, Gallime, Lufkin-Rain, Wolfpen, and Nahatche soil series are immediately underlain by the Queen City Formation (Qec). This formation is composed of light gray to brownish gray quartz sand, fine grained to locally medium grained. Thin beds of gray to brown silty clay are also present toward the East. Ironstone concentrations and ledges are common. The thickness is approximately 100-400 feet. Below is the Reklaw Formation (Er) which consist of a layer of dark silty shale typically 30 to 40 feet thick over a layer of dark gray to green, very fine glauconitic silty sand typically 20 to 30 feet thick for a total formation thickness of 50 to 70 feet, but is up to 130 feet thick in certain areas. The shale layer is important in that it provides an impermeable separation layer above the Carrizo Formation. These formations comprise the Queen City Aquifer; most wells in the area are developed in this major aquifer. The primary source of groundwater in the area is the infiltration of rainfall either directly in the outcrop or indirectly as seepage from stream flows. Wet weather seeps may occur during extremely high rainfall events. One fresh water spring, Martin Spring, is located on the property in one of the land management units. Other unnamed springs could be located near the property. These features could provide direct inflow into the Queen City Aquifer. Any identified springs will be buffered to prevent wastewater infiltration into the spring Underlying is the Carrizo Sand (Ec) which consists largely of white to light gray, fine to medium quartz sand. However, small amounts of silt and clay are present in the upper part of the formation. Typical thickness of the Carrizo is 50 to 100 feet, but is up to 150 feet thick in some places and in other places is mostly shale so as to not be detectable. Below this formation is Wilcox Group Undivided (Ewi) which consists mostly of silty and sandy clay, very thinly bedded to massive, locally cross-bedded, in part carbonaceous, calcareous siltstone and ironstone concretions common various shades of gray; local beds of clay, lignite, silt, and quartz sand; weathers various shades of gray, brown, yellow, and red; abundant plant fossils; thickness 700 feet. The Wilcox varies in thickness in the extreme outcrop area but typically 400 to 960 feet thick where it is not outcropped. The formation consists of crossbedded layers of shale, lignite and sand with intermingled combinations of these layers. Medium to very fine quartz sands constitute about half of the Wilcox. Individual layers of sand are generally not thick, but some beds are as much as 70 feet thick or more. Sands and shales in the Wilcox are typically light gray in color. Other formations in descending order include Wills Point Formation (Ewp) and Kincaid Formation (Ek). Wills Point Formation is mostly clay, upper part silty, locally liginitic, some calcareous siltstone concretions, thin bed of rosette limestone near middle, glauconitic near base thin bedded to locally massive, various shades of gray;

weathers medium gray to yellowish gray; marine megafossils; thickness +450 feet. Kincaid Formation is mostly clays calcareous, glauconitic, selenitic, in part silty and sandy locally phosphatic near base, some thin beds of hard gray limestone in upper part, various shades of gray; weathers medium gray: marine megafossils thickness ±150 feet. (Barnes and others 1966). Several watercourses and intermittent streams bisect the property. These act as drainage ways which could carry wastewater off the property. Adequate buffering around these waterways will be maintained. Drainage from the north side of Farm-to-Market Road 3079 flows toward Cottonwood Creek which flows into Lake Palestine. The production area and several land management units drain toward Martin Springs Branch which flows into Lake Palestine. No part of the production area appears to lie within two miles of Lake Palestine. The far west side of the property drains west toward a tributary of Boggy Creek, which flows into Lake Palestine. Some areas have slopes in excess of 8 percent, irrigation avoided, on these areas. No gullies were noted on the LMUs during the site inspection. No faults or fractured sediments were observed. No caves, sinkholes, or signs of significant animal burrowing were noted. In addition, no topographic depressions or playa lakes were observed.

EVALUATIONS OF LOCAL RECHARGE POTENTAL

Recharge from Precipitation

According to the National Weather Service. (NOAA), the average annual precipitation rate in Henderson County is about 44.6 inches per year. A significant quantity of water that infiltrates to the water table moves slowly down the local hydraulic gradient and discharges through evapotranispiration or via seeps and springs into the surface drainage system. This rejected recharge supplies a major fraction of the base flow for streams in the area.

Production area and Retention Control Structures (Transfer pond and RCS #1)

All runoff water contaminated with animal waste from the dairy operation is directed to the RCSs and TP. The USDA-Soil Conservation Service Soil Survey for Henderson County indicates Transfer pond and RCS#1 were constructed in 43—Wolfpen loamy fine sand, 1 to 5 percent slopes. Jim C Wyrick, Texas Licensed Professional Geoscientist certified the in-situ soil material in Transfer pond and RCS#1 as meeting the minimum requirements considered protective of groundwater as established by the TCEQ. An on-site evaluation was done on the Transfer pond and RCS#1. RCS #2 is a concrete lined pit. Nico DeBoer; owner indicated there had not been any digging equipment in the pond since it was constructed. During the inspection no evidence was found to show any mechanical or structural damage to the liner.

Wastewater Application Area

The wastewater application area consists of nine LMUs: LMU#1 is 41 acres, and generally drain via overland flow and shallow concentrated flows north into an unnamed tributary then into Cottonwood Creek. LMU#2 is 40 acres, and generally drain via overland flow and shallow concentrated flows northeast into an unnamed tributary then into Cottonwood Creek. LMU#3 is 26, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #4 is 90 acres, and generally drain via overland flow and shallow concentrated flows southeast into an unnamed tributary then into Martin Springs Branch. LMU #5 is 46 acres, and generally drain via overland flow and shallow concentrated flows southwest into an unnamed tributary then into Martin Springs Branch. LMU #6 is 28 acres, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #7 is 126 acres, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #8 is 160 acres and generally drain via overland flow and shallow concentrated flows northeast into an unnamed tributary then into Martin Springs Branch. LMU#9 is 80 acres and generally drain via overland flow and shallow concentrated flows southeast into an unnamed tributary then into Cottonwood Creek.

The USDA-NRCS Web soil survey of Henderson County, indicates that soils occurring on the wastewater applications are: 3-Bernaldo fine sandy loam, 1 to 3 percent slopes, 26-LufkinRaino complex, 29-Pickton loamy fine sand, 1 to 8 percent slopes and 43-Wolfpen loamy fine sand, 2 to 5 percent slopes.

ARTIFICIAL RECHARGE FEATURE EVALUATION

Texas Railroad Commission Records

The Railroad Commission of Texas website was accessed. There are several oil and gas wells of record located within one mile from the boundaries of the facility. Review of the coordinates indicates there are two dry holes on site.

Local Water District

Henderson County's underground water is regulated by the Neches and Trinity Valleys Groundwater Conservation District. A review was made of the underground water district's web site httpfintvgcd.org. According to the local Water Supply Office, no public water supply wells are known to exist on the subject property. Three Communities WSC services the area around the dairy. There are no private wells being used for water supply in the area.

Texas Water Development Board

A review of the Texas Water Development Board Water Data Interactive (TWDB WDI). Shows only one well on the dairy. It appears to be in the wrong location on their map. The database was also reviewed for registered wells within a I-mile radius of the faculty site. There are no registered public wells near the site. All wells are plotted on the attached "Site and Runoff Map.

Current and Previous Landowners

Nico DeBoer was contacted regarding the present of potential artificial recharge features on the facility. He confirmed there are two-plugged oil well are located on the facility. There are five private water wells located on the facility. A certified well driller constructed the water well. Surface completion was in accordance with a Specified Surface Slab (Rule 287.44 (2) (A). The water wells are identified on water well location map. The previous owner could not be located.

USDA Natural Resources Conservation Service (Henderson County)

An inquiry was made to the USDA-NRCS office in Athens relating to artificial or natural recharge features, which may be present on the site. They were not aware of any additional features. The USDA-NRCS Soil Survey of Henderson County was reviewed and no artificial features are shown.

On-Site Inspection

The property was inspected by ground reconnaissance and aerial photo interpretation for features that could be adversely affected due to the operation of the facility. Other than the areas identified within the attached maps, no other suspect areas were observed.

METHODS USED

Natural and artificial recharge features were identified by the following techniques: on-site inspection of the site, interviews with the landowner, review of Texas Railroad Commission records, review of published maps and reports (refer to bibliography), review of Soil Survey of Henderson County, Texas, review of Texas Water development Board maps, well driller's logs, the Geologic Atlas of Texas Tyler and personal knowledge of the area.

CONCLUSIONS

The shallow fine-grained sand units present at the site do not represent a classic recharge feature for the regional aquifer system. A significant pathway between ground surface and the regional aquifers does not appear to exist at the site; however, a percentage of the annual precipitation will infiltrate through the unsaturated zone to the shallow aquifers underlying the site. Therefore, protective measures as Best Management Practices (BMPs) should be carried out to prevent any potential negative impacts to the underlying aquifer.

2) There are five private water wells located on the facility. A records search and on-site inspection were made and no other wells were found. Other water wells not identified during this investigation could be near the site.

3) Texas Rail Road Commission records show there are two plugged oil wells located on the property.

4) The existing Transfer pond and RCS#1 and RCS#2 were constructed prior to this application and meets 30 TAC subchapter B: §§321.31-321.47 requirements for in-situ soil material. They are designed to hold all runoff water from the facility, including a 25-year, 24-hour rainfall event.

5) Transfer pond, RSC #1 and RCS#2 are being properly maintained and there was no indication of seepage or leakage. The embankments are free of trash, brushes or trees and walls are stabilized and no erosion or deterioration has taken place. Based on these facts, there is little or no potential for hydraulic connection between Transfer pond, RCS#1 and RCS#2 the underlying aquifer

RECOMMENDATIONS

Since a percentage of the annual Precipitation will infiltrate through the unsaturated zone to the shallow, local aquifers underlying the site, the facility will employ BMPs, which are protective of the local aquifer underlying the site. These protective measures will be taken to prevent the possible migration of contaminants from Transfer pond and RCS#1 and the wastewater application areas to the underlying groundwater. As a minimum, these protective measures will include the following BMPs:

- Operations in and around the RCSs and TP take care not to damage the in-suite clay material or concrete sides. If the ponds are cleaned by a dragline, front-end loader or the waste storage pond liner disturbed, Nico DeBoer will request the pond liner be inspected and certified by a Texas Licensed Professional Engineer or Texas Licensed Professional Geoscientists
- The operator will prohibit livestock entry into the RCSs and TP.
- Land application of wastewater in the recharge areas of the shallow, local aquifer will take place on designated application areas and at agronomic rates as an organic fertilizer.
- Wastewater application rates will not exceed the infiltration rates of the soil.
- Over watering of wastewater will be avoided to prevent leaching of nutrients below the crop root zone.
- Wastewater will not be applied when the ground is frozen or saturated or during rainfall events. Irrigation application will be managed to minimize ponding and puddling of wastewater. Wastewater will be applied at agronomic rates and not allowed to runoff. Diversions or terraces will be constructed if necessary, to prevent wastewater from leaving the application areas. Wastewater will not be applied closer than 150 feet from any active water well. Wastewater will not be applied closer than 100 feet to waters of Texas. In addition, a vegetative buffer strip will be maintained between all waste application areas and waters of Texas.
- Dead animals will be properly buried in the designated burial area as identified on LMU Map and according to 30 TAC subchapter B: §§321.31-321.47 requirements.
- Pesticides and other chemicals will not be stored near the water wells or disposed of in the waste storage pond.

CERTIFICATION

The undersigned hereby certifies that natural recharge features and three potential artificial recharge features exist as defined in 30 TAC subchapter B: §§321.31-321.47 Part I on tracts operated or controlled by Bouma Dairy and utilized under this application. See Aquifer Protection Plan for the natural and artificial recharge features impact on the Aquifer.

_____ _____

Jim C. Wyrick Date

Professional Geoscientist, License Number 770

REFERENCES

Ashworth J. B., and J. Hopkins, 1995. *Aquifers of Texas*. Texas Water Development Board, Report 345.

Barnes V. E., 1979, Bureau of Economic Geology Report. *Geologic Atlas of Texas Texarkana Sheet, Bureau of Economic Geology Report*, The University of Texas at Austin.

Hall Southwest Water Consultants, Inc. (Southwest), 1990a. *Geology Description, Monticello-Winfield and Monticello-Thermo Mines, Titus and Hopkins Counties, Texas*. Report Prepared for Texas Utilities Mining Co. April 30.

Kaiser, W. R., 1990, *The Wilcox Group (Paleocene-Eocene) in the Sabine Uplift area, Texas: Depositional systems and deep-basin lignite*: The University of Texas at Austin, Bureau of Economic Geology Special Publication

Soil Survey of Henderson County, Texas. USDA NRCS Web Soil Survey

Parsons Engineering Science, Inc. *Groundwater Availability Model for the Northern Carrizo-Wilcox Aquifer Draft Report*, Prepared for: Texas Water Development Board Prepared September 2002

Personal interview with USDA Natural Resources Conservation Service personnel in Athens.

Sellards E.H, Adkins, A. D. Plummer, F.B, 1954, *The Geology of Texas, Volume I, Stratigraphy* The University of Texas at Austin, Bureau of Economic Geology Bulletin No. 3232. pages 612-620.

Texas Basin. *The University of Texas at Austin, Bureau of Economic Geology Report. Report of Investigations No.127.*

The Texas Water Development Board Well Location Report Submission and Retrieval System Website.

AQUIFER PROTECTION PLAN

The artificial recharge features are three private water wells. They are used exclusively for private water supply. The wells locations are shown on the Site and Runoff Map.

Well #1 is about 80 feet north of the commodity barn. Well #2 is about 75 feet east of the commodity barn and 140 feet north of the milking parlor. Well #3 is about 110 feet north of the freestall barn and about 80 feet west of milking parlor. Well#4 and Well#5 are south of the cattle lane from milking parlor and freestall barns. .All runoff water from the commodity barns flows to the south away from the wells. The wastewater generated in the milking parlor flows south over a concrete lane and a pipeline into the RCS. Wastewater from the commodity or milking parlor could not enter the wells. The surrounding ground slopes away from the wells. The wastewater generated in the milking parlor flows south over concrete and through a pipeline into the RCS. Wastewater generated in the freestall barns is flushed down a curbed concrete floor sloping to the south away from the well. Wastewater from the milking parlor or freestall cannot enter the wells. The surrounding ground slopes away from the well.

These BMPs are for use on all five wells. All wastewater is stored in the RCS. Wastewater application will not be applied near the wells. Cattle are not allowed to graze in the area around the wells. There are no other pollutant sources such as manure, sludge, wastewater, dust, fuel storage tanks, pesticide and lubricants stored near the wells. Dead animal burial area is not near the wells. The fuel storage tank is not located near the wells. Additional wellhead protective measures include, all wells have a sanitary seal, located on a concrete slab. The areas around the wells have a bermudagrass ground cover. Water wellhead backflow prevention devices have been added to the wells.

The wells and area around them will be inspected monthly to ensure contaminants are not running into the well. If for some reason a pollutant ever flows in the direction of the well, immediate action will be taken to divert the flow from the well. Any change in conditions of the wells will have corrective measures taken. The date Well#1 and Well#2 were drilled is unknown and well logs are not available. Well#3 was drilled on January 9, 2008 a copy of the well log is attached. The wells were completed in accordance with water well drilling rules at that time of drilling. These wellhead protective measures will prevent pollutants from entering the groundwater through the wells

The natural recharge features include surface water bodies, creeks, and tributaries. Structural and non-structural controls to be used to protect the natural recharge features are as follow:

- Vegetative filter strips of Bermuda grass will filter, contain, and prevent the lateral movement of wastewater irrigation and manure.
- Waste will be applied only where the LMU cover vegetation is growing and has crop demand for nutrients.
- Waste will be applied at the nutrient requirements of the vegetative cover at the agronomic application rates.
- Wastewater will be applied at a rate less than the permeability of the soil to prevent ponding and runoff.
- Wastewater application will be at rate that ensures that wastewater will be used by the vegetative cover.
- Vegetative buffers of 150 feet for will be maintained around any newly drilled private water wells.
- 100 feet of vegetative cover buffer between waste and wastewater application areas and surface water and watercourses will be maintained.
- Records of climatic conditions during waste application such as: temperature, precipitation and cloud cover.

The following BMPs are to protect the groundwater for LMU#1, LMU#2, LMU#3, LMU#4, LMU#5 and LMU#6. These LMUs have Bernaldo, Nahatche and Wolfpen soils, which have a seasonal high-water table. LMU#1, LMU#2, LMU#5 and LMU#6 have Wolfpen soils which have excessive permeability. The LMU locations are shown on the LMU Map.

1. Application of wastewater will be applied following the Nutrient Management Plan. This will ensure:
    - Intensive nutrient management practices to manage LMU limitations
    - All agricultural waste shall be utilized in a manner that minimizes the opportunity for contamination of surface and ground water supplies.
    - Wastewater application rates will not exceed the soil infiltration rate so not to cause leaching and groundwater contamination.
    - Wastewater application rates will not exceed the available water holding capacity of the soil profile at the time of application, so not to cause leaching and groundwater contamination.
    - Wastewater will be applied at nutrients levels to meet the bermudagrass ground cover needs. This will prevent the movement of nutrients through the soil profile to groundwater caused by over irrigation
    - Annual soil sampling to determine soil available nutrient and amount of nutrients needed for crop production, according to30 TAC subchapter B: §§321.31-321.47.
2. Use of proper timing, formulation, and application methods for nutrients that maximize plant utilization of nutrients and minimize the loss to the ground water,
3. Wastewater will not be applied to saturated soils.
4. Irrigation will be limited on these soil areas when the potential for the seasonal water table to be near the soil surface. (November – May).
5. Timing of manure or waste water application should coincide as nearly as possible to the time when plants can use the nutrients -- that is, during the normal growing season
6. Continual inspection and maintenance of waste handling facilities and equipment will prevent unwarranted waste discharges into surface water and groundwater.
7. Records of crop yields will be kept to determine realistic crop yield expectations.
8. Application equipment should be calibrated and inspected for wear and damage periodically, and repaired when necessary.
9. Records of nutrient application rates will be maintained along with other management records for each field.

These BMPs will provide adequate protective measures for the natural recharge features.

_____ _____

Jim C. Wyrick Date
Professional Geoscientist, License Number 770

Hilltop Jersey Farm Well Location

Texas Water Development Board

September 4, 2024

TWDB Groundwater

Well Reports

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

1:18,056

Esri, HERE, Garmin, (c) OpenStreetMap contributors

STATE OF TEXAS WELL REPORT for Tracking #318334

Owner:	**NICO DEBORE**	Owner Well #:	**3**
Address:	**19008 FM 3079 CHANDLER, TX 75758**	Grid #:	**34-44-8**
Well Location:	**19008 FM 3079 CHANDLER, TX 75758**	Latitude:	**32° 15' 33" N**
		Longitude:	**095° 32' 42" W**
Well County:	**Henderson**	Elevation:	**441 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Stock**

Drilling Start Date: **3/5/2013** Drilling End Date: **3/7/2013**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**7.875**	**0**	**88**

Drilling Method: **Jetted**

Borehole Completion: **Filter Packed; Straight Wall**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**25**	**88**	**Gravel**	**16 30**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**10**	**10**
	20	**25**	**4**

Seal Method: **mix and pore**

Sealed By: **WIL**

Distance to Property Line (ft.): **500 PLUS**

Distance to Septic Field or other concentrated contamination (ft.): **300 PLUS**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed**

Water Level: **20 ft.** below land surface on **2013-03-05** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **70**

Well Tests: **Unknown** **Yield: 30 GPM with 10 ft. drawdown after 1 hours**

Water Quality:

Strata Depth (ft.)	Water Type
25	**IRON**

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: **Chandler Water Well Drillers**

18150 Fm 3204
Brownsboro, TX 75756

Driller Name: **Wil Hammack** License Number: **55055**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
SAND	**0-5**	
CLAY	**5-30**	
SAND	**30-88**	

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4"	**SCH 40**	**BLANK**	**0 - 40**
4"	**SCH 40**	**PVC 020 SLOTTED SCREEN**	

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

SP

ADJ SERVICES INC
A Woman Owned Business

705 Coleman Dr.
Longview, Texas 75605
Phone: 903-759-3111
Fax: 903-759-3126
E-mail: adjscs@sbcglobal.net

SP

June 27, 2008

To: Nico de Boer
Hill Top Jersey Farm
19008 FM 3079
Chandler, Tx 75758-7667

PROJECT NO.: 08-6000
REPORT NO.: Boer-Dairy-08-100
P.O. NO. Verbal
REPORT DATE: June 27, 2008

Re: Certification for Overflow Lagoon Fluid Storage Volume

Mr. Boer;

As requested, an ADJ Services, Inc.'s Engineer was present for the above referenced project site on June 12, 2008. The purpose of the visit was to determine the Fluid Storage Capacity of an existing lagoon used to store overflow from the primary lagoon(s).

The said overflow storage lagoon is located on the west side of the metal hay and equipment storage barn and concrete line silage storage area. Note that the barn is located on the north east side of silage storage area there is also a concrete paved area between the barn and north section of the lagoon. For this project north is taken as toward FM 3079 which provides access to the said Hill Top Jersey Farm along its north side.

Based on the field surveying the top of the lagoon embankment slopes towards the north. The lowest elevation is located at the north east corner. For the project this point was taken as elevation 100.0. The existing water level in the lagoon was at elevation 91.04. As stated by Mr. Boer the lagoon was constructed 15 feet deep.

Based on providing 2 feet of free board so that max pool is at elevation 98.0. There is presently 19,507 cubic feet of air space available for additional fluid storage.

Based on the stated 15 foot deep lagoon there is an estimated 8,877 cubic foot of fluid in the lagoon on June 12, 2007. Note that due to no access to gauge the actual depth of liquid. This volume was estimated based on inspection of the lagoon embankment the 6 foot estimated depth of fluid appears correct. Therefore, the lagoon's storage capacity is as follows.

* Top of embankment elevation	= 100.0
* Max pool elevation	= 98.0
* Bottom of lagoon elevation	= 85.0
* Liquid elevation on June 12, 2008	= 91.04
* Top of embankment size	191ft x 135.5ft
* Side slopes; 41 degrees average	

SP

Lagoon Volumes with 2 foot Freeboard

A) Airspace on June 12, 2008	19, 507 cubic ft. = 0.4478 acre-foot
B) Existing liquid volume estimate	8,877 cubic ft. = 0.2038 acre foot
C) Total volume if lagoon is empty	28, 384 cubic ft. = 0.6516 acre foot
D) 2 ft freeboard storage volume	24,400 cubic ft. = 0.5690 acre foot

This should provide you with information needed. Please call our office if you have any questions.

Very truly yours,
ADJ Services, Inc.

6/27/08

STATE OF TEXAS
JAMES KIM WINN
62402
LICENSED
PROFESSIONAL ENGINEER

James Kim Winn, P.E. On behalf of ADJ Services, Inc.

Cc: Jim Wyrick

RCS#2

RCS#2

COLLIER
CONSULTING

Box 1137
702 East South Loop
Stephenville, TX 76401
Office: (254) 968-8721
Fax (254) 968-8725
www.collierconsulting.com

July 13, 2007

Mr. Nico DeBoer
Hilltop Jersey Farm
19008 FM 3079
Chandler Texas 75758

Dear Mr. DeBoer,

Thank you for choosing Collier Consulting for your Engineering services. As per our agreement, we were to determine the as-built capacity of the recently built Retention Control Structure (RCS) . To properly evaluate the pond, Gerry Kendall, E.I.T. and Sadina Mayeux of Collier Consulting, conducted a on-site assessment on July 10, 2007. After careful consideration of data gathered on-site, it was determined the storage capacity of the RCS is approximately 3.7 ac-ft. This is the calculated capacity to the point where the RCS was running over.

Also, as required by the Texas Commission on Environmental Quality (TCEQ) a sludge accumulation was measured. At the time of the on-site visit, no measurable sludge accumulation was noted.

Please feel free to give me a call if there are any questions.

gk/MS

Gerry Kendall, E.I.T

Gerry Kendall E.I.T

Marion Striegler, P.E.
Collier Consulting

Marion Striegler, P.E.

STATE OF TEXAS
MARION E. STRIEGLER
31489
REGISTERED
PROFESSIONAL ENGINEER

7-13-07

MAX N. BERRY
dba M. BERRY & ASSOCIATES
741 Swendson Road, Jefferson, Texas 75657
903.923.8981 (Office) ibmberry@yahoo.com **903.742.4607 (Cell)**

May 27, 2015

RCS #1

Mr. Jim Wyrick
East Texas Environmental Services
317 Highland Drive
Sulphur Springs, Texas 75482

Subject: Hilltop Jersey Farms
Retention Control Structure #2
Volume Certification

Dear Mr. Wyrick:

This letter is in response to your verbal request that I determine and certify the storage volume of the concrete Retention Control Structure (RCS) #2, on the Hilltop Jersey Farms, in Henderson County, Texas. (A sketch of the RCS is attached.)

I have determined the storage volume at over-flow stage of RCS #2 to be **1.68 Acre-Feet.**

Please contact me at (903) 923-8981 with questions concerning this information, or if further information is required.

Yours very truly,

Max N. Berry, P.E.

05/27/15

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

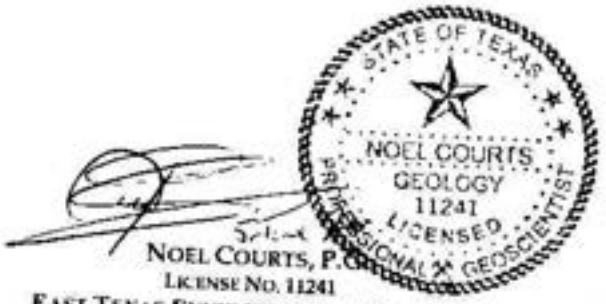
M. BERRY & ASSOCIATES
F-10104

HILLTOP JERSEY FARM

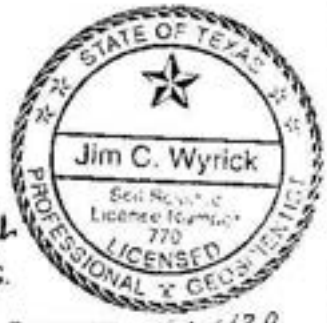
DAIRY BARN
&
FREE STALL SLUDGE
CALCULATIONS

NICO DEBOER
19008 FM 3079
CHANDLER, TEXAS 75758
HENDERSON COUNTY

PREPARED BY:



NOEL COURTS, P.G.
LICENSE NO. 11241
EAST TEXAS ENVIRONMENTAL SERVICES



JIM C. WYRICK, P.G.
LICENSE NO. 770
EAST TEXAS ENVIRONMENTAL SERVICES 6/06/20

06/06/20

M. BERRY
FIRM NO. 212
SEAL NO. 44452

HILLTOP JERSEY FARM – SLUDGE VOLUME (Total Cows)

DAIRY BARN &

FREE STALL BARNS

All of the waste from the dairy barn and free stall barns at Hilltop Jersey Farm is removed by a Honey Vacuum that is proved to be at least 88% effective, and the remaining solids go into concrete settling basins that remove 45% of the solids produced. Any manure separating facilities have 30%-90% total solids efficiency according to NRCS Practice Standard Code 632 – "Solid/Liquid Waste Separation Facility". The adjusted total live weight contributing to the waste volume is 974,025 pounds @ 975lbs/cow. The sludge from the free stall & dairy barns is calculated below:

Adjusted Total Live weight Contributing Manure	974,025 lbs
Honey Vacuum Efficiency	88%
Adjusted Live weight	116,883 lbs
Settling Basin Efficiency	45%
Adjusted Live weight	64,286 lbs
Sludge Accumulation Rate cu ft/year/lbs live weight	0.25

Sludge Volume = $\frac{(64{,}286 \text{ lbs})\ (0.25 \text{ cu ft/year/lbs live weight})}{43{,}560 \text{ cu ft/ac-ft}}$ = .37 Ac-Ft/yr * 5yrs = 1.85 ac-ft

CERTIFICATION:

STATE OF TEXAS
NOEL COURTS
GEOLOGY
11241
LICENSED
PROFESSIONAL GEOSCIENTIST

Prepared By:
Noel Courts, P.G.
East Texas Env. Services

STATE OF TEXAS
Jim C. Wyrick
LICENSED
PROFESSIONAL GEOSCIENTIST

Prepared By:
Jim C. Wyrick, P.G.
East Texas Env. Services
6/06/20

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

M. Berry, P.E.
Firm No. F-2120
Seal No. 44452
06/06/20

HILLTOP JERSEY FARM - FreeStalls (Dry cows)

AGRICULTURAL WASTE MANAGEMENT PLAN

HENDERSON COUNTY

Prepared by:

Noel Courts, P.G.
Professional Geoscientist
East Texas Environmental Services

Jim C Wyrick, P.G.
Professional Geoscientist
East Texas Environmental Services

6/16/20

M. Berry, P.E.
No. F-21204
Seal No. 44452

06/04/20

Modified for Wood/Hopkins/Rains/Franklin Counties(I.D. #6b) on January 22, 2008. Modifications made in monthly rainfall, monthly evaporation, and monthly consumptive use values for bermudagrass pastureland, bermuda/small grain pastureland, small grain cropland, grain sorghum cropland, and sorghum/small grain cropland. Modifications (values) were taken from following reference: Borrelli, J., C.B. Fehler, and J.M. Gregory. 1998 *Mean Crop Consumptive Use and Free-Water Evaporation for Texas.* TWDB Grant No. 95-483-137, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. *WATRNTR Version 1, Modified by Eugene Lindeman, P.E.*

IN COOPERATION WITH:

NATURAL RESOURCES CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

MANURE PRODUCTION DATA FOR CONFINED ANIMAL FEEDING OPERATIONS

TYPE OF ANIMAL (Dairy=0, Swine=1, Laying Hens=2, Beef Feedlot=3, Sheep Feedlot=4, Horses=5, Turkeys=6, Broilers=7) => 0

Feeding Facilities For: Dairy

	Dairy Barn & FreeStall	Open Lots	Total
Number of Animals	899	0	
Average Liveweight per Head, lbs/hd	975	0	
Total Liveweight,lbs	876,525	0	
Confinement Period, hours/hd/day	24.0	0.0	24.0
Adjusted Total Liveweight, lbs	876,525	0	876,525
Wet Manure Production, lbs/day	89,406	0	89,406
Dry Manure Production, lbs/day	12,885	0	12,885
Dry Manure Production, tons/year	2,351	0	2,351
Volatile Solids (VS) Production, lbs/day	9,458	0	9,458
Total Nitrogen Production, lbs/day	479	0	479
Total Phosphorus (P2O5), lbs/day	237	0	237
Total Potassium (K2O), lbs/day	406	0	406
Sodium Production, lbs/day	68	0	68
COD Production, lbs/day	11,745	0	11,745
BOD5 Production, lbs/day	1,823	0	1,823

Engineering Job Approval Authority Job Class for Ag. Waste Management System: _____

This practice, Ag. Waste Management System, meets specifications, signed by:

Remarks _____ Date: _____

HILLTOP JERSEY FARM - Dairy Barn & FreeStalls

AGRICULTURAL WASTE MANAGEMENT PLAN

HENDERSON COUNTY

Prepared by:

Noel Courts, P.G.
Professional Geoscientist
East Texas Environmental Services

Jim C Wyrick, P.G.
Professional Geoscientist
East Texas Environmental Services

1/04/20

Max N. Berry, P.E.
Firm No. F-21204
Seal No. 44452

06/06/20

Modified for Wood/Hopkins/Rains/Franklin Counties(I.D. #6b) on January 22, 2008. Modifications made in monthly rainfall, monthly evaporation, and monthly consumptive use values for bermudagrass pastureland, bermuda/small grain pastureland, small grain cropland, grain sorghum cropland, and sorghum/small grain cropland. Modifications (values) were taken from following reference: Borrelli, J., C.B. Felder, and J.M. Gregory, 1998 *Mean Crop Consumptive Use and Free-Water Evaporation for Texas*, TWDB Grant No. 95-483-137, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. *WATRNTR Version 1, Modified by Eugene Lindeman, P.E.*

IN COOPERATION WITH:

NATURAL RESOURCES CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

MANURE PRODUCTION DATA FOR CONFINED ANIMAL FEEDING OPERATIONS

TYPE OF ANIMAL (Dairy=0, Swine=1, Laying Hens=2, Beef Feedlot=3, Sheep Feedlot=4, Horses=5, Turkeys=6, Broilers=7) => 0

Feeding Facilities For: Dairy

	FreeStall	Open Lots	Total
Number of Animals	100	0	
Average Liveweight per Head, lbs/hd	975	0	
Total Liveweight,lbs	97,500	0	
Confinement Period, hours/hd/day	24.0	0.0	24.0
Adjusted Total Liveweight, lbs	97,500	0	97,500
Wet Manure Production, lbs/day	9,945	0	9,945
Dry Manure Production, lbs/day	1,433	0	1,433
Dry Manure Production, tons/year	262	0	262
Volatile Solids (VS) Production, lbs/day	1,052	0	1,052
Total Nitrogen Production, lbs/day	53	0	53
Total Phosphorus (P2O5), lbs/day	26	0	26
Total Potassium (K2O), lbs/day	45	0	45
Sodium Production, lbs/day	8	0	8
COD Production, lbs/day	1,307	0	1,307
BOD5 Production, lbs/day	203	0	203

Engineering Job Approval Authority Job Class for Ag. Waste Management System: _____

This practice, Ag. Waste Management System, meets specifications, signed by:

Remarks _____ Date: _____

VOLUME OF MANURE & WASTEWATER FROM CONFINEMENT BUILDINGS

Wet Manure Production	=	11913	gal/day
Water Used for Manure Removal			
a. Dry Manure Production	=	14318	lbs/day
b. Water Volume Required for Manure Removal			
1. Flush Systems:			
(Enter gallons water per pound of dry manure production, range 8-12 gal/lb)	=>	8	
Total flush water	=	114545	gal/day
2. Manual Scrape/Wash System (Enter gallons of water per pound of dry manure production, Range: 3 - 6 gal/lb)	=>	0	
Total manual wash water	=	0	gal/day
Cleanup and Washwater (Default=10 gal/hd/day)	=>	3	gal/hd/day
	=	2697	gal/day
Other Water That Enters Wastewater System [e.g. drinking water, etc.(12 gal/hd/day)]	=>	2	gal/hd/day
	=	1998	gal/day
Total Process Generated Wastewater Volume Daily Volume	=	131153	gal/day
Less Volume of Recycled Wastewater Used for Manure Removal	=>	111479	gal/day
Design Wastewater Storage Volume, Minimum Allowable			
Minimum Storage Days (Use Exhibit 2)*	=>	21	days
Minimum Design Storage Volume	=	1.27	ac-ft
Net Manure and Wastewater Volume for Land Application Monthly Volume	=	1.84	ac-ft/month
Annual Sludge Accumulation Rate, ac-ft	=	0.37	
Desired Sludge Storage Volume in Pond	=>	1.85	ac-ft
Sludge Cleanout Interval	=	5.0	years
Design Sludge Accumulation Storage Volume (Not to be less than 1 Year accumulation)	=	1.85	ac-ft

* Use Exhibit 2 of Texas Water Commission regulations for your particular location.

ESTIMATED VOLUME OF RUNOFF FROM OPEN LOTS

Total area draining into Runoff Control Structure (RCS)				
a. Area of open lot surface		=>	0.00	acres
b. Area between open lot surface and RCS		=>	0.15	acres
c. Surface area of RCS		=>	0.90	acres
d. Total area (#1.a + #1.b + #1.c)		=	1.05	acres
Design rainfall (25-year frequency, 24-hour duration storm), inches (Use Exhibit 1)	1)	=>	8.00	inches
Design runoff depth, inches (Use exhibit 3)				
a. For Open Lot Surface * CN		=>	0	
			0.00	inches
b. For Area Between Lots and RCS ** CN		=>	90	
			6.81	inches
c. For Surface Area of RCS		=	8.00	inches
Design runoff volume from 25-year, 24-hour storm				
a. For Open Lot Surface		=	0.0	ac-ft
b. For Area Between Lots and RCS		=	0.1	ac-ft
c. For Surface Area of RCS		=	0.6	ac-ft
d. Total Design Runoff Volume		=	0.7	ac-ft

NOTE: Runoff Control Structures must be capable of storing Design Runoff Volume plus Design Storage Volume, if runoff and process generated wastewater streams are combined.

* Use NRCS soil cover complex curve No. 90 for unpaved (soil) lots and curve No. 95 for concrete surfaces.

** Use appropriate NRCS soil cover complex curve number for particular type of cover. Contact local Natural Resources Conservation Service field office for assistance.

SUMMARY OF REQUIRED AND DESIGNED STORAGE PONDS

Minimum Design Wastewater Storage Volume	1.27	ac-ft
Minimum Design Runoff Storage Volume	0.69	ac-ft
Sludge Accumulation Storage Volume	1.85	ac-ft
Additional Capacity Allowance	1.58	ac-ft
Total Capacity Designed	5.38	ac-ft

Primary Anaerobic Manure Treatment Lagoons, Sheet 5 of 10., Use Where Applicable.

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

06/06/20

DESIGN BASIS FOR PRIMARY ANAEROBIC MANURE TREATMENT LAGOONS

(WHERE APPLICABLE)

Design Factor		Dairy	
Adjusted Total Liveweight Contributing Manure to Lagoon	=	64286	lbs
Recommended Unit Treatment Volume (see footnote) (RUTV), cubic feet/pound liveweight	=> =	0.00 3.00	
Total Treatment Volume	=	4	
Design checks (see footnotes):			
a. Volatile Solids (VS) Loading Rate		0.0545	
b. Hydraulic Retention Time	=	11	days
c. Estimated Sludge Cleanout Interval,			
1. Sludge Accumulation Rate, cu ft/year/lb liveweight	=	0.250	
2. Sludge Cleanout Interval	=	6.0	years
Additional Capacity Allowance for:			
a. Design Runoff Volume, (one stage lagoons (	=>	0.0	ac-ft
b. Sludge storage	=>	0.0	ac-ft
c. Additional Storage	=>	0.0	ac-ft
Total Primary Lagoon Capacity	=	4.4	ac-ft

THIS PAGE IS NOT APPLICABLE TO THIS PLAN

Notes: 2. If user entry area equals 0, then default values are used (dairy=3, swine=1.75, poultry,laying hens=2.5, beef=2, sheep=2, horses=2). User may specify alternate value which will override template default.

4.a. VS Loading Rate--Volatile Solids Production (Worksheet I, #10) / Total Treatment Volume. Desired range is 0.0025-0.0040 lbs VS/day/cu ft for odor control.

4.b. Hydraulic Retention Time--Total Treatment Volume / Total Manure and Wastewater Volume. Desired range is 160-400 days for good treatment.

4.c. Sludge Cleanout Interval (when half full)

$$\text{Interval} = \frac{\text{Total Treatment Volume (cuft)} \times 0.5}{\text{Adj. Total Live Wt.} \times \text{Sludge Accum. Rate}}$$

LAND AREA FOR DISPOSAL OF MANURE OR EFFLUENT FROM TREATMENT LAGOONS,

BASED ON PLANT-AVAILABLE NITROGEN (PAN)

		Buildings		Open Lots	
Total Daily Nitrogen Production	=	533	more->	0	lbs/day
Total Annual Nitrogen Production	=	194469	more->	0	lbs/yr
Percent Nitrogen Loss from manure storage or treatment system*	=>	20	more->	50	percent
Annual Nitrogen Loss from manure storage or treatment system	=	38894	more->	0	lbs/yr
Total Annual Nitrogen Remaining	=	155575	more->	0	lbs/yr
Availability of Nitrogen in Manure or Effluent,% (Normal range is 80-95% in lagoon effluent; 50-80% in fresh or pit-stored manure; or 40-50% in feed lot manure)	=>	80	more->	50	percent
Annual Plant-Available Nitrogen (PAN) Applied to Soil		124460	more->	0	lbs/yr
PAN Losses from Soil Surface Application** **	=>	20	more->	20	percent
PAN Losses from Soil Surface Application	=	24892	more->	0	lbs/yr
PAN Entering Soil	=	99568	more->	0	lbs N/yr

Land Required for Various PAN Application Rates:

Assumed PAN Application Rate, lbs/ac/yr	Buildings Acres		Open Lots Acres		Total Acres
100	996	+	0	=	996
150	664	+	0	=	664
200	498	+	0	=	498
300	332	+	0	=	332
400	249	+	0	=	249

* Nitrogen Loss from Lagoon Surface--Normal loss is 40-65% for primary treatment lagoons with 200 days or more storage; 10-20% from liquid manure settling basins or storage pits; and 40-50% from open feedlot surface.

** Normal range of nitrogen loss from soil surface is 15-35% for surface application or, 5% for soil injection. Losses are highest in warm weather and on high pH soils.

STATE OF TEXAS
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06/06/20

WATER BUDGET ANALYSIS

DRAINAGE AREA	1.05	ACRES
MANURE PROD. RCS AREA	0.90	ACRES
SLUDGE ACCUMULATION	1.85	AC-FT
MIN. WASTEWATER STORE	1.27	AC-FT
ADDITIONAL STORAGE	1.58	AC-FT
SUBTOTAL	4.70	AC-FT
25YR-24HR RUNOFF	0.69	AC-FT
TOTAL POND CAPACITY	5.38	AC-FT

RUNOFF CONTROL STRUCTURE DATA

LOCATION NO. 13

30-DAY CURVE NUMBERS

POND	74.0
FIELD	48.0
IRRIG. EFFICIENCY, %	75.00
IRRIGATION DEPTH, IN/YR	0.33
EVAPORATION COEFF.	71.80

FIELD OFFICE RUSK WEA. STA

COUNTY CHEROKEE

CROPS FOR WATER DEMAND

Bermudagrass	0.00	AC
Bermuda/SmGr	367.00	AC
Sorghum/SmGr	256.00	AC
Small Grain	0.00	AC
Assumed Seepage	0.0	ACFT

MONTH	RAINFALL (1) IN	RUNOFF (2) IN	INFLOW TO POND (3) AC-FT	OTHER INFLOW (3a) AC-FT	EFFECTIVE RAINFALL (4) IN	GROSS EVAP (5) IN	NET POND EVAP (6) AC-FT	CROP DEMAND (10) AC-FT	ACTUAL WITHDRAWAL (10a) AC-FT	STORAGE at E.O.M. (11) AC-FT	SURF AREA at E.O.M. (12) AC	SPILL (13) AC-FT
JAN	3.80	0.21	0.13	1.84	3.59	1.90	-0.03	23.67	2.00	1.85	0.67	0.00
FEB	3.44	0.13	0.10	1.84	3.31	2.00	-0.02	57.31	1.96	1.85	0.67	0.00
MAR	3.63	0.17	0.12	1.84	3.46	2.80	0.02	168.16	1.94	1.85	0.67	0.00
APR	4.90	0.55	0.20	1.84	4.35	3.30	0.02	273.52	2.01	1.85	0.67	0.00
MAY	4.73	0.50	0.19	1.84	4.27	4.16	0.07	324.98	1.96	1.85	0.67	0.00
JUN	3.57	0.16	0.11	1.84	3.41	5.00	0.13	284.42	1.82	1.85	0.67	0.00
JUL	2.77	0.03	0.07	1.84	2.74	6.30	0.21	243.65	1.69	1.85	0.67	0.00
AUG	2.40	0.00	0.05	1.84	2.40	6.70	0.24	134.72	1.64	1.85	0.67	0.00
SEP	4.41	0.38	0.17	1.84	4.03	5.70	0.15	37.46	1.85	1.85	0.67	0.00
OCT	3.38	0.12	0.10	1.84	3.26	4.60	0.11	72.55	1.82	1.85	0.67	0.00
NOV	3.50	0.15	0.11	1.84	3.35	3.20	0.04	30.77	1.91	1.85	0.67	0.00
DEC	4.04	0.28	0.14	1.84	3.76	2.30	-0.02	4.47	2.00	1.85	0.67	0.00
TOTALS	44.61	2.70	1.49	22.04	41.91	47.90	0.92	1655.69	22.60			
	44.61					47.90			22.60	Checks	Reset	0

STORAGE-AREA TABLE FOR RUNOFF CONTROL STRUCTURE

STORAGE DATA TYPE R (C - CIRCULAR, R - RECTANGULAR, or S - STAGE DATA)

CIRCULAR		RECTANGULAR	
DEPTH, FT	0.0	DEPTH, FT	7.57
SIDE SLOPE, RATIO	0.00	SIDE SLOPE, RATIO	3.000
TOP DIAMETER, FT	0.00	END SLOPE, RATIO	3.000
FREE BOARD, FT	0.00	TOP WIDTH, FT	225.0
BOTTOM DIAMETER, FT	0.00	TOP LENGTH, FT	175.0
SURFACE AREA, AC	0.00	FREE BOARD, FT	2.000
VOLUME, ACFT	0.00	BOTTOM WIDTH, FT	179.58
		BOTTOM LENGTH, FT	129.58
		SURFACE AREA, AC	0.90
		VOLUME, ACFT	5.38

THIS WATER BUDGET VERIFIES THAT 25YR - 24 HR STORM RUNOFF STORAGE ALLOCATION IS MAINTAINED THROUGHOUT THIS CLIMATIC CYCLE.

NOTE: USER INPUT VALUES FOR NUTRIENTS USED IN NUTRIENT BALANCE WORKSHEET!

DEPTH, FT 0.0 **STAGE**

FREE BOARD, FT 0.00

Leave Extra Rows at Bottom with Blanks or Zeros.

ROW #	DEPTH FT	AREA AC
BOTTOM	0.00	0.53
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

STAGE STORAGE DATA SUMMARY

METHOD: RECTANGULAR

ROW #	DEPTH FT	AREA AC	STORE ACFT	WIDTH FT	LENGTH FT
0	0.00	0.53	0.00	179.58	129.58
1	0.76	0.57	0.42	184.12	134.12
2	1.51	0.60	0.86	188.66	138.66
3	2.27	0.64	1.33	193.21	143.21
4	3.03	0.67	1.82	197.75	147.75
5	3.79	0.71	2.34	202.29	152.29
6	4.54	0.74	2.89	206.83	156.83
7	5.30	0.78	3.47	211.37	161.37
8	6.06	0.82	4.08	215.92	165.92
9	6.81	0.86	4.71	220.46	170.46
10	7.57	0.90	5.38	225.00	175.00
11	8.57	0.96	6.32	231.00	181.00
12	9.57	1.02	7.30	237.00	187.00
BOT. 25YR-24HR	6.79	0.86	4.70	220.46	170.46
SPILLWAY	7.57	0.90	5.38	225.00	175.00
FREE BOARD	9.57	1.02	7.30	237.00	187.00

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

06/06/20

WATER BUDGET ANALYSIS

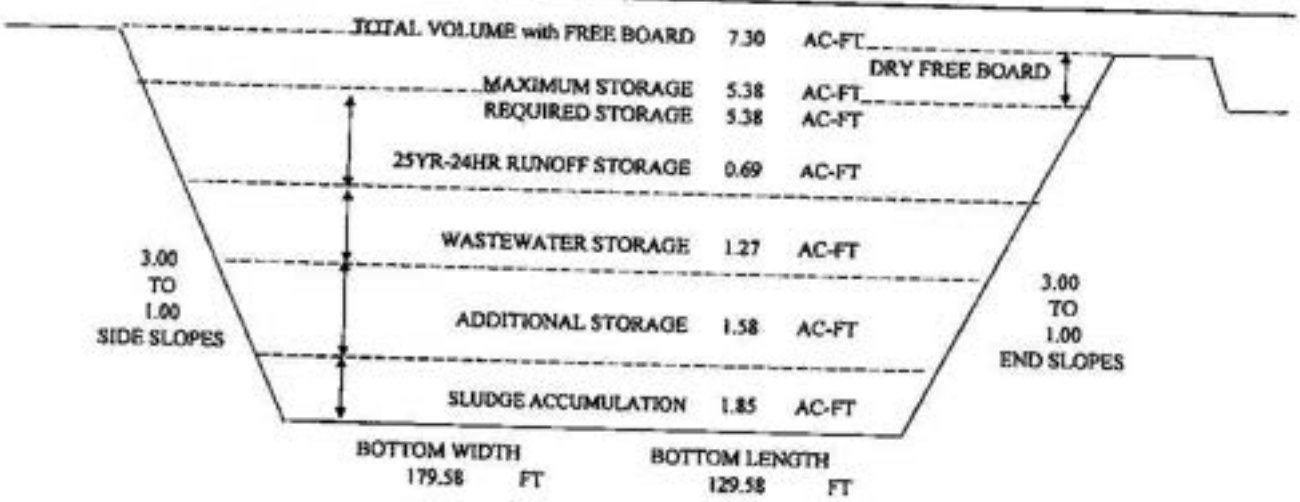

DIAGRAM OF RUNOFF CONTROL STRUCTURE

CONSUMPTIVE USE FOR SPECIFIC CROP AREAS (IN/MONTH)

FIELD	0	1,3,7,8,9	2,4,5,6	4	5	6
VEGETATION	Bermudagrass Pastureland	Bermuda/SmGr Pastureland	Sorghum/SmGr Cropland	Small Grain Cropland	Grain Sorghum Cropland	Alfalfa Pastureland
JAN	1.92	4.36	2.44	2.44	0.00	0.90
FEB	2.31	5.18	2.87	2.87	0.00	1.20
MAR	3.76	8.24	4.48	4.48	0.00	3.00
APR	4.81	10.23	8.74	5.42	3.32	3.70
MAY	5.50	10.55	10.49	5.05	5.44	6.60
JUN	6.27	8.53	9.40	2.26	7.14	6.90
JUL	7.16	7.16	7.82	0.00	7.82	7.60
AUG	6.80	6.80	1.75	0.00	1.75	5.30
SEP	5.25	5.25	0.00	0.00	0.00	5.50
OCT	4.47	5.63	1.16	1.16	0.00	3.80
NOV	2.54	4.36	1.82	1.82	0.00	1.70
DEC	1.98	3.98	1.92	1.92	0.00	1.00

NET CROP DEMAND (C.U.-EFF.RAINFALL) (IN/MONTH)

	0	1,3,7,8,9	2,4,5,6	4	5	6
	Bermudagrass Pastureland	Bermuda/SmGr Pastureland	Sorghum/SmGr Cropland	Small Grain Cropland	Grain Sorghum Cropland	Alfalfa Pastureland
JAN	0.00	0.77	0.00	0.00	0.00	0.00
FEB	0.00	1.87	0.00	0.00	0.00	0.00
MAR	0.30	4.78	1.02	1.02	0.00	0.00
APR	0.46	5.88	4.39	1.07	0.00	0.00
MAY	1.23	6.28	6.22	0.78	1.17	2.33
JUN	2.86	5.12	5.99	0.00	3.73	3.49
JUL	4.42	4.42	5.08	0.00	5.08	4.86
AUG	4.40	4.40	0.00	0.00	0.00	2.90
SEP	1.22	1.22	0.00	0.00	0.00	1.47
OCT	1.21	2.37	0.00	0.00	0.00	0.54
NOV	0.00	1.01	0.00	0.00	0.00	0.00
DEC	0.00	0.15	0.00	0.00	0.00	0.00

STATE OF TEXAS
MAX NORTON BERRY
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REGISTERED
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06/04/20

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU #1

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643715
Customer Sample ID: 100
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

8

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	7.0	(5.8)	-	Slightly Acid	
Conductivity	89	(-)	umho/cm	None	
Nitrate-N	26	(-)	ppm**	CL*	45 lbs N/acre
Phosphorus	174	(50)	ppm		0 lbs P2O5/acre
Potassium	135	(150)	ppm		20 lbs K20/acre
Calcium	874	(180)	ppm		0 lbs Ca/acre
Magnesium	65	(50)	ppm		0 lbs Mg/acre
Sulfur	33	(13)	ppm		0 lbs S/acre
Sodium	48	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 2

Soil Analysis Report

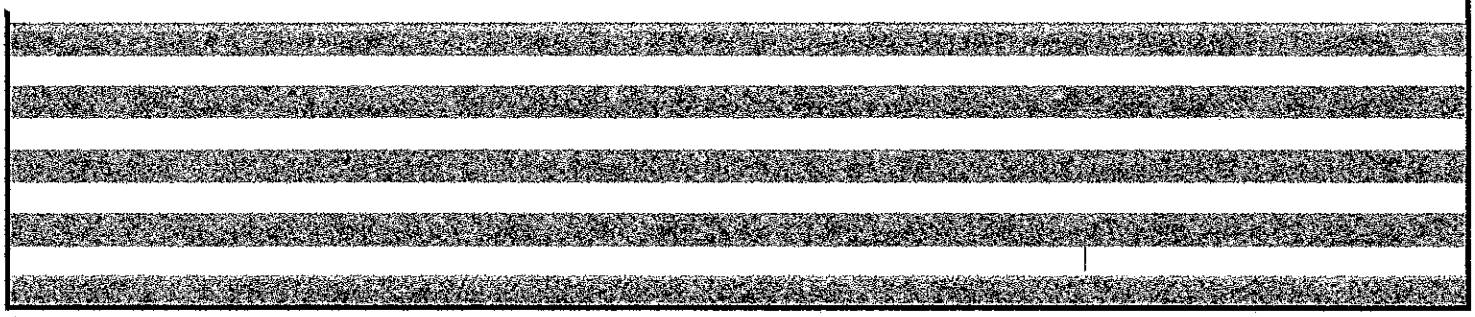
Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643716
Customer Sample ID: 101
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	
pH	5.3	(5.8)	-	Mod. Acid	
Conductivity	32	(-)	umho/cm	None	Fertilizer Recommended
Nitrate-N	4	(-)	ppm**	CL*	90 lbs N/acre
Phosphorus	106	(50)	ppm		0 lbs P2O5/acre
Potassium	60	(150)	ppm		150 lbs K20/acre
Calcium	675	(180)	ppm		0 lbs Ca/acre
Magnesium	42	(50)	ppm		5 lbs Mg/acre
Sulfur	13	(13)	ppm		0 lbs S/acre
Sodium	26	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.25 tons 100ECCE/acre



*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 3

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643717
Customer Sample ID: 102
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	7.0	(5.8)		Neutral	
Conductivity	23	(-)	umho/cm	None	
Nitrate-N	5	(-)	ppm**		90 lbs N/acre
Phosphorus	44	(50)	ppm		15 lbs P2O5/acre
Potassium	51	(150)	ppm		160 lbs K20/acre
Calcium	1,008	(180)	ppm		0 lbs Ca/acre
Magnesium	41	(50)	ppm		5 lbs Mg/acre
Sulfur	12	(13)	ppm		5 lbs S/acre
Sodium	19	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Lestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.
Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 4

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
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Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643718
Customer Sample ID: 103
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	6.7	(5.8)	-	Slightly Acid							
Conductivity	43	(-)	umho/cm	None							**Fertilizer Recommended**
Nitrate-N	12	(-)	ppm**					CL*			**75** lbs N/acre
Phosphorus	122	(50)	ppm								**0** lbs P2O5/acre
Potassium	49	(150)	ppm								**165** lbs K20/acre
Calcium	1,100	(180)	ppm								**0** lbs Ca/acre
Magnesium	34	(50)	ppm								**10** lbs Mg/acre
Sulfur	15	(13)	ppm								**0** lbs S/acre
Sodium	23	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Lime Requirement											**0.00** tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 5'

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
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College Station, TX 77843-2478
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979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643719
Customer Sample ID: 104
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	6.1	(5.8)		Mod. Acid	
Conductivity	87	(-)	umho/cm	None CL*	
Nitrate-N	81	(-)	ppm**		0 lbs N/acre
Phosphorus	235	(50)	ppm		0 lbs P2O5/acre
Potassium	215	(150)	ppm		0 lbs K20/acre
Calcium	919	(180)	ppm		0 lbs Ca/acre
Magnesium	131	(50)	ppm		0 lbs Mg/acre
Sulfur	31	(13)	ppm		0 lbs S/acre
Sodium	65	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU 6

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643720
Customer Sample ID: 105
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	5.8	(5.8)	-	Mod. Acid							
Conductivity	76	(-)	umho/cm	None				CL*			
Nitrate-N	16	(-)	ppm**								65 lbs N/acre
Phosphorus	311	(50)	ppm								0 lbs P2O5/acre
Potassium	190	(150)	ppm								0 lbs K20/acre
Calcium	1,130	(180)	ppm								0 lbs Ca/acre
Magnesium	135	(50)	ppm								0 lbs Mg/acre
Sulfur	21	(13)	ppm								0 lbs S/acre
Sodium	40	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU 1

Soil Analysis Report

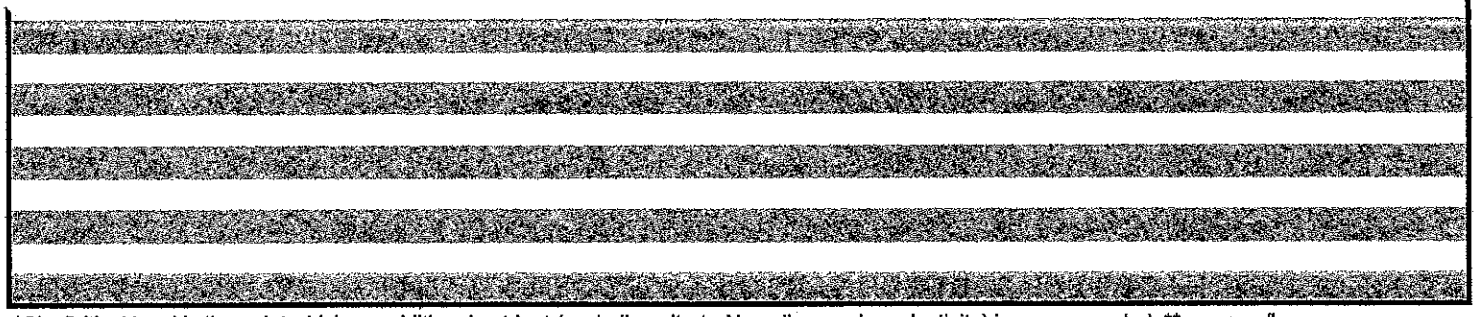
Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643721
Customer Sample ID: 106
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	5.8	(5.8)		Mod. Acid	
Conductivity	110	(-)	umho/cm	None	
Nitrate-N	41	(-)	ppm**		15 lbs N/acre
Phosphorus	177	(50)	ppm		0 lbs P2O5/acre
Potassium	129	(150)	ppm		30 lbs K20/acre
Calcium	725	(180)	ppm		0 lbs Ca/acre
Magnesium	80	(50)	ppm		0 lbs Mg/acre
Sulfur	20	(13)	ppm		0 lbs S/acre
Sodium	44	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre



*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU8

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643722
Customer Sample ID: 107
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH	5.1	(6.8)	-	Strongly Acid						
Conductivity	107	(-)	umho/cm	None			CL*			
Nitrate-N	20	(-)	ppm**							
Phosphorus	61	(50)	ppm							
Potassium	115	(150)	ppm							
Calcium	243	(180)	ppm							
Magnesium	37	(50)	ppm							
Sulfur	40	(13)	ppm							
Sodium	25	(-)	ppm							
Iron										
Zinc										
Manganese										
Copper										
Boron										
Limestone Requirement										

Fertilizer Recommended

60 lbs N/acre
0 lbs P2O5/acre
55 lbs K20/acre
0 lbs Ca/acre
5 lbs Mg/acre
0 lbs S/acre

0.25 tons 100ECCE/acre

4

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Hilltop
LMU 9

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643723
Customer Sample ID: 108
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	6.3	(6.8)	-	Slightly Acid	
Conductivity	58	(-)	umho/cm	None	
Nitrate-N	10	(-)	ppm**	CL*	80 lbs N/acre
Phosphorus	94	(50)	ppm		0 lbs P2O5/acre
Potassium	231	(150)	ppm		0 lbs K2O/acre
Calcium	444	(180)	ppm		0 lbs Ca/acre
Magnesium	82	(50)	ppm		0 lbs Mg/acre
Sulfur	19	(13)	ppm		0 lbs S/acre
Sodium	35	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
104

Bio-Liquid Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
(979)321-5960

Visit our website:
http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services

317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Date Printed: 12/18/2023

Sample(s) from Hopkins County

Section 1: **Bio-liquids are analyzed on an as received basis**

Laboratory #	Customer Sample Identification	Total Nitrogen %	Total Phosphorus %	Total Potassium %	Total Calcium %	Total Magnesium %	Total Sodium %	Total Zinc ppm	Total Iron ppm
45021454	100	0.0003	0.0039	0.0367	0.0055	0.0032	0.0350	2.22	1.56
45021455	101	0.0010	0.0039	0.0749	0.0063	0.0040	0.0221	2.32	1.33
45021456	102	0.0031	0.0043	0.0260	0.0258	0.0029	0.0255	3.00	1.21
45021457	103	0.0094	0.0104	0.1243	0.0280	0.0182	0.0874	5.01	1.87
45021458	104	0.0060	0.0100	0.0734	0.0245	0.0077	0.0408	3.94	3.56

Laboratory #	Total Copper ppm	Total Manganese ppm
450[illegible]4	0.06	0.00
45021455	0.06	0.10
45021456	0.24	1.11
45021457	0.75	2.40
45021458	4.16	2.33

Section 2: **Interpretation of Bio-Liquid Analysis—pounds of nutrients per acre inch of effluent.**

Laboratory #	Customer Sample Identification	Nitrogen lbs/acre inch	P_2O_5 lbs/acre inch	K_2O lbs/acre inch	Calcium lbs/acre inch	Magnesium lbs/acre inch	Sodium lbs/acre inch	Zinc lbs/acre inch	Iron lbs/acre inch
45021454	100	1	20	100	13	7	79	0.50	0.35
45021455	101	2	20	203	14	9	50	0.53	0.30
45021456	102	7	22	71	58	6	58	0.68	0.27
45021457	103	21	54	338	63	41	198	1.13	0.42
45021458	104	14	52	199	56	18	92	0.89	0.81

Laboratory #	Copper lbs/acre inch	Manganese lbs/acre inch
45021454	0.01	0.00
45021455	0.01	0.02
45021456	0.06	0.25
450[illegible]7	0.17	0.54
45021458	0.94	0.53

* one acre inch equals 27150 gallons

Waste Utilization and Nutrient Management Plan

Hilltop Jersey Farm
19008 FM 3079
Chandler, TX 75758
903-849-2604

TCEQ Permit Number:

Owner
Nico DeBoer
19008 FM 3079
Chandler, TX 75758
903-849-2604

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

Prepared By:

_____

(Signature)
Jim C. Wyrick
Nutient Management Specialist
Certificate Number = TX20049
Expiration Date = December 31, 2024
East Texas Enviornmental Services
317 Hughland Dr.
Sulphur Springs, TX 75482
903-243-0400

This plan is based on:
590 -633 Plan V 4.0_5

2/5/25 12:59 PM

Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY: Permit #:

This Nutrient Management Plan has fields that meet NUPs requirements.

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Henderson** 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 **2024** 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 **999** head will be confined with the average weight of **960** pounds. The animals will be confined **365** hours per day for **24** 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. 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 "book" values, this plan will need revision.

Application of effluent 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. The 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:
There is no solids application in this plan. If any is produced, it will be transported off-site.

EFFLUENT APPLICATION:
The maximum effluent application rates are given in Table 4 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 maximum 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 4. 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_2O_5, and K_2O contained in the effluent are provided in Table 5 for the maximum application rate indicated in Table 4. 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 needs.

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 effluent produced. Table 7 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 6. The amounts of supplemental nutrients in Table 7 are based on the actual amount of effluent available rather than the **maximum** rate that **"could"** be applied.

The bottom line on the right of Table 6 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 effluent 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 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 crop requirement rates in both Table 4 and 6 may be doubled not to exceed 2X the 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.

Land application of 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. Effluent will not 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. Surface applications with trucks should only be made when soil conditions are favorable in order to minimize soil compaction.

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,

EFFLUENT APPLICATION: (cont) Permit #:

DO NOT exceed the rates shown in Table 1 of the attached Job Sheet entitled, "Waste Utilization, Determining Effluent Application Rates, rev. 4/06". 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, rev. 4/06" 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 8.

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 8 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.

Managing Runoff -

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

Managing Leaching -

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

MORTALITY MANAGEMENT:

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

MORTALITY MANAGEMENT: (cont) Permit #:

Disposal in a landfill may be an option in some locations. Before planning this option, the closest commercial, regional, county, or municipal landfill should be contacted to determine if the landfill has a permit which would allow acceptance of dead animals (swine, sheep, cattle, etc.). Also ask if there are any restrictions on type and volume of animal mortality that will be accepted at the facility. Landfill fees and transport, offloading, and handling procedures should be discussed with landfill managers and documented for reference when needed.

The landfill is not a viable option if the producer does not own or have access to a vehicle capable of transporting mortality quickly in an emergency situation. After a catastrophic die-off is not a good time to find out that a driver and truck to transport mortality will not be available for several weeks **(MAKE ARRANGEMENTS NOW, NOT AFTER THE ANIMALS ARE DEAD).**

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

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

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

Air Quality:

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

Waste Utilization and Nutrient Management Plan

EFFLUENT STORAGE AND TESTING: Permit #:

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

Effluent sampling is needed to get a better idea of the nutrients actually being applied. Effluent 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 effluent be analyzed for percent dry matter, 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 #:

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 #:

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:	**Jim C. Wyrick**	Date:	**2/5/2025**
Plan Approved by:		Date:	
Producer Signature:		Date:	

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 #:

Avg. Number of Animals	Type of Waste
999	**Dairy Lagoon**

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* **271**

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

*From engineering design.

Estimated Nutrient Availabilty

Effluent

	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch		No Solids used	
N	**2,950**	**0.40**	**10.9**	**		**
P2O5	**14,075**	**1.91**	**51.9**			
K2O	**54,137**	**7.35**	**199.6**			

**** Effluent Values Based on Analysis dated: December 1, 2023**

**** Solids Values Based on Analysis**

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	1.5 Times Annual Crop P Requirement [3/]	1.5 Times Annual Crop P Requirement [3/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement
Very High	1.0 Times Annual Crop P Requirement [3/]	1.0 Times Annual Crop P Requirement [3/]	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement

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

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

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

Footnotes Applicable to both Tables

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

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

3/ Not to exceed the annual nitrogen requirement rate.

4/ Not to exceed the annual nitrogen removal rate.

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

Waste Utilization and Nutrient Management Plan

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

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	41.0	Silage - Corn21-25T;SG Silage-8-9T H	NMP	Default	345	136	291
2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318
3	26.0	Coastal Hay 4 cut, SG mod graze M	NMP	Default	357	108	318
4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	NMP	Default	345	136	291
5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	NUP	Default	345	136	291
6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	NUP	Default	357	108	318
7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318
8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	NMP	Default	345	136	291
9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318

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 Effluent Application Per Field Permit #:

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)
271	1	41.0		Silage - Corn21-25T;SG Silage-8-9T H	174	233	A	4.5	185
Source:	2	40.0		Coastal Hay 4 cut, SG mod graze VL - L	106	2672	A	51.5	2060
	3	26.0		Coastal Hay 4 cut, SG mod graze M	44	350	A	6.7	174
	4	90.0		Silage - Corn21-25T;SG Silage-8-9T M	122	310	A	6	540
Dairy Lagoon	5	46.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	235	1646	A	31.7	1458
	6	28.0		Coastal Hay 4 cut, SG mod graze VL - L	311	1704	A	32.8	918
	7	126.0		Coastal Hay 4 cut, SG mod graze VL - L	127	2672	A	51.5	6489
	8	160.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	61	2123	A	40.9	6544
	9	80.0		Coastal Hay 4 cut, SG mod graze VL - L	94	2672	A	51.5	4120

Total Effluent Application Acres

637

Maximum Effluent Application Allowable On-Site (ac in)

22488

Adequate

Effluent to be used Off-Site (ac in)

0

End of Table 4

Waste Utilization and Nutrient Management Plan

Table 4 - Maximum Effluent Application Per Field Permit #:

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)
271	1	41.0		Silage - Corn21-25T;SG Silage-8-9T H	174	233	A	4.5	185
Source:	2	40.0		Coastal Hay 4 cut, SG mod graze VL - L	106	2672	A	51.5	2060
	3	26.0		Coastal Hay 4 cut, SG mod graze M	44	350	A	6.7	174
	4	90.0		Silage - Corn21-25T;SG Silage-8-9T M	122	310	A	6	540
Dairy Lagoon	5	46.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	235	1646	A	31.7	1458
	6	28.0		Coastal Hay 4 cut, SG mod graze VL - L	311	1704	A	32.8	918
	7	126.0		Coastal Hay 4 cut, SG mod graze VL - L	127	2672	A	51.5	6489
	8	160.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	61	2123	A	40.9	6544
	9	80.0		Coastal Hay 4 cut, SG mod graze VL - L	94	2672	A	51.5	4120

Total Effluent Application Acres

637

Maximum Effluent Application Allowable On-Site (ac in)

22488

Adequate

Effluent to be used Off-Site (ac in)

0

End of Table 4

Waste Utilization and Nutrient Management Plan

Table 6 - Planned Effluent Application Rates Permit #:

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	41.0		Silage - Corn21-25T;SG Silage-8-9T H	174	A	4.5	**2.0**	0.1	4
2	40.0		Coastal Hay 4 cut, SG mod graze VL - L	106	A	51.5	**1.0**	0.52	21
3	26.0		Coastal Hay 4 cut, SG mod graze M	44	A	6.7	**1.0**	0.07	2
4	90.0		Silage - Corn21-25T;SG Silage-8-9T M	122	A	6	**2.0**	0.12	11
5	46.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	235	A	31.7	**2.0**	0.63	29
6	28.0		Coastal Hay 4 cut, SG mod graze VL - L	311	A	32.8	**1.0**	0.33	9
7	126.0		Coastal Hay 4 cut, SG mod graze VL - L	127	A	51.5	**1.0**	0.52	66
8	160.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	61	A	40.9	**2.0**	0.82	131
9	80.0		Coastal Hay 4 cut, SG mod graze VL - L	94	A	51.5	**1.0**	0.52	
Acres	**637.0**					**Will the planned application rates use all of the Effluent?**			**272**
									YES

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #:

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	1	5	18	49	234	145	0
2	6	27	103	560	2673	270	0
3	1	3	13	73	348	370	0
4	1	6	24	65	311	205	0
5	7	33	127	345	1645	0	0
6	4	17	66	357	1702	155	0
7	6	27	103	560	2673	190	0
8	9	42	163	445	2123	15	0
9	6	27	103	560	2673	70	0

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #:

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	1	5	18	49	234	145	0
2	6	27	103	560	2673	270	0
3	1	3	13	73	348	370	0
4	1	6	24	65	311	205	0
5	7	33	127	345	1645	0	0
6	4	17	66	357	1702	155	0
7	6	27	103	560	2673	190	0
8	9	42	163	445	2123	15	0
9	6	27	103	560	2673	70	0

Waste Utilization and Nutrient Management Plan

Table 9 - Non Application Areas by Field Permit #:

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

LMU / Field #	**FS** Acres	**FB** Acres	**RFB** Acres	**OLEA** Acres	**Total Excluded**
1	4.0	0.0	0.0		4.0
2	5.0	0.0	0.0		5.0
3	2.0	0.0	0.0		2.0
4	7.0	0.0	0.0		7.0
5	10.0	0.0	0.0		10.0
6	9.0	0.0	0.0		9.0
7	20.0	0.0	0.0		20.0
8	15.0	0.0	0.0		15.0
9	8.0	0.0	0.0		8.0
Totals	80.0	0.0	0.0	0.0	80.0

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

See Application Map for location of buffers

Total 590-633 application acres: 637.0

Total 590-633 Field Acres: 717.0

Waste Utilization and Nutrient Management Data Entries

General Data

Date :	2/5/2025
Farmer Name :	Hilltop Jersey Farm
County in which the Land is located :	Henderson
Type of Waste Plan :	Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients? Yes or No :	No
Is any field PERMITTED by TCEQ? Yes or No :	Yes
Permit # :	

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year :	2024
Are you receiving waste from another producer?	No
Number of animals :	999
Approximate Weight :	960
Days per year in confinement :	24
Hours per day confined :	365
***ACRE FEET* of effluent to be irrigated* :**	22.6
Estimated annual gallons of effluent to be irrigated/applied annually :	7364164.8
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)* :	0
Is this the first Year of the AFO-CAFO Operation? :	No

Analysis Information

Effluent Information

Date of Analysis:	12/1/2023
Manure Source:	Dairy Lagoon
Nitrogen % From Analysis:	0.006
Phosphorus % From Analysis:	0.01
Potassium % From Analysis:	0.0734
Moisture % From Analysis:	97

Manure / Solids Information

Date of Analysis:	
Manure Source:	
Nitrogen % From Analysis:	
Phosphorus % From Analysis:	
Potassium % From Analysis:	
Moisture % From Analysis:	
What will be Applied to Fields on this Farm?	Effluent Only
Is this Farm part of an AFO-CAFO?	No

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

Printed on: 2/5/25 12:59 PM

Field and Buffer Entries

Permit #:

Printed on: 2/5/25 12:59 PM

Plan is based on: 590 -633 Plan V 4.0_5

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	45	4				4.0	41.0	
2	45	5				5.0	40.0	
3	28	2				2.0	26.0	
4	97	7				7.0	90.0	
5	56	10				10.0	46.0	
6	37	9				9.0	28.0	
7	146	20				20.0	126.0	
8	175	15				15.0	160.0	
9	88	8				8.0	80.0	

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 2/5/25 12:59 PM Plan is based on: 590 -633 Plan V 4.0_5 Permit #:

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)
26	174	135			1	41.0	Silage - Corn21-25T;SG Silage-8-9T H	E	N				
4	106	60			2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
5	44	51			3	26.0	Coastal Hay 4 cut, SG mod graze M	E	N				
12	122	49			4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	E	N				
81	235	215			5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	E	N				
16	311	190			6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
41	127	129			7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
20	61	115			8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	E	N				
10	94	231			9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				

Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit #:

7364165	Gallons of Effluent to be used annually				Will the planned rates use all of the effluent?				Yes
271	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	41.0	Silage - Corn21-25T;SG Silage-8-9T H	174	155	Annual	4.5	2.0	0.09	4
2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	106	175	Annual	51.5	1.0	0.52	21
3	26.0	Coastal Hay 4 cut, SG mod graze M	44	175	Annual	6.7	1.0	0.07	2
4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	122	155	Annual	6	2.0	0.12	11
5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	235	155	Annual	31.7	2.0	0.63	29
6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	311	175	Annual	32.8	1.0	0.33	9
7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	127	175	Annual	51.5	1.0	0.52	66
8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	61	155	Annual	40.9	2.0	0.82	131
9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	94	175	Annual	51.5	1.0	0.52	42

Total Effluent This Page: 314

Printed on: 2/5/25 12:59 PM

Plan is based on: 590 -633 Plan V 4.0_5

Available Water Capacity Entries

Printed on: 2/5/25 12:59 PM Plan is based on: 590 -633 Plan V 4.0_5 Permit #:

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	clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72
2	clay loam	0	4	0.11	0.16	4	16	0.11	0.16	16				0				2.16
3	clay	0	10	0.11	0.18	10	24	0.09	0.14	24				0				3.06
4	clay loam	0	7	0.11	0.16	7	16	0.11	0.16	16				0				2.16
5	clay loam	0	4	0.06	0.09	4	24	0.05	0.09	24				0				1.70
6	clay loam	0	7	0.11	0.16	7	16	0.11	0.16	16				0				2.16
7	sandy clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72
8	fine sand	0	4	0.06	0.09	4	24	0.05	0.09	24								1.70
9	clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72

PI Index by Field

Printed on: 2/5/25 12:57 PM

This plan is based on: 590 -633 Plan V 4.0_2

Permit #:

Client Name: Hilltop Jersey Farm

Planner: Jim C. Wyrick

Date: 2/5/2025

Location: Henderson

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 - Corn21-25T;SG Silage-8-9T	3.2%	39	8	4	0.75	4	0.5	5	1	0	23.25	High	11/14/23
2	Coastal Hay 4 cut, SG mod graze	2.5%	64	2	0	0.75	0	0.5	0	1	1.5	5.75	Very Low - Low	11/14/23
3	Coastal Hay 4 cut, SG mod graze	1.0%	85	8	4	0.75	4	0.5	0	2	1.5	20.75	Medium	11/14/23
4	Silage - Corn21-25T;SG Silage-8-9T	2.3%	85	8	0	0.75	0	0.5	2.5	2	1.5	15.25	Medium	11/14/23
5	Silage - Corn21-25T;SG Silage-8-9T	2.5%	61	8	0	0.75	0	0.5	0	2	0	11.25	Very Low - Low	11/14/23
6	Coastal Hay 4 cut, SG mod graze	3.1%	61	8	0	0.75	0	0.5	0	1	0	10.25	Very Low - Low	11/14/23
7	Coastal Hay 4 cut, SG mod graze	4.0%	61	4	0	1.5	0	0.5	5	1	0	12	Very Low - Low	11/14/23
8	Silage - Corn21-25T;SG Silage-8-9T	3.2%	61	8	0	1.5	0	0.5	0	1	0	11	Very Low - Low	11/14/23
9	Coastal Hay 4 cut, SG mod graze	3.1%	64	8	0	0.75	0	0.5	0	1	0	10.25	Very Low - Low	11/14/23

Odor Control Plan
for
Hilltop Jersey Farm

Odors from the facility are mainly associated with agricultural operations, including other CAFOs. Odors from CAFO's are not consistently predictable, and may have a periodic impact on nearby residents depending on sources and weather conditions. Odors may be less noticeable during calm days and tend to be strongest during the cleaning of animal buildings and during withdrawal of water from the lagoons and land application. It is the intention of the faculty to limit odors to an absolute minimum.

The following are practices to be used for an Odor Control Plan:

- Pens will be scraped off on as needed basis. Solid waste will be removed as needed to best reduce nuisance odors.

- All dead animals should be removed within 24 hours or will be buried at a minimum depth of three feet in designated area.

- Cleaning of the barns will be done at times consistent with the least nuisance problems.

- Irrigation will be done during daylight hours when wind velocity and humidity are lower. Irrigation will be monitored by an employee or management trained in waste disposal. This training will be accomplished by attending waste management training provided by the Agriculture Extension Service and TCEQ

- All lounging areas around the barn will be maintained so that there is no ponding of liquids.

- Pump retention ponds before the liquid level reaches the 24 hr-25 yr marker.

- The RCS is properly sized using USDA-Natural Resource Conservation Service Waternuter spreadsheet.

- In an effort to reduce air-bound particulate the dairy will add moisture to feed when mixing under windy conditions. Controlling the speed of farm vehicles will reduce dust generated at the facility

- The dairy would urge anyone who lives in the vicinity of the dairy, to notify the management when a perceived problem develops so that the source can be identified immediately.

- Dust when necessary will be controlled by water the area until the dust is controlled.

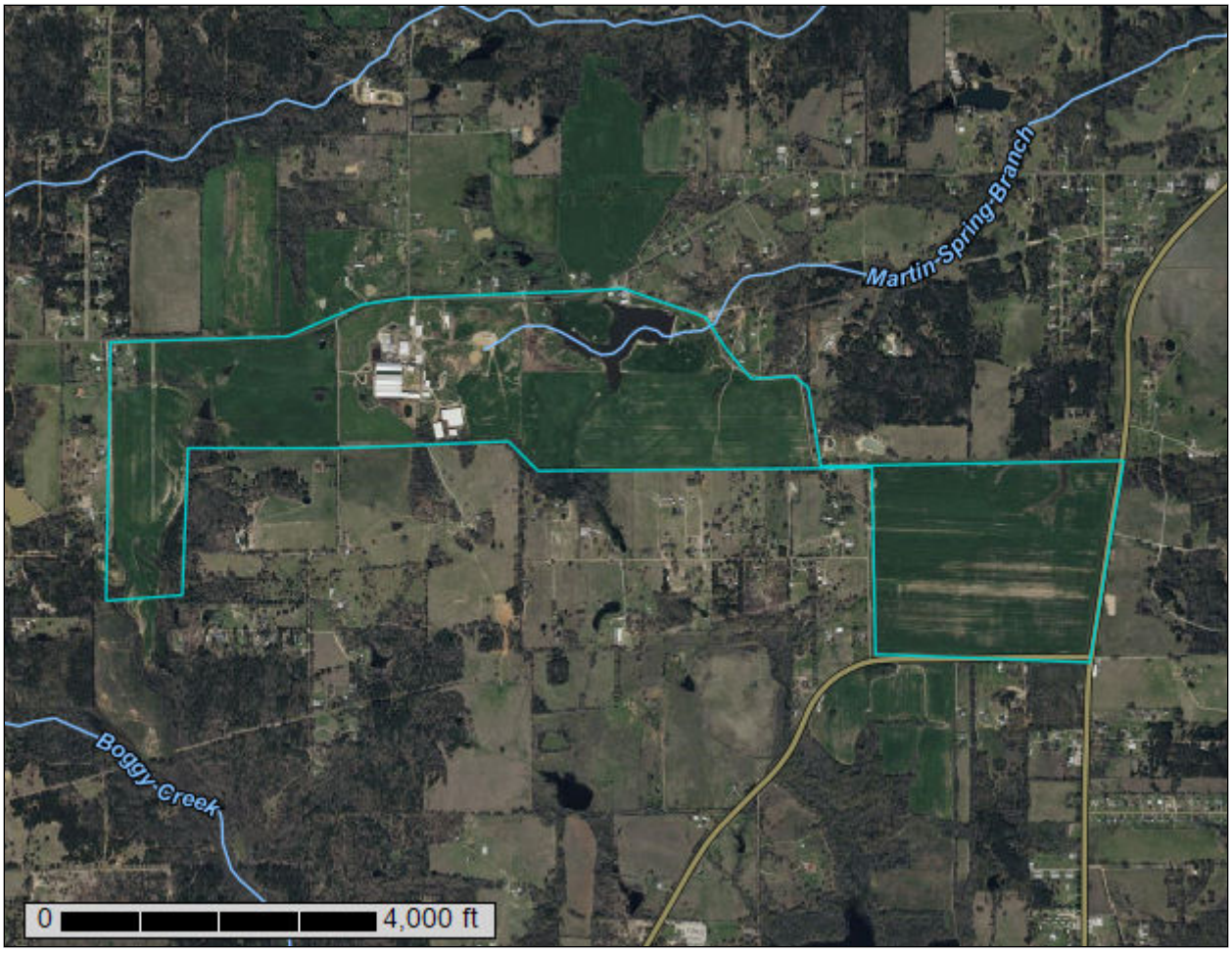
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Henderson County, Texas



December 2, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

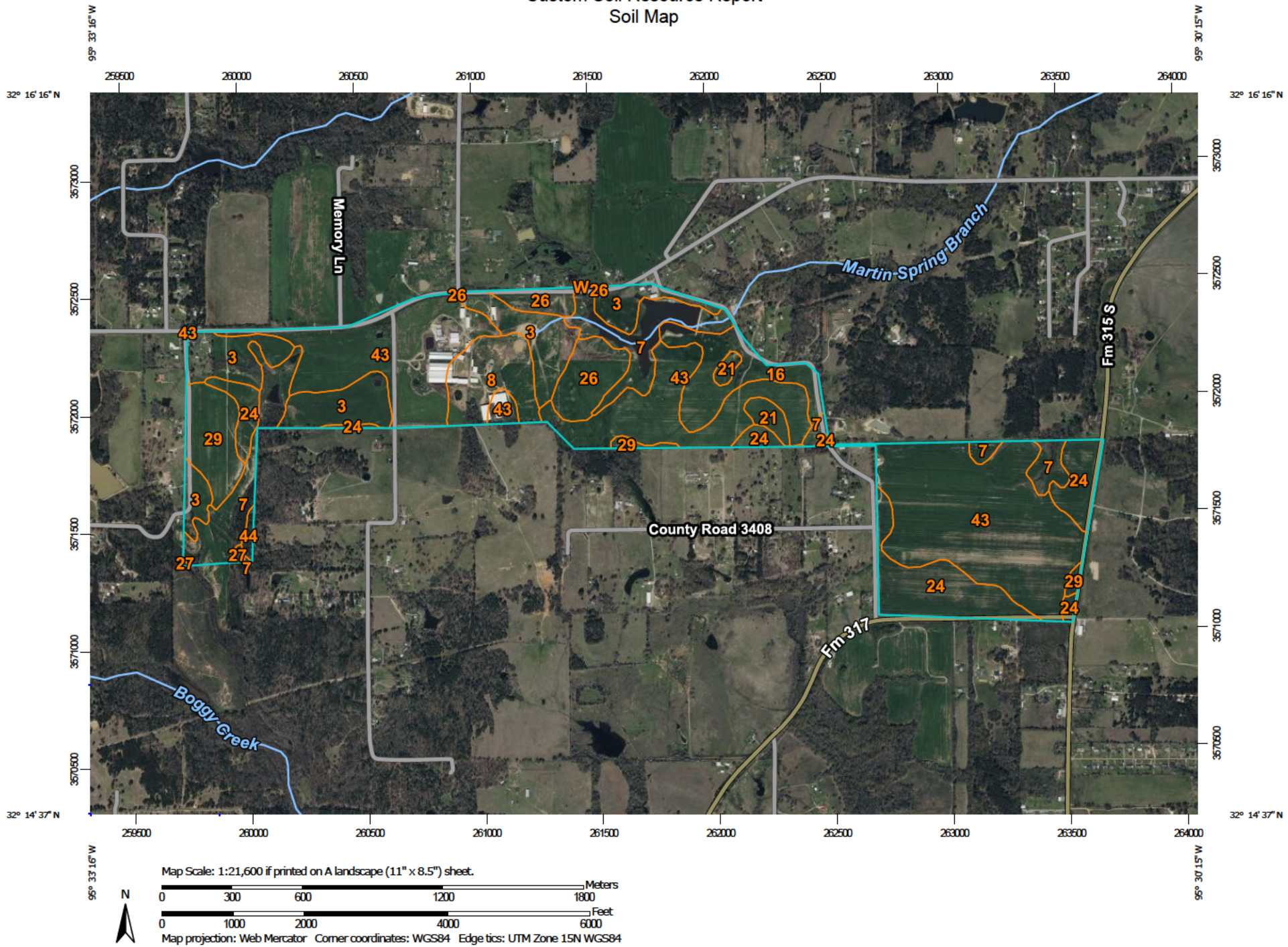
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:21,600 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Henderson County, Texas
Survey Area Data: Version 22, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 19, 2023—Mar 5, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Bernaldo fine sandy loam, 1 to 3 percent slopes	77.3	13.7%
7	Cuthbert fine sandy loam, 8 to 20 percent slopes	66.0	11.7%
8	Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes	28.6	5.1%
16	Freestone fine sandy loam, 1 to 3 percent slopes	29.9	5.3%
21	Kirvin fine sandy loam, 1 to 5 percent slopes	7.6	1.4%
24	Larue loamy fine sand, 1 to 8 percent slopes	60.5	10.7%
26	Lufkin-Raino complex	27.5	4.9%
27	Nahatche loam, 0 to 1 percent slopes, frequently flooded	1.0	0.2%
29	Pickton loamy fine sand, 1 to 8 percent slopes	26.7	4.7%
43	Wolfpen loamy fine sand, 2 to 5 percent slopes	236.6	42.0%
44	Wolfpen loamy fine sand, 5 to 12 percent slopes	1.9	0.3%
W	Water	0.0	0.0%
Totals for Area of Interest		**563.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Henderson County, Texas

3—Bernaldo fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tf44
Elevation: 200 to 720 feet
Mean annual precipitation: 42 to 51 inches
Mean annual air temperature: 54 to 75 degrees F
Frost-free period: 240 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bernaldo and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bernaldo

Setting

Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 4 inches: fine sandy loam
E - 4 to 12 inches: fine sandy loam
Bt - 12 to 47 inches: sandy clay loam
Bt/E - 47 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 42 to 59 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F133BY013TX - Terrace
Hydric soil rating: No

Minor Components

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

Freestone

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

7—Cuthbert fine sandy loam, 8 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2s62z
Elevation: 300 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 230 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Marine deposits

Typical profile

A - 0 to 5 inches: fine sandy loam
E - 5 to 10 inches: fine sandy loam

Bt - 10 to 28 inches: clay
Bt/C - 28 to 36 inches: sandy clay loam
C - 36 to 60 inches: clay loam

Properties and qualities

Slope: 8 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Tenaha

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Kirvin

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Redsprings

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Pickton

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes

Map Unit Setting

National map unit symbol: dbkf
Elevation: 400 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 235 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum

Typical profile

H1 - 0 to 4 inches: very gravelly fine sandy loam
H2 - 4 to 24 inches: clay
H3 - 24 to 62 inches: sandy clay loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: 20 to 40 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

16—Freestone fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wg9c
Elevation: 140 to 790 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 62 to 66 degrees F
Frost-free period: 218 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Freestone and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freestone

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 4 inches: fine sandy loam
E - 4 to 11 inches: fine sandy loam
Bt - 11 to 20 inches: sandy clay loam
B/Et1 - 20 to 28 inches: clay loam
B/Et2 - 28 to 44 inches: clay
B't - 44 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

Minor Components

Raino
Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Mounds
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

Woodtell
Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

21—Kirvin fine sandy loam, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2tljs
Elevation: 130 to 640 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition
Kirvin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kirvin

Setting
Landform: Interfluves

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits

Typical profile

A - 0 to 7 inches: fine sandy loam
E - 7 to 12 inches: fine sandy loam
Bt - 12 to 40 inches: clay
BCt - 40 to 51 inches: clay
CBt - 51 to 57 inches: sandy clay loam
C - 57 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Darco

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

Bowie

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY005TX - Loamy Upland
Hydric soil rating: No

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

24—Larue loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: dbjj
Elevation: 350 to 650 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 285 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Larue and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Larue

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 34 inches: loamy fine sand
H2 - 34 to 63 inches: sandy clay loam
H3 - 63 to 67 inches: sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

26—Lufkin-Raino complex

Map Unit Setting

National map unit symbol: dbjl
Elevation: 230 to 500 feet
Mean annual precipitation: 32 to 48 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lufkin and similar soils: 50 percent
Raino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lufkin

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey alluvium of pleistocene age derived from mixed sources

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 44 inches: clay
H3 - 44 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: R087AY003TX - Claypan Savannah
Hydric soil rating: No

Description of Raino

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium of pleistocene age derived from mixed sources

Typical profile

H1 - 0 to 29 inches: loam
H2 - 29 to 35 inches: loam
H3 - 35 to 64 inches: loam
H4 - 64 to 72 inches: clay
H5 - 72 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R087AY003TX - Claypan Savannah
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

27—Nahatche loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2y0v3
Elevation: 100 to 670 feet
Mean annual precipitation: 36 to 45 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 222 to 257 days
Farmland classification: Not prime farmland

Map Unit Composition

Nahatche and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nahatche

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Microfeatures of landform position: Closed depressions
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Stratified loamy alluvium derived from mudstone

Typical profile

A - 0 to 8 inches: loam
Bg - 8 to 52 inches: clay loam
Agb - 52 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Minor Components

Manco
Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: Yes

Gladewater
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, open depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R087BY008TX - Clayey Bottomland
Hydric soil rating: Yes

Hatliff
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Whitesboro
Percent of map unit: 1 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

29—Pickton loamy fine sand, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: dbjp
Elevation: 350 to 600 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 235 to 275 days

Farmland classification: Not prime farmland

Map Unit Composition

Pickton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pickton

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 8 inches: loamy fine sand
H2 - 8 to 50 inches: loamy fine sand
H3 - 50 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

43—Wolfpen loamy fine sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tcnz
Elevation: 210 to 570 feet
Mean annual precipitation: 41 to 51 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 204 to 236 days
Farmland classification: Not prime farmland

Map Unit Composition

Wolfpen and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wolfpen

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy fluviomarine deposits

Typical profile

A - 0 to 6 inches: loamy fine sand
E - 6 to 27 inches: loamy fine sand
Bt - 27 to 55 inches: sandy clay loam
Bt/E - 55 to 70 inches: sandy clay loam
B't - 70 to 80 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.1 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Minor Components

Oakwood

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY005TX - Loamy Upland
Hydric soil rating: No

44—Wolfpen loamy fine sand, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: dbk7
Elevation: 400 to 700 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 64 to 66 degrees F
Frost-free period: 235 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Wolfpen and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wolfpen

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 7 inches: loamy fine sand
H2 - 7 to 24 inches: loamy fine sand
H3 - 24 to 60 inches: sandy clay loam
H4 - 60 to 64 inches: sandy clay loam

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R087BY004TX - Sandy
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

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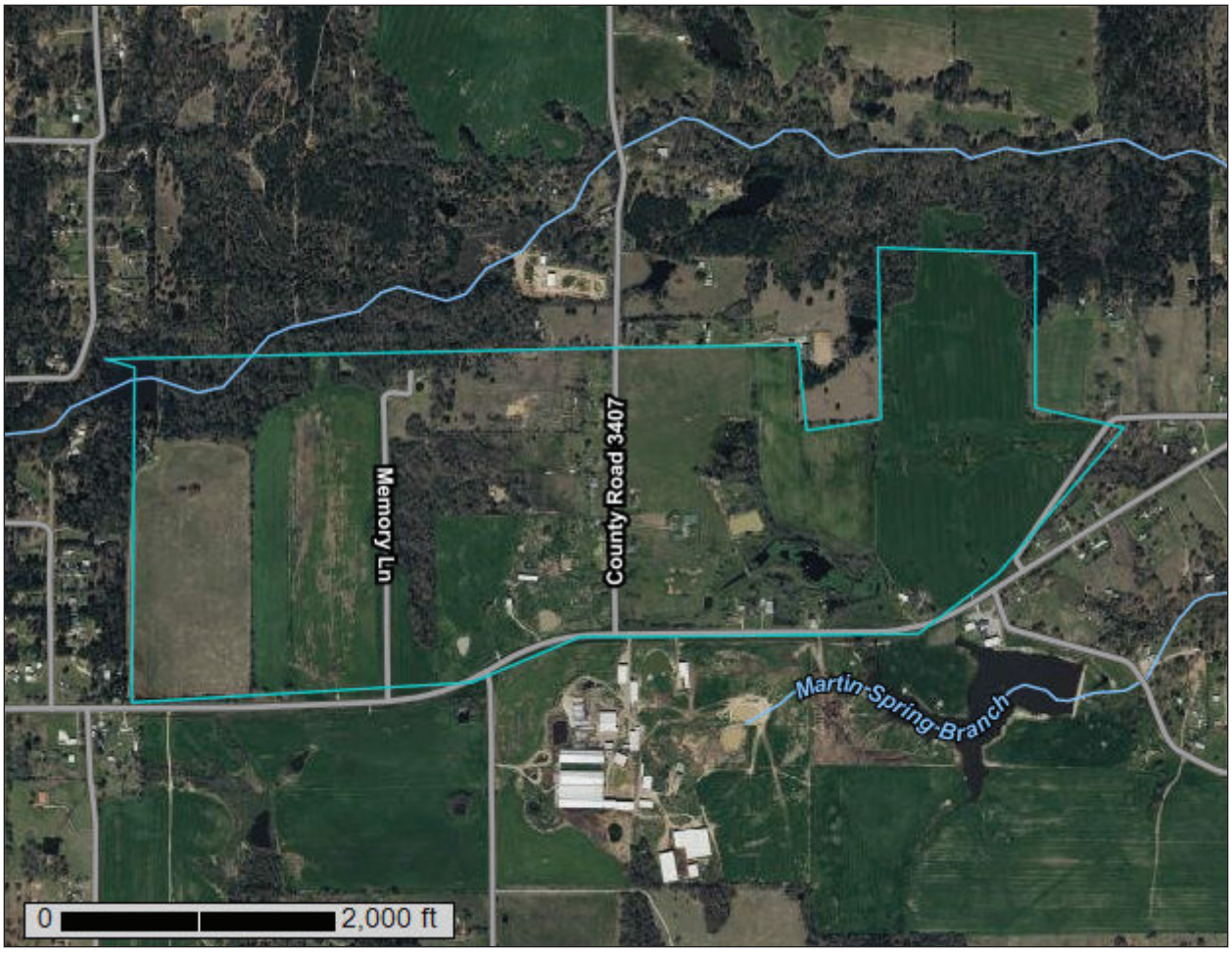
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

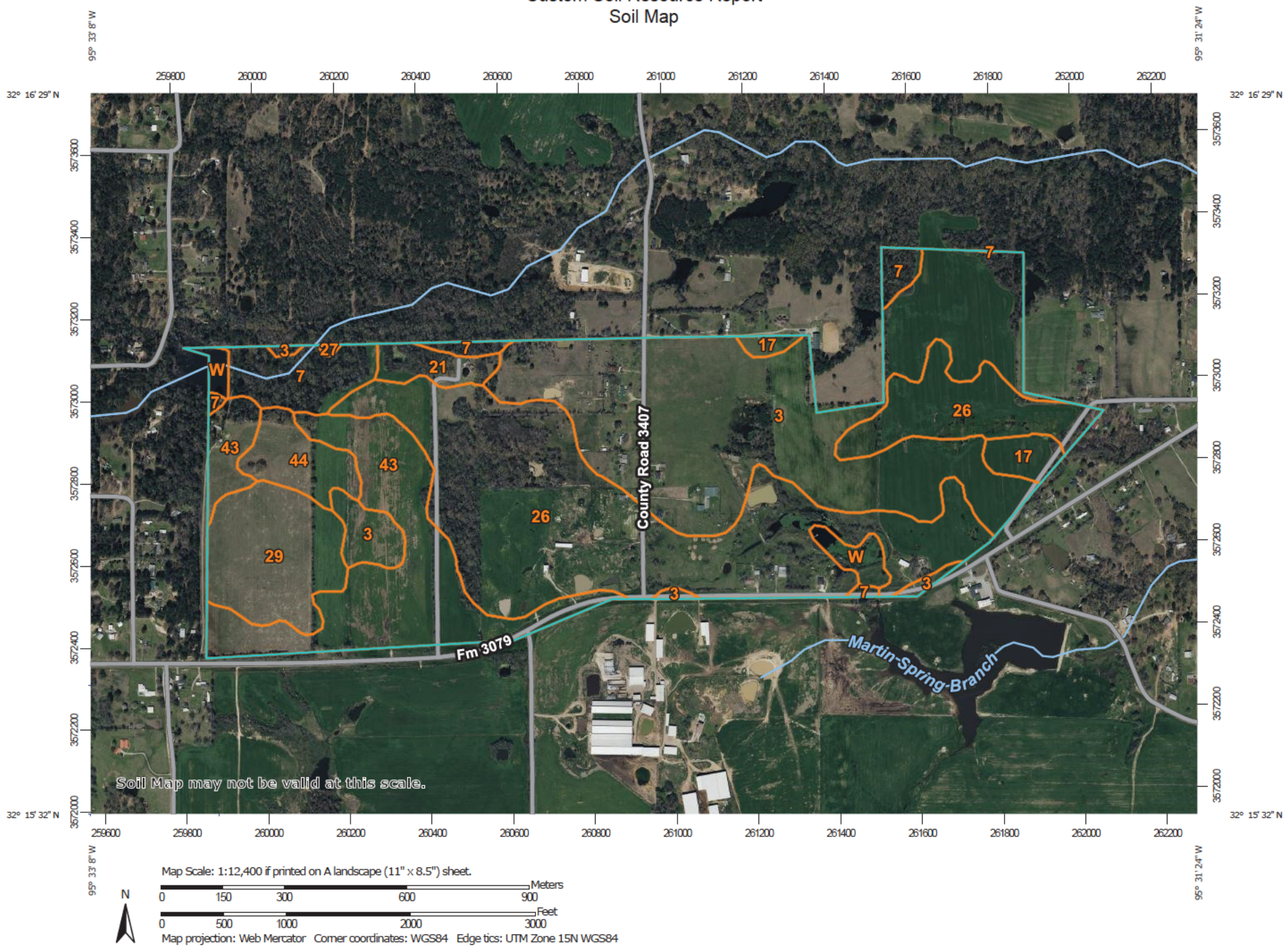
A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Henderson County, Texas



December 2, 2024

Custom Soil Resource Report
Soil Map



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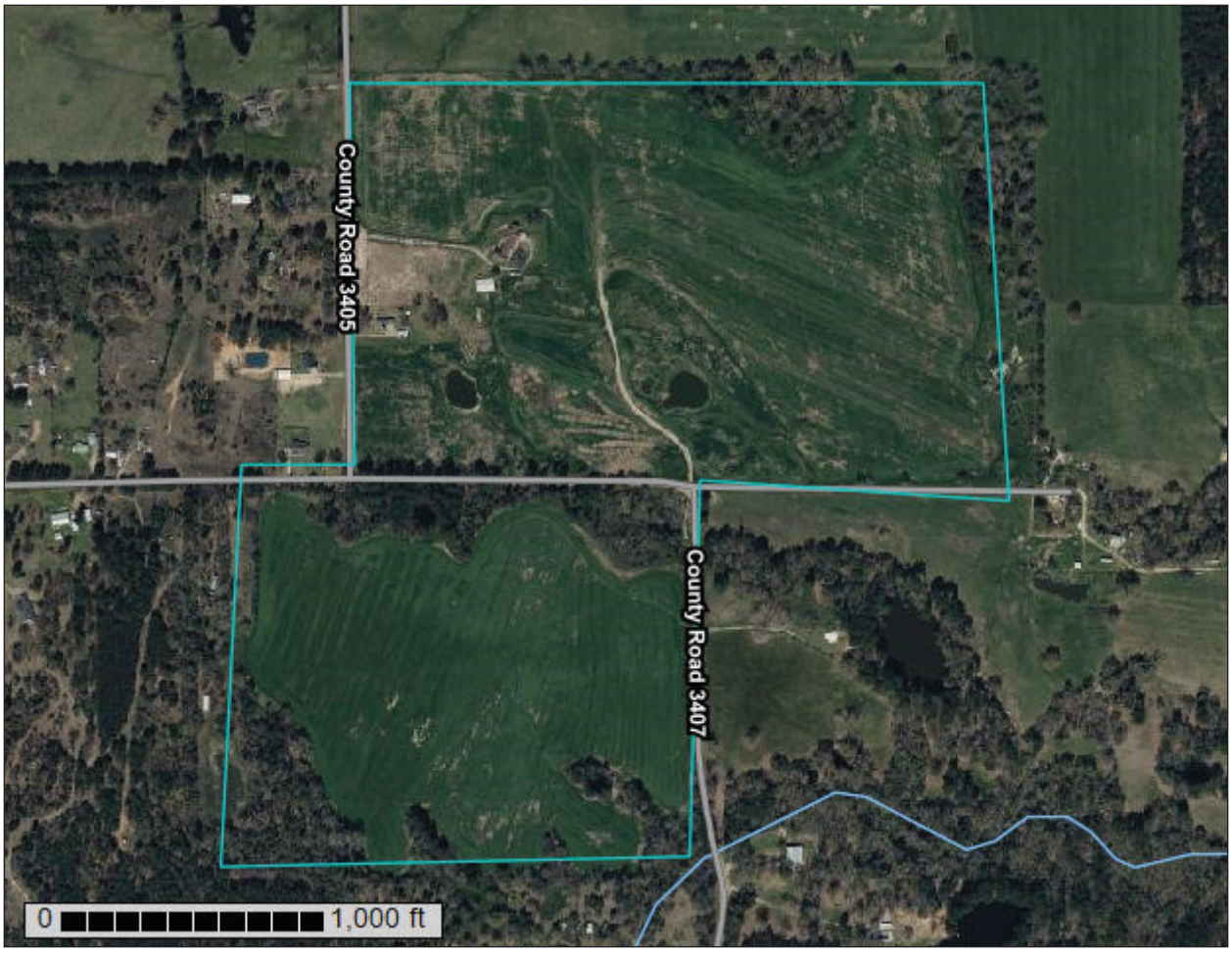
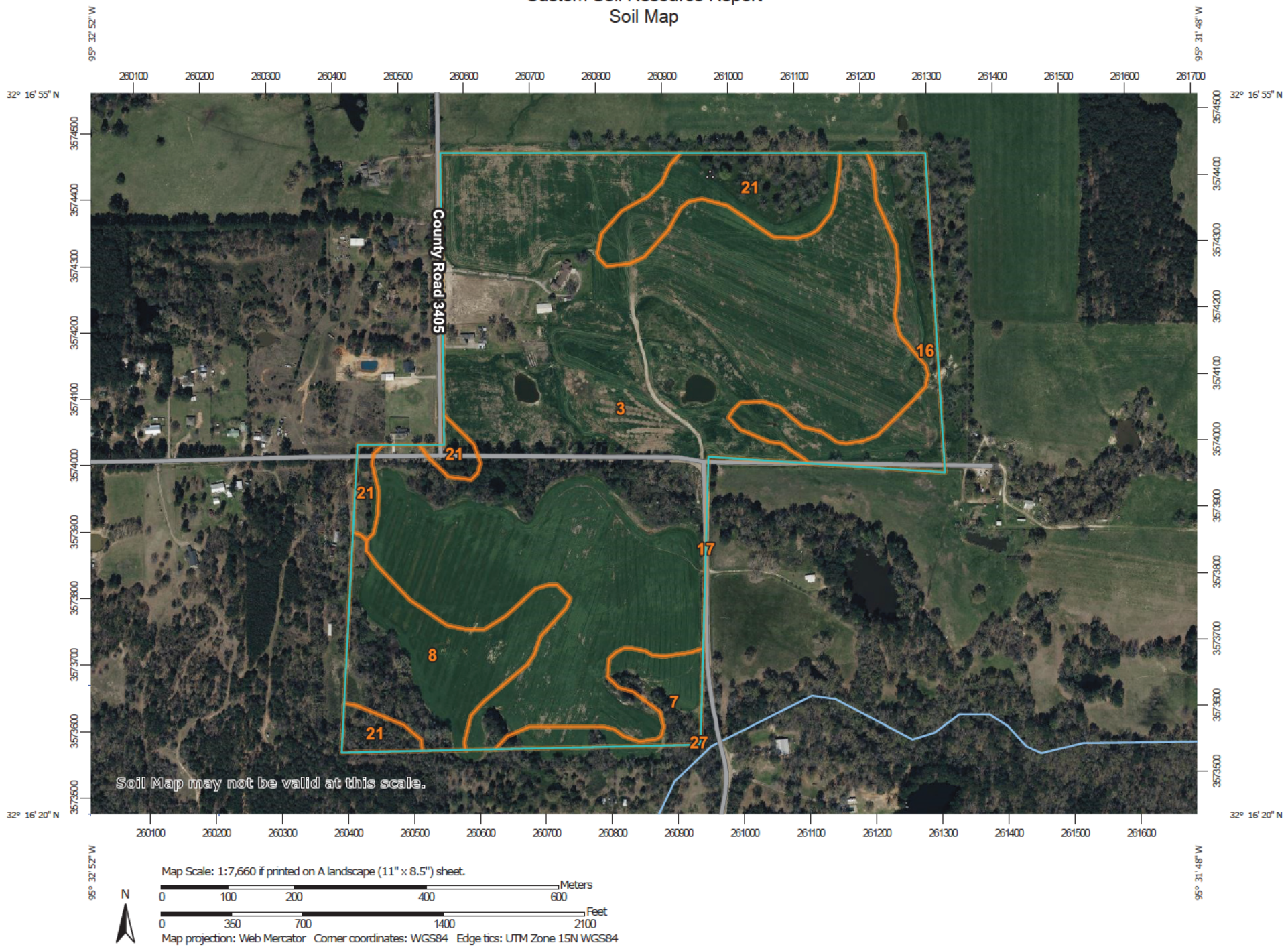
Custom Soil Resource Report for Henderson County, Texas



August 21, 2024

Custom Soil Resource Report
Soil Map



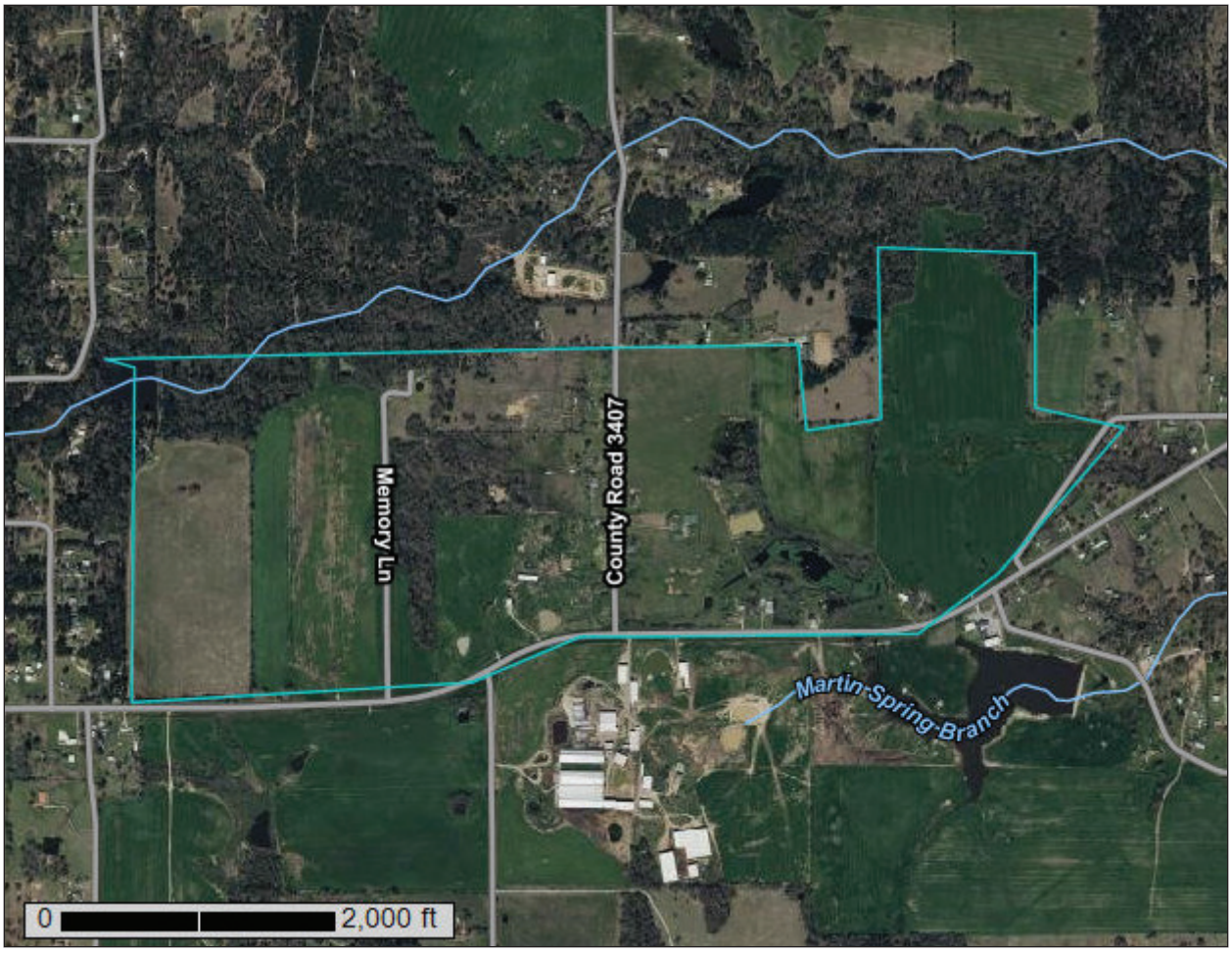
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Henderson County, Texas



December 2, 2024

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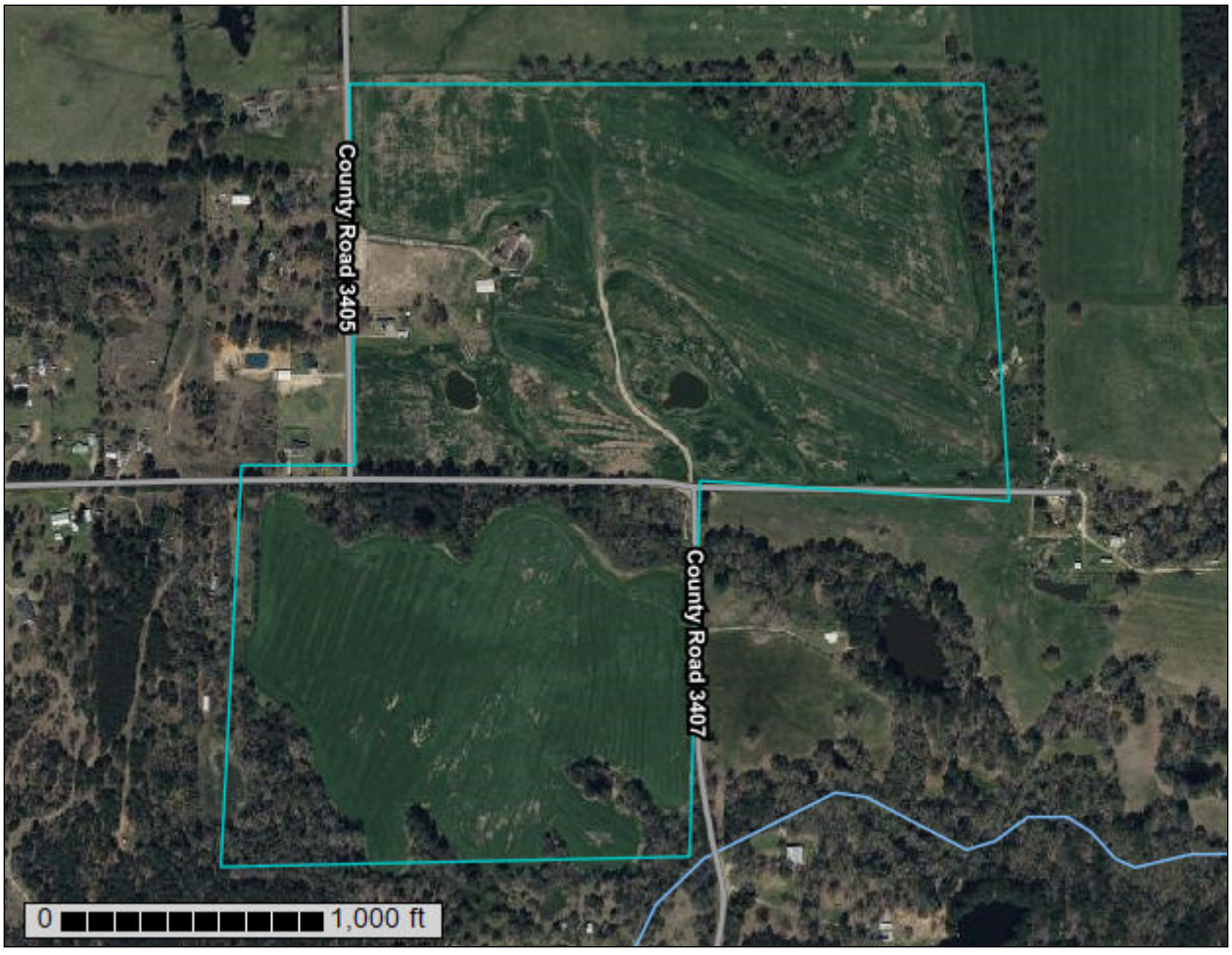

August 21, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

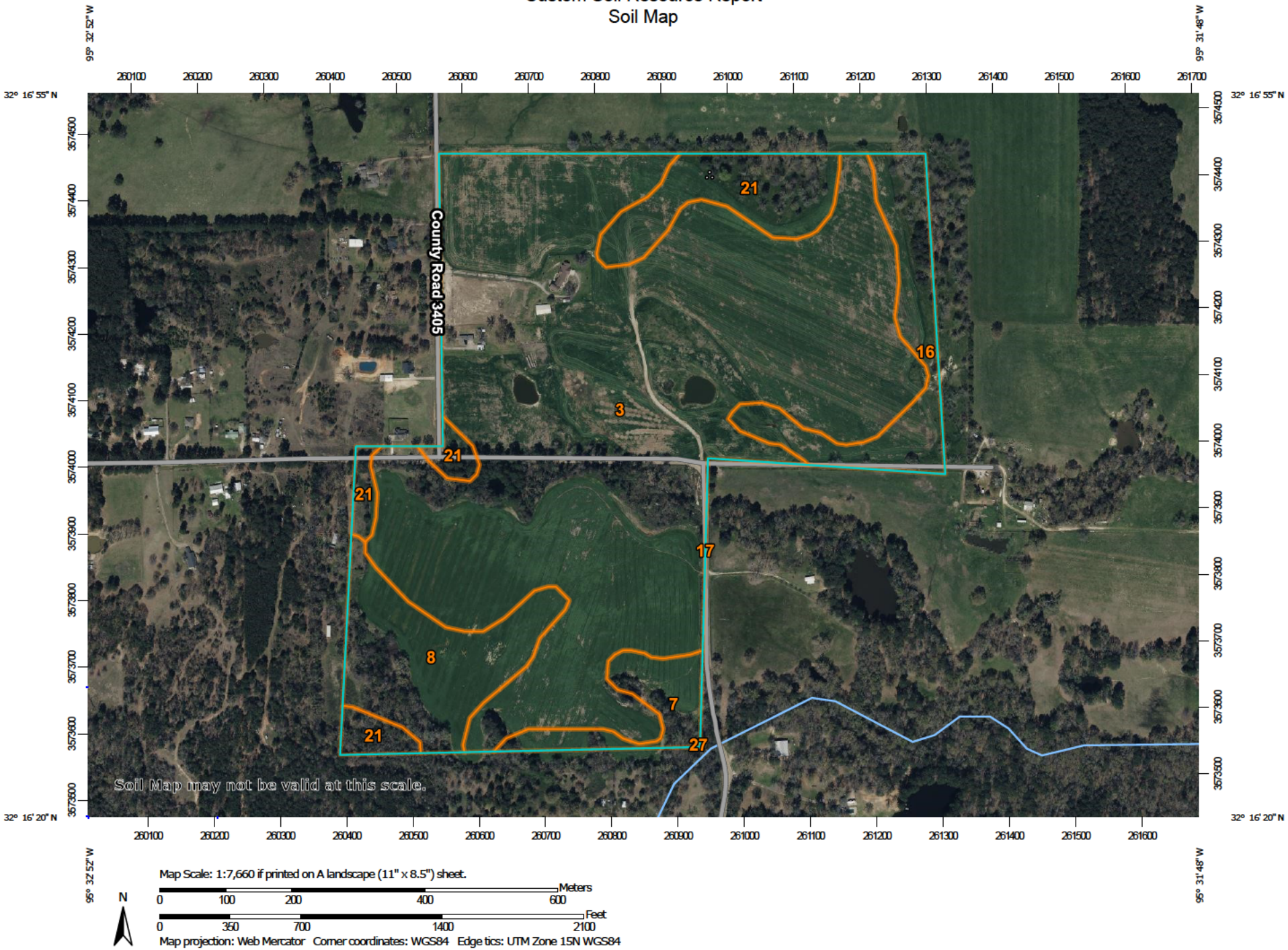
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:7,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Henderson County, Texas
Survey Area Data: Version 21, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 19, 2023—Mar 5, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Bernaldo fine sandy loam, 1 to 3 percent slopes	105.2	72.7%
7	Cuthbert fine sandy loam, 8 to 20 percent slopes	4.8	3.3%
8	Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes	12.8	8.9%
16	Freestone fine sandy loam, 1 to 3 percent slopes	9.8	6.8%
17	Gallime fine sandy loam, 1 to 5 percent slopes	0.0	0.0%
21	Kirvin fine sandy loam, 1 to 5 percent slopes	12.0	8.3%
27	Nahatche loam, 0 to 1 percent slopes, frequently flooded	0.0	0.0%
Totals for Area of Interest		**144.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Henderson County, Texas

3—Bernaldo fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tf44
Elevation: 200 to 720 feet
Mean annual precipitation: 42 to 51 inches
Mean annual air temperature: 54 to 75 degrees F
Frost-free period: 240 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bernaldo and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bernaldo

Setting

Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 4 inches: fine sandy loam
E - 4 to 12 inches: fine sandy loam
Bt - 12 to 47 inches: sandy clay loam
Bt/E - 47 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 42 to 59 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F133BY013TX - Terrace
Hydric soil rating: No

Minor Components

Freestone

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

7—Cuthbert fine sandy loam, 8 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2s62z
Elevation: 300 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 230 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Marine deposits

Typical profile

A - 0 to 5 inches: fine sandy loam
E - 5 to 10 inches: fine sandy loam

Bt - 10 to 28 inches: clay
Bt/C - 28 to 36 inches: sandy clay loam
C - 36 to 60 inches: clay loam

Properties and qualities

Slope: 8 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Redsprings

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Kirvin

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Pickton

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

Tenaha

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes

Map Unit Setting

National map unit symbol: dbkf
Elevation: 400 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 235 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum

Typical profile

H1 - 0 to 4 inches: very gravelly fine sandy loam
H2 - 4 to 24 inches: clay
H3 - 24 to 62 inches: sandy clay loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: 20 to 40 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

16—Freestone fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wg9c
Elevation: 140 to 790 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 62 to 66 degrees F
Frost-free period: 218 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Freestone and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freestone

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 4 inches: fine sandy loam
E - 4 to 11 inches: fine sandy loam
Bt - 11 to 20 inches: sandy clay loam
B/Et1 - 20 to 28 inches: clay loam
B/Et2 - 28 to 44 inches: clay
B't - 44 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

Minor Components

Raino
Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Mounds
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

Woodtell
Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

17—Gallime fine sandy loam, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2sjxn
Elevation: 250 to 550 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 240 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Gallime and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gallime

Setting
Landform: Stream terraces

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 10 inches: fine sandy loam
E - 10 to 28 inches: fine sandy loam
Bt - 28 to 47 inches: sandy clay loam
Bt/E - 47 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 47 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F133BY013TX - Terrace
Hydric soil rating: No

Minor Components

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Bernaldo

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F133BY013TX - Terrace
Hydric soil rating: No

21—Kirvin fine sandy loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tljs
Elevation: 130 to 640 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Kirvin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kirvin

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits

Typical profile

A - 0 to 7 inches: fine sandy loam
E - 7 to 12 inches: fine sandy loam
Bt - 12 to 40 inches: clay
BCt - 40 to 51 inches: clay
CBt - 51 to 57 inches: sandy clay loam
C - 57 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Wolfpen
Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Darco
Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

Bowie
Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY005TX - Loamy Upland
Hydric soil rating: No

27—Nahatche loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting
National map unit symbol: 2y0v3
Elevation: 100 to 670 feet
Mean annual precipitation: 36 to 45 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 222 to 257 days
Farmland classification: Not prime farmland

Map Unit Composition
Nahatche and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nahatche

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Microfeatures of landform position: Closed depressions
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Stratified loamy alluvium derived from mudstone

Typical profile

A - 0 to 8 inches: loam
Bg - 8 to 52 inches: clay loam
Agb - 52 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Minor Components

Manco

Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: Yes

Gladewater

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, open depressions
Down-slope shape: Concave
Across-slope shape: Concave

Ecological site: R087BY008TX - Clayey Bottomland
Hydric soil rating: Yes

Hatliff

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Whitesboro

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Component Legend (Hill Top Dairy)

This report presents general information about the map units and map unit components in the selected area. It shows map unit symbols and names and the components in each map unit. It also shows the percent of the components in the map units, the kind of component, and the slope range of each component.

Report—Component Legend (Hill Top Dairy)

Component Legend–Henderson County, Texas							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
3—Bernaldo fine sandy loam, 1 to 3 percent slopes	22,633						
		90	Bernaldo	Series	1.0	2.0	3.0
7—Cuthbert fine sandy loam, 8 to 20 percent slopes	45,852						
		80	Cuthbert	Series	8.0	14.0	20.0

Component Legend–Henderson County, Texas							
Map unit symbol and name	Map unit acres	Pct. of map unit	Component name	Component kind	Pct. slope		
					Low	RV	High
8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes	8,588						
		100	Cuthbert	Series	12.0	21.0	30.0
16—Freestone fine sandy loam, 1 to 3 percent slopes	26,991						
		85	Freestone	Series	1.0	2.0	3.0
17—Gallime fine sandy loam, 1 to 5 percent slopes	4,706						
		90	Gallime	Series	1.0	3.0	5.0
21—Kirvin fine sandy loam, 1 to 5 percent slopes	6,234						
		85	Kirvin	Series	1.0	3.0	5.0
27—Nahatche loam, 0 to 1 percent slopes, frequently flooded	50,771						
		85	Nahatche	Series	0.0	0.5	1.0

Map Unit Description (Brief) (Hill Top Dairy)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the selected area. The component descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit. A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the associated soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas (components) for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The "Map Unit Description (Brief)" report gives a brief, general description of the soil components that occur in a map unit. Descriptions of nonsoil (miscellaneous areas) and minor map unit components may or may not be included. This description is written by the local soil scientists responsible for the respective soil survey area data. A more detailed description can be generated by the "Map Unit Description" report.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the

Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief) (Hill Top Dairy)

Henderson County, Texas

Map Unit: 8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes

Description Category: PHG

8C - LOAMY UPLAND - Moderately deep to very deep uplands with loamy surfaces and friable loamy subsoils; slopes 0 to 8 percent; medium natural fertility; medium to high water holding capacity with good plant-soil-moisture relationship; medium to high production potential.

Description Category: WSG

4c2 - Clayey texture may cause moderate equipment limitations during wet periods, and erosion may increase with slope. Important commercial tree species include loblolly pine and shortleaf pine. These soils are suited for pines, and the site index for loblolly pine is 70. The yield from an unmanaged stand of loblolly pine over a 50-year period is approximately 130 board feet (Doyle rule) per acre per year. Native species important to wildlife include red oak, post oak, and American beautyberry. High value grasses and forbs used by livestock include pinehill bluestem, big bluestem, and longleaf uniola. Stocking rates depend on canopy density and range from 6-40 acres per animal unit.

Map Unit: 16—Freestone fine sandy loam, 1 to 3 percent slopes

Description Category: PHG

8C - LOAMY UPLAND - Moderately deep to very deep uplands with loamy surfaces and friable loamy subsoils; slopes 0 to 8 percent; medium natural fertility; medium to high water holding capacity with good plant-soil-moisture relationship; medium to high production potential.

Description Category: WSG

3w8 - Seasonally wet periods may cause moderate equipment limitations, seedling mortality, and plant competition. Important commercial tree species include loblolly pine, shortleaf pine, water oak, and sweetgum. These soils are suited for pine and hardwoods, and the site index for loblolly pine, water oak, and sweetgum is 80. The yield from an unmanaged stand of loblolly pine over a 50-year period is approximately 230 board feet (Doyle rule) or 120 for sweetgum per acre per year. Native species important to wildlife include water oak, green ash, yaupon, and Alabama supplejack. High value grasses and forbs used by livestock include pinehill bluestemr, beaked panicum, longleaf uniola, wildrye, switchcane, and switchgrass. Stocking rate depend on canopy density and range from 6-50 acres per animal unit.

Map Unit: 27—Nahatche loam, 0 to 1 percent slopes, frequently flooded

Description Category: PHG

2A - LOAMY BOTTOMLAND - Deep and very deep, loamy bottomlands with friable loamy subsoils; may overflow; medium natural fertility; medium to high water holding capacity with good plant- soil-moisture relationship; high production potential.

Description Category: WSG

1w9 - Excessive wetness will cause severe equipment limitations, plant competition, and seedling mortality. Important commercial tree species include loblolly pine, water oak, willow oak, sweetgum, and green ash. These soils are suited for pine and hardwoods, and the site index for loblolly pine, sweetgum, and water oak is 100. The yield from an unmanaged stand over a 50-year period is approximately 430 board feet (Doyle rule) for loblolly pine, or 310 for sweetgum per acre per year. Native species important to wildlife include water oak, willow oak, green ash, yaupon, and blackgum. High value grasses and forbs used by livestock include pinehill bluestem, longleaf uniola, beaked panicum, and sedges. Stocking rates depend on canopy density and range from 6-60 acres per animal unit.

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Engineering Properties (Hill Top Dairy)

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These

properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

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

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Henderson County, Texas														
Map unit symbol and soil name	**Pct. of map unit**	**Hydrologic group**	**Depth**	**USDA texture**	**Classification**		**Pct Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
					Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
3—Bernaldo fine sandy loam, 1 to 3 percent slopes														
Bernaldo	90	B	0-4	Fine sandy loam	SC-SM, SC, SM	A-2-4, A-4	0- 0- 0	0- 0- 0	100-100 -100	94-98-100	80-89-96	34-41-47	0-22 -29	NP-7 -9
			4-12	Fine sandy loam, very fine sandy loam, loam	SC-SM, SC, SM	A-2-4, A-4	0- 0- 0	0- 0- 0	100-100 -100	95-98-100	80-89-97	34-41-48	0-21 -27	NP-7 -9
			12-47	Sandy clay loam, loam, clay loam	CL, SC	A-6	0- 0- 0	0- 0- 0	95-98-100	89-96-100	83-95-100	40-47-55	28-32 -39	12-15-21
			47-80	Sandy clay loam, fine sandy loam, loam	CL, SC	A-6	0- 0- 0	0- 0- 0	100-100 -100	95-97-100	88-95-100	42-46-54	28-29 -39	12-13-21

Engineering Properties–Henderson County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
7—Cuthbert fine sandy loam, 8 to 20 percent slopes														
Cuthbert	80	C	0-5	Fine sandy loam	CL, SC-SM, SM	A-1-b, A-4	0- 0- 0	0- 0- 26	68-100-100	58-100-100	49-92-99	21-45-55	0-22 -29	NP-5 -9
			5-10	Fine sandy loam	CL, SC-SM, SM	A-1-b, A-4	0- 0- 0	0- 0- 26	68-100-100	58-100-100	49-92-99	21-45-55	0-21 -27	NP-5 -9
			10-28	Clay, sandy clay, sandy clay loam	GC, CH	A-7-6, A-6	0- 0- 0	0- 0- 26	69-100-100	59-100-100	49-92-100	39-80-90	38-56 -69	21-34-44
			28-36	Clay loam, fine sandy loam, sandy clay loam	CL, CH, SC	A-2-6, A-7-6	0- 0- 0	0- 0- 24	72-100-100	64-100-100	51-87-98	28-54-66	28-43 -49	12-24-28
			36-60	Stratified clay, stratified fine sandy loam, clay loam	CL, CH, SC	A-7-6, A-6	0- 0- 0	0- 0- 23	72-100-100	65-100-100	56-94-100	42-76-85	28-37 -53	12-19-32
8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes														
Cuthbert	100	C	0-4	Very gravelly fine sandy loam	GM	A-2-4, A-1-b, A-4	0- 1- 1	0- 3- 5	40-50-60	35-43-50	20-33-45	16-28-40	0-13 -25	NP-2 -4
			4-24	Clay, sandy clay, sandy clay loam	CH, SC	A-7-6, A-6	0- 0- 0	0- 1- 1	85-93-100	75-88-100	65-83-100	45-72-98	37-51 -64	19-30-40
			24-62	Sandy clay loam	CL, SC-SM	A-2-4, A-7-6, A-6	0- 0- 0	0- 2- 3	85-93-100	80-90-100	75-88-100	28-56-84	21-33 -45	7-17-26

Engineering Properties–Henderson County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
16—Freestone fine sandy loam, 1 to 3 percent slopes														
Freestone	85	C/D	0-4	Fine sandy loam	SC-SM, SM	A-4	0- 0- 0	0- 0- 0	95-98-100	90-97-100	78-89-95	39-47-51	16-21-23	NP-4 -5
			4-11	Fine sandy loam	SC-SM, SM	A-4	0- 0- 0	0- 0- 0	95-98-100	90-97-100	78-89-97	39-47-53	16-21-25	NP-4 -7
			11-20	Sandy clay loam	CL	A-6	0- 0- 0	0- 0- 0	95-98-100	90-95-100	69-83-90	42-56-61	30-40-43	11-19-21
			20-28	Clay loam	CL	A-6	0- 0- 0	0- 0- 0	95-98-100	89-94-100	79-85-99	59-63-77	36-37-46	16-17-24
			28-44	Clay	CH	A-7-6	0- 0- 0	0- 0- 0	95-98-100	89-94-100	69-89-97	58-78-85	48-64-66	25-37-39
			44-80	Clay	CH	A-7-6	0- 0- 0	0- 0- 0	98-98-100	96-96-100	80-87-98	66-73-84	48-54-62	25-30-36
17—Gallime fine sandy loam, 1 to 5 percent slopes														
Gallime	90	B	0-10	Fine sandy loam	CL, SC-SM, SC	A-2-4, A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	81-93-100	31-41-61	22-28-34	6-9 -13
			10-28	Fine sandy loam, very fine sandy loam, loam	SC-SM, SC	A-2-4, A-4, A-6	0- 0- 0	0- 0- 0	98-99-100	96-98-100	84-91-98	34-40-46	21-26-32	6-9 -13
			28-47	Sandy clay loam, clay loam, loam	CL, SC	A-7-6, A-6	0- 0- 0	0- 0- 0	96-98-100	93-96-100	84-96-100	48-58-69	28-37-45	12-18-24
			47-80	Sandy clay loam, clay loam, loam	CL, SC	A-7-6, A-6	0- 0- 0	0- 0- 0	95-98-100	90-96-100	84-96-100	48-61-71	28-37-45	12-18-24

Engineering Properties–Henderson County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
21—Kirvin fine sandy loam, 1 to 5 percent slopes														
Kirvin	85	C	0-7	Fine sandy loam	SC, SM	A-2-4, A-4, A-6	0- 0- 0	0- 0- 0	94-96-100	89-92-100	77-86-98	35-41-49	17-29-35	1-9 -12
			7-12	Fine sandy loam	SC, SM	A-2-4, A-4, A-6	0- 0- 0	0- 0- 0	95-96-100	89-93-100	78-87-98	35-41-49	16-27-33	1-9 -12
			12-40	Clay, sandy clay, clay loam	CL, CH	A-7-6	0- 0- 0	0- 1- 1	94-96-100	83-90-100	69-83-100	57-72-92	43-56-68	25-34-43
			40-51	Sandy clay loam, clay, clay loam, sandy clay	CL, CH	A-7-6, A-6	0- 0- 0	0- 1- 1	94-96-100	83-90-100	67-83-100	54-72-90	37-56-68	19-34-43
			51-57	Sandy clay loam, clay loam	CL, SC	A-2-6, A-7-6, A-6	0- 0- 0	0- 0- 0	88-91-100	77-83-100	58-72-95	33-42-60	29-36-44	13-19-25
			57-80	Clay, sandy clay, clay loam, sandy clay loam	CL, CH, SC	A-7-6, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-93-100	48-60-72	29-40-53	13-22-32

Engineering Properties–Henderson County, Texas														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
27—Nahatche loam, 0 to 1 percent slopes, frequently flooded														
Nahatche	85	B/D	0-8	Loam	CL	A-7-6, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	51-62-92	30-37-43	12-15-18
			8-52	Stratified loam, silt loam, clay loam, sandy clay loam, loam, stratified clay loam, stratified silt loam, stratified fine sandy loam, fine sandy loam, silty clay loam	CL, SC	A-7-6, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-92-100	45-70-90	28-41-46	12-21-25
			52-80	Clay loam, loam, silty clay loam, stratified loam, silt loam	CL	A-7-6, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-87-100	60-75-90	28-41-46	12-21-25

Physical Soil Properties (Hill Top Dairy)

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)

Physical Soil Properties–Henderson 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*					
3—Bernaldo fine sandy loam, 1 to 3 percent slopes														
Bernaldo	0-4	55-69- 73	15-22- 30	3- 9- 15	1.48-1.49	14.00-42.00	0.12-0.16	0.0-1.0	0.5-2.0	.28	.28	5	3	86
	4-12	55-69- 73	15-22- 30	3- 9- 15	1.58-1.67	14.00-42.00	0.11-0.15	0.0-1.0	0.1-1.0	.37	.37			
	12-47	47-61- 65	15-17- 25	18-22- 30	1.44-1.61	4.00-14.00	0.16-0.20	0.9-1.7	0.1-0.3	.28	.28			
	47-80	47-62- 65	15-17- 25	18-21- 30	1.44-1.61	4.00-14.00	0.16-0.20	0.9-1.8	0.0-0.3	.28	.28			
7—Cuthbert fine sandy loam, 8 to 20 percent slopes														
Cuthbert	0-5	52-65- 80	10-27- 40	2- 9- 15	1.20-1.40	14.00-42.00	0.09-0.12	0.1-0.9	0.5-2.0	.37	.37	3	3	86
	5-10	52-65- 80	10-27- 40	2- 9- 15	1.20-1.40	14.00-42.00	0.09-0.12	0.1-0.9	0.5-1.0	.37	.37			
	10-28	20-23- 55	10-29- 40	30-48- 60	1.24-1.45	1.40-4.00	0.10-0.15	1.4-6.2	0.1-1.0	.20	.20			
	28-36	45-52- 80	0-14- 28	18-35- 39	1.35-1.60	1.40-4.00	0.08-0.14	0.7-4.5	0.1-0.5	.20	.20			
	36-60	20-27- 45	20-45- 50	18-28- 45	1.40-1.65	0.42-4.00	0.08-0.14	0.7-3.7	0.1-0.5	.37	.37			
8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes														
Cuthbert	0-4	-65-	-27-	2- 9- 15	1.20-1.40	14.00-42.00	0.07-0.11	0.0-2.9	0.5-2.0	.15	.37	3	8	0
	4-24	-42-	-11-	35-48- 60	1.24-1.45	1.40-4.00	0.10-0.15	3.0-5.9	0.1-1.0	.17	.17			
	24-62	-55-	-17-	20-28- 35	1.40-1.65	0.42-4.00	0.08-0.14	3.0-5.9	0.1-0.5	.24	.24			

Physical Soil Properties–Henderson 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*					
16—Freestone fine sandy loam, 1 to 3 percent slopes														
Freestone	0-4	50-60- 70	20-30- 40	4-10- 12	1.51-1.60	14.00-42.00	0.13-0.17	0.5-2.9	1.0-4.0	.28	.28	5	3	86
	4-11	50-60- 70	20-30- 40	4-10- 14	1.55-1.70	14.00-42.00	0.11-0.15	0.5-2.9	0.3-1.0	.43	.43			
	11-20	45-46- 60	16-22- 28	20-32- 34	1.40-1.60	1.40-4.00	0.15-0.19	2.0-4.0	0.3-0.6	.28	.28			
	20-28	30-40- 45	17-32- 36	27-28- 38	1.37-1.50	1.40-4.00	0.15-0.19	3.0-6.0	0.3-0.6	.37	.37			
	28-44	20-21- 45	7-22- 38	40-58- 60	1.25-1.44	0.42-1.40	0.14-0.18	9.0-14.0	0.3-0.6	.20	.20			
	44-80	20-27- 45	7-25- 32	40-47- 55	1.25-1.45	0.42-1.40	0.15-0.19	6.0-8.9	0.2-0.4	.24	.24			
17—Gallime fine sandy loam, 1 to 5 percent slopes														
Gallime	0-10	42-69- 85	0-16- 48	10-15- 20	1.39-1.48	14.00-42.00	0.11-0.16	0.6-1.5	0.5-2.0	.24	.24	5	3	86
	10-28	42-69- 85	0-16- 48	10-15- 20	1.54-1.61	14.00-42.00	0.11-0.16	0.6-1.4	0.3-1.0	.28	.28			
	28-47	45-53- 65	5-22- 28	18-25- 30	1.53-1.59	4.00-14.00	0.13-0.18	0.8-1.7	0.1-1.0	.32	.32			
	47-80	45-53- 65	5-22- 28	18-25- 30	1.53-1.61	4.00-14.00	0.13-0.18	0.8-1.7	0.1-1.0	.32	.32			

Physical Soil Properties–Henderson 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*					
21—Kirvin fine sandy loam, 1 to 5 percent slopes														
Kirvin	0-7	55-65- 75	18-20- 28	4-15- 19	1.47-1.50	14.00-42.00	0.11-0.15	0.2-1.2	1.0-3.0	.24	.24	4	3	86
	7-12	55-65- 75	18-20- 28	4-15- 19	1.52-1.63	14.00-42.00	0.11-0.15	0.2-1.2	0.5-2.0	.28	.28			
	12-40	20-24- 50	10-29- 35	35-48- 59	1.29-1.61	0.42-1.40	0.13-0.16	2.0-6.0	0.1-1.0	.24	.24			
	40-51	20-24- 50	10-29- 40	28-48- 59	1.29-1.55	0.42-1.40	0.13-0.16	1.3-6.0	0.1-1.0	.24	.24			
	51-57	40-55- 65	10-17- 28	20-28- 35	1.47-1.64	4.00-14.00	0.14-0.18	0.7-2.4	0.1-0.5	.20	.20			
	57-80	30-51- 65	10-18- 28	20-32- 45	1.65-1.73	4.00-14.00	0.10-0.14	0.8-3.9	0.0-0.5	.24	.24			
27—Nahatche loam, 0 to 1 percent slopes, frequently flooded														
Nahatche	0-8	23-38- 49	28-39- 50	18-23- 27	1.10-1.30	4.00-14.00	0.17-0.21	2.0-3.3	0.3-1.0	.37	.37	5	6	48
	8-52	5-35- 55	10-35- 68	18-30- 35	1.20-1.50	4.00-14.00	0.16-0.20	1.9-4.5	0.1-0.8	.32	.32			
	52-80	5-30- 40	25-40- 66	18-30- 35	1.30-1.60	4.00-14.00	0.16-0.20	1.9-4.5	0.1-0.8	.37	.37			

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EAST TEXAS ENVIRONMENTAL SERVICES

ENVIRONMENTAL CONSULTANTS

Executive Director
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Subject: Delegation of Signatories to Reports

Facility/Company/Site Name: HILLTOP JERSEY FARM

Texas General Permit Number: Not issued yet

Dear Executive Director:

This letter serves to designate the following people or positions as authorized personnel for Electronic STEERS signature(s), signing reports, stormwater pollution prevention plans, Pollution Prevention Plans, Core Data Forms, Annual Reporting Forms, Soil Monitoring Report Forms, Discharge Monitoring Report Forms, certifications or other information requested by the Executive Director or required by the general or water quality permit(s), as set forth by 30 TAC §305.128.

Name or Position	Jim C. Wyrick, PG, Environmental Consultant

I understand that this authorization does extend to the STEERS Electronic Signatory Authority but does not extend to the signing of the paper copies of the Notice of Intent, Notice of Change, or Change in Permittee for obtaining coverage under a TCEQ Water Quality or Texas General Permit offered by the TCEQ.

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in 30 TAC §305.44 .

Sincerely,

Signature

Owner
Title

12-6-24
Date

NICO JAAP DEBOER
Printed Name

RELEVANT PROVISIONS

305.128(a) All reports requested by permits and other information requested by the executive director shall be signed by a person described in §305.44(a) of this title (relating to Signatories to Applications) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) the authorization is made in writing by a person described in §305.44(a) of this title (relating to Signatories to Applications);

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity or for environmental matters for the applicant, such as the position of plant manager, operator of a well or well field, environmental manager, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(3) the written authorization is submitted to the executive director.

(b) If an authorization under this section is no longer accurate because of a change in individuals or position, a new authorization satisfying the requirements of this section must be submitted to the executive director prior to or together with any reports, information, or applications to be signed by an authorized representative.

(c) Any person signing a report required by a permit shall make the certification set forth in §305.44(b) of this title (relating to Signatories to Applications).

305.44(a) All applications shall be signed as follows.

(1) For a corporation, the application shall be signed by a responsible corporate officer. For purposes of this paragraph, a responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit or post-closure order applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

(2) For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

(3) For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the EPA).

(b) A person signing an application shall make the following 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 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."

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: 4927	
	Check/Money Order Amount: $350.00	
	Name Printed on Check: Hilltop Jersey Farm	
EPAY	Voucher Number:	
	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:

E. For existing permits:

What is the permit number? Not known

What is the EPA I.D. Number? TX

SECTION 3. FACILITY OWNER (APPLICANT) INFORMATION

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

NICO JAAP DEBOER

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN 601180649

C. What is the contact information for the owner?

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 601180649		RN 103920385

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	9/3/2024

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* *If new Customer, enter previous Customer below:*

NICO JAAP DEBOER

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☒ Sole Proprietorship ☐ Other:

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

13. Independently Owned and Operated? ☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

15. Mailing Address: 19008 FM 3079 CHANDLER TX 75758 7667

City	CHANDLER	State	TX	ZIP	75758	ZIP + 4	7667

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(903) 521-3095		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

HILLTOP JERSEY FARM

23. Street Address of the Regulated Entity: *(No PO Boxes)*	19008 FM 3079							
	City	CHANDLER	**State**	TX	**ZIP**	75758	**ZIP + 4**	7667
24. County	HOPKINS							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**	**Nearest ZIP Code**	
CHANDLER			TX	75758	

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:	32.2635		**28. Longitude (W) In Decimal:**	-95.537716	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
0241			

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

MILK PRODUCTION

34. Mailing Address:	**19008 FM 3079**							
	City	**CHANDLER**	**State**	**TX**	**ZIP**	**75758**	**ZIP + 4**	**7667**

35. E-Mail Address:	**hilltopjersey@gmail.com**

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(903) 855-2748		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☒ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Jim C. Wyrick	**41. Title:**	Consultant

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(903) 521-3095		( ) -	wyrick@suddenlink.net

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	East Texas Environmental Services	**Job Title:**	Consultant
Name *(In Print):*	Jim C, Wyrick	**Phone:**	(903) 243- 400
Signature:	Jim C Wyrick	**Date:**	11/3/2024

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

Phone Number: 903 521 3095 Fax Number:

E-mail Address: hilltopjersey@gmail.com

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:

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

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?

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

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

Mailing Address:

City, State and Zip Code:

Phone Number: Fax Number:

E-mail Address:

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:

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

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: Jim Wyrick

Title: Consultant Credentials: Professional Geoscientist

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr,

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903 243-0400 Fax Number:

E-mail Address: wyrick@suddenlink.net

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: Jim Wyrick

Title: Consultant Credentials: PG

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903-243-0400 Fax Number: na E-mail Address: wyrick@suddenlink.net

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

Permit Contact First and Last Name: NICO JAAP DEBOER

Title: Owner Credentials:

Company Name: HILLTOP JERSEY FARM

Mailing Address: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER, TX 75758 7667

Phone Number: 903 521 3095 Fax Number: _E-mail Address: hilltopjersey@gmail.com

SECTION 7. ANNUAL BILLING CONTACT INFORMATION

Please identify the individual for receiving the annual fee invoices.

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

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

NICO JAAP DEBOER

☐ 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: NICO JAAP DEBOER

B. Landowner of the land management units (LMUs)

Landowner Name: NICO JAAP DEBOER

SECTION 9. PUBLIC NOTICE INFORMATION

A. Individual responsible for publishing the notices in the newspaper

Prefix (Mr., Ms., Miss): Mr. First and Last Name: Jim Wyrick

Title: Consultant Credentials: PG

Company Name: East Texas Environmental Services

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

Phone Number: 903-243-0400 Fax Number: E-mail Address: wyrick@suddenlink.net

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

☐ E-mail:

☐ Fax Number:

☒ Regular Mail:

Mailing Address: 317 Highland Dr.

City, State and Zip Code: Sulphur Springs, TX 75482

C. Contact person to be listed in the notice

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

First and Last Name: NICO JAAP DEBOER

Title: OWNER Credentials:

Company Name: HILLTOP JERSEY FARM

Phone Number: 903 521 3095

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: Henderson County Extension Office

Physical Address of Building: Courthouse, 3rd Floor, Room 300 & 303 100 East Tyler Street

City: Athens, County: Henderson

Phone Number: 903-675-6130

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? Spanish

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: HILLTOP JERSEY FARM

B. If this is an existing permitted site, provide the Regulated Entity Number (RN) issued to this site? RN 103920385

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.

Texas Commission on Environmental Quality

Template and Instructions for the Plain Language Summary for a Concentrated Animal Feeding Operation (CAFO) Permit Application

This template is a guide for developing a plain language summary for a CAFO permit application as required by the TCEQ Public Participation Plan and Language Access Plan. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed site or facility; (2) the expected output of the proposed site or facility; (3) the expected pollutants that may be emitted or discharged by the proposed site or facility; and (4) how the applicant will control those pollutants, so that the proposed or existing CAFO facility will not have an adverse impact on human health or the environment.

Complete the plain language summary templates in English and Spanish below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements.

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, and the alternative language is not Spanish, you must provide a translated copy of the completed English plain language summary in the appropriate alternative language as part of your application package for CAFO Permit Applications.

If you have any questions about this template, contact the TCEQ Water Quality Division at (512) 239-4671.

You must submit this template with any of these applications or forms:

1. CAFO General Permit Notice of Intent Application, for a new or significant expansion (form number TCEQ 20111)

2. Notice of Change, for substantial change (form number TCEQ 20511)

3. CAFO Individual Permit Application for new, renewal, or major amendment (form number TCEQ 000728.)

Plantilla e instrucciones para el resumen en lenguaje sencillo para una solicitud de permiso de operación concentrada de alimentación animal (CAFO, sigla en inglés).

Esta plantilla es una guía para desarrollar un resumen en lenguaje sencillo para una solicitud de permiso CAFO según lo requerido por el Plan de Participación Pública y el Plan de Acceso Lingüístico de TCEQ. Puede modificar la plantilla según sea necesario para describir con precisión su instalación, siempre y cuando el resumen incluya la siguiente información: (1) la función del sitio o instalación propuestos; (2) la producción esperada del sitio o instalación propuestos; (3) los contaminantes esperados que pueden ser emitidos o descargados por el sitio o instalación propuestos; y (4) cómo el solicitante controlará esos contaminantes, de modo que la instalación CAFO propuesta o existente no tenga un impacto adverso en la salud humana o el medio ambiente.

Complete las plantillas de resumen en lenguaje sencillo en inglés y español a continuación para describir su instalación y aplicación en lenguaje sencillo. A continuación se proporcionan instrucciones y ejemplos. Realice cualquier otra edición necesaria para mejorar la legibilidad o la gramática y para cumplir con los requisitos de la regla.

Si el Código de Educación de Texas requiere un programa de educación bilingüe en la escuela primaria o intermedia más cercana a la instalación o instalación propuesta, y el idioma alternativo no es el español, debe proporcionar una copia traducida del resumen completo en inglés en el idioma alternativo apropiado como parte de su paquete de solicitud para las solicitudes de permisos CAFO.

Si tiene alguna pregunta sobre esta plantilla, comuníquese con la División de Calidad del Agua de TCEQ al (512) 239-4671.

Debe enviar esta plantilla con cualquiera de estas solicitudes o formularios:

1. Solicitud de Aviso de Intención de Permiso General de CAFO, para una expansión nueva o significativa (número de formulario TCEQ 20111)
2. Aviso de cambio, para cambios sustanciales (número de formulario TCEQ 20511)
3. Solicitud de Permiso Individual CAFO para una enmienda nueva, renovable o importante (número de formulario TCEQ 000728.)

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: -NICO JAAP DEBOER
2. Enter Customer Number: CN601180649
3. Name of facility: HILLTOP JERSEY FARM
4. Enter Regulated Entity Number: RN103920385
5. Provide your permit Number: NOT ISSUED YET
6. Facility Business: DAIRY MILK PRODUCTION. THIS FACILITY CONFINES 999 HEAD DAIRY CATTLE, OF WHICH 999 HEAD ARE MILKING COWS. THE FACILITY PRODUCTION AREA IS LOCATED 19008 FM 3079 CHANDLER TX 75758 7667. THE DAIRY FACILITY HAS 9 LAND MANAGEMENT UNITS (LMUS) WITH THE FOLLOWING ACREAGE: LMU #1 - 41, LMU # LMU #2 - 40, LMU #3 - 26, LMU #4 - 90, LMU #5 - 46, LMU #6 - 28, LMU #7 - 160, LMU #8 - 160 AND LMU #9 - 80, AND 3 RETENTION CONTROL STRUCTURES (RCSS), AND A CONCRETE SETTLING BASIN. THE RCSS TOTAL REQUIRED CAPACITIES WITHOUT FREEBOARD (ACRE-FEET) ARE RCS #1 - 1.68, RCS #2 - 3.70 AND RCS #3 - 5.28. THERE ARE ONSITE WATER WELLS (WELLS #1 THROUGH #5). THE FACILITY IS LOCATED IN THE DRAINAGE AREA OF THE LAKE PALESTINE IN SEGMENT NO. 0605.
7. Facility Location: 9008 FARM TO MARKET 3079 CHANDLER TX 75758 7667
8. Application Type: IP
9. Description of your request: APPLYING FOR A NEW IP
10. Potential pollutant sources at the facility include (list the pollutant sources): Manure, Wastewater, Dust, lubricants, Feed, Fuel Storage, Medicines, Cleaning Chemicals
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): MANURE WILL BE STORED WITHIN THE DRAINAGE AREA OF RCS #1. WASTEWATER WILL BE STORED IN RCS #1, RCS #2 AND RCS #3 UNTIL PROPERLY IRRIGATED THROUGH A DRAGHOSE SYSTEM IRRIGATION SYSTEMS. MANURE WILL BE HAULED TO THE APPROPRIATE LMUS, OFFSITE, IN ACCORDANCE WITH THE NUTRIENT MANAGEMENT PLAN. RCS #1, RCS #2AND RCS #3 WILL BE DESIGNED TO STORE AND MAINTAIN THE SLUDGE AND 25YR-24HR RAINFALL. ALL OTHER CLEANERS, LUBRICANTS, FUELS AND MEDICINES WILL BE MAINTAINED AND ALL MANUFACTURERS' DIRECTIONS FOLLOWED. DEAD COWS WILL BE BURIED WITHIN 72 HOURSClick or tap here to enter text.

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.

PLANTILLA DE IDIOMA ESPAÑOL PARA SOLICITUDES DE PERMISO CAFO

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Plan de Participación Pública y el Plan de Acceso al Idioma de la TCEQ. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación federal exigible de la solicitud de permiso.

1. Nombre del Solicitante: NICO JAAP DEBOER
2. Introduzca el Número de Cliente: CN601180649
3. Nombre de la Instalación: HILLTOP JERSEY FARM
4. Introduzca el Número de Entidad Regulada: RN103920385.
5. Proporcione su Número de Permiso: AÚN NO EMITIDO
6. Negocio de Instalación: PRODUCCIÓN DE LECHE. ESTA INSTALACIÓN CONFINA 999 CABEZAS DE GANADO LECHERO, DE LAS CUALES 999 SON VACAS DE ORDEÑO. EL ÁREA DE PRODUCCIÓN DE LA INSTALACIÓN ESTÁ UBICADA EN 19008 FM 3079 CHANDLER TX 75758 7667. LA INSTALACIÓN LÁCTEA CUENTA CON 9 UNIDADES DE GESTIÓN DE TIERRAS (LMUS) CON LA SIGUIENTE SUPERFICIE: LMU N.º 1 - 41, LMU N.º 2 - 40, LMU N.º 3 - 26, LMU N.º 4 - 90, LMU N.º 5 - 46, LMU N.º 6 - 28, LMU N.º 7 - 160, LMU N.º 8 - 160 Y LMU N.º 9 - 80, Y 3 ESTRUCTURAS DE CONTROL DE RETENCIÓN (RCSS) Y UN DEPÓSITO DE DESENREDO DE CONCRETO. LAS CAPACIDADES TOTALES REQUERIDAS POR EL RCSS SIN FRANCOBORDO (ACRE-PIES) SON RCS N.° 1: 1,68, RCS N.° 2: 3,70 Y RCS N.° 3: 5,28. HAY POZOS DE AGUA EN EL LUGAR (POZOS N.° 1 AL N.° 5). LA INSTALACIÓN ESTÁ UBICADA EN EL ÁREA DE DRENAJE DEL LAGO PALESTINE EN EL SEGMENTO N.° 0605.
7. Ubicación de la Instalación: 9008 DE LA GRANJA AL MERCADO 3079 CHANDLER TX 75758 7667
8. Tipo de Solicitud: IP
9. Descripción de su solicitud: SOLICITUD DE UNA NUEVA PROPIEDAD INTELECTUAL
10. Las fuentes potenciales de contaminantes en la instalación incluyen (liste las fuentes contaminantes): Estiércol, aguas residuales, polvo, lubricantes, piensos, almacenamiento de combustible, medicamentos, productos químicos de limpieza.
11. Las siguientes mejores prácticas de gestión se implementarán en el sitio para gestionar los contaminantes de las fuentes contaminantes listadas (describa las mejores prácticas de gestión que se utilizan): EL ESTIÉRCOL SE ALMACENARÁ DENTRO DEL ÁREA DE DRENAJE DE RCS N.° 1. LAS AGUAS RESIDUALES SE ALMACENARÁN EN RCS N.° 1, RCS N.° 2 Y RCS N.° 3 HASTA QUE SE RIGUEN CORRECTAMENTE A TRAVÉS DE UN SISTEMA DE RIEGO POR DRAGÓN. EL ESTIÉRCOL SE TRANSPORTARÁ AL LMUS CORRESPONDIENTE, FUERA DEL SITIO, DE ACUERDO CON EL PLAN DE GESTIÓN DE NUTRIENTES. RCS N.° 1, RCS N.° 2 Y RCS N.° 3 ESTARÁN DISEÑADOS PARA ALMACENAR Y MANTENER EL LODO Y LA LLUVIA DE 25 AÑOS A 24 HORAS. SE MANTENDRÁN TODOS LOS DEMÁS LIMPIADORES, LUBRICANTES,

COMBUSTIBLES Y MEDICAMENTOS Y SE SEGUIRÁN TODAS LAS INSTRUCCIONES DE LOS FABRICANTES. LAS VACAS MUERTAS SERÁN ENTERRADAS DENTRO DE LAS 72 HORAS

A menos que se limite lo contrario, el estiércol, los lodos o las aguas residuales no se descargarán de una unidad de gestión de la tierra (LMU, por sus siglas en inglés) o una estructura de control de retención (RCS, por sus siglas en inglés) hacia o adyacente al agua en el estado de una CAFO, excepto como resultado de cualquiera de las siguientes condiciones:

1) una descarga de estiércol, lodos o aguas residuales que el permisionario no pueda prevenir o controlar razonablemente como resultado de una condición catastrófica que no sea un evento de lluvia;

2) desbordamiento de estiércol, lodo o aguas residuales de un RCS como resultado de un evento de lluvia crónico/catastrófico; o

3) una descarga de lluvia crónica/catastrófica de una LMU que ocurre porque el permisionario toma medidas para desaguar el RCS si el RCS está en peligro de desbordamiento inminente.

Instructions to Complete the Summary - English

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789). You may search for your CN from this web address: Customer Number.
3. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
4. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789). You may search for your RN from this web address: Regulated Entity Number
5. Provide the permit number that the TCEQ assigned to your site. GP starts with TXG92 and four numbers. IPs start with WQ000xxxx000.
6. Enter a description of the facility in this section. For example, Dairy cattle milk production facility; dairy heifer replacement production facility; beef cattle production facility; young calves production facility or cow/calf operation; chicken egg laying production facility; chicken broiler production facility; sheep/goat production facility; swine production facility.
7. Enter the location of the facility in this section. If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753 enter it in this section, but if not provide the location description in the space.
8. Provide the application type in this section.
1. CAFO general permit authorization: select the applicable type from the following list:
1. New authorization for a facility not currently authorized
2. Significant expansion
3. Substantial change
4. CAFO Individual Permit: select the applicable type from the following list:
    1. New
    2. Renewal
    3. Major Amendment
4. Provide a detailed description of the proposed changes to the site to be authorized if you are already authorized and you are proposing some changes to your permit (IP) or authorization (GP).

   If you are requesting a new permit or authorization, provide the number of animals, the number of acres that will be available for land application, list of main crops, and number of lagoons to be authorized.
5. List all potential pollutant sources expected at the facility in this section. For example, you may refer to page one of the technical information packet in this application.
6. Enter a description of the best management practices used at your facility. Include a description of each process, starting with initial treatment and finishing with the point of

disposal. For example, process generated wastewater and stormwater are stored in a 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.

Example of a Completed Plain Language Summary - English

Individual Permit Application for a Concentrated Animal Feeding Operation- English

The following summary is provided for this water quality permit application being submitted for review by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. 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. Spotted Cow Dairy, LLC
2. CN600000000
3. Spotted Cow Dairy
4. RN1000000000
5. WQ0000000000
6. This facility confines 4,100 head dairy cattle, of which 3,500 head are milking cows. The facility main production area is located on the west side of County Road 8000, approximately one mile south of the intersection of County Road 60 and Highway 11, east of Hico in Hamilton County, Texas. The dairy facility has twelve (12) land management units (LMUs) with the following acreage: LMU #1 - 25, LMU #1A - 45, LMU #2 - 19, LMU #3 - 15, LMU #4 - 59, LMU #5 - 54, LMU #6 - 48, LMU #7 - 35, LMU #8 - 44, LMU #9 - 7, LMU #10 - 6, and LMU #14 - 26; and two (2) retention control structures (RCSs), one Earthen Slurry Basin, one Concrete Slurry Basin, three Earthen Settling Basins, and two Concrete Settling Basins. The RCSs total required capacities without freeboard (acre-feet) are RCS #1 - 67.84 and RCS #2 - 5.24. There are ten onsite water wells (Wells #1 through #10), of which Wells #1, #5 and #6 are plugged. The facility also owns a calf ranch facility and one retention control structure (RCS) RCS #3. The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin.
7. The facility main production area is located on the west side of County Road 80, approximately one mile south of the intersection of County Road 2361 and Highway 6, east of Hico in Hamilton County, Texas.
8. This application is for a major amendment to the permit.
9. The changes include the increase in the number of milking cows from 3500 to 4100 head, the addition of a cross ventilated barn a pen area.
10. Potential pollutant sources at the site include: manure and manure stockpiles, wastewater, sludge, dust, inorganic fertilizers, fuel storage tanks, and compost.
11. The following best management practices will be implemented at the site to manage pollutants from the listed pollutant sources: process generated wastewater and stormwater are stored in a 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, sludge, and wastewater 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; and wastewater will be contained in RCSs properly designed ((25-year frequency 10-day duration (25 year/10 day), constructed, operated and maintained according to the provisions of the permit.

Manure, sludge, or wastewater will not be discharged from a LMU or a retention control structure (RCS) into or adjacent to water in the state except under 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 it is in danger of imminent overflow.

Any discharges initiated under the above conditions will be sampled for the following potential pollutants: 5 Day Biochemical Oxygen Demand (BOD5), Escherichia coli, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Nitrate (N), Total Phosphorus, Ammonia Nitrogen and Pesticides.

Instrucciones para completar el resumen – Español

1) Introduzca el nombre del solicitante en esta sección. El nombre del solicitante debe coincidir con el nombre asociado con el número de cliente.
2) Introduzca el número de cliente en esta sección. A cada individuo u organización se le emite un número de identificación único de 11 dígitos llamado CN (por ejemplo, CN123456789). Puede buscar su CN desde esta dirección web: Número de cliente.
3) Introduzca el nombre de la instalación en esta sección. El nombre de la instalación debe coincidir con el nombre asociado con el número de entidad regulada.
4) Introduzca el número de Entidad Regulada en esta sección. Cada ubicación del sitio recibe un número de identificación único de 11 dígitos llamado RN (por ejemplo, RN123456789). Puede buscar su RN desde esta dirección web: Número de entidad regulada
5) Proporcione el número de permiso que la TCEQ asignó a su sitio. GP comienza con TXG92 y cuatro números. Las direcciones IP comienzan con WQ000____000.
6) Introduzca una descripción de la instalación en esta sección. Por ejemplo, la planta de producción de leche para ganado lechero; instalación de producción de reemplazo de novillas lecheras; instalaciones de producción de ganado vacuno; instalación de producción de terneros jóvenes u operación de vacas/terneros; planta de producción de puesta de huevos de gallina; planta de producción de pollos de engorde; planta de producción de ovino y caprino; planta de producción porcina.
7) Introduzca la ubicación de la instalación en esta sección. Si el sitio tiene una dirección física como 12100 Park 35 Circle, Austin, TX 78753, introdúzcala en esta sección, pero si no proporciona la descripción de la ubicación en el espacio.
8) Proporcione el tipo de aplicación en esta sección.
   a) Autorización de permiso general CAFO: seleccione el tipo aplicable de la siguiente lista:
      - Nueva autorización para una instalación no autorizada actualmente
      - Expansión significativa
      - Cambio sustancial
   b) Permiso Individual CAFO: seleccione el tipo aplicable de la siguiente lista:
      - Nuevo
      - Renovación
      - Modificación importante
9) Proporcione una descripción detallada de los cambios propuestos al sitio que se autorizará si ya está autorizado y está proponiendo algunos cambios a su permiso (IP) o autorización (GP).

   Si está solicitando un nuevo permiso o autorización, proporcione el número de animales, el número de acres que estarán disponibles para la aplicación en tierra, la lista de cultivos principales y el número de lagunas que se autorizarán.
10) Enumere todas las fuentes potenciales de contaminantes que se esperan en la instalación en esta sección. Por ejemplo, puede consultar la página uno del paquete de información técnica de esta aplicación.

11) Introduzca una descripción de las mejores prácticas de gestión utilizadas en sus instalaciones. Incluya una descripción de cada proceso, comenzando con el tratamiento inicial y terminando con el punto de eliminación. Por ejemplo, las aguas residuales y pluviales generadas por el proceso se almacenan en una laguna (RCS) hasta que la tierra se aplica a través del riego, y el estiércol y el lodo se almacenan en el área de drenaje del RCS hasta que la tierra se aplica o se transporta fuera del sitio para un uso beneficioso.

Ejemplo de un resumen completo en lenguaje sencillo - Español

Solicitud de Permiso Individual para una Operación de Alimentación Animal Concentrada-Español

Se proporciona el siguiente resumen para esta solicitud de permiso de calidad del agua que se presenta para su revisión por la Comisión de Calidad Ambiental de Texas según lo requerido por 30 Código Administrativo de Texas, Capítulo 39. La información proporcionada en este sumario puede cambiar durante la revisión técnica de la solicitud y no es una representación ejecutable federal de la solicitud de permiso.

1) Spotted Cow Dairy, LLC

2) CN600000000

3) Vaca lechera manchada

4) RN1000000000

5) WQ0000000000

6) Esta instalación confina 4.100 cabezas de ganado lechero, de las cuales 3.500 cabezas son vacas de ordeño. El área de producción principal de la instalación está ubicada en el lado oeste de County Road 8000, aproximadamente una milla al sur de la intersección de County Road 60 y Highway 11, al este de Hico en el condado de Hamilton, Texas. La instalación lechera tiene doce (12) unidades de manejo de tierras (LMU) con la siguiente superficie: LMU # 1 - 25, LMU #1A - 45, LMU # 2 - 19, LMU # 3 - 15, LMU # 4 - 59, LMU # 5 - 54, LMU # 6 - 48, LMU # 7 - 35, LMU # 8 - 44, LMU # 9 - 7, LMU # 10 - 6 y LMU # 14 - 26; y dos (2) estructuras de control de retención (RCS), una cuenca de lodo de tierra, una cuenca de lodo de concreto, tres cuencas de sedimentación de tierra y dos cuencas de sedimentación de concreto. Las capacidades totales requeridas de RCS sin francobordo (acres-pies) son RCS # 1 - 67.84 y RCS # 2 - 5.24. Hay diez pozos de agua en el sitio (pozos # 1 a # 10), de los cuales los pozos # 1, # 5 y # 6 están tapados. La instalación también posee una instalación de rancho de terneros y una estructura de control de retención (RCS) RCS # 3. La instalación está ubicada en el área de drenaje del río Bosque Norte en el Segmento No. 1226 de la Cuenca del Río Brazos.

7) El área de producción principal de la instalación está ubicada en el lado oeste de County Road 80, aproximadamente una milla al sur de la intersección de County Road 2361 y Highway 6, al este de Hico en el condado de Hamilton, Texas.

8) Esta solicitud es para una modificación importante del permiso.

9) Los cambios incluyen el aumento en el número de vacas de ordeño de 3500 a 4100 cabezas, la adición de un establo ventilado cruzado y un área de corral.

10) Las fuentes potenciales de contaminantes en el sitio incluyen: estiércol y estiércol, aguas residuales, lodos, polvo, fertilizantes inorgánicos, tanques de almacenamiento de combustible y compost.

11) Las siguientes mejores prácticas de gestión se implementarán en el sitio para manejar los

contaminantes de las fuentes contaminantes enumeradas: las aguas residuales generadas por el proceso y las aguas pluviales se almacenan en una laguna (RCS) hasta que la tierra se aplica a través del riego, y el estiércol y el lodo se almacenan en el área de drenaje del RCS hasta que la tierra se aplica o se transporta fuera del sitio para un uso beneficioso.

El estiércol, lodo y aguas residuales generados por la CAFO serán retenidos y utilizados de manera apropiada y beneficiosa de acuerdo con un plan certificado de manejo de nutrientes específico del sitio; y las aguas residuales estarán contenidas en RCS debidamente diseñados ((frecuencia de 25 años 10 días de duración (25 años / 10 días), construidos, operados y mantenidos de acuerdo con las disposiciones del permiso.

El estiércol, los lodos o las aguas residuales no se descargarán de una LMU o una estructura de control de retención (RCS) en o adyacentes al agua en el estado, excepto bajo las siguientes condiciones:

· una descarga de estiércol, lodo o aguas residuales que el permisionario no puede prevenir o controlar razonablemente como resultado de una condición catastrófica que no sea un evento de lluvia;

· desbordamiento de estiércol, lodo o aguas residuales de un RCS como resultado de un evento de lluvia crónica / catastrófica; o

· una descarga de lluvia crónica/catastrófica de una LMU que ocurre porque el permisionario toma medidas para deshidratar el RCS si está en peligro de desbordamiento inminente.

Cualquier descarga iniciada en las condiciones anteriores se muestreará para los siguientes contaminantes potenciales: demanda bioquímica de oxígeno (DBO5) de 5 días, Escherichia coli, sólidos disueltos totales (TDS), sólidos suspendidos totales (TSS), nitrato (N), fósforo total, nitrógeno amoniacal y pesticidas.

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

☐ 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

☒ 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 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.

Chandler

(City)

Henderson

(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

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

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

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

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

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?

☐ Yes ☒ No

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

☐ Yes ☒ 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) County Extension Office

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 ☐ 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) Local Newspaper

Item 1: Physical Address of Project or Site:

Street Number and Name: 19008 FARM TO MARKET 3079

City, State and Zip Code: CHANDLER TX 75758 7667

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: HENDERSON

E. Latitude: 32.2635 Longitude: -95.537716

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: 999

Proposed Maximum Number of Animals: 999

H. What is the total LMU acreage? 637

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.

Henderson Co, Tax Appraisal District website

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

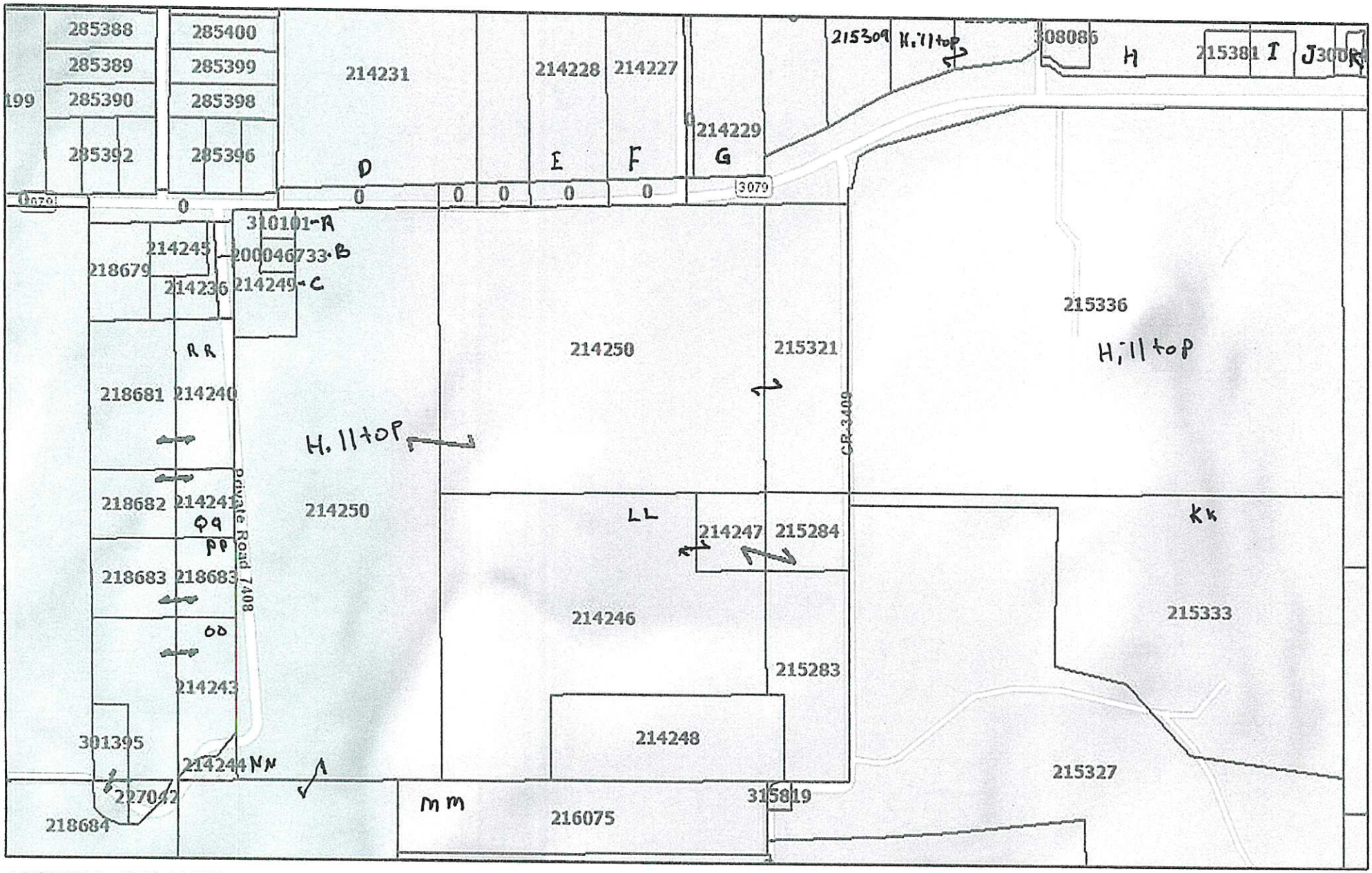
- Public Involvement Plan Form (TCEQ-20960)

D. Minor Amendment

Attach the following items if applicable:

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

Henderson CAD Web Map A



10/22/2024, 12:29:11 PM

Parcels

Land Hooks

1:9,028

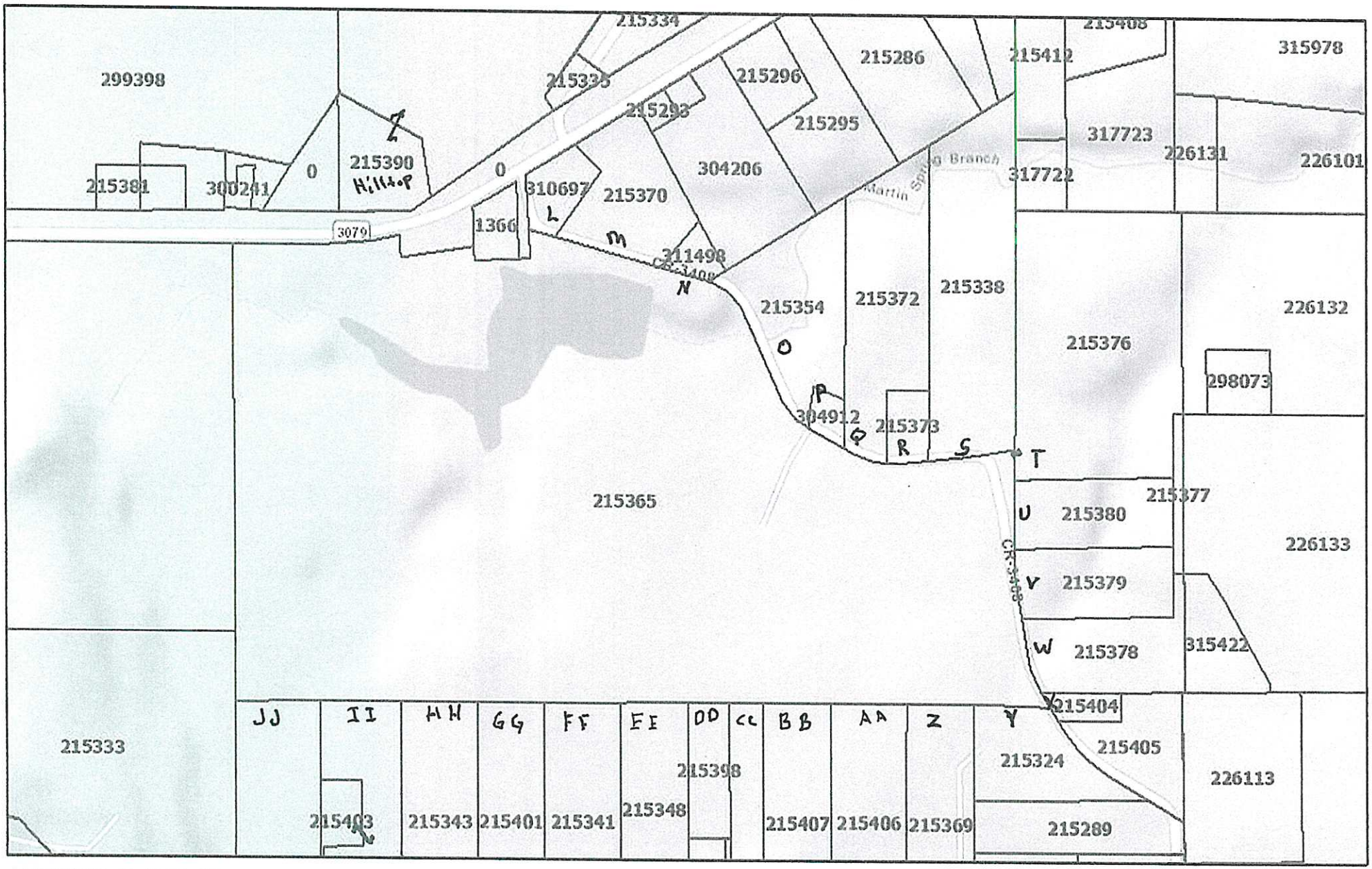
0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map B



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Parcels

Land Hooks

1:9,028

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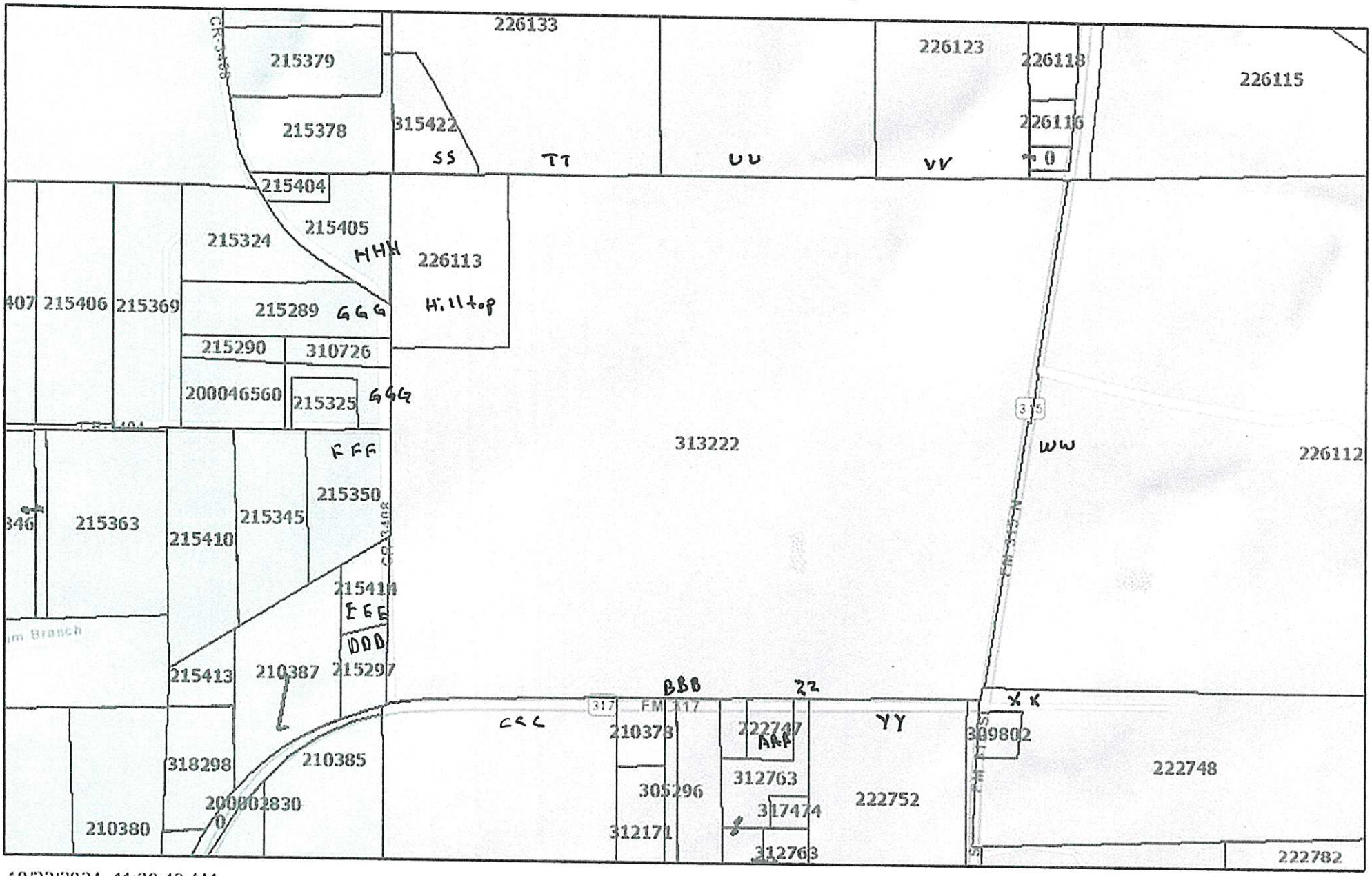
Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map C



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Parcels

Land Hooks

1:9,028

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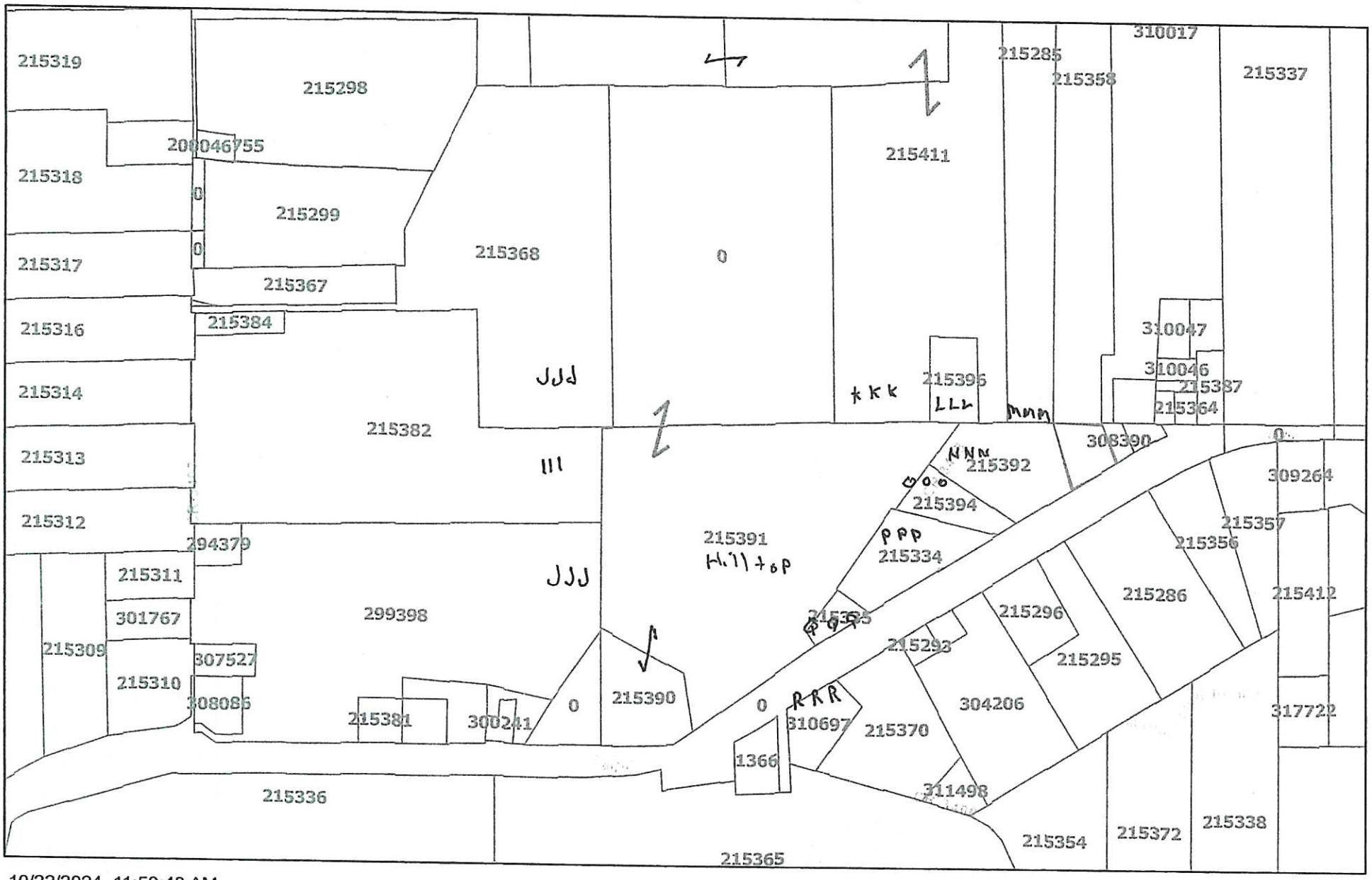
Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson County Appraisal District, BIS Consulting -

Henderson CAD Web Map d



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Parcels

Land Hooks

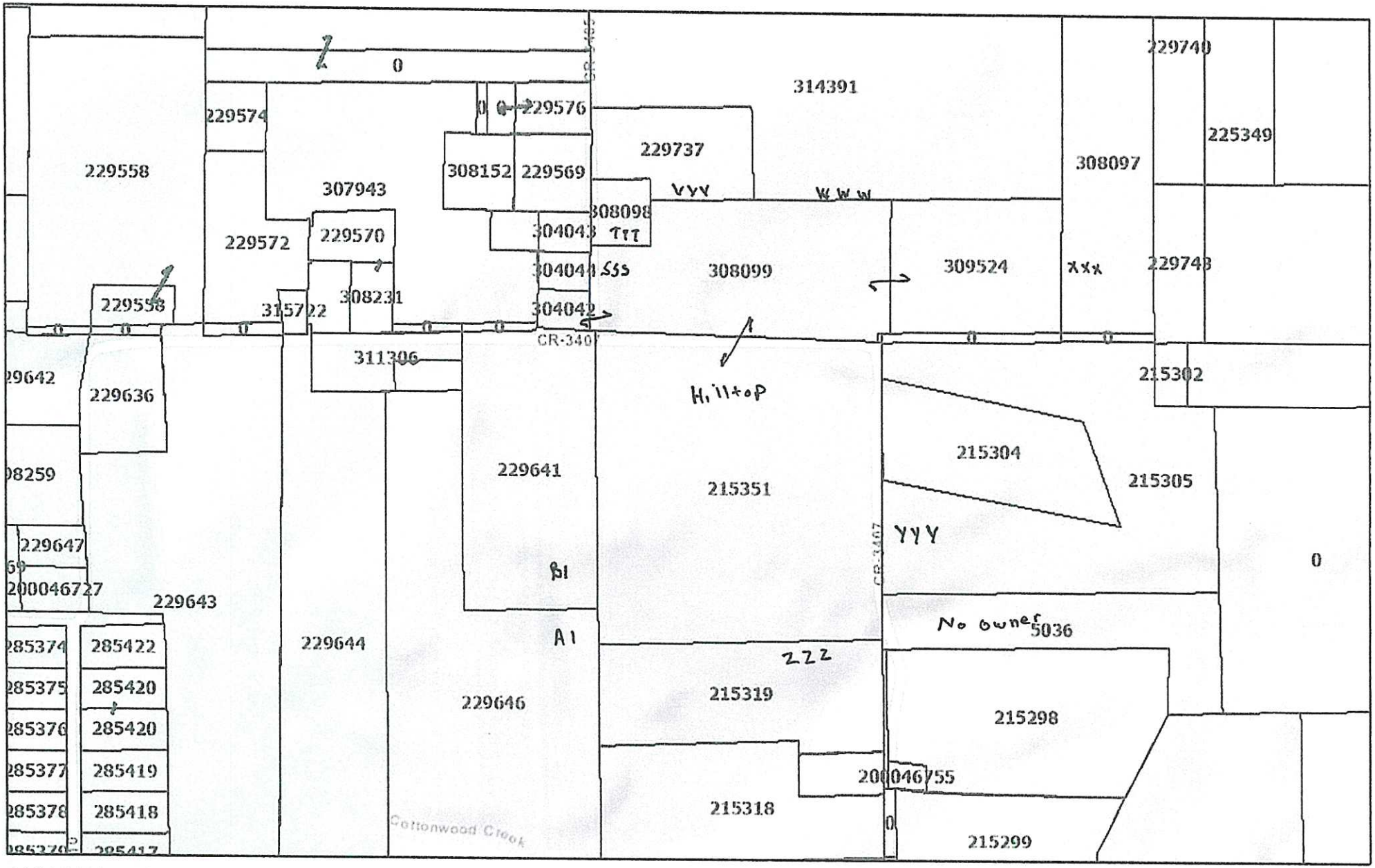
1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri, HERE, Garmin, INCREMENT P, Intermap, NGA, USGS

Henderson CAD Web Map e



10/22/2024, 12:01:23 PM

Parcels

Land Hooks

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Hilltop Jersey Farm Land Owners Map

A	310,101	MARIA LEONOR 18400 FM 3079 CHANDLER TX 75758 TX 75758
B	200,046,733	SILVIA LEDESMA 184002 FM 3079 CHANDLER TX 75758 TX 75758
C	214,249	CESARIO & MARIA T LEDESMA 18274 FM 3079 CHANDLER TX 75758 TX 75758
D	214,231	LANA GAY GOODSON ETAL 7802 ABBEY CT TYLER TX 75703 TX 75703
E	214,228	CLAYTON R&P TRUST RANDAL & PAMELA CLAYTON CO-TRUSTEES PO BOX 186 BROWNSBORO TX 75756
F	214,227	CLAYTON R&P TRUST RANDAL & PAMELA CLAYTON CO-TRUSTEES PO BOX 186 BROWNSBORO TX 75756
G	214,229	LARRY B DENNEY PO BOX 683 CHANDLER TX 75758 TX 75758
H	299,398	ODIS DELMAN PARMER 8980 CR 3407 CHANDLER TX 75758 TX 75758
I	215,381	MICHAEL S & ALLEN ASHELY Y PARMER 10955 FM 3079 CHANDLER TX 75758 TX 75758
J	299,327	GAIL PARMER MORRIS 11036 HIDDEN HOLLOW LN TYLER TX 75703
K	300,241	CECILIA VILLALOBOS 19365 FM 3079 CHANDLER TX 75758 TX 75758

Hilltop Jersey Farm Land Owners Map

L	299,397	ODIS DELMON & SHIRLEY K PARMER 8980 CR 3407 CHANDLER TX 75758 TX 75758
M	215,370	KAYLA & FRED GOODSON 179 VZ COUNTY ROAD 4819 CHANDLER TX 75758 TX 75758
N	311,498	KAYLA GOODSON 8774 CR 3408 CHANDLER TX 75758 TX 75758
O	215,354	SANDA MCCOY 8702 CR 3408 CHANDLER TX 75758 TX 75758
P	304,912	COPE JESSY COPE 1631 DUNLAVY ST HOUSTON TX 77006
Q	215,372	DEBORAH RENEE TAYLOR 8642 CR 3408 CHANDLER TX 75758 TX 75758
R	215,373	CURTIS D DURHAM 7432 CR 3409 CHANDLER TX 75758
S	215,338	JOE A SPRADLEY 8570 CR 3408 CHANDLER TX 75758
T	215,376	PAULA J & DENNIS B WEIMER 8480 CR 3408 CHANDLER TX 75758 TX 75758
U	215,380	LAURA LEE SCHMIDT ET AL 419 4TH ST CHANDLER TX 75758
V	215,379	MICHAEL EDWARD FORD ESTATE PO BOX 264 CHANDLER TX 75758
W	215,378	CELYA NICOLE TILLEY 8382 CR 3408 CHANDLER TX 75758
X	215,404	MICHAEL LEE & CLAIRE ANITA PATTERSON 8336 CR 3408 CHANDLER TX 75758

Hilltop Jersey Farm Land Owners Map

Y	215,324	LANCE E ARMSTRONG 8291 CR 3408 CHANDLER TX 75758
Z	215,369	CORRINNE CLARK 19819 CR 3404 CHANDLER TX 75758
AA	215,406	PAMELA RENEE SIGGELOW TRUST 19783 COUNTY ROAD 3404 CHANDLER TX 75758
BB	215,407	PAMELA RENEE SIGGELOW TRUST 19783 COUNTY ROAD 3404 CHANDLER TX 75758
CC	312,905	WILLIE THOMAS 19769 CR 3404 CHANDLER TX 75758
DD	215,398	KIM GATES 19771 COUNTY ROAD 3404 CHANDLER TX 75758
EE	215,348	KENNETH D & TONYA L BEAM 19731 CR 3404 CHANDLER TX 75758
FF	215,341	TONYA LANELL BEAM 19731 CR 3404 CHANDLER TX 75758
GG	215,401	REYNALDO M PONCE 19930 CR 3411 CHANDLER TX 75758
HH	215,343	LEONARD & CHRISTINA HALL 19363 CR 3404 CHANDLER TX 75758
II	215,402	TRACEY LYNN WARREN 19275 CR 3404 CHANDLER TX 75758
JJ	215,340	ARTHUR S & DORIS PAINTER DAVIS C/O ARTHUR DAVIS 19260 CR 3404 CHANDLER TX 75758
KK	215,333	LINDA JEAN COTTON HARRIS 8202 CR 3409 CHANDLER TX 75758

Hilltop Jersey Farm Land Owners Map

LL	215,284 214,247 214,246	WANDA RUE WRIGHT 8570 CR 3409 CHANDLER TX 75758
MM	216,075 216,073	JOHNNY MCELROY 17619 WHITE OAK DR CONROE TX 77306
NN	214,244	LAURA ANN WELCH 8330 PR 7408 CHANDLER TX 75758
OO	214,243	CHESTER MARTIN PO BOX 775 BROWNSBORO TX 75756
PP	218,683	TRAVIS & KAREN WALL 2135 FOX FIRE ST HIGHLANDS RANCH CO 80129
QQ	214,241	LAURA ANN & KAVASCH KRIS SMITH PO BOX 636 CHANDLER TX 75758
RR	214,240	LISA JO GROSS C/O DENNIS CRY PO BOX 1715 CHANDLER TX 75758
SS	315,422	CELYA NICOLE TILLEY 630 MEADOW LANE TYLER TX 75703
TT	226,133	RUTHIE LEE ET AL DEWS 115 DEWS DR WHITEHOUSE TX 75791
UU	226,103	RUTHIE LEE DEWS REVOCABLE LIVING TRUST 115 DEWS DR WHITEHOUSE TX 75791
VV	226,123	OTTIS FLETCHER 8237 FM 315 N CHANDLER TX 75758
WW	226,112	JOHN LUSTER KIDD P O BOX 365 CHANDLER TX 75758
XX	222,748	DAVID FRANK & MARY LYNN MCCURLEY 7962 FM 315 N CHANDLER TX 75758

Hilltop Jersey Farm Land Owners Map

YY	222,752	MICHAEL DENNIS& HOBIE & BELINDA DENNIS 2109 CHERRY HILL DR LEAGUE CITY TX 77573
ZZ	312,763	DAVID & THERESA MARONGE 20490 FM 317 CHANDLER TX 75758
AAA	222,747	SHARONNE C LIFE ESTATE BARTON 20470 FM 317 CHANDLER TX 75758
BBB	305,296	RHONDA MCCALLIE 701 CEDAR CREEK DR TYLER TX 75703
CCC	210,384	TEXAS PECAN NURSERY INC BOX 306 CHANDLER TX 75758
DDD	215,297	DYLAN L BROWN 7959 CR 3408 CHANDLER TX 75758
EEE	215,414	DYLAN L & STEPHANIE BROWN 7959 CR 3408 CHANDLER TX 75758
FFF	215,350	CLARK R TUCKER 20036 CR 3404 CHANDLER TX 75758
GGG	200,046,561 215,289 310,726	LANCE ARMSTRONG JR 20033 CR 3404 CHANDLER TX 75758
HHH	215,405	MICHAEL LEE & CLAIRE ANITA PATTERSON 8336 CR 3408 CHANDLER TX 75758
III	215,382	GAIL PARMER MORRIS 11036 HIDDEN HOLLOW LN TYLER TX 75703
JJJ	215,368 215,368	JAMES & LISA DIPPEL 9200 CR 3407 CHANDLER TX 75758
KKK	215,411	LIMEHOUSE FAMILY TRUST 19671 CR 3403 CHANDLER TX 75758

Hilltop Jersey Farm Land Owners Map

LLL	215,396	WILLIAM C & KAREN D DEAN 19651 CR 3403 CHANDLER TX 75758
MMM	215,285	DONALD R KNARR 736 FAIRMONT DR TYLER TX 75703
NNN	215,392	BILLY F & KAREN L YARBROUGH 19820 CR 3403 CHANDLER TX 75758
OOO	215,394	JANET POLLINGTON PO BOX 544 CHANDLER TX 75758
PPP	215,334	CATHY LYNN VICK MOORE 19609 FM 3079 CHANDLER TX 75758
QQQ	215,335	JIM TUSTISON PO BOX 158 CHANDLER TX 75758
RRR	310,697	RENE ADAMS & THOMAS EUBANKS 19502 FM 3079 CHANDLER TX 75758
SSS	304,044	TAYLOR & ERIN WEXLER-ADAMS 9835 CR 3405 BROWNSBORO TX 75756
TTT	304,043	TAYLOR & ERIN WEXLER-ADAMS 9835 CR 3405 BROWNSBORO TX 75756
UUU	308,098	BENITA G CLAYTON WILLIAMS 9754 CR 3405 BROWNSBORO TX 75756
VVV	229,737	CLAYTON FAMILY IRREVOCABLE TRUST C/O STEPHANIE GOLDY & CHARLES R CLAYTON II 3902 RAVENBANK DR ROCKWALL TX 75087
WWW	314,391	CHARLES RAY CLAYTON II 3902 RAVENBANK DR ROCKWALL TX 75087
XXX	308,097	CLAYTON R&P TRUST RANDAL & PAMELA CLAYTON CO-TRUSTEES PO BOX 186 BROWNSBORO TX 75756

Hilltop Jersey Farm Land Owners Map

YYY	215,305	LARRY DON LAWRENCE 9700 CR 3407 BROWNSBORO TX 75756
ZZZ	215,319	DONNA H CLARK 9495 BLUEBONNET DR SCURRY TX 75158
A1	229,646	DONNA FAYE ALLISON 10121 CR 3407 BROWNSBORO TX 75756
B1	229,641	DAVID DIJOY 9987 COUNTY ROAD 3407 BROWNSBORO TX 75756

MARIA LEONOR
18400 FM 3079
CHANDLER TX 75758 TX 75758

ODIS DELMON & SHIRLEY K PARMER
8980 CR 3407
CHANDLER TX 75758 TX 75758

MICHAEL EDWARD FORD ESTATE
PO BOX 264
CHANDLER TX 75758

SILVIA LEDESMA
184002 FM 3079
CHANDLER TX 75758 TX 75758

KAYLA & FRED GOODSON
179 VZ COUNTY ROAD 4819
CHANDLER TX 75758 TX 75758

CELYA NICOLE TILLEY
8382 CR 3408
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CESARIO & MARIA T LEDESMA
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KAYLA GOODSON
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CHANDLER TX 75758 TX 75758

MICHAEL LEE & CLAIRE ANITA PATTERS(
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LANA GAY GOODSON ETAL
7802 ABBEY CT
TYLER TX 75703 TX 75703

SANDA MCCOY
8702 CR 3408
CHANDLER TX 75758 TX 75758

LANCE E ARMSTRONG
8291 CR 3408
CHANDLER TX 75758

CLAYTON R&P TRUST
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BROWNSBORO TX 75756

COPE JESSY COPE
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HOUSTON TX 77006

CORRINNE CLARK
19819 CR 3404
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LARRY B DENNEY
PO BOX 683
CHANDLER TX 75758 TX 75758

DEBORAH RENEE TAYLOR
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PAMELA RENEE SIGGELOW TRUST
19783 COUNTY ROAD 3404
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CURTIS D DURHAM
7432 CR 3409
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WILLIE THOMAS
19769 CR 3404
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MICHAEL S & ALLEN ASHELY Y PARMER
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KIM GATES
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115 DEWS DR
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LEAGUE CITY TX 77573

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LAURA ANN WELCH
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DONALD R KNARR
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CHESTER MARTIN
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SHARONNE C LIFE ESTATE BARTON
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TRAVIS & KAREN WALL
2135 FOX FIRE ST
HIGHLANDS RANCH CO 80129

RHONDA MCCALLIE
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9987 COUNTY ROAD 3407
BROWNSBORO TX 75756

CATHY LYNN VICK MOORE
19609 FM 3079
CHANDLER TX 75758

JIM TUSTISON
PO BOX 158
CHANDLER TX 75758

RENE ADAMS & THOMAS EUBANKS
19502 FM 3079
CHANDLER TX 75758

TAYLOR & ERIN WEXLER-ADAMS
9835 CR 3405
BROWNSBORO TX 75756

BENITA G CLAYTON WILLIAMS
9754 CR 3405
BROWNSBORO TX 75756

CLAYTON FAMILY IRREVOCABLE TRUS
C/O STEPHANIE GOLDY & CHARLES R
3902 RAVENBANK DR
ROCKWALL TX 75087

CHARLES RAY CLAYTON II
3902 RAVENBANK DR
ROCKWALL TX 75087

DONNA FAYE ALLISON
10121 CR 3407
BROWNSBORO TX 75756

LARRY DON LAWRENCE
9700 CR 3407
BROWNSBORO TX 75756

DONNA H CLARK
9495 BLUEBONNET DR
SCURRY TX 75158

DONNA FAYE ALLISON
10121 CR 3407
BROWNSBORO TX 75756

DAVID DIJOY
9987 COUNTY ROAD 3407
BROWNSBORO TX 75756

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19609 FM 3079
CHANDLER TX 75758

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PO BOX 158
CHANDLER TX 75758

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9835 CR 3405
BROWNSBORO TX 75756

BENITA G CLAYTON WILLIAMS
9754 CR 3405
BROWNSBORO TX 75756

CLAYTON FAMILY IRREVOCABLE TRUST
C/O STEPHANIE GOLDY & CHARLES R CL
3902 RAVENBANK DR
ROCKWALL TX 75087

CHARLES RAY CLAYTON II
3902 RAVENBANK DR
ROCKWALL TX 75087

CLAYTON R&P TRUST
RANDAL & PAMELA CLAYTON CO-TRUST
PO BOX 186
BROWNSBORO TX 75756

LARRY DON LAWRENCE
9700 CR 3407
BROWNSBORO TX 75756

DONNA H CLARK
9495 BLUEBONNET DR
SCURRY TX 75158

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BROWNSBORO TX 75756

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9835 CR 3405
BROWNSBORO TX 75756

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9754 CR 3405
BROWNSBORO TX 75756

CLAYTON FAMILY IRREVOCABLE TRUST
C/O STEPHANIE GOLDY & CHARLES R CL
3902 RAVENBANK DR
ROCKWALL TX 75087

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3902 RAVENBANK DR
ROCKWALL TX 75087

DONNA FAYE ALLISON
10121 CR 3407
BROWNSBORO TX 75756

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SCURRY TX 75158

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BROWNSBORO TX 75756

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BROWNSBORO TX 75756

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SIGNATURE PAGE

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

Permit Number: not issued, Hilltop Jersey Farm

Applicant: NICO JAAP DEBOER

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: NICO JAAP DEBOER

Title: Owner

Signature: _____ Date: 12-6-24

SUBSCRIBED AND SWORN to before me by the said Nico Deboer on

this 6th day of December, 20 24

My commission expires on the 9 day of August, 20 27

(Seal)

_____
Notary Public

Henderson
County, Texas

TERI ADAIR
Notary Public
State of Texas
ID # 134499880
My Comm. Expires 08/09/2027

Attachment 1
Individual Information

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

Prefix (Mr., Ms., Miss):

Full Legal Name, including middle name:

Driver's License or State Identification Number:

State that Issued the License or Identification Number:

Date of Birth:

Mailing Address:

City, State and Zip Code:

Phone Number: Fax Number:

E-mail Address:

For TCEQ Use Only

Customer Number _____
Regulated Entity Number _____
Permit Number _____

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: NICO JAAP DEBOER
2. Permit Number: EPA ID Number:
3. Address of the project (location description that includes street/highway, city/vicinity, and county). 19008 FARM TO MARKET 3079 CHANDLER TX 75758 7667
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: Jim Wyrick

   Company Name: East Texas Environmental Services

   Mailing Address: 317 Highland Dr.

   City, State, and Zip Code: 75482

   Phone Number: 903-243-0400 Fax Number:
5. County where the facility is located: HENDERSON CO.
6. If the property is publicly owned and the owner is different than the permittee/applicant, please identify the owner. NA
7. Identify the name of the water body (receiving waters) and TCEQ segment number that will receive the discharge. LAKE PALESTINE
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): NONE
12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances):

Aeriation of hayland, no-till of winter pasture, plowing and seeding

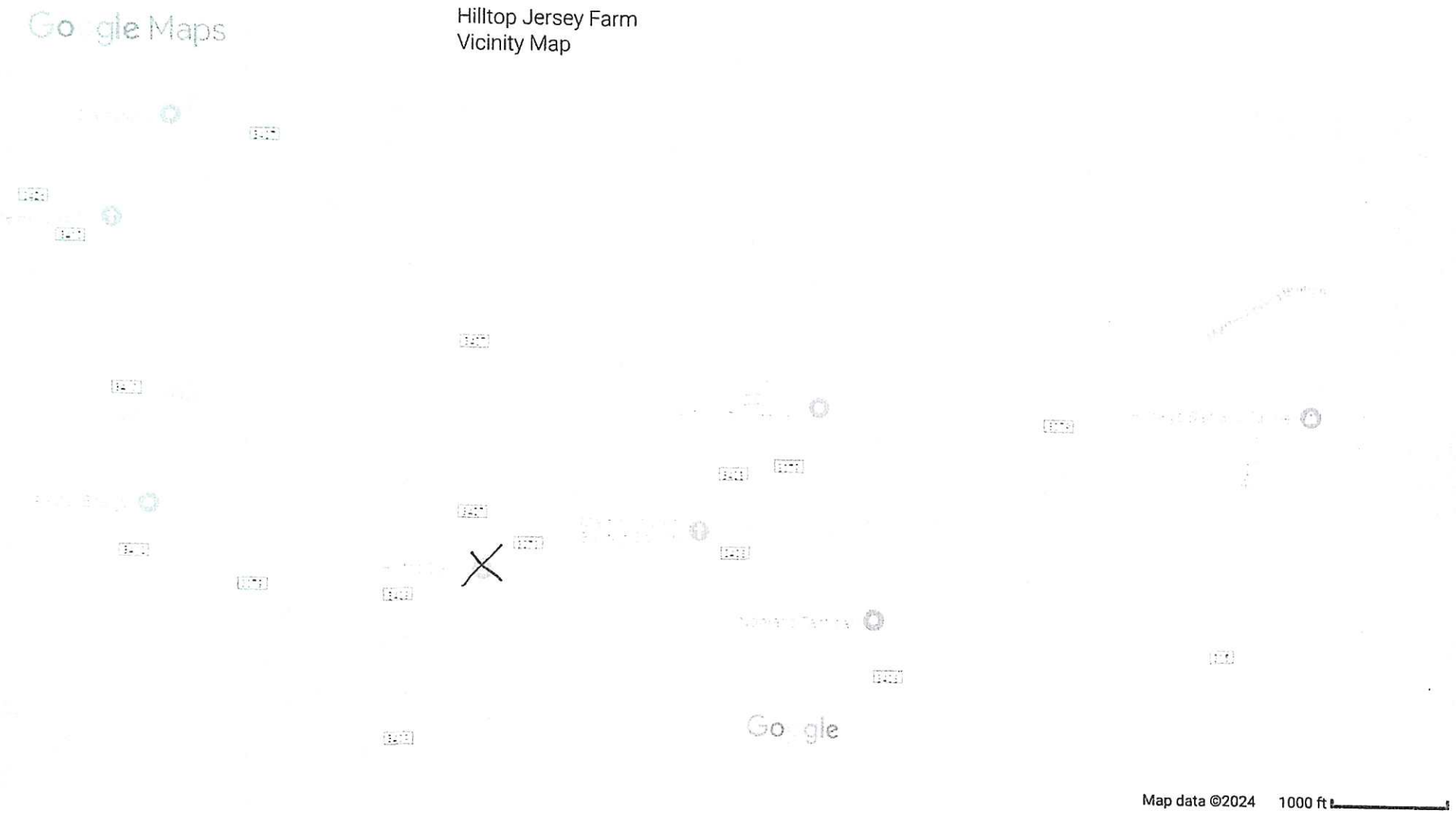
The following applies to New TPDES and Major Amendment to TPDES Permits:

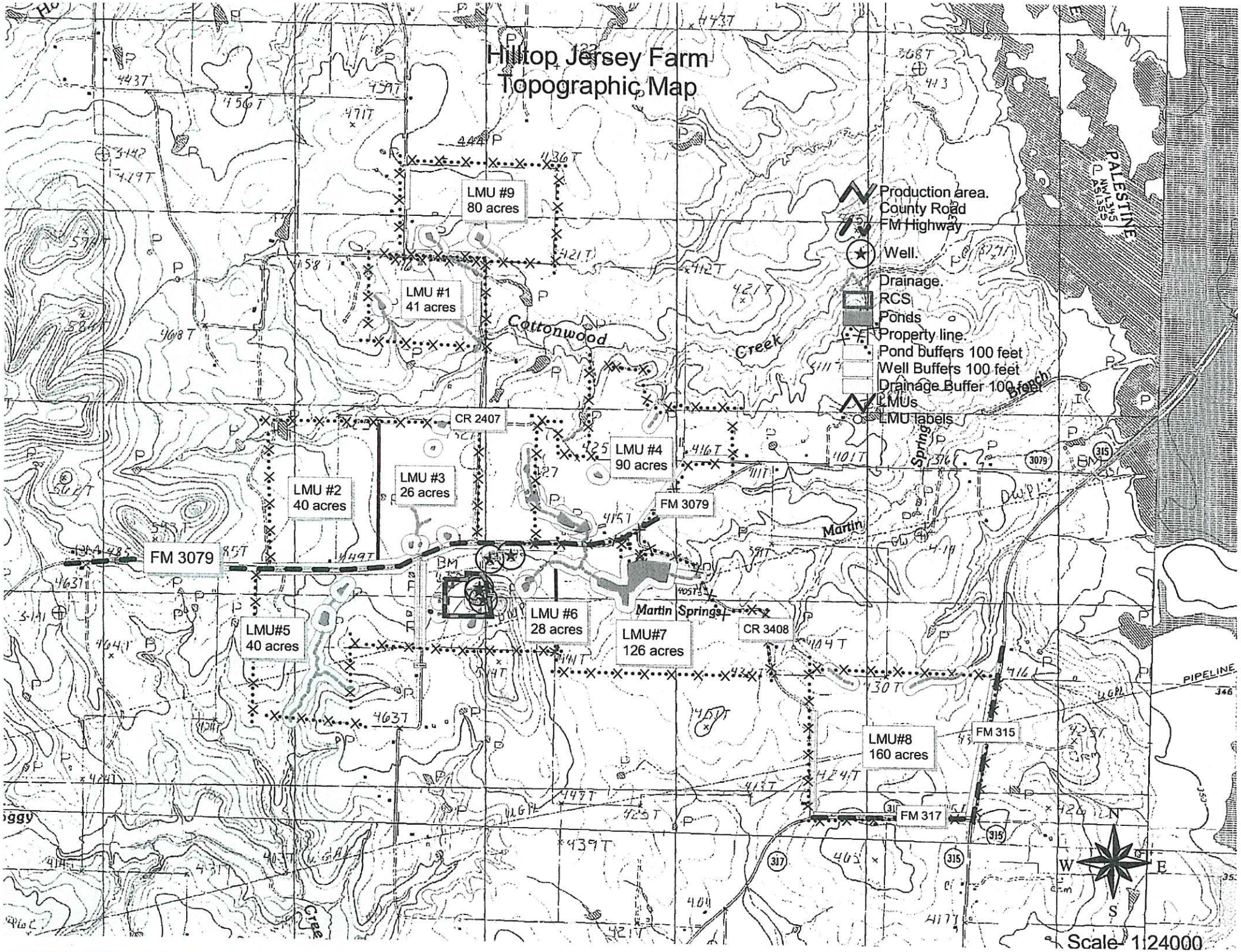
13. List construction dates of any buildings or structures on the property: unknown
14. Provide a brief history of the property, and name of the architect/builder, if known: unknown

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

15. List each Retention Control Structure and its required capacity (Acre Feet). SP-.65, RCS1-1.68 AND RCS#2-3.70
16. Provide the location and number of acres where wastewater and manure are land applied: LMU#1-75, LMU#2-44, LMU#3-39, LMU#4-64, LMU#5-30, LMU#6-41, LMU#7-38, LMU#8-37 AND LMU#9-109
17. List the maximum number of head to be permitted. 999

Hilltop Jersey Farm
Vicinity Map




Hilltop Jersey Farm
Topographic Map
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
FM 3079
CR 3408
FM 315
FM 317
Cottonwood Creek
Martin Springs
Martin Springs Branch
PALESTINE
PIPELINE
Production area.
County Road
FM / Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
N
W
E
S
Scale 1:24000

Property Details

Account		
Property ID:	213568	**Geographic ID:** 0145.0300.0A00.10
Type:	R	***Zoning:***
Property Use:		**Condo:**
Location		
Situs Address:	0 FM 317 000000	
Map ID:	43	**Mapsco:**
Legal Description:	TR 30A AB 145 J COLE SUR, TR 30A (PT OF 94.60 AC TR)	
Abstract/Subdivision:	A0145	
Neighborhood:		
Owner		
Owner ID:	36458	
Name:	DE BOER NICO & ERNA	
Agent:		
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758	
% 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:	$138,475 (+)

Market Value:	$138,475 (=)
Agricultural Value Loss:	$135,610 (-)
Appraised Value:	$2,865 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)
Assessed Value:	$2,865
Ag Use Value:	$2,865

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$138,475	$2,865	$31.38
CAD	HENDERSON CAD	$138,475	$2,865	$0.00
ES5	EMERGENCY SVS DIST #5	$138,475	$2,865	$1.34
HC	HENDERSON CO R&B	$138,475	$2,865	$0.49
HE	HENDERSON COUNTY	$138,475	$2,865	$7.68
HR	HENDERSON CO FM-FC	$138,475	$2,865	$1.12
TV	TRINITY VALLEY COMM	$138,475	$2,865	$3.26

Total Tax Rate: 1.579749

Market Value:	$67,153 (=)
Agricultural Value Loss:	$0 (-)
Appraised Value:	$67,153 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$11,577 (-)
Assessed Value:	$55,576
Ag Use Value:	$0

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Property Taxing Jurisdiction

Owner: DE BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$67,153	$55,576	$608.67
CAD	HENDERSON CAD	$67,153	$55,576	$0.00
HC	HENDERSON CO R&B	$67,153	$55,576	$9.47
HE	HENDERSON COUNTY	$67,153	$55,576	$148.91
HR	HENDERSON CO FM-FC	$67,153	$55,576	$21.78
TV	TRINITY VALLEY COMM	$67,153	$55,576	$63.17
ES12	EMERGENCY SVS DIST #12	$67,153	$55,576	$52.30

Total Tax Rate: 1.627125

Property Details

Account			
Property ID:	215309	**Geographic ID:**	0244.0130.0C00.10
Type:	R	**Zoning:**	
Property Use:		**Condo:**	
Location			
Situs Address:	0 FM 3079 000000		
Map ID:	34	**Mapsco:**	
Legal Description:	TR 13C AB 244 J N GAINER SUR, TR 13C (RE:TR 3)		
Abstract/Subdivision:	A0244		
Neighborhood:			
Owner			
Owner ID:	36458		
Name:	DE BOER NICO & ERNA		
Agent:			
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758		
% 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:	$67,153 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$0 (+)

Property Details

Account			
Property ID:	215391	**Geographic ID:**	0244.0680.0A00.10
Type:	R	**Zoning:**	
Property Use:		**Condo:**	
Location			
Situs Address:	0 FM 3079 000000		
Map ID:	34	**Mapsco:**	
Legal Description:	TR 68A AB 244 J N GAINER SUR, TR 68A		
Abstract/Subdivision:	A0244		
Neighborhood:			
Owner			
Owner ID:	36458		
Name:	DE BOER NICO & ERNA		
Agent:			
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758		
% 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:	$572,787 (+)

Market Value:	$572,787 (=)
Agricultural Value Loss:	$564,060 (-)
Appraised Value:	$8,727 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)
Assessed Value:	$8,727
Ag Use Value:	$8,727

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$572,787	$8,727	$95.58
CAD	HENDERSON CAD	$572,787	$8,727	$0.00
HC	HENDERSON CO R&B	$572,787	$8,727	$1.49
HE	HENDERSON COUNTY	$572,787	$8,727	$23.38
HR	HENDERSON CO FM-FC	$572,787	$8,727	$3.42
TV	TRINITY VALLEY COMM	$572,787	$8,727	$9.92
ES12	EMERGENCY SVS DIST #12	$572,787	$8,727	$8.21

Total Tax Rate: 1.627125

Property Details

Account		
Property ID:	215310	**Geographic ID:** 0244.0130.0D00.10
Type:	R	**Zoning:**
Property Use:		**Condo:**
Location		
Situs Address:	19008 FM 3079 000000	
Map ID:	34	**Mapsco:**
Legal Description:	TR 13D AB 244 J N GAINER SUR, TR 13D (RE:TR 4)	
Abstract/Subdivision:	A0244	
Neighborhood:		
Owner		
Owner ID:	511566	
Name:	DE BOER NICO & ERNA	
Agent:		
Mailing Address:	19008 FM 3079 CHANDLER, TX 75758	
% 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:	$56,981 (+)
Land Non-Homesite Value:	$0 (+)
Agricultural Market Valuation:	$0 (+)
Market Value:	$56,981 (=)

Market Value:	$986,532 (=)
Agricultural Value Loss:	$973,170 (-)
Appraised Value:	$13,362 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)
Assessed Value:	$13,362
Ag Use Value:	$13,362

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$986,532	$13,362	$146.34
CAD	HENDERSON CAD	$986,532	$13,362	$0.00
HC	HENDERSON CO R&B	$986,532	$13,362	$2.28
HE	HENDERSON COUNTY	$986,532	$13,362	$35.80
HR	HENDERSON CO FM-FC	$986,532	$13,362	$5.24
TV	TRINITY VALLEY COMM	$986,532	$13,362	$15.19
ES12	EMERGENCY SVS DIST #12	$986,532	$13,362	$12.57

Total Tax Rate: 1.627125

Property Details

Account			
Property ID:	215365	**Geographic ID:**	0244.0520.0000.10
Type:	R	**Zoning:**	
Property Use:		**Condo:**	
Location			
Situs Address:	0 FM 3079 000000		
Map ID:	34	**Mapsco:**	
Legal Description:	AB 244 J N GAINER SUR, TR 52		
Abstract/Subdivision:	A0244		
Neighborhood:			
Owner			
Owner ID:	36458		
Name:	DE BOER NICO & ERNA		
Agent:			
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758		
% 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:	$996,341 (+)
Agricultural Market Valuation:	$0 (+)

Market Value:	$996,341 (=)
Agricultural Value Loss:	$0 (-)
Appraised Value:	$996,341 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$171,783 (-)
Assessed Value:	$824,558
Ag Use Value:	$0

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$996,341	$824,558	$9,030.56
CAD	HENDERSON CAD	$996,341	$824,558	$0.00
HC	HENDERSON CO R&B	$996,341	$824,558	$140.53
HE	HENDERSON COUNTY	$996,341	$824,558	$2,209.30
HR	HENDERSON CO FM-FC	$996,341	$824,558	$323.10
TV	TRINITY VALLEY COMM	$996,341	$824,558	$937.19
ES12	EMERGENCY SVS DIST #12	$996,341	$824,558	$775.90

Total Tax Rate: 1.627125

Property Details

Account			
Property ID:	215321	**Geographic ID:**	0244.0150.0000.10
Type:	R	**Zoning:**	
Property Use:		**Condo:**	
Location			
Situs Address:	0 CR 3409 000000		
Map ID:	34	**Mapsco:**	
Legal Description:	TR 15 AB 244 J N GAINER SUR, TR 15		
Abstract/Subdivision:	A0244		
Neighborhood:			
Owner			
Owner ID:	36458		
Name:	DE BOER NICO & ERNA		
Agent:			
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758		
% 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:	$73,428 (+)

Market Value:	$73,428 (=)
Agricultural Value Loss:	$71,988 (-)
Appraised Value:	$1,440 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)
Assessed Value:	$1,440
Ag Use Value:	$1,440

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$73,428	$1,440	$15.77
CAD	HENDERSON CAD	$73,428	$1,440	$0.00
HC	HENDERSON CO R&B	$73,428	$1,440	$0.25
HE	HENDERSON COUNTY	$73,428	$1,440	$3.86
HR	HENDERSON CO FM-FC	$73,428	$1,440	$0.56
TV	TRINITY VALLEY COMM	$73,428	$1,440	$1.64
ES12	EMERGENCY SVS DIST #12	$73,428	$1,440	$1.36

Total Tax Rate: 1.627125

Property Details

Account			
Property ID:	227053	**Geographic ID:**	0754.0020.0000.10
Type:	R	**Zoning:**	
Property Use:		**Condo:**	
Location			
Situs Address:	0 FM 3079 (OFF) 000000		
Map ID:	33	**Mapsco:**	
Legal Description:	TR 2 AB 754 G A STROUD SUR, TR 2		
Abstract/Subdivision:	A0754		
Neighborhood:			
Owner			
Owner ID:	36458		
Name:	DE BOER NICO & ERNA		
Agent:			
Mailing Address:	19008 FM 3079 CHANDLER , TX 75758		
% 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:	$383,661 (+)

Market Value:	$383,661 (=)
Agricultural Value Loss:	$376,137 (-)
Appraised Value:	$7,524 (=)
HS Cap Loss:	$0 (-)
Circuit Breaker:	$0 (-)
Assessed Value:	$7,524
Ag Use Value:	$7,524

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 BOER NICO & ERNA **%Ownership:** 100.0%

Entity	Description	Market Value	Taxable Value	Estimated Tax
BR	BROWNSBORO ISD	$383,661	$7,524	$82.40
CAD	HENDERSON CAD	$383,661	$7,524	$0.00
ES5	EMERGENCY SVS DIST #5	$383,661	$7,524	$3.52
HC	HENDERSON CO R&B	$383,661	$7,524	$1.28
HE	HENDERSON COUNTY	$383,661	$7,524	$20.16
HR	HENDERSON CO FM-FC	$383,661	$7,524	$2.95
TV	TRINITY VALLEY COMM	$383,661	$7,524	$8.55

Total Tax Rate: 1.579749

TECHNICAL INFORMATION PACKET FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOS)

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

Name of Site: HILLTOP JERSEY FARM
TCEQ Permit Number, if assigned: WQ000
Date Prepared: 11/26/24

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	Manure generated in the freestalls is flushed into the settling basin then into RCS #1 and irrigated to the LMUs with the irrigation water. Very limited amount will be stockpiled at end of the freestalls and hauled to LMUs.
Wastewater	All wastewater gravity flows from the freestalls into the settling basin then into RCS #. Where it is stored until there is a crop demand for water and nutrients, and then applied to LMUs at an agronomic rate
Sludge	Sludge will be cleaned from the RCSs before the sludge volume reaches the designed capacity. A system of irrigation and vacuum tanks will be used to with the sludge from the RCSs
Compost	NA
Feed and Bedding	Feed when spoiled, will be applied to LMUs. When applied it will be applied at a rate similar to that of manure.
Silage stockpiles	Most of the silage is stored under plastic. The plastic will be removed and disposed of in the appropriate waste containers. If the silage is not covered, any ruined silage will be land applied
Dead animals	All dead animals are collected within 24-hours and properly buried within 72 hours of death following TCEQ guidelines.
Dust	Water will be applied to the until the conductions for dust have passed.
Lubricants	All oil and lubricant products will be stored in a covered storage area in covered, waterproof container. Empty containers are to be disposed of following all precautionary guidelines on the container or placing in a commercial garbage

Potential Pollutant Source	Best Management Practices
Pesticides	All pesticides and herbicides application is contracted to an applicator and no chemicals are stored on the property. All pesticides will be used and disposed in accordance with the label rules
Bulk cleaning chemicals	Use and disposal of empty containers will be according to direction on the product label.
Inorganic fertilizers	NA
Fuel storage tanks	All fuels are stored in a properly maintained storage tank, away from wells. Care will be so spills do not occur when equipment is being filled. If a spill occurs, it will be immediately cleaned up and not allowed to flow from the tank area
Other, specify:	NA

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:

2) Total Number of Animals:
In Open Lots: 0 In Buildings: 999

3) Animal Housing Location, hours/day:
Open Lots: 0 Buildings: 24

4) Average Liveweight, pounds per head: 975

5) Volatile Solids Removed by Separator System: 0

6) Volatile Solids Loading Rate, lbs/day/1000 ft^3: 0

7) Spilled Drinking Water, gallons/day: 1998

8) Water for Cleanup, gallons/day: 2697

9) Water for Manure Removal, gallons/day: 14318

10) Recycled Wastewater, gallons/day: 131153

B. Wastewater Runoff

1) Design Rainfall Amount, inches: 8.00

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
SP	0	.65	0	0	0	.64	.65
RCS#1	.19	.62	0	.52	.36	1.68	1.69
RCS#2	.50	0	0	1.32	1.22	3.06	6.04

Indicate which RCSs are in-series: SP, RCS#1 AND RCS#2 are in series

D. RCS Liner or Lack of Hydrologic Connection Certification

Table 3: RCS Hydrologic Connection

RCS Name	Construction Date	Type of Hydrologic Connection Certification
SP	7/13/2007	concrete
RCS#1	7/13/2007	In-situ Soils - Certified 09/17/08
RCS#2	7/13/2007	In-situ Soils - Certified 09/17/08

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)
LMU #1	41	Silage - Corn21-25T;SG Silage-8-9T	.38 Ac-ft/Ac/Year
LMU #2	40	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year
LMU #3	26	Coastal Hay 4 cut, SG mod graze	.56 Ac-ft/Ac/Year
LMU #4	90	Silage - Corn21-25T;SG Silage-8-9T	.50 Ac-ft/Ac/Year
LMU #5	46	Silage - Corn21-25T;SG Silage-8-9T	2.64 Ac-ft/Ac/Year
LMU #6	28	Coastal Hay 4 cut, SG mod graze	2.73 Ac-ft/Ac/Year
LMU #7	126	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year
LMU #8	160	Silage - Corn21-25T;SG Silage-8-9T	3.41 Ac-ft/Ac/Year
LMU #9	80	Coastal Hay 4 cut, SG mod graze	4.29 Ac-ft/Ac/Year

1) Wastewater production, ac-in/year: 22.60
2) Estimated Wastewater application, ac-in/year: 22.60
3) Manure production, tons/year: 262
4) Estimated manure application, tons/year: 0 Dry Tons/yr – included in Slurry application
5) Estimated manure transferred to other persons, tons/year: 0

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.

F. Soil Limitations

Table 5: Soil Limiting Characteristics and Best Management Practices

Soil Types	Limiting Characteristics	Best Management Practices
	See atachment	

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
Well #1	Domestic	Producing	Cased	Maintain 150' Buffer
Well #2	Domestic	Producing	Cased	Maintain 150' Buffer
Well #3	Domestic	Producing	Cased	Maintain 150' Buffer
Well #4	Domestic	Producing	Cased	Maintain 150' Buffer
Well #5	Domestic	Producing	Cased	Maintain 150' Buffer

SECTION 4. AIR AUTHORIZATION SUMMARY

A. Type of Air Authorization

☒ Air Standard Permit in 30 TAC § 321.43

Table 5: Soil Limiting Characteristics and Best Management Practices

Soil Types	Limiting Characteristics	Best Management Practices
3—Bernaldo fine sandy loam, 1 to 3 percent slopes	Too acid	Permanent Vegetation: High residue crop
16—Freestone fine sandy loam, 1 to 3 percent slopes	Depth to saturated zone	Permanent Vegetation: High residue crop
21--- Kirvin fine sandy loam, 1 to 5 percent slopes	Slow water movement, Too acid, Droughty	Permanent Vegetation: High residue crop
27—Nahatche soils, frequently flooded	Flooding	Permanent Vegetation: High residue crop
8---Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes	Droughty Too steep for sprinkler application Depth to bedrock	Permanent Vegetation: High residue crop
17--Gallime fine sandy loam, 1 to 5 percent slopes	Too acid	Permanent Vegetation: High residue crop
21--Kirvin fine sandy loam, 1 to 5 percent slopes	Slow water movement Too acid	Permanent Vegetation: High residue crop
27--Nahatche loam, 0 to 1 percent slopes, frequently flooded...	Depth to saturated zone Flooding	Permanent Vegetation: High residue crop

- ☐ 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: 9

¼ - ½ mile: 14

½ - 1 mile: 39

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

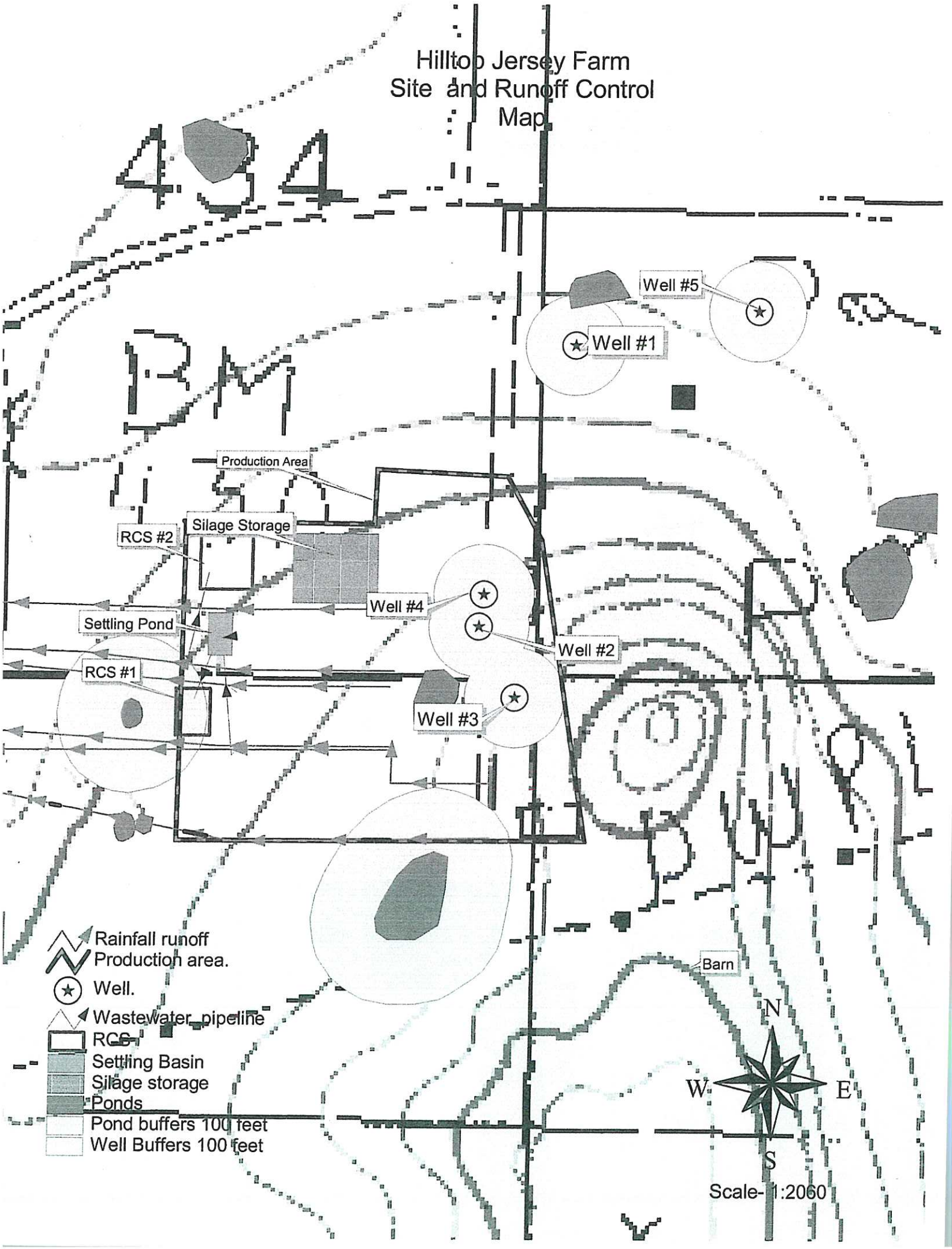
D. Air Standard Permit Documentation (if required)

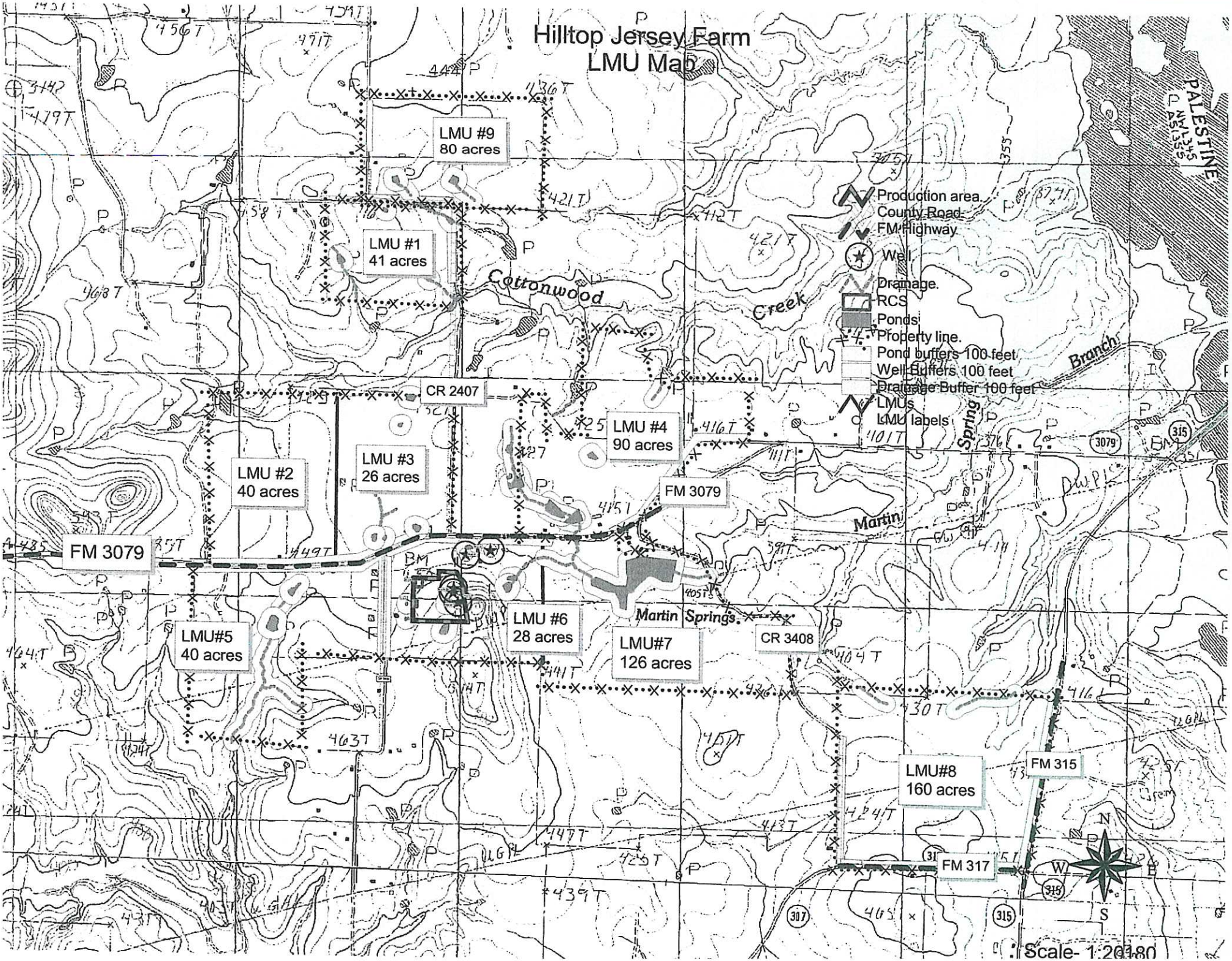
1) Area Land Use Map,
2) Odor Control Plan, if applicable
3) Written Consent Letters, if applicable

E. Groundwater Monitoring (if required)

1) Groundwater Monitoring Plan
2) Groundwater Monitoring Analyses

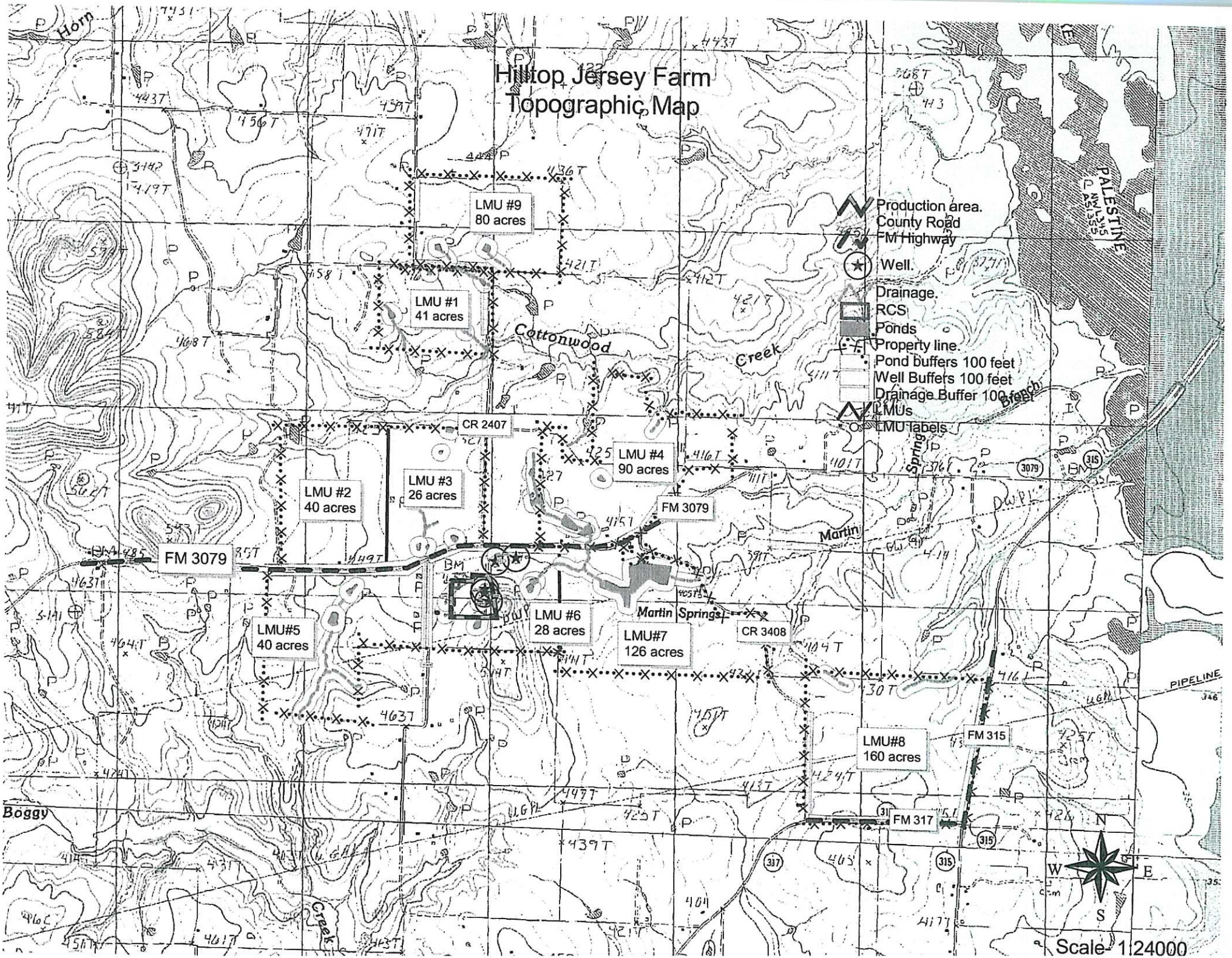
Hilltop Jersey Farm Site and Runoff Control Map

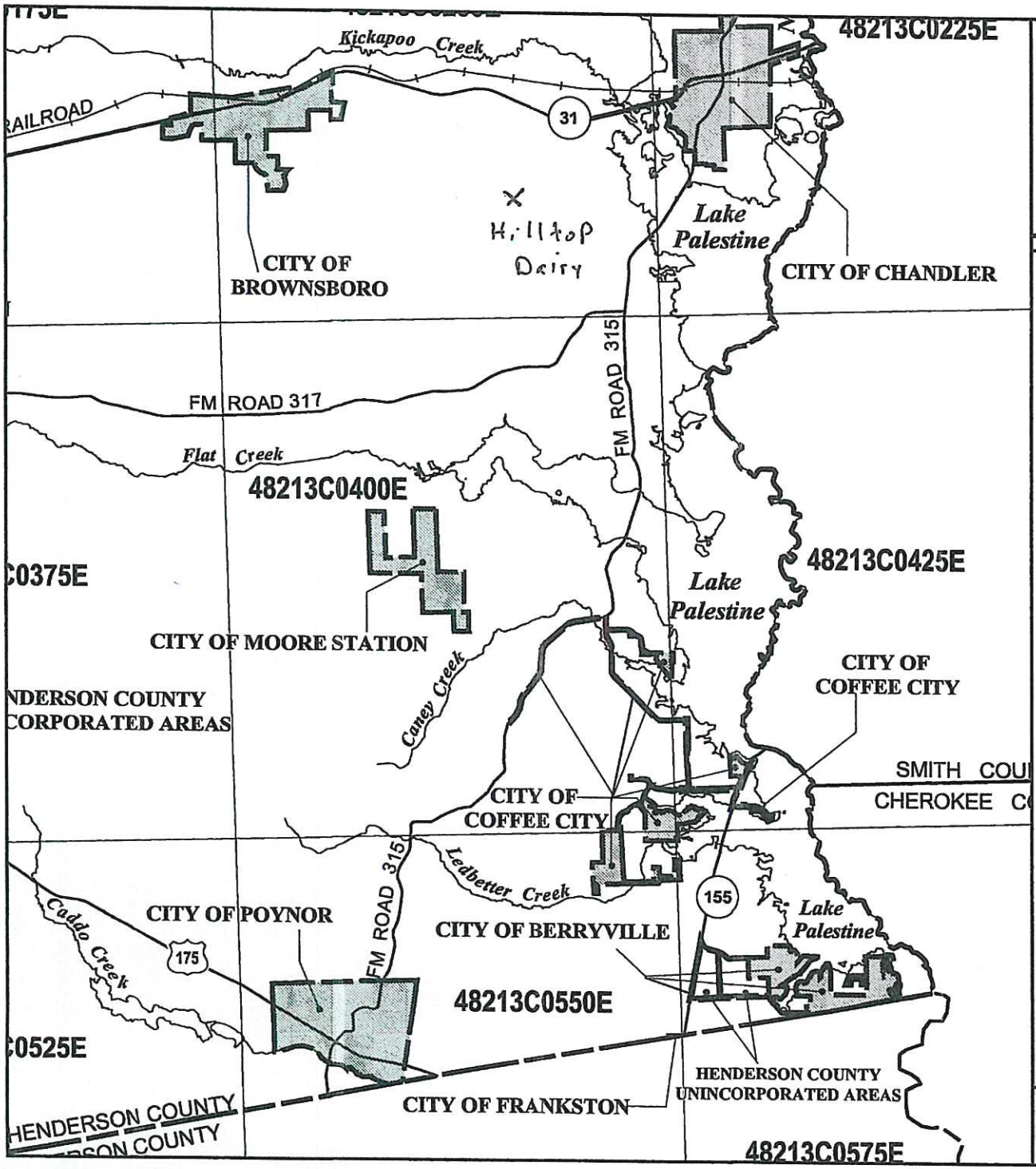



Hilltop Jersey Farm
LMU Map
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
FM 3079
CR 3408
FM 315
FM 317
Cottonwood Creek
Martin Spring Branch
Martin Springs
PALESTINE
Production area.
County Road
FM Highway
Well
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
N
S
W
E
Scale- 1:20,000

Google Maps

Hilltop Jersey Farm
Vicinity Map


Hilltop Jersey Farm
Topographic Map
LMU #9
80 acres
LMU #1
41 acres
LMU #2
40 acres
LMU #3
26 acres
LMU #4
90 acres
LMU #5
40 acres
LMU #6
28 acres
LMU#7
126 acres
LMU#8
160 acres
CR 2407
CR 3408
FM 3079
FM 315
FM 317
Cottonwood Creek
Martin Springs
Martin Spring Branch
PALESTINE
PIPELINE
Boggy Creek
Production area.
County Road
FM Highway
Well.
Drainage.
RCS
Ponds
Property line.
Pond buffers 100 feet
Well Buffers 100 feet
Drainage Buffer 100 feet
LMUs
LMU labels
N
S
E
W
Scale- 1:24000



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

MAP INDEX

FIRM

FLOOD INSURANCE RATE MAP

HENDERSON COUNTY, TEXAS

AND INCORPORATED AREAS

(SEE LISTING OF COMMUNITIES TABLE)

MAP INDEX

PANELS PRINTED: 25, 50, 60, 70, 75, 100, 125, 150, 175, 200, 225, 250, 275, 300, 310, 320, 325, 330, 340, 350, 375, 400, 425, 450, 475, 500, 525, 550, 575

MAP NUMBER
48213CIND0A

MAP REVISED
APRIL 5, 2010

Federal Emergency Management Agency

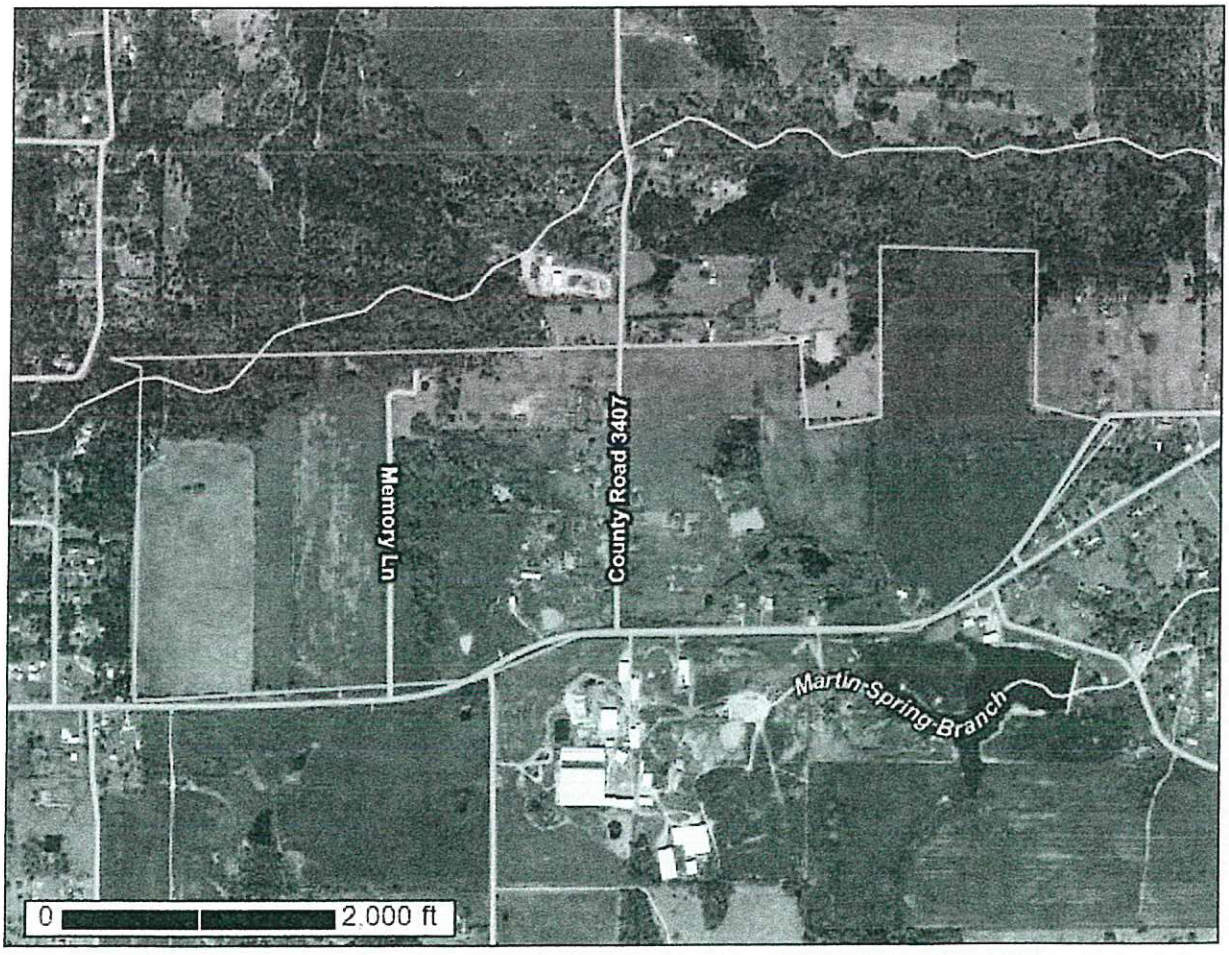
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

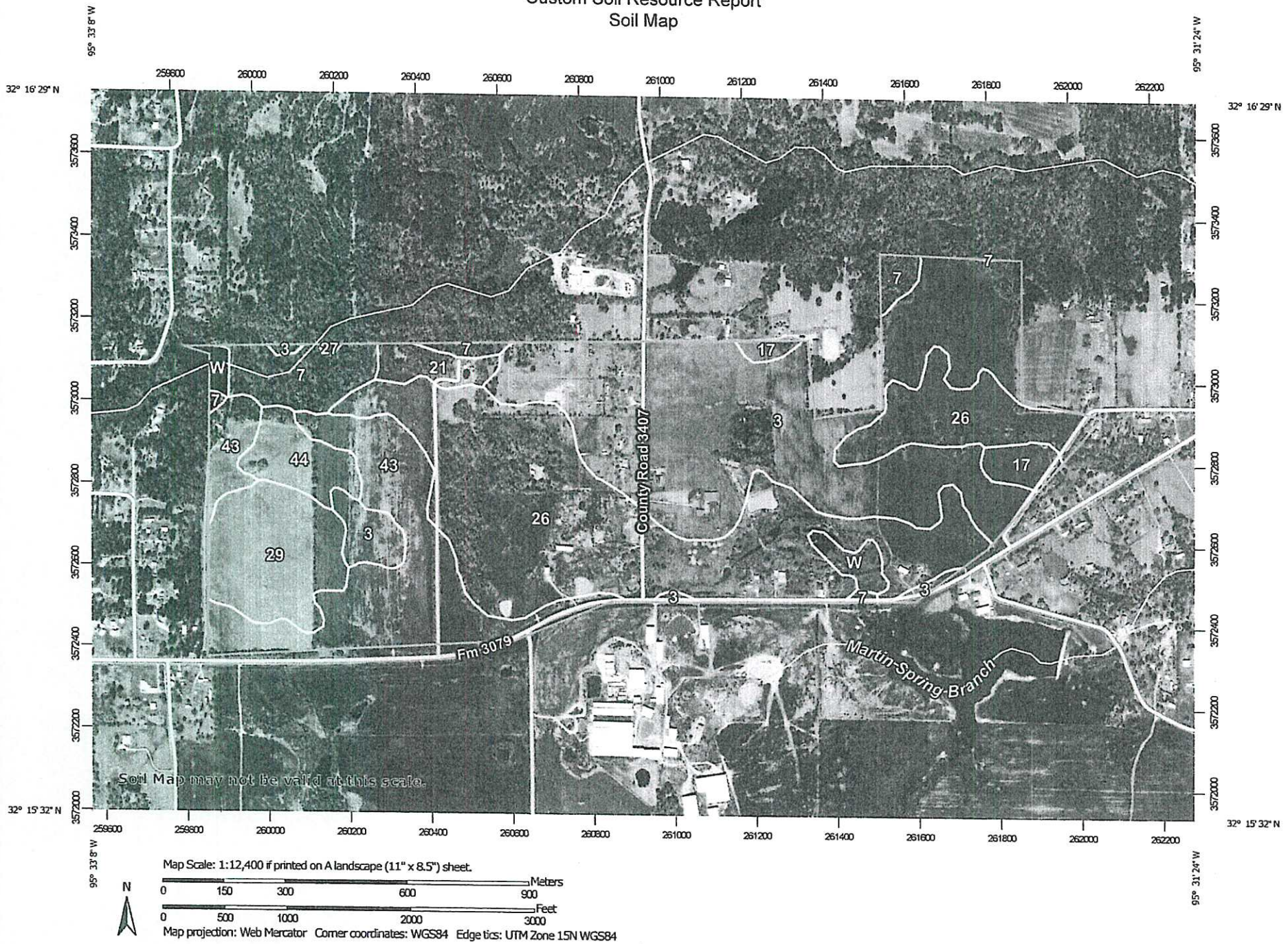
A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Henderson County, Texas

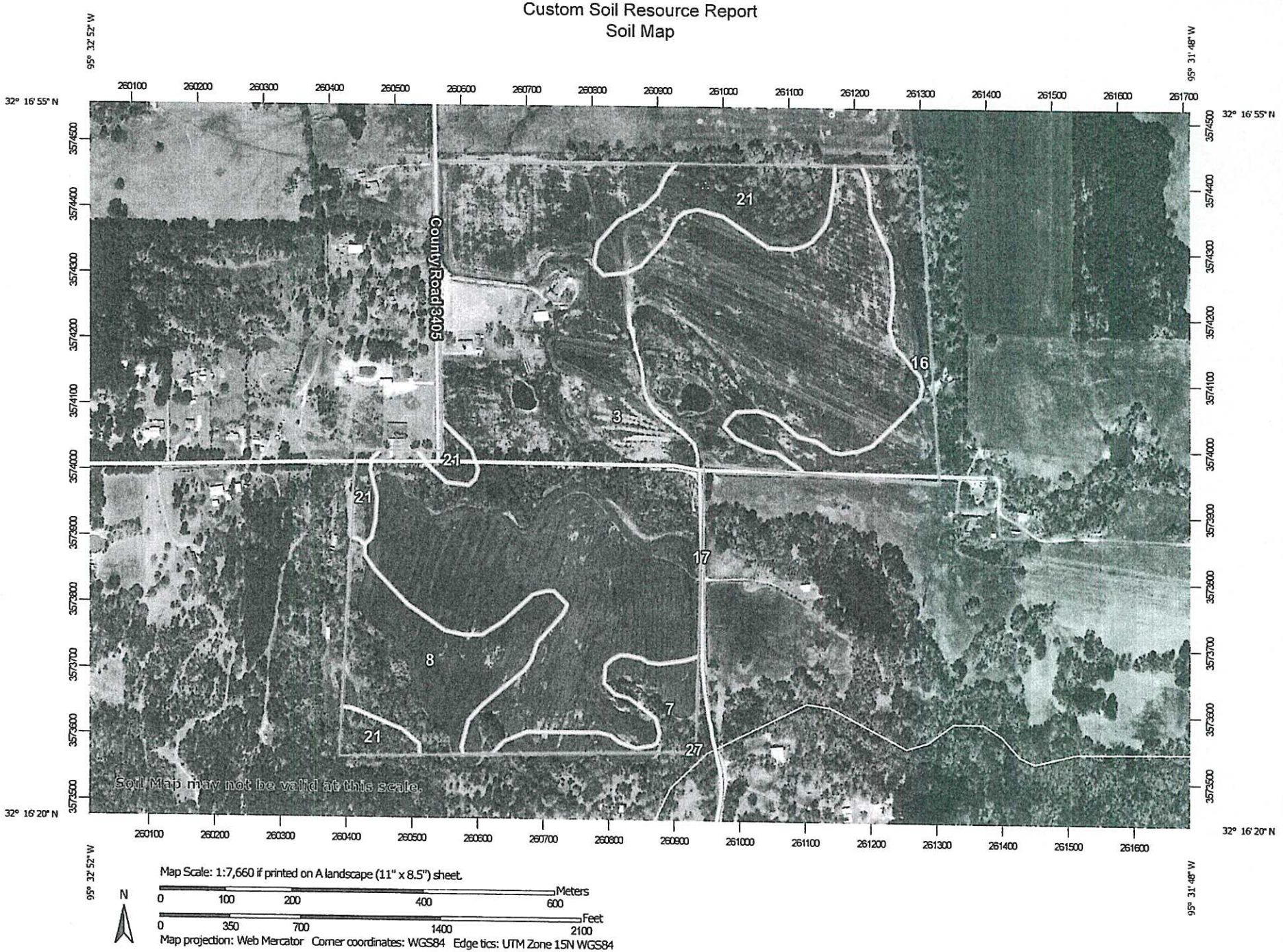


December 2, 2024

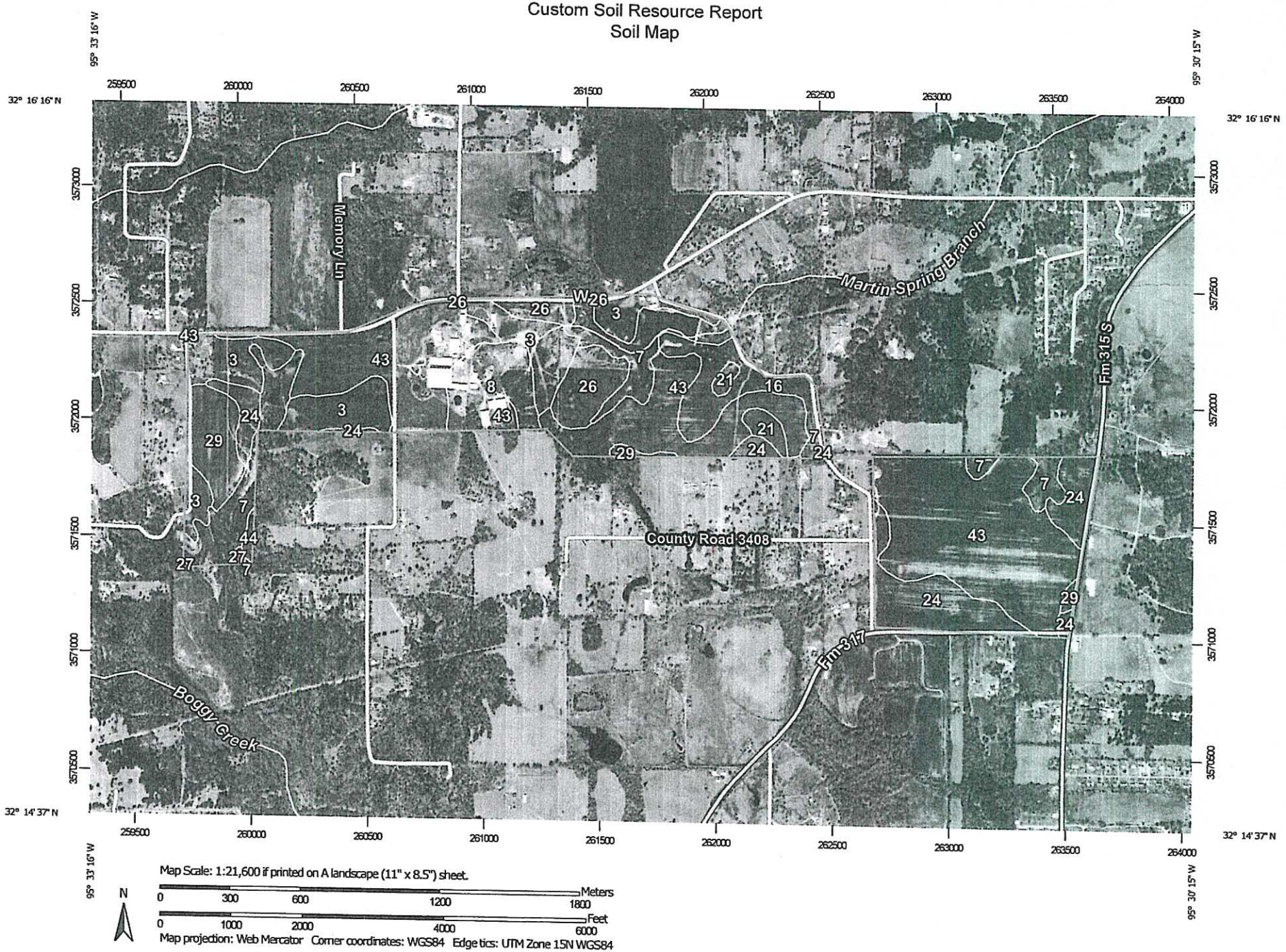
Custom Soil Resource Report
Soil Map



Custom Soil Resource Report
Soil Map



Custom Soil Resource Report
Soil Map



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Henderson County, Texas
Survey Area Data: Version 22, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 19, 2023—Mar 5, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Bernaldo fine sandy loam, 1 to 3 percent slopes	77.3	13.7%
7	Cuthbert fine sandy loam, 8 to 20 percent slopes	66.0	11.7%
8	Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes	28.6	5.1%
16	Freestone fine sandy loam, 1 to 3 percent slopes	29.9	5.3%
21	Kirvin fine sandy loam, 1 to 5 percent slopes	7.6	1.4%
24	Larue loamy fine sand, 1 to 8 percent slopes	60.5	10.7%
26	Lufkin-Raino complex	27.5	4.9%
27	Nahatche loam, 0 to 1 percent slopes, frequently flooded	1.0	0.2%
29	Pickton loamy fine sand, 1 to 8 percent slopes	26.7	4.7%
43	Wolfpen loamy fine sand, 2 to 5 percent slopes	236.6	42.0%
44	Wolfpen loamy fine sand, 5 to 12 percent slopes	1.9	0.3%
W	Water	0.0	0.0%
Totals for Area of Interest		**563.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion

of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Henderson County, Texas

3—Bernaldo fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tf44
Elevation: 200 to 720 feet
Mean annual precipitation: 42 to 51 inches
Mean annual air temperature: 54 to 75 degrees F
Frost-free period: 240 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bernaldo and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bernaldo

Setting

Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 4 inches: fine sandy loam
E - 4 to 12 inches: fine sandy loam
Bt - 12 to 47 inches: sandy clay loam
Bt/E - 47 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 42 to 59 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F133BY013TX - Terrace
Hydric soil rating: No

Minor Components

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

Freestone

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

7—Cuthbert fine sandy loam, 8 to 20 percent slopes

Map Unit Setting

National map unit symbol: 2s62z
Elevation: 300 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 230 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Marine deposits

Typical profile

A - 0 to 5 inches: fine sandy loam
E - 5 to 10 inches: fine sandy loam

Bt - 10 to 28 inches: clay
Bt/C - 28 to 36 inches: sandy clay loam
C - 36 to 60 inches: clay loam

Properties and qualities

Slope: 8 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Tenaha

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Kirvin

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Redsprings

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Pickton

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

8—Cuthbert very gravelly fine sandy loam, 12 to 30 percent slopes

Map Unit Setting

National map unit symbol: dbkf
Elevation: 400 to 750 feet
Mean annual precipitation: 40 to 56 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 235 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Cuthbert and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cuthbert

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum

Typical profile

H1 - 0 to 4 inches: very gravelly fine sandy loam
H2 - 4 to 24 inches: clay
H3 - 24 to 62 inches: sandy clay loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: 20 to 40 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

16—Freestone fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wg9c
Elevation: 140 to 790 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 62 to 66 degrees F
Frost-free period: 218 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Freestone and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freestone

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium derived from shale and siltstone

Typical profile

Ap - 0 to 4 inches: fine sandy loam
E - 4 to 11 inches: fine sandy loam
Bt - 11 to 20 inches: sandy clay loam
B/Et1 - 20 to 28 inches: clay loam
B/Et2 - 28 to 44 inches: clay
B't - 44 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: R087BY003TX - Sandy Loam
Hydric soil rating: No

Minor Components

Raino
Percent of map unit: 10 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Mounds
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

Woodtell
Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R087BY002TX - Claypan Savannah
Hydric soil rating: No

21—Kirvin fine sandy loam, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2tljs
Elevation: 130 to 640 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition
Kirvin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kirvin

Setting
Landform: Interfluves

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits

Typical profile

A - 0 to 7 inches: fine sandy loam
E - 7 to 12 inches: fine sandy loam
Bt - 12 to 40 inches: clay
BCt - 40 to 51 inches: clay
CBt - 51 to 57 inches: sandy clay loam
C - 57 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F133BY003TX - Loamy Over Clayey Upland
Hydric soil rating: No

Minor Components

Darco

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

Bowie

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY005TX - Loamy Upland
Hydric soil rating: No

Wolfpen

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

24—Larue loamy fine sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: dbjj
Elevation: 350 to 650 feet
Mean annual precipitation: 40 to 46 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 285 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Larue and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Larue

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 34 inches: loamy fine sand
H2 - 34 to 63 inches: sandy clay loam
H3 - 63 to 67 inches: sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

26—Lufkin-Raino complex

Map Unit Setting

National map unit symbol: dbjl
Elevation: 230 to 500 feet
Mean annual precipitation: 32 to 48 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lufkin and similar soils: 50 percent
Raino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lufkin

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey alluvium of pleistocene age derived from mixed sources

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 44 inches: clay
H3 - 44 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: R087AY003TX - Claypan Savannah
Hydric soil rating: No

Description of Raino

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium of pleistocene age derived from mixed sources

Typical profile

H1 - 0 to 29 inches: loam
H2 - 29 to 35 inches: loam
H3 - 35 to 64 inches: loam
H4 - 64 to 72 inches: clay
H5 - 72 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: R087AY003TX - Claypan Savannah
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 15 percent
Hydric soil rating: No

27—Nahatche loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2y0v3
Elevation: 100 to 670 feet
Mean annual precipitation: 36 to 45 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 222 to 257 days
Farmland classification: Not prime farmland

Map Unit Composition

Nahatche and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nahatche

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Microfeatures of landform position: Closed depressions
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Stratified loamy alluvium derived from mudstone

Typical profile

A - 0 to 8 inches: loam
Bg - 8 to 52 inches: clay loam
Agb - 52 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Minor Components

Manco
Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: Yes

Gladewater
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, open depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R087BY008TX - Clayey Bottomland
Hydric soil rating: Yes

Hatliff
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

Whitesboro
Percent of map unit: 1 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R087BY007TX - Loamy Bottomland
Hydric soil rating: No

29—Pickton loamy fine sand, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: dbjp
Elevation: 350 to 600 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 235 to 275 days

Farmland classification: Not prime farmland

Map Unit Composition

Pickton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pickton

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 8 inches: loamy fine sand
H2 - 8 to 50 inches: loamy fine sand
H3 - 50 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F133BY008TX - Northern Deep Sandy Upland
Hydric soil rating: No

43—Wolfpen loamy fine sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tcnz
Elevation: 210 to 570 feet
Mean annual precipitation: 41 to 51 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 204 to 236 days
Farmland classification: Not prime farmland

Map Unit Composition

Wolfpen and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wolfpen

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy fluviomarine deposits

Typical profile

A - 0 to 6 inches: loamy fine sand
E - 6 to 27 inches: loamy fine sand
Bt - 27 to 55 inches: sandy clay loam
Bt/E - 55 to 70 inches: sandy clay loam
B't - 70 to 80 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.1 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F133BY006TX - Northern Sandy Loam Upland
Hydric soil rating: No

Minor Components

Oakwood

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F133BY005TX - Loamy Upland
Hydric soil rating: No

44—Wolfpen loamy fine sand, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: dbk7
Elevation: 400 to 700 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 64 to 66 degrees F
Frost-free period: 235 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Wolfpen and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wolfpen

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum

Typical profile

H1 - 0 to 7 inches: loamy fine sand
H2 - 7 to 24 inches: loamy fine sand
H3 - 24 to 60 inches: sandy clay loam
H4 - 60 to 64 inches: sandy clay loam

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R087BY004TX - Sandy
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: No

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RECHARGE FEATURE CERTIFICATION
FOR
HILLTOP JERSEY FARM

GENERAL REMARKS:

Hilltop Jersey Farm is applying for a TCEQ Individual Permit for a concentrated animal feeding operation. The herd size will be 999 animals of which 999 are milking cows and will be kept in confinement. This recharge feature evaluation and associated certification was conducted at the request of Nico Debore. Jim C. Wyrick, Professional Geoscientist, compiled the findings and recommendations, contained herein.

PURPOSE OF REPORT:

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 wastewater from the retention control structure or land application site into the underlying aquifer as required in 30 TAC subchapter B: §§321.31-321.47 requirements. The following records and/or maps from the following entities/agencies were reviewed to locate any recharge features: (a) Texas Railroad Commission, (b) well driller, (c) TCEQ, (d) USDA-Natural Resource Conservation Service, (e) owner of site, (f) an on-site inspection and (g). Neches and Trinity Valleys Ground Water Conservation District. There are no previous landowners available to contact.

AREA OF EVALUATION

The property under evaluation consists of approximately 637 acres in Henderson County. The site includes milking parlor, drip shed, pack barn, two freestall barns, settling basin, a Transfer pond (TP), RCS#1 and RCS #2. The wastewater application areas are (LMU#1, LMU#2, LMU#3, LMU #4, LMU #5, LMU #6, LMU #7, LMU #8 and LMU#9). The facility is located on a topographic ridge with uncontaminated surface the runoff generally draining via overland flow and shallow concentrated flows south and southwest into an unnamed tributary then in Boggy Creek. The elevation of the dairy property ranges from approximately 420 to 510 feet above mean sea level (AMSL). The current land use of the property is agricultural (forage crops). All waste application areas are located on the property, and off-site manure and wastewater application areas will not be used by this facility. The site plan map shows the locations of the dairy barn, Settling basin, Transfer pond and RCS#1. The LMU map identifies the wastewater application areas. The 7.5 mm USGS map shows the general topography of the area.

SITE DESCRIPTIONS

The existing Transfer pond, RCS#1 and RCS #2 are located west and down slope of the freestall barns. These RCSs will catch and contain all wastewater generated from the dairy. All manure and wastewater from the freestall barns will be flushed into the Transfer pond and RCS. Manure will be applied to the LMUs mixed with the wastewater. Wastewater flows from the dairy facility into the settling basin. The excess then goes to RCS #2 and the Transfer pond. RCS #1 catches runoff from Freestall south and flows to RCS #2. Wastewater is transferred between RCSs and Transfer pond through a six-inch PVC pipe. RCS#1, RCS #2 and Transfer pond will be dewatered using a 6000-gallon tanker and/or pumped into a drag hose system. On occupations solid manure is scraped from area and hauled offsite.

DEFINITION OF RECHARGE ZONE FEATURE

For the purpose of this report, the definition of "recharge feature" shall be the same as the definition described by TCEQ rules. *Recharge feature is defined as those natural or artificial features either on or beneath the ground surface at the site under evaluation that provide or create significant hydrologic connections 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 connection includes, but are not limited to faults; fractures; sinkholes or other macro pores that allow direct surface infiltration; a permeable or a shallow soil material that overlies an aquifer, exposed geologic formations that are identified as an aquifer;* or a water course bisecting an aquifer

LOCAL GEOLOGY AND GROUND WATER

The site is located in the northern part of the East Texas Basin. Geologic units near the site crop out in bands running generally in an east-west direction. The fine sandy lawns and foams of the Cuthbert, Freestone, Bernard, Gallime, Lufkin-Rain, Wolfpen, and Nahatche soil series are immediately underlain by the Queen City Formation (Qec). This formation is composed of light gray to brownish gray quartz sand, fine grained to locally medium grained. Thin beds of gray to brown silty clay are also present toward the East. Ironstone concentrations and ledges are common. The thickness is approximately 100-400 feet. Below is the Reklaw Formation (Er) which consist of a layer of dark silty shale typically 30 to 40 feet thick over a layer of dark gray to green, very fine glauconitic silty sand typically 20 to 30 feet thick for a total formation thickness of 50 to 70 feet, but is up to 130 feet thick in certain areas. The shale layer is important in that it provides an impermeable separation layer above the Carrizo Formation. These formations comprise the Queen City Aquifer; most wells in the area are developed in this major aquifer. The primary source of groundwater in the area is the infiltration of rainfall either directly in the outcrop or indirectly as seepage from stream flows. Wet weather seeps may occur during extremely high rainfall events. One fresh water spring, Martin Spring, is located on the property in one of the land management units. Other unnamed springs could be located near the property. These features could provide direct inflow into the Queen City Aquifer. Any identified springs will be buffered to prevent wastewater infiltration into the spring Underlying is the Carrizo Sand (Ec) which consists largely of white to light gray, fine to medium quartz sand. However, small amounts of silt and clay are present in the upper part of the formation. Typical thickness of the Carrizo is 50 to 100 feet, but is up to 150 feet thick in some places and in other places is mostly shale so as to not be detectable. Below this formation is Wilcox Group Undivided (Ewi) which consists mostly of silty and sandy clay, very thinly bedded to massive, locally cross-bedded, in part carbonaceous, calcareous siltstone and ironstone concretions common various shades of gray; local beds of clay, lignite, silt, and quartz sand; weathers various shades of gray, brown, yellow, and red; abundant plant fossils; thickness 700 feet. The Wilcox varies in thickness in the extreme outcrop area but typically 400 to 960 feet thick where it is not outcropped. The formation consists of crossbedded layers of shale, lignite and sand with intermingled combinations of these layers. Medium to very fine quartz sands constitute about half of the Wilcox. Individual layers of sand are generally not thick, but some beds are as much as 70 feet thick or more. Sands and shales in the Wilcox are typically light gray in color. Other formations in descending order include Wills Point Formation (Ewp) and Kincaid Formation (Ek). Wills Point Formation is mostly clay, upper part silty, locally liginitic, some calcareous siltstone concretions, thin bed of rosette limestone near middle, glauconitic near base thin bedded to locally massive, various shades of gray;

weathers medium gray to yellowish gray; marine megafossils; thickness +450 feet. Kincaid Formation is mostly clays calcareous, glauconitic, selenitic, in part silty and sandy locally phosphatic near base, some thin beds of hard gray limestone in upper part, various shades of gray; weathers medium gray: marine megafossils thickness ±150 feet. (Barnes and others 1966). Several watercourses and intermittent streams bisect the property. These act as drainage ways which could carry wastewater off the property. Adequate buffering around these waterways will be maintained. Drainage from the north side of Farm-to-Market Road 3079 flows toward Cottonwood Creek which flows into Lake Palestine. The production area and several land management units drain toward Martin Springs Branch which flows into Lake Palestine. No part of the production area appears to lie within two miles of Lake Palestine. The far west side of the property drains west toward a tributary of Boggy Creek, which flows into Lake Palestine. Some areas have slopes in excess of 8 percent, irrigation avoided, on these areas. No gullies were noted on the LMUs during the site inspection. No faults or fractured sediments were observed. No caves, sinkholes, or signs of significant animal burrowing were noted. In addition, no topographic depressions or playa lakes were observed.

EVALUATIONS OF LOCAL RECHARGE POTENTAL

Recharge from Precipitation

According to the National Weather Service. (NOAA), the average annual precipitation rate in Henderson County is about 44.6 inches per year. A significant quantity of water that infiltrates to the water table moves slowly down the local hydraulic gradient and discharges through evapotranispiration or via seeps and springs into the surface drainage system. This rejected recharge supplies a major fraction of the base flow for streams in the area.

Production area and Retention Control Structures (Transfer pond and RCS #1)

All runoff water contaminated with animal waste from the dairy operation is directed to the RCSs and TP. The USDA-Soil Conservation Service Soil Survey for Henderson County indicates Transfer pond and RCS#1 were constructed in 43—Wolfpen loamy fine sand, 1 to 5 percent slopes. Jim C Wyrick, Texas Licensed Professional Geoscientist certified the in-situ soil material in Transfer pond and RCS#1 as meeting the minimum requirements considered protective of groundwater as established by the TCEQ. An on-site evaluation was done on the Transfer pond and RCS#1. RCS #2 is a concrete lined pit. Nico DeBoer; owner indicated there had not been any digging equipment in the pond since it was constructed. During the inspection no evidence was found to show any mechanical or structural damage to the liner.

Wastewater Application Area

The wastewater application area consists of nine LMUs: LMU#1 is 41 acres, and generally drain via overland flow and shallow concentrated flows north into an unnamed tributary then into Cottonwood Creek. LMU#2 is 40 acres, and generally drain via overland flow and shallow concentrated flows northeast into an unnamed tributary then into Cottonwood Creek. LMU#3 is 26, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #4 is 90 acres, and generally drain via overland flow and shallow concentrated flows southeast into an unnamed tributary then into Martin Springs Branch. LMU #5 is 46 acres, and generally drain via overland flow and shallow concentrated flows southwest into an unnamed tributary then into Martin Springs Branch. LMU #6 is 28 acres, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #7 is 126 acres, and generally drain via overland flow and shallow concentrated flows south into an unnamed tributary then into Boggy Creek. LMU #8 is 160 acres and generally drain via overland flow and shallow concentrated flows northeast into an unnamed tributary then into Martin Springs Branch. LMU#9 is 80 acres and generally drain via overland flow and shallow concentrated flows southeast into an unnamed tributary then into Cottonwood Creek.

The USDA-NRCS Web soil survey of Henderson County, indicates that soils occurring on the wastewater applications are: 3-Bernaldo fine sandy loam, 1 to 3 percent slopes, 26-LufkinRaino complex, 29-Pickton loamy fine sand, 1 to 8 percent slopes and 43-Wolfpen loamy fine sand, 2 to 5 percent slopes.

ARTIFICIAL RECHARGE FEATURE EVALUATION

Texas Railroad Commission Records

The Railroad Commission of Texas website was accessed. There are several oil and gas wells of record located within one mile from the boundaries of the facility. Review of the coordinates indicates there are two dry holes on site.

Local Water District

Henderson County's underground water is regulated by the Neches and Trinity Valleys Groundwater Conservation District. A review was made of the underground water district's web site httpfintvgcd.org. According to the local Water Supply Office, no public water supply wells are known to exist on the subject property. Three Communities WSC services the area around the dairy. There are no private wells being used for water supply in the area.

Texas Water Development Board

A review of the Texas Water Development Board Water Data Interactive (TWDB WDI). Shows only one well on the dairy. It appears to be in the wrong location on their map. The database was also reviewed for registered wells within a I-mile radius of the faculty site. There are no registered public wells near the site. All wells are plotted on the attached "Site and Runoff Map.

Current and Previous Landowners

Nico DeBoer was contacted regarding the present of potential artificial recharge features on the facility. He confirmed there are two-plugged oil well are located on the facility. There are five private water wells located on the facility. A certified well driller constructed the water well. Surface completion was in accordance with a Specified Surface Slab (Rule 287.44 (2) (A). The water wells are identified on water well location map. The previous owner could not be located.

USDA Natural Resources Conservation Service (Henderson County)

An inquiry was made to the USDA-NRCS office in Athens relating to artificial or natural recharge features, which may be present on the site. They were not aware of any additional features. The USDA-NRCS Soil Survey of Henderson County was reviewed and no artificial features are shown.

On-Site Inspection

The property was inspected by ground reconnaissance and aerial photo interpretation for features that could be adversely affected due to the operation of the facility. Other than the areas identified within the attached maps, no other suspect areas were observed.

METHODS USED

Natural and artificial recharge features were identified by the following techniques: on-site inspection of the site, interviews with the landowner, review of Texas Railroad Commission records, review of published maps and reports (refer to bibliography), review of Soil Survey of Henderson County, Texas, review of Texas Water development Board maps, well driller's logs, the Geologic Atlas of Texas Tyler and personal knowledge of the area.

CONCLUSIONS

The shallow fine-grained sand units present at the site do not represent a classic recharge feature for the regional aquifer system. A significant pathway between ground surface and the regional aquifers does not appear to exist at the site; however, a percentage of the annual precipitation will infiltrate through the unsaturated zone to the shallow aquifers underlying the site. Therefore, protective measures as Best Management Practices (BMPs) should be carried out to prevent any potential negative impacts to the underlying aquifer.

2) There are five private water wells located on the facility. A records search and on-site inspection were made and no other wells were found. Other water wells not identified during this investigation could be near the site.

3) Texas Rail Road Commission records show there are two plugged oil wells located on the property.

4) The existing Transfer pond and RCS#1 and RCS#2 were constructed prior to this application and meets 30 TAC subchapter B: §§321.31-321.47 requirements for in-situ soil material. They are designed to hold all runoff water from the facility, including a 25-year, 24-hour rainfall event.

5) Transfer pond, RSC #1 and RCS#2 are being properly maintained and there was no indication of seepage or leakage. The embankments are free of trash, brushes or trees and walls are stabilized and no erosion or deterioration has taken place. Based on these facts, there is little or no potential for hydraulic connection between Transfer pond, RCS#1 and RCS#2 the underlying aquifer

RECOMMENDATIONS

Since a percentage of the annual Precipitation will infiltrate through the unsaturated zone to the shallow, local aquifers underlying the site, the facility will employ BMPs, which are protective of the local aquifer underlying the site. These protective measures will be taken to prevent the possible migration of contaminants from Transfer pond and RCS#1 and the wastewater application areas to the underlying groundwater. As a minimum, these protective measures will include the following BMPs:

- Operations in and around the RCSs and TP take care not to damage the in-suite clay material or concrete sides. If the ponds are cleaned by a dragline, front-end loader or the waste storage pond liner disturbed, Nico DeBoer will request the pond liner be inspected and certified by a Texas Licensed Professional Engineer or Texas Licensed Professional Geoscientists
- The operator will prohibit livestock entry into the RCSs and TP.
- Land application of wastewater in the recharge areas of the shallow, local aquifer will take place on designated application areas and at agronomic rates as an organic fertilizer.
- Wastewater application rates will not exceed the infiltration rates of the soil.
- Over watering of wastewater will be avoided to prevent leaching of nutrients below the crop root zone.
- Wastewater will not be applied when the ground is frozen or saturated or during rainfall events. Irrigation application will be managed to minimize ponding and puddling of wastewater. Wastewater will be applied at agronomic rates and not allowed to runoff. Diversions or terraces will be constructed if necessary, to prevent wastewater from leaving the application areas. Wastewater will not be applied closer than 150 feet from any active water well. Wastewater will not be applied closer than 100 feet to waters of Texas. In addition, a vegetative buffer strip will be maintained between all waste application areas and waters of Texas.
- Dead animals will be properly buried in the designated burial area as identified on LMU Map and according to 30 TAC subchapter B: §§321.31-321.47 requirements.
- Pesticides and other chemicals will not be stored near the water wells or disposed of in the waste storage pond.

CERTIFICATION

The undersigned hereby certifies that natural recharge features and three potential artificial recharge features exist as defined in 30 TAC subchapter B: §§321.31-321.47 Part I on tracts operated or controlled by Bouma Dairy and utilized under this application. See Aquifer Protection Plan for the natural and artificial recharge features impact on the Aquifer.

Jim C. Wyrick

Jim C. Wyrick
Professional Geoscientist, License Number 770

STATE OF TEXAS
Jim C. Wyrick
Soil Science
License Number
770
LICENSED
PROFESSIONAL GEOSCIENTIST

11/26/24
Date

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Sellards E.H, Adkins, A. D. Plummer, F.B, 1954, *The Geology of Texas, Volume I, Stratigraphy* The University of Texas at Austin, Bureau of Economic Geology Bulletin No. 3232. pages 612-620.

Texas Basin. *The University of Texas at Austin, Bureau of Economic Geology Report. Report of Investigations No.127.*

The Texas Water Development Board Well Location Report Submission and Retrieval System Website.

AQUIFER PROTECTION PLAN

The artificial recharge features are three private water wells. They are used exclusively for private water supply. The wells locations are shown on the Site and Runoff Map.

Well #1 is about 80 feet north of the commodity barn. Well #2 is about 75 feet east of the commodity barn and 140 feet north of the milking parlor. Well #3 is about 110 feet north of the freestall barn and about 80 feet west of milking parlor. Well#4 and Well#5 are south of the cattle lane from milking parlor and freestall barns. .All runoff water from the commodity barns flows to the south away from the wells. The wastewater generated in the milking parlor flows south over a concrete lane and a pipeline into the RCS. Wastewater from the commodity or milking parlor could not enter the wells. The surrounding ground slopes away from the wells. The wastewater generated in the milking parlor flows south over concrete and through a pipeline into the RCS. Wastewater generated in the freestall barns is flushed down a curbed concrete floor sloping to the south away from the well. Wastewater from the milking parlor or freestall cannot enter the wells. The surrounding ground slopes away from the well.

These BMPs are for use on all five wells. All wastewater is stored in the RCS. Wastewater application will not be applied near the wells. Cattle are not allowed to graze in the area around the wells. There are no other pollutant sources such as manure, sludge, wastewater, dust, fuel storage tanks, pesticide and lubricants stored near the wells. Dead animal burial area is not near the wells. The fuel storage tank is not located near the wells. Additional wellhead protective measures include, all wells have a sanitary seal, located on a concrete slab. The areas around the wells have a bermudagrass ground cover. Water wellhead backflow prevention devices have been added to the wells.

The wells and area around them will be inspected monthly to ensure contaminants are not running into the well. If for some reason a pollutant ever flows in the direction of the well, immediate action will be taken to divert the flow from the well. Any change in conditions of the wells will have corrective measures taken. The date Well#1 and Well#2 were drilled is unknown and well logs are not available. Well#3 was drilled on January 9, 2008 a copy of the well log is attached. The wells were completed in accordance with water well drilling rules at that time of drilling. These wellhead protective measures will prevent pollutants from entering the groundwater through the wells

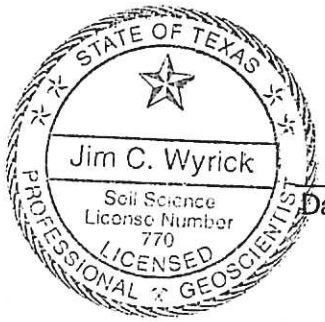
The natural recharge features include surface water bodies, creeks, and tributaries. Structural and non-structural controls to be used to protect the natural recharge features are as follow:

- Vegetative filter strips of Bermuda grass will filter, contain, and prevent the lateral movement of wastewater irrigation and manure.
- Waste will be applied only where the LMU cover vegetation is growing and has crop demand for nutrients.
- Waste will be applied at the nutrient requirements of the vegetative cover at the agronomic application rates.
- Wastewater will be applied at a rate less than the permeability of the soil to prevent ponding and runoff.
- Wastewater application will be at rate that ensures that wastewater will be used by the vegetative cover.
- Vegetative buffers of 150 feet for will be maintained around any newly drilled private water wells.
- 100 feet of vegetative cover buffer between waste and wastewater application areas and surface water and watercourses will be maintained.
- Records of climatic conditions during waste application such as: temperature, precipitation and cloud cover.

The following BMPs are to protect the groundwater for LMU#1, LMU#2, LMU#3, LMU#4, LMU#5 and LMU#6. These LMUs have Bernaldo, Nahatche and Wolfpen soils, which have a seasonal high-water table. LMU#1, LMU#2, LMU#5 and LMU#6 have Wolfpen soils which have excessive permeability. The LMU locations are shown on the LMU Map.

1. Application of wastewater will be applied following the Nutrient Management Plan. This will ensure:
    - Intensive nutrient management practices to manage LMU limitations
    - All agricultural waste shall be utilized in a manner that minimizes the opportunity for contamination of surface and ground water supplies.
    - Wastewater application rates will not exceed the soil infiltration rate so not to cause leaching and groundwater contamination.
    - Wastewater application rates will not exceed the available water holding capacity of the soil profile at the time of application, so not to cause leaching and groundwater contamination.
    - Wastewater will be applied at nutrients levels to meet the bermudagrass ground cover needs. This will prevent the movement of nutrients through the soil profile to groundwater caused by over irrigation
    - Annual soil sampling to determine soil available nutrient and amount of nutrients needed for crop production, according to30 TAC subchapter B: §§321.31-321.47.
2. Use of proper timing, formulation, and application methods for nutrients that maximize plant utilization of nutrients and minimize the loss to the ground water,
3. Wastewater will not be applied to saturated soils.
4. Irrigation will be limited on these soil areas when the potential for the seasonal water table to be near the soil surface. (November – May).
5. Timing of manure or waste water application should coincide as nearly as possible to the time when plants can use the nutrients -- that is, during the normal growing season
6. Continual inspection and maintenance of waste handling facilities and equipment will prevent unwarranted waste discharges into surface water and groundwater.
7. Records of crop yields will be kept to determine realistic crop yield expectations.
8. Application equipment should be calibrated and inspected for wear and damage periodically, and repaired when necessary.
9. Records of nutrient application rates will be maintained along with other management records for each field.

These BMPs will provide adequate protective measures for the natural recharge features.

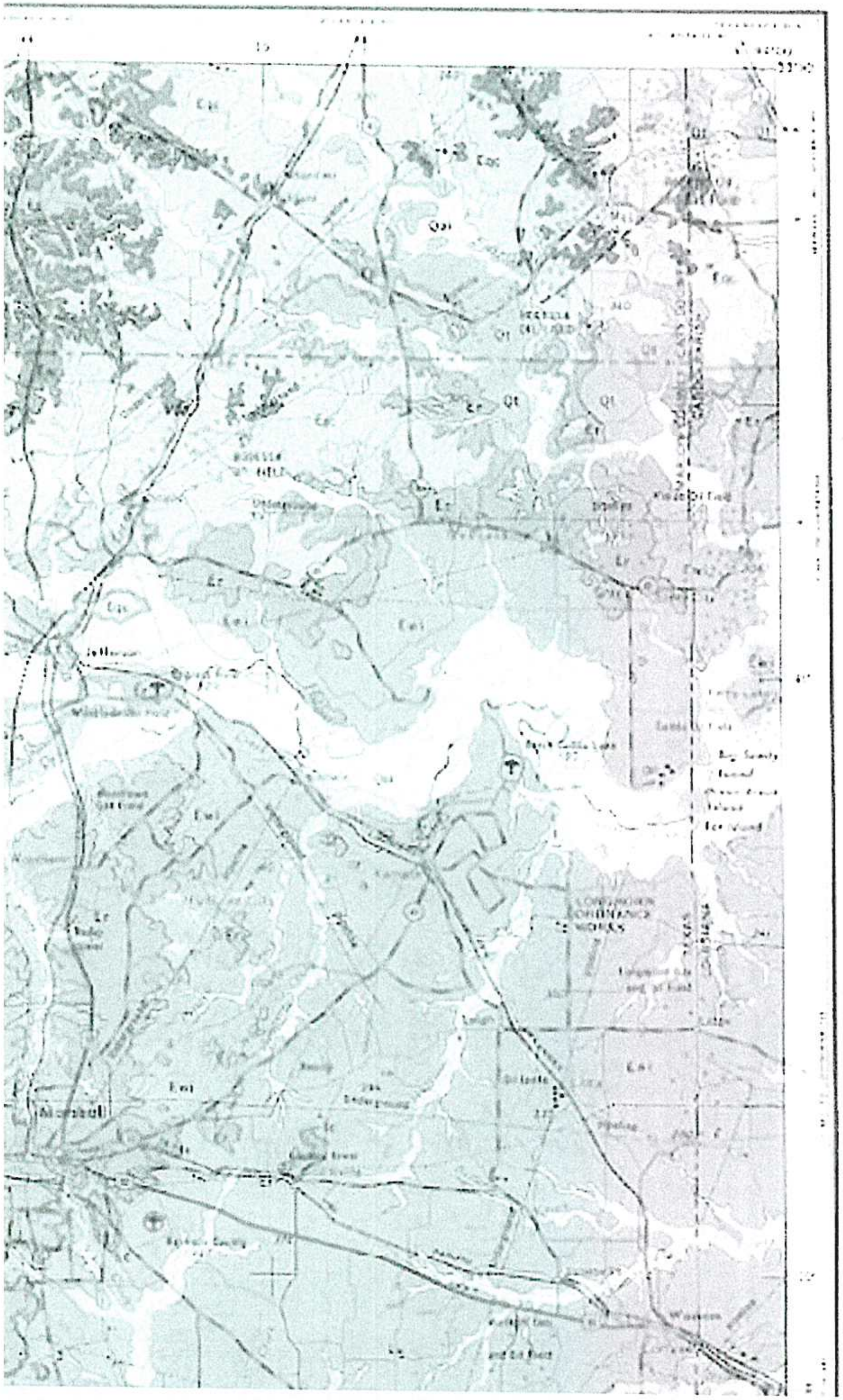


Jim C. Wyrick
Professional Geoscientist, License Number 770

11/26/24
Date

GEOLOGIC ATLAS OF TEXAS

TYLER SHEET



EXPLANATION

QUATERNARY ROCKS

Qal

Alluvium

Flood-plain deposits

Qt

Fluviatile terrace deposits undivided

Es

Sparta Sand

Ew

Weches Formation

Eqc

Queen City Sand

Er

Reklaw Formation

Ec

Carrizo Sand

Ewi

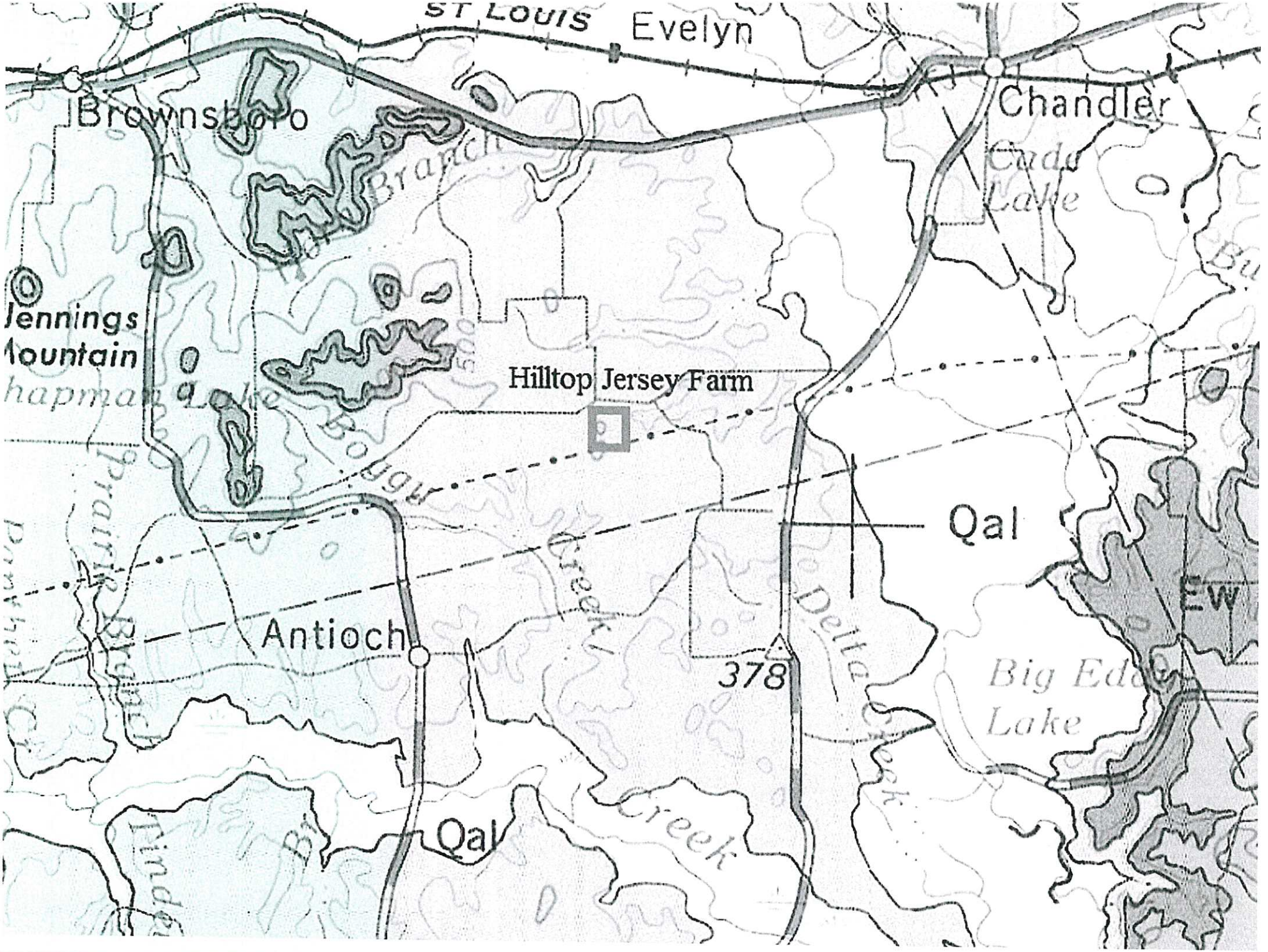
Wilcox Group undivided

EPE

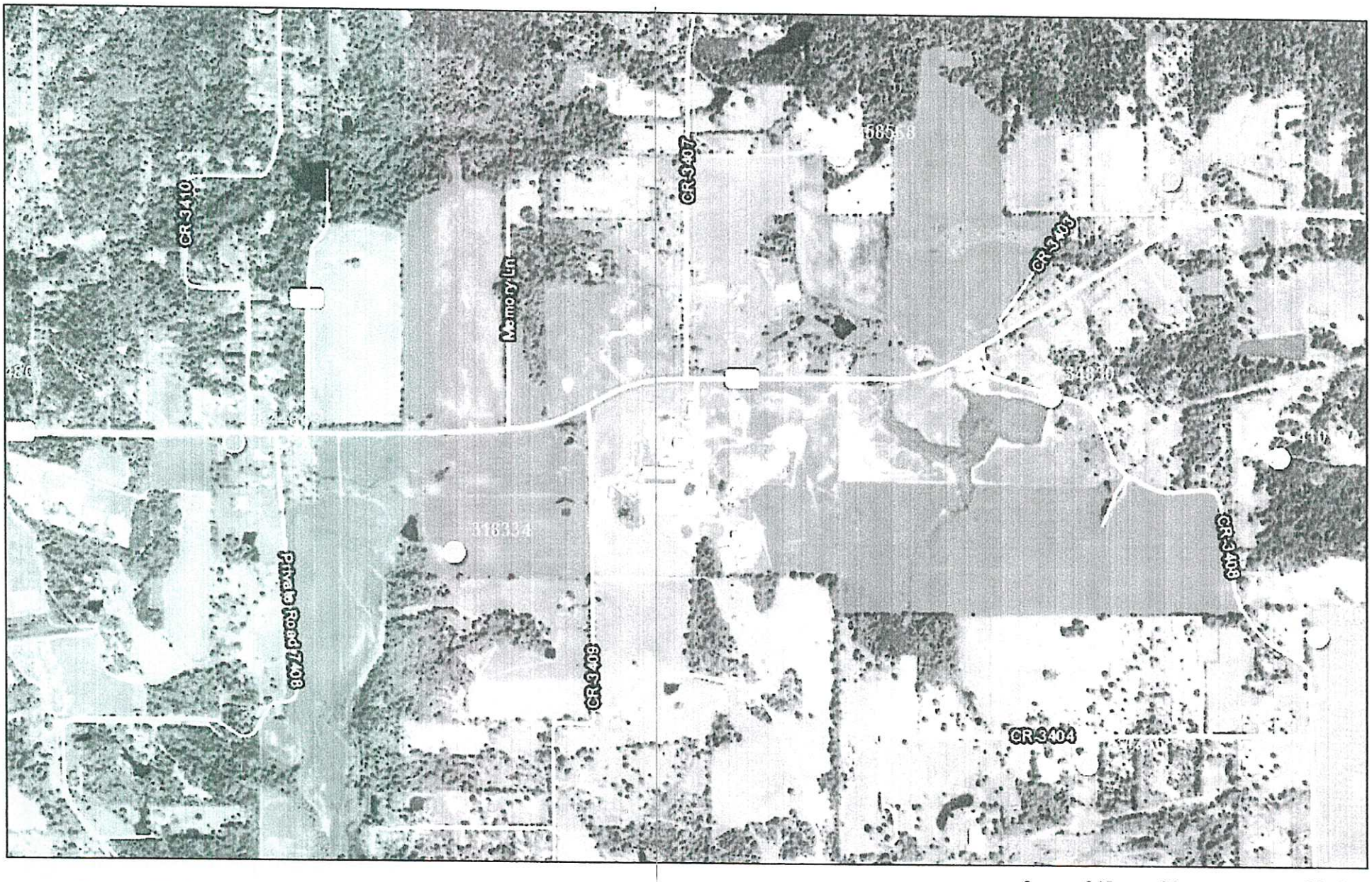
Eocene and Paleocene rocks undivided

PEwp

Wills Point Formation


St Louis
Evelyn
Brownsboro
Chandler
Cedar Lake
Jennings Mountain
Chapman Lake
Hilltop Jersey Farm
Qal
Antioch
Prairie Branch
Deltaic Creek
378
Big Eddy Lake
Qal
Qal

Hilltop Jersey Farm Well Location



Texas Water
Development Board

September 4, 2024

TWDB Groundwater
Well Reports

0 0.15 0.3 0.6 mi
0 0.25 0.5 1 km
1:18,056

Esri, HERE, Garmin, (c) OpenStreetMap contributors

STATE OF TEXAS WELL REPORT for Tracking #318334

Owner:	**NICO DEBORE**	Owner Well #:	**3**
Address:	**19008 FM 3079 CHANDLER, TX 75758**	Grid #:	**34-44-8**
Well Location:	**19008 FM 3079 CHANDLER, TX 75758**	Latitude:	**32° 15' 33" N**
		Longitude:	**095° 32' 42" W**
Well County:	**Henderson**	Elevation:	**441 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Start Date: **3/5/2013** Drilling End Date: **3/7/2013**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**88**

Drilling Method: **Jetted**

Borehole Completion: **Filter Packed; Straight Wall**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
25	**88**	**Gravel**	**16 30**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**10**
20	**25**	**4**

Seal Method: **mix and pore**

Sealed By: **WIL**

Distance to Property Line (ft.): **500 PLUS**

Distance to Septic Field or other concentrated contamination (ft.): **300 PLUS**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed**

Water Level: **20 ft.** below land surface on **2013-03-05** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **70**

Well Tests: **Unknown** **Yield: 30 GPM with 10 ft. drawdown after 1 hours**

Water Quality:

Strata Depth (ft.)	Water Type
25	IRON

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: **Chandler Water Well Drillers**

18150 Fm 3204
Brownsboro, TX 75756

Driller Name: **Wil Hammack** License Number: **55055**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
SAND	0-5	
CLAY	5-30	
SAND	30-88	

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4"	SCH 40	BLANK	0 - 40
4"	SCH 40	PVC 020 SLOTTED SCREEN	

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.

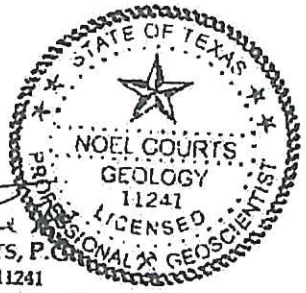
Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

HILLTOP JERSEY FARM

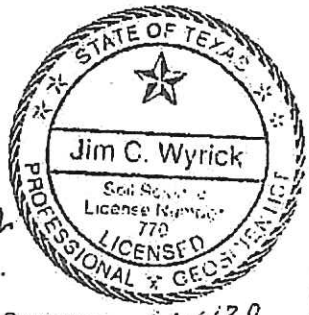
DAIRY BARN
&
FREE STALL SLUDGE
CALCULATIONS

NICO DEBOER
19008 FM 3079
CHANDLER, TEXAS 75758
HENDERSON COUNTY

PREPARED BY:



NOEL COURTS, P.G.
LICENSE NO. 11241
EAST TEXAS ENVIRONMENTAL SERVICES



JIM C. WYRICK, P.G.
LICENSE NO. 770
EAST TEXAS ENVIRONMENTAL SERVICES 6/06/20

06/06/20

M. BERRY JR. P.E.
FIRM NO. 2128
SEAL NO. 44452

HILLTOP JERSEY FARM – SLUDGE VOLUME (Total Cows)

DAIRY BARN &

FREE STALL BARNS

All of the waste from the dairy barn and free stall barns at Hilltop Jersey Farm is removed by a Honey Vacuum that is proved to be at least 88% effective, and the remaining solids go into concrete settling basins that remove 45% of the solids produced. Any manure separating facilities have 30%-90% total solids efficiency according to NRCS Practice Standard Code 632 – "Solid/Liquid Waste Separation Facility". The adjusted total live weight contributing to the waste volume is 974,025 pounds @ 975lbs/cow. The sludge from the free stall & dairy barns is calculated below:

Adjusted Total Live weight Contributing Manure	974,025 lbs
Honey Vacuum Efficiency	88%
Adjusted Live weight	116,883 lbs
Settling Basin Efficiency	45%
Adjusted Live weight	64,286 lbs
Sludge Accumulation Rate cu ft/year/lbs live weight	0.25

Sludge Volume = $\frac{(64{,}286 \text{ lbs})\ (0.25 \text{ cu ft/year/lbs live weight})}{43{,}560 \text{ cu ft/ac-ft}}$ = .37 Ac-Ft/yr * 5yrs = 1.85 ac-ft

CERTIFICATION:

STATE OF TEXAS
NOEL COURTS
GEOLOGY
11241
LICENSED
PROFESSIONAL GEOSCIENTIST

Prepared By:
Noel Courts, P.G.
East Texas Env. Services

STATE OF TEXAS
Jim C. Wyrick
PROFESSIONAL GEOSCIENTIST
LICENSED

Prepared By:
Jim C. Wyrick, P.G.
East Texas Env. Services
6/06/20

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

Prepared By:
M. Berry, P.E.
Firm No. F-2120 06/06/20
Seal No. 44452

HILLTOP JERSEY FARM - FreeStalls (Dry cows)

AGRICULTURAL WASTE MANAGEMENT PLAN

HENDERSON COUNTY

Prepared by:

Noel Courts, P.G.
Professional Geoscientist
East Texas Environmental Services

Jim C Wyrick, P.G.
Professional Geoscientist
East Texas Environmental Services

6/06/20

M. Berry, P.E.
Texas No. F-21204
Seal No. 44452

06/04/20

Modified for Wood/Hopkins/Rains/Franklin Counties(I.D. #6b) on January 22, 2008. Modifications made in monthly rainfall, monthly evaporation, and monthly consumptive use values for bermudagrass pastureland, bermuda/small grain pastureland, small grain cropland, grain sorghum cropland, and sorghum/small grain cropland. Modifications (values) were taken from following reference: Borrelli, J., C.B. Felder, and J.M. Gregory. 1998 *Mean Crop Consumptive Use and Free-Water Evaporation for Texas.* TWDB Grant No. 95-483-137. Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. *WATRNTR Version 1, Modified by Eugene Lindeman, P.E.*

IN COOPERATION WITH:

NATURAL RESOURCES CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

MANURE PRODUCTION DATA FOR CONFINED ANIMAL FEEDING OPERATIONS

TYPE OF ANIMAL (Dairy=0, Swine=1, Laying Hens=2, Beef Feedlot=3, Sheep Feedlot=4, Horses=5, Turkeys=6, Broilers=7) => 0

Feeding Facilities For: Dairy

	Dairy Barn & FreeStall	Open Lots	Total
Number of Animals	899	0	
Average Liveweight per Head, lbs/hd	975	0	
Total Liveweight,lbs	876,525	0	
Confinement Period, hours/hd/day	24.0	0.0	24.0
Adjusted Total Liveweight, lbs	876,525	0	876,525
Wet Manure Production, lbs/day	89,406	0	89,406
Dry Manure Production, lbs/day	12,885	0	12,885
Dry Manure Production, tons/year	2,351	0	2,351
Volatile Solids (VS) Production, lbs/day	9,458	0	9,458
Total Nitrogen Production, lbs/day	479	0	479
Total Phosphorus (P2O5), lbs/day	237	0	237
Total Potassium (K2O), lbs/day	406	0	406
Sodium Production, lbs/day	68	0	68
COD Production, lbs/day	11,745	0	11,745
BOD5 Production, lbs/day	1,823	0	1,823

Engineering Job Approval Authority Job Class for Ag. Waste Management System: _____

This practice, Ag. Waste Management System, meets specifications, signed by:

Remarks _____ Date: _____

HILLTOP JERSEY FARM - Dairy Barn & FreeStalls

AGRICULTURAL WASTE MANAGEMENT PLAN

HENDERSON COUNTY

Prepared by:

Noel Courts, P.G.
Professional Geoscientist
East Texas Environmental Services

Jim C Wyrick, P.G.
Professional Geoscientist
East Texas Environmental Services

Max N. Berry, P.E.
Firm No. F-21204
Seal No. 44452

Modified for Wood/Hopkins/Rains/Franklin Counties(I.D. #6b) on January 22, 2008. Modifications made in monthly rainfall, monthly evaporation, and monthly consumptive use values for bermudagrass pastureland, bermuda/small grain pastureland, small grain cropland, grain sorghum cropland, and sorghum/small grain cropland. Modifications (values) were taken from following reference: Borrelli, J., C.B. Felder, and J.M. Gregory. 1998 *Mean Crop Consumptive Use and Free-Water Evaporation for Texas.* TWDB Grant No. 95-483-137, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas. *WATRNTR Version 1, Modified by Eugene Lindeman, P.E.*

IN COOPERATION WITH:

NATURAL RESOURCES CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

MANURE PRODUCTION DATA FOR CONFINED ANIMAL FEEDING OPERATIONS

TYPE OF ANIMAL (Dairy=0, Swine=1, Laying Hens=2, Beef Feedlot=3, Sheep Feedlot=4, Horses=5, Turkeys=6, Broilers=7) => 0

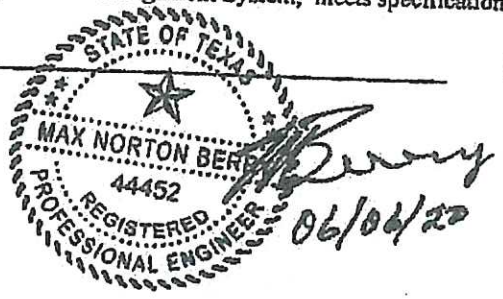
Feeding Facilities For: Dairy

	FreeStall	Open Lots	Total
Number of Animals	100	0	
Average Liveweight per Head, lbs/hd	975	0	
Total Liveweight,lbs	97,500	0	
Confinement Period, hours/hd/day	24.0	0.0	24.0
Adjusted Total Liveweight, lbs	97,500	0	97,500
Wet Manure Production, lbs/day	9,945	0	9,945
Dry Manure Production, lbs/day	1,433	0	1,433
Dry Manure Production, tons/year	262	0	262
Volatile Solids (VS) Production, lbs/day	1,052	0	1,052
Total Nitrogen Production, lbs/day	53	0	53
Total Phosphorus (P2O5), lbs/day	26	0	26
Total Potassium (K2O), lbs/day	45	0	45
Sodium Production, lbs/day	8	0	8
COD Production, lbs/day	1,307	0	1,307
BOD5 Production, lbs/day	203	0	203

Engineering Job Approval Authority Job Class for Ag. Waste Management System: _____

This practice, Ag. Waste Management System, meets specifications, signed by:

Remarks _____ Date: _____



VOLUME OF MANURE & WASTEWATER FROM CONFINEMENT BUILDINGS

Wet Manure Production	=	11913	gal/day
Water Used for Manure Removal			
a. Dry Manure Production	=	14318	lbs/day
b. Water Volume Required for Manure Removal			
1. Flush Systems:			
(Enter gallons water per pound of dry manure production, range 8-12 gal/lb)	=>	8	
Total flush water	=	114545	gal/day
2. Manual Scrape/Wash System (Enter gallons of water per pound of dry manure production, Range: 3 - 6 gal/lb)	=>	0	
Total manual wash water	=	0	gal/day
Cleanup and Washwater (Default=10 gal/hd/day)	=>	3	gal/hd/day
	=	2697	gal/day
Other Water That Enters Wastewater System [e.g. drinking water, etc.(12 gal/hd/day)]	=>	2	gal/hd/day
	=	1998	gal/day
Total Process Generated Wastewater Volume Daily Volume	=	131153	gal/day
Less Volume of Recycled Wastewater Used for Manure Removal	=>	111479	gal/day
Design Wastewater Storage Volume, Minimum Allowable			
Minimum Storage Days (Use Exhibit 2)*	=>	21	days
Minimum Design Storage Volume	=	1.27	ac-ft
Net Manure and Wastewater Volume for Land Application Monthly Volume	=	1.84	ac-ft/month
Annual Sludge Accumulation Rate, ac-ft	=	0.37	
Desired Sludge Storage Volume in Pond	=>	1.85	ac-ft
Sludge Cleanout Interval	=	5.0	years
Design Sludge Accumulation Storage Volume (Not to be less than 1 Year accumulation)	=	1.85	ac-ft

* Use Exhibit 2 of Texas Water Commission regulations for your particular location.

ESTIMATED VOLUME OF RUNOFF FROM OPEN LOTS

Total area draining into Runoff Control Structure (RCS)			
a. Area of open lot surface	=>	0.00	acres
b. Area between open lot surface and RCS	=>	0.15	acres
c. Surface area of RCS	=>	0.90	acres
d. Total area (#1.a + #1.b + #1.c)	=	1.05	acres
Design rainfall (25-year frequency, 24-hour duration storm), inches (Use Exhibit 1)	1) =>	8.00	inches
Design runoff depth, inches (Use exhibit 3)			
a. For Open Lot Surface * CN	=>	0	
		0.00	inches
b. For Area Between Lots and RCS ** CN	=>	90	
		6.81	inches
c. For Surface Area of RCS	=	8.00	inches
Design runoff volume from 25-year, 24-hour storm			
a. For Open Lot Surface	=	0.0	ac-ft
b. For Area Between Lots and RCS	=	0.1	ac-ft
c. For Surface Area of RCS	=	0.6	ac-ft
d. Total Design Runoff Volume	=	0.7	ac-ft

NOTE: Runoff Control Structures must be capable of storing Design Runoff Volume plus Design Storage Volume, if runoff and process generated wastewater streams are combined.

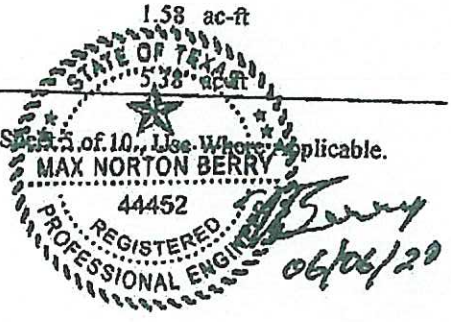
* Use NRCS soil cover complex curve No. 90 for unpaved (soil) lots and curve No. 95 for concrete surfaces.

** Use appropriate NRCS soil cover complex curve number for particular type of cover. Contact local Natural Resources Conservation Service field office for assistance.

SUMMARY OF REQUIRED AND DESIGNED STORAGE PONDS

Minimum Design Wastewater Storage Volume	1.27 ac-ft
Minimum Design Runoff Storage Volume	0.69 ac-ft
Sludge Accumulation Storage Volume	1.85 ac-ft
Additional Capacity Allowance	1.58 ac-ft
Total Capacity Designed	5.38 ac-ft

Primary Anaerobic Manure Treatment Lagoons, Section 3 of 10., Use Where Applicable.



DESIGN BASIS FOR PRIMARY ANAEROBIC MANURE TREATMENT LAGOONS

(WHERE APPLICABLE)

Design Factor		Dairy	
Adjusted Total Liveweight Contributing Manure to Lagoon	=	64286	lbs
Recommended Unit Treatment Volume (see footnote) (RUTV), cubic feet/pound liveweight	=>	0.00	
	=	3.00	
Total Treatment Volume	=	4.	
Design checks (see footnotes):			
a. Volatile Solids (VS) Loading Rate		0.0545	
b. Hydraulic R	=	11	days
c. Esti Sludge Cleanout Interval,			
1. Sludge Accumulation Rate, cu ft/year/lb liveweight	=	0.250	
2. Sludge Cleanout Interval	=	6.0	years
Additional Capacity Allowance for:			
a. Design Runoff Volume, (one stage lagoons (	=>	0.0	ac-ft
b. Sludge storage	=>	0.0	ac-ft
c. Additional Storage	=>	0.0	ac-ft
Total Primary Lagoon Capacity	=	4.4	ac-ft

THIS PAGE IS NOT APPLICABLE TO THIS PLAN

Notes: 2. If user entry area equals 0, then default values are used (dairy=3, swine=1.75, poultry,laying hens=2.5, beef=2, sheep=2, horses=2). User may specify alternate value which will override template default.

4.a. VS Loading Rate--Volatile Solids Production (Worksheet I, #10) / Total Treatment Volume. Desired range is 0.0025-0.0040 lbs VS/day/cu ft for odor control.

4.b. Hydraulic Retention Time--Total Treatment Volume / Total Manure and Wastewater Volume. Desired range is 160-400 days for good treatment.

4.c. Sludge Cleanout Interval (when half full)

$$\text{Interval} = \frac{\text{Total Treatment Volume (cuft)} \times 0.5}{\text{Adj. Total Live Wt.} \times \text{Sludge Accum. Rate}}$$

LAND AREA FOR DISPOSAL OF MANURE OR EFFLUENT FROM TREATMENT LAGOONS,

BASED ON PLANT-AVAILABLE NITROGEN (PAN)

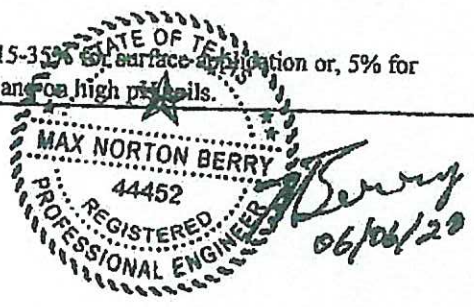
		Buildings		Open Lots
Total Daily Nitrogen Production	=	533	more->	0 lbs/day
Total Annual Nitrogen Production	=	194469	more->	0 lbs/yr
Percent Nitrogen Loss from manure storage or treatment system*	=>	20	more->	50 percent
Annual Nitrogen Loss from manure storage or treatment system	=	38894	more->	0 lbs/yr
Total Annual Nitrogen Remaining	=	155575	more->	0 lbs/yr
Availability of Nitrogen in Manure or Effluent,% (Normal range is 80-95% in lagoon effluent; 50-80% in fresh or pit-stored manure; or 40-50% in feed lot manure)	=>	80	more->	50 percent
Annual Plant-Available Nitrogen (PAN) Applied to Soil		124460	more->	0 lbs/yr
PAN Losses from Soil Surface Application**	** =>	20	more->	20 percent
PAN Losses from Soil Surface Application	=	24892	more->	0 lbs/yr
PAN Entering Soil	=	99568	more->	0 lbs N/yr

Land Required for Various PAN Application Rates:

Assumed PAN Application Rate, lbs/ac/yr	Buildings Acres		Open Lots Acres		Total Acres
100	996	+	0	=	996
150	664	+	0	=	664
200	498	+	0	=	498
300	332	+	0	=	332
400	249	+	0	=	249

* Nitrogen Loss from Lagoon Surface--Normal loss is 40-65% for primary treatment lagoons with 200 days or more storage; 10-20% from liquid manure settling basins or storage pits; and 40-50% from open feedlot surface.

** Normal range of nitrogen loss from soil surface is 15-35% for surface application or, 5% for soil injection. Losses are highest in warm weather and on high pH soils.



WATER BUDGET ANALYSIS

DRAINAGE AREA	1.05	ACRES
MANURE PROD. RCS AREA	0.90	ACRES
SLUDGE ACCUMULATION	1.85	AC-FT
MIN. WASTEWATER STORE	1.27	AC-FT
ADDITIONAL STORAGE	1.58	AC-FT
SUBTOTAL	4.70	AC-FT
25YR-24HR RUNOFF	0.69	AC-FT
TOTAL POND CAPACITY	5.38	AC-FT

RUNOFF CONTROL STRUCTURE DATA

LOCATION NO. 15

30-DAY CURVE NUMBERS

POND	74.0
FIELD	48.0
IRRIG. EFFICIENCY, %	75.00
IRRIGATION DEPTH, IN/YR	0.33
EVAPORATION, COEFF	71.80

FIELD OFFICE RUSK WEA. STA
COUNTY CHEROKEE
CROPS FOR WATER DEMAND

Bermudagrass	0.00	AC
Bermuda/SmGr	367.00	AC
Sorghum/SmGr	256.00	AC
Small Grain	0.00	AC
Assumed Seepage	0.0	ACFT

MONTH	RAINFALL (1) IN	RUNOFF (2) IN	INFLOW TO POND (3) AC-FT	OTHER INFLOW (3a) AC-FT	EFFECTIVE RAINFALL (4) IN	GROSS EVAP (5) IN	NET POND EVAP (8) AC-FT	CROP DEMAND (10) AC-FT	ACTUAL WITHDRAWL (10b) AC-FT	STORAGE at E O M (11) AC-FT	SURF AREA at E O M (12) AC	SPILL (15) AC-FT
										1.85	0.67	0.00
JAN	3.80	0.21	0.13	1.84	3.59	1.90	-0.03	23.67	2.00	1.85	0.67	0.00
FEB	3.44	0.13	0.10	1.84	3.31	2.00	-0.02	57.31	1.96	1.85	0.67	0.00
MAR	3.63	0.17	0.12	1.84	3.46	2.80	0.02	168.16	1.94	1.85	0.67	0.00
APR	4.90	0.55	0.30	1.84	4.35	3.30	0.02	275.52	2.01	1.85	0.67	0.00
MAY	4.77	0.50	0.19	1.84	4.27	4.10	0.07	324.98	1.96	1.85	0.67	0.00
JUN	3.97	0.16	0.11	1.84	3.81	5.00	0.13	284.42	1.82	1.85	0.67	0.00
JUL	2.77	0.03	0.07	1.84	2.74	6.30	0.21	243.65	1.69	1.85	0.67	0.00
AUG	2.40	0.00	0.05	1.84	2.40	6.70	0.24	134.72	1.64	1.85	0.67	0.00
SEP	4.41	0.38	0.17	1.84	4.03	5.70	0.15	37.46	1.85	1.85	0.67	0.00
OCT	3.38	0.12	0.10	1.84	3.26	4.60	0.11	72.55	1.82	1.85	0.67	0.00
NOV	3.50	0.15	0.11	1.84	3.35	3.20	0.04	10.77	1.91	1.85	0.67	0.00
DEC	4.04	0.28	0.14	1.84	3.76	2.30	-0.02	4.47	2.00	1.85	0.67	0.00
TOTALS	44.61	2.70	1.49	22.04	41.91	47.90	0.92	1655.69	22.60			
	44.61					47.90			22.60	Checks	Reset	0

STORAGE-AREA TABLE FOR RUNOFF CONTROL STRUCTURE

STORAGE DATA TYPE R (C - CIRCULAR, R - RECTANGULAR, or S - STAGE DATA)

CIRCULAR		RECTANGULAR	
DEPTH, FT	0.0	DEPTH, FT	7.57
SIDE SLOPE, RATIO	0.00	SIDE SLOPE, RATIO	3.000
TOP DIAMETER, FT	0.00	END SLOPE, RATIO	3.000
FREE BOARD, FT	0.00	TOP WIDTH, FT	225.0
BOTTOM DIAMETER, FT	0.00	TOP LENGTH, FT	175.0
SURFACE AREA, AC	0.00	FREE BOARD, FT	2.000
VOLUME, ACFT	0.00	BOTTOM WIDTH, FT	179.58
		BOTTOM LENGTH, FT	129.58
		SURFACE AREA, AC	0.90
		VOLUME, ACFT	5.38

THIS WATER BUDGET VERIFIES THAT 25YR - 24 HR STORM RUNOFF STORAGE ALLOCATION IS MAINTAINED THROUGHOUT THIS CLIMATIC CYCLE.

NOTE: USER INPUT VALUES FOR NUTRIENTS USED IN NUTRIENT BALANCE WORKSHEET!

DEPTH, FT 0.0 STAGE
FREE BOARD, FT 0.00

Leave Extra Rows at Bottom with Blanks or Zeros.

ROW #	DEPTH FT	AREA AC
BOTTOM	0.00	0.00
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

STAGE STORAGE DATA SUMMARY

METHOD: RECTANGULAR

ROW #	DEPTH FT	AREA AC	STORE ACFT	WIDTH FT	LENGTH FT
0	0.00	0.53	0.00	179.58	129.58
1	0.76	0.57	0.42	184.12	134.12
2	1.51	0.60	0.86	188.66	138.66
3	2.27	0.64	1.33	193.21	143.21
4	3.03	0.67	1.82	197.75	147.75
5	3.79	0.71	2.34	202.29	152.29
6	4.54	0.74	2.89	206.83	156.83
7	5.30	0.78	3.47	211.37	161.37
8	6.06	0.82	4.08	215.92	165.92
9	6.81	0.86	4.71	220.46	170.46
10	7.57	0.90	5.38	225.00	175.00
11	8.57	0.96	6.32	231.00	181.00
12	9.57	1.02	7.30	237.00	187.00
BOT. 25YR-24HR	6.79	0.86	4.70	220.46	170.46
SPILLWAY	7.57	0.90	5.38	225.00	175.00
FREE BOARD	9.57	1.02	7.30	237.00	187.00

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER
06/06/20

WATER BUDGET ANALYSIS

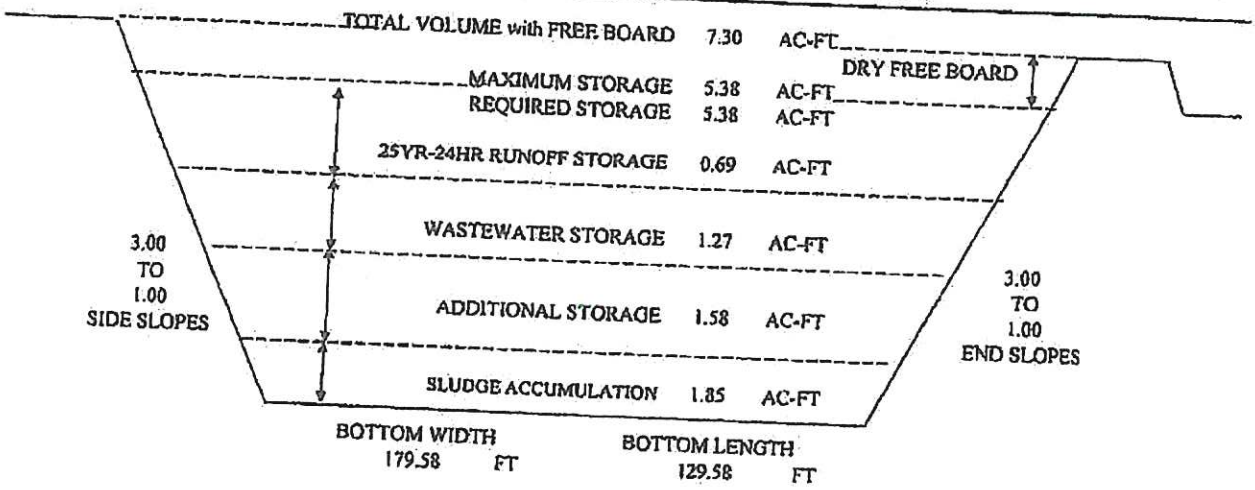
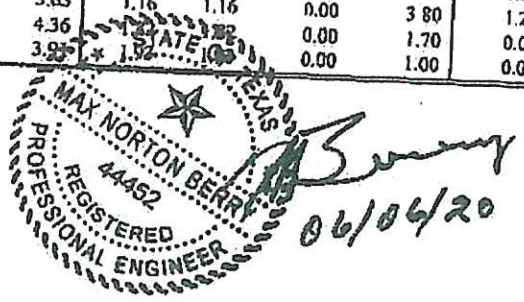


DIAGRAM OF RUNOFF CONTROL STRUCTURE

CONSUMPTIVE USE FOR SPECIFIC CROP AREAS (IN/MONTH)							NET CROP DEMAND (C.U.-EFF.RAINFALL) (IN/MONTH)					
FIELD	0	1,3,7,8,9	2,4,5,6	4	5	6	0	1,3,7,8,9	2,4,5,6	4	5	6
VEGETATION	Bermudagrass Pastureland	Bermuda/SmGr Pastureland	Sorghum/SmGr Cropland	Small Grain Cropland	Grain Sorghum Cropland	Alfalfa Pastureland	Bermudagrass Pastureland	Bermuda/SmGr Pastureland	Sorghum/SmGr Cropland	Small Grain Cropland	Grain Sorghum Cropland	Alfalfa Pastureland
JAN	1.92	4.36	2.44	2.44	0.00	0.90	0.00	0.77	0.00	0.00	0.00	0.00
FEB	2.31	5.18	2.87	2.87	0.00	1.20	0.00	1.87	0.00	0.00	0.00	0.00
MAR	3.76	8.24	4.48	4.48	0.00	3.00	0.30	4.78	1.02	1.02	0.00	0.00
APR	4.81	10.23	8.74	5.42	3.32	3.70	0.46	5.88	4.39	1.07	0.00	0.00
MAY	5.50	10.55	10.49	5.05	5.44	6.60	1.23	6.28	6.22	0.78	1.17	2.33
JUN	6.27	8.53	9.40	2.26	7.14	6.90	2.86	5.12	5.99	0.00	3.73	3.49
JUL	7.16	7.16	7.82	0.00	7.82	7.60	4.42	4.42	5.08	0.00	5.08	4.86
AUG	6.80	6.80	1.75	0.00	1.75	5.30	4.40	4.40	0.00	0.00	0.00	2.90
SEP	5.25	5.25	0.00	0.00	0.00	5.50	1.22	1.22	0.00	0.00	0.00	1.47
OCT	4.47	5.63	1.16	1.16	0.00	3.80	1.21	2.37	0.00	0.00	0.00	0.54
NOV	2.54	4.36	1.82	1.82	0.00	1.70	0.00	1.01	0.00	0.00	0.00	0.00
DEC	1.98	3.98	1.92	1.92	0.00	1.00	0.00	0.15	0.00	0.00	0.00	0.00



SP

ADJ SERVICES INC
A Woman Owned Business

705 Coleman Dr.
Longview, Texas 75605
Phone: 903-759-3111
Fax: 903-759-3126
E-mail: adjscs@sbcglobal.net

SP

June 27, 2008

To: Nico de Boer
Hill Top Jersey Farm
19008 FM 3079
Chandler, Tx 75758-7667

PROJECT NO.: 08-6000
REPORT NO.: Boer-Dairy-08-100
P.O. NO. Verbal
REPORT DATE: June 27, 2008

Re: Certification for Overflow Lagoon Fluid Storage Volume

Mr. Boer;

As requested, an ADJ Services, Inc.'s Engineer was present for the above referenced project site on June 12, 2008. The purpose of the visit was to determine the Fluid Storage Capacity of an existing lagoon used to store overflow from the primary lagoon(s).

The said overflow storage lagoon is located on the west side of the metal hay and equipment storage barn and concrete line silage storage area. Note that the barn is located on the north east side of silage storage area there is also a concrete paved area between the barn and north section of the lagoon. For this project north is taken as toward FM 3079 which provides access to the said Hill Top Jersey Farm along its north side.

Based on the field surveying the top of the lagoon embankment slopes towards the north. The lowest elevation is located at the north east corner. For the project this point was taken as elevation 100.0. The existing water level in the lagoon was at elevation 91.04. As stated by Mr. Boer the lagoon was constructed 15 feet deep.

Based on providing 2 feet of free board so that max pool is at elevation 98.0. There is presently 19,507 cubic feet of air space available for additional fluid storage.

Based on the stated 15 foot deep lagoon there is an estimated 8,877 cubic foot of fluid in the lagoon on June 12, 2007. Note that due to no access to gauge the actual depth of liquid. This volume was estimated based on inspection of the lagoon embankment the 6 foot estimated depth of fluid appears correct. Therefore, the lagoon's storage capacity is as follows.

* Top of embankment elevation	= 100.0
* Max pool elevation	= 98.0
* Bottom of lagoon elevation	= 85.0
* Liquid elevation on June 12, 2008	= 91.04
* Top of embankment size	191ft x 135.5ft
* Side slopes; 41 degrees average	

SP - 1

Lagoon Volumes with 2 foot Freeboard

A) Airspace on June 12, 2008	19, 507 cubic ft. = 0.4478 acre-foot
B) Existing liquid volume estimate	8,877 cubic ft. = 0.2038 acre foot
C) Total volume if lagoon is empty	28, 384 cubic ft. = 0.6516 acre foot
D) 2 ft freeboard storage volume	24,400 cubic ft. = 0.5690 acre foot

This should provide you with information needed. Please call our office if you have any questions.

Very truly yours,
ADJ Services, Inc.

6/27/08

STATE OF TEXAS
JAMES KIM WINN
62402
LICENSED PROFESSIONAL ENGINEER

James Kim Winn, P.E. On behalf of ADJ Services, Inc.

Cc: Jim Wyrick

RCS#2

RCS#2

July 13, 2007

COLLIER CONSULTING

Box 1137
702 East South Loop
Stephenville, TX 76401
Office: (254) 968-8721
Fax (254) 968-8725
www.colliercousulting.com

Mr. Nico DeBoer
Hilltop Jersey Farm
19008 FM 3079
Chandler Texas 75758

Dear Mr. DeBoer,

Thank you for choosing Collier Consulting for your Engineering services. As per our agreement, we were to determine the as-built capacity of the recently built Retention Control Structure (RCS) . To properly evaluate the pond, Gerry Kendall, E.I.T. and Sadina Mayeux of Collier Consulting, conducted a on-site assessment on July 10, 2007. After careful consideration of data gathered on-site, it was determined the storage capacity of the RCS is approximately 3.7 ac-ft. This is the calculated capacity to the point where the RCS was running over.

Also, as required by the Texas Commission on Environmental Quality (TCEQ) a sludge accumulation was measured. At the time of the on-site visit, no measurable sludge accumulation was noted.

Please feel free to give me a call if there are any questions.

gk/MS

Gerry Kendall, E.I.T

Gerry Kendall E.I.T

Marion Striegler, P.E.
Collier Consulting

Marion Striegler, P.E.

Marion E. Striegler

STATE OF TEXAS
MARION E. STRIEGLER
31489
REGISTERED
PROFESSIONAL ENGINEER

7-13-07

MAX N. BERRY
dba M. BERRY & ASSOCIATES
741 Swendson Road, Jefferson, Texas 75657
903.923.8981 (Office) lbmberry@yahoo.com 903.742.4607 (Cell)

May 27, 2015

RCS #1

Mr. Jim Wyrick
East Texas Environmental Services
317 Highland Drive
Sulphur Springs, Texas 75482

Subject: Hilltop Jersey Farms
Retention Control Structure #2
Volume Certification

Dear Mr. Wyrick:

This letter is in response to your verbal request that I determine and certify the storage volume of the concrete Retention Control Structure (RCS) #2, on the Hilltop Jersey Farms, in Henderson County, Texas. (A sketch of the RCS is attached.)

I have determined the storage volume at over-flow stage of RCS #2 to be 1.68 Acre-Feet.

Please contact me at (903) 923-8981 with questions concerning this information, or if further information is required.

Yours very truly,

Max N. Berry, P.E.

05/27/15

STATE OF TEXAS
MAX NORTON BERRY
44452
REGISTERED
PROFESSIONAL ENGINEER

M. BERRY & ASSOCIATES
F-10104

INTRODUCTION

This investigation was performed in accordance with request for services and authorization to proceed granted by Nico DeBoer of Hilltop Jersey Farm, Henderson County, Texas. Field operations were conducted on July 14, 2008

The purpose of this investigation was to define and evaluate the in-situ soil material in the Transfer pond and RCS#1 to determine if it meets the minimum criteria for hydraulic conductivity tested at optimal moisture content and thickness as described in General Permit No. TXG920000 Part III.A.5.(g)(3).

Specifically this study was planned to determine the following soil properties:

- Hydraulic Conductivity equal to or less than 1 x 10-7 cm/sec.
- Suitable in-situ soil material has a minimum thickness of 1.5 feet.

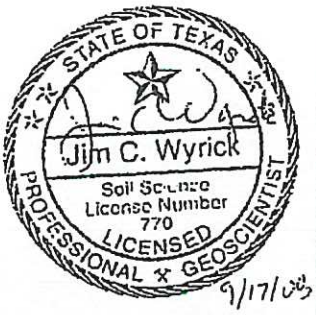
PROJECT DESCRIPTION

The existing Transfer pond and RCS#1 were constructed prior to investigation. Included in this report is a detailed drawing showing the soil sampling locations

INVESTIGATION PROCEDURE

Depth of the in-situ material was verified by using a two-inch soil bucket auger, six-foot long with a seven-foot extension. The water level was at 3 feet below the ground level in the Transfer pond. Soil borings in the settling pond were made to a depth of 9.5 feet below ground level in four locations. The water level was at 3 feet below the ground level in RC#1 and soil borings were made to a depth of 16.5 feet below ground level in four locations. Upon completion all sample holes were backfilled with native soil cuttings. Determining in-place hydraulic conductivity was done by driving a thin-walled tube into the soil mass to obtain a relativity undisturbed sample according to ASTM D1587. The samples were taken in the sidewall just above the wastewater level. ADJ Services, Inc. Lab, Longview Texas determined the hydraulic conductivity using ASTM D 5084.

The RCSs were in service and wastewater was present. Based on the literature reviewed, introduction of manure provides a further decrease in the permeability rate of at least 1 order of magnitude. Such sealing is thought to be a result of physical, chemical, and biological processes. Suspended solids settle or filter out of solution and physically clog the pores of the soil mass. Anaerobic bacteria produce by-products that accumulate at the soil-water interface and reinforce the seal, and in the process of metabolizing organic material can alter the soil structure. Chemicals in animal waste, such as salts, can disperse soil, which may be beneficial in reducing seepage. 1/.



1/ Part 651, Agricultural Waste Management Field Handbook, Agricultural Waste Management System Component Design Chapter 10, 651.1080 Appendix 10D—Geotechnical, Design, and Construction Guidelines

FINDINGS AND OTHER OBSERVATIONS

The in-situ soil material identified during this investigation should be of sufficient thickness and with a hydraulic conductivity slow enough to insure there will be no significant leakage from the RCS. A 100-foot walkout inspection around the Transfer pond and RCS#1 did not disclose any evidence of water wells, springs, seeps, or water bodies.

RCS #1

Table 1 - Verification of ~~Transfer pond~~ in-site soil material thickness

Sample Number	Boring Location	Boring Depth (Feet)	Color (Munsell)	Texture (USDA)	Depth Below Bottom (Feet)	TCEQ Minimum Req. (Feet)
1	northeast sidewall	9.5	red and gray	sandy clay	1.5	1.5
2	southeast sidewall	9.5	reddish yellow and gray	sandy clay	1.5	1.5
3	southwest sidewall	9.5	reddish yellow and gray	sandy clay	1.5	1.5
4	northwest sidewall	9.5	red and gray	sandy clay	1.5	1.5

RCS #2

Table 2 - Verification of ~~RCS#1~~ in-site soil material thickness

Sample Number	Boring Location	Boring Depth (Feet)	Color (Munsell)	Texture (USDA)	Depth Below Bottom (Feet)	TCEQ Minimum Req. (Feet)
1	southeast sidewall	16.5	reddish yellow and gray	sandy clay	1.5	1.5
2	southwest sidewall	16.5	reddish yellow	sandy clay	1.5	1.5
3	northwest sidewall	16.5	red and gray	sandy clay	1.5	1.5
4	northeast sidewall	16.5	red and gray	sandy clay	1.5	1.5

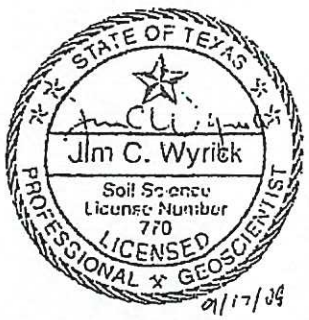


Table 4 - Hydraulic conductivity sample of Transfer pond in-situ soil material

Sample Number	Location	Hydraulic conductivity (cm/sec)	TCEQ Minimum Req. (cm/sec)
1	northeast sidewall	3.39 x 10-8	<1 x 10-7

Table 5 - Hydraulic conductivity sample of RCS#1 in-situ soil material

Sample Number	Location	Hydraulic conductivity (cm/sec)	TCEQ Minimum Req. (cm/sec)
1	southeast sidewall	6.63 x 10-8	<1 x 10-7

FIELD OPERATIONS

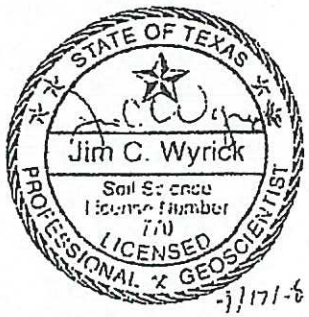
Jim Wyrick, Professional Geoscientist, made the soil borings, collected the hydraulic conductivity sample and visually identified the characteristic of the in-situ soil material.

CONCLUSION

The in-situ soil material in the ~~Transfer pond~~ RCS#2 and RCS#1 feet meets the minimum criteria of hydraulic conductivity no greater than 1 x 10^{-7} cm/sec at optimal moisture content. The in-situ soil material the ~~Transfer pond~~ RCS#2 and RCS#1 have a thickness of 1.5 feet or greater meeting the thickness requirement in Part III.A.5 (g)(3). No significant hydrologic connection exists, so there will be no significant leakage to migrate wastewater to water in the state. Therefore a pond liner is not needed to prevent a significant hydrologic connection between the contained wastewater and water in the state.

LIMITATIONS

Geotechnical investigations are characterized by the presence of a calculated risk that soil and groundwater conditions may not have been fully revealed by this exploratory boring investigation. This risk derives from the practical necessity of basing interpretations and design conclusions on a limited sampling of the subsoil stratigraphy at the project site. The recommendations given in this report are based on the conditions that existed at the boring location at the time it was drilled. It is conceivable that soil conditions throughout the site may vary from those observed in the exploratory boring. ETES is not responsible for the conclusions, opinions, or recommendations made by others based on the contents of this report. My professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical principles and practices. These warranties are in lieu of other warranties either expressed or implied.



Jim C. Wyrick, Professional Geoscientist

ADJ SERVICES INC.
A Woman Owned Business

705 Coleman Dr.
Longview, Texas 75605
Phone: 903-759-3111
Fax: 903-759-3126
E-mail: adjscs@sbcglobal.net

July 17, 2008

Test for Hydraulic Conductivity

To: East Texas Environmental Services
317 Highland Dr.
Sulphur Springs, Texas 75482
Attn: Jim Wyrick

Project No.: 08-1005
Report No.:Wyrick-NicoDeBoer-08-100
P.O. No.: verbal
Report Date: July 17, 2008

Project: Nico DeBoer
Hilltop Jersey Farm
19008 FM 3079
Chandler, Texas 75708

Mr. Wyrick;

As requested ADJ Services, Inc. has completed the soil testing for the above referenced project site. The purpose of the testing was to conduct hydraulic conductivity testing on two (2) soil samples shipped to our Longview Office. The soil samples was shipped in a drive ring sampler and sealed to prevent moisture loss.

The sample was prepared and tested in accordance with ASTM D5084 Test Procedure. The test results are as follows;

	RCS#1 ~~Transfer Pond~~	RCS#2 ~~RCS#1~~
Test Procedure:	ASTM D5084	ASTM D5084
Specimen ID:	Transfer Pond	RCS#1
Soil Description:	Dark brownish gray & red sandy clay	Dark brownish gray & red sandy clay
Specimen Height:	1.49	1.55
Initial Moisture	21.9	22.6
Final Moisture	24.1	24.6
Surcharge: Yes psi		
Hydraulic Conductory (cm/sec)	3.39 x 10.8	6.63 x 10.8

Test meets minimum 1.0 x 10 -7 cm/sec

This should provide you with the information needed. Please contact our office if you have any questions.

Very truly yours,
ADJ Services, Inc.

James Kim Winn, P.E. On behalf of ADJ Services, Inc.

7/17/08

STATE OF TEXAS
JAMES KIM WINN
62402
LICENSED
PROFESSIONAL ENGINEER

Waste Utilization and Nutrient Management Plan

Hilltop Jersey Farm
19008 FM 3079
Chandler, TX 75758
903-849-2604

TCEQ Permit Number:

Owner
Nico DeBoer
19008 FM 3079
Chandler, TX 75758
903-849-2604

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

Prepared By:

(Signature)
Jim C. Wyrick
Nutient Management Specialist
Certificate Number = TX20049
Expiration Date = December 31, 2024
East Texas Enviornmental Services
317 Hughland Dr.
Sulphur Springs, TX 75482
903-243-0400

This plan is based on:
590 -633 Plan V 4.0_5

12/2/24 1:23 PM

Waste Utilization and Nutrient Management Plan

OPERATION AND MAINTENANCE: Permit #:

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:	**Jim C. Wyrick**	Date:	**12/2/2024**
Plan Approved by:	J C Wyrick	Date:	12/12/24
Producer Signature:		Date:	

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.

A NMP will be reviewed with Producer after approval by the TCEQ

Waste Utilization and Nutrient Management Plan

RECORD KEEPING: Permit #:

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

EFFLUENT STORAGE AND TESTING: Permit #:

Effluent sampling is needed to get a better idea of the nutrients actually being applied. Effluent 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 effluent be analyzed for percent dry matter, 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.

MORTALITY MANAGEMENT: (cont) Permit #:

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 APPLICATION: (cont) Permit #:

DO NOT exceed the rates shown in Table 1 of the attached Job Sheet entitled, "Waste Utilization, Determining Effluent Application Rates, rev. 4/06". 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, rev. 4/06" 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 8.

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 8 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.

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.

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 effluent produced. Table 7 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 6. The amounts of supplemental nutrients in Table 7 are based on the actual amount of effluent available rather than the **maximum** rate that **"could"** be applied.

The bottom line on the right of Table 6 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 effluent 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 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 crop requirement rates in both Table 4 and 6 may be doubled not to exceed 2X the 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.

Land application of 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. Effluent will not 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. Surface applications with trucks should only be made when soil conditions are favorable in order to minimize soil compaction. **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,

TABLES 1, 2 and 2a Permit #:

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. 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 "book" values, this plan will need revision.

Application of effluent 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. The 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:
There is no solids application in this plan. If any is produced, it will be transported off-site.

EFFLUENT APPLICATION:
The maximum effluent application rates are given in Table 4 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 maximum 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 4. 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_2O_5, and K_2O contained in the effluent are provided in Table 5 for the maximum application rate indicated in Table 4. 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 needs.

Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY: Permit #:

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in Henderson 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 2024 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 999 head will be confined with the average weight of 960 pounds. The animals will be confined 365 hours per day for 24 days per year.

Waste Utilization and Nutrient Management Plan

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

Avg. Number of Animals	Type of Waste
999	Dairy Lagoon

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* 271

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

*From engineering design.

Estimated Nutrient Availabilty

Effluent

	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch		No Solids used	
N	2,950	0.40	10.9	**		**
P2O5	14,075	1.91	51.9			
K2O	54,137	7.35	199.6			

**** Effluent Values Based on Analysis** **** Solids Values Based on Analysis**

dated: December 1, 2023

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

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

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

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

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

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

Footnotes Applicable to both Tables

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

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

3/ Not to exceed the annual nitrogen requirement rate.

4/ Not to exceed the annual nitrogen removal rate.

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

Waste Utilization and Nutrient Management Plan

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

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	41.0	Silage - Corn21-25T;SG Silage-8-9T H	NMP	Default	345	136	291
2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318
3	26.0	Coastal Hay 4 cut, SG mod graze M	NMP	Default	357	108	318
4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	NMP	Default	345	136	291
5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	NUP	Default	345	136	291
6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	NUP	Default	357	108	318
7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318
8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	NMP	Default	345	136	291
9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	NMP	Default	357	108	318

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 Effluent Application Per Field Permit #:

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)
271	1	41.0		Silage - Corn21-25T;SG Silage-8-9T H	174	233	A	4.5	185
Source:	2	40.0		Coastal Hay 4 cut, SG mod graze VL - L	106	2672	A	51.5	2060
	3	26.0		Coastal Hay 4 cut, SG mod graze M	44	350	A	6.7	174
	4	90.0		Silage - Corn21-25T;SG Silage-8-9T M	122	310	A	6	540
Dairy Lagoon	5	46.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	235	1646	A	31.7	1458
	6	28.0		Coastal Hay 4 cut, SG mod graze VL - L	311	1704	A	32.8	918
	7	126.0		Coastal Hay 4 cut, SG mod graze VL - L	127	2672	A	51.5	6489
	8	160.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	61	2123	A	40.9	6544
	9	80.0		Coastal Hay 4 cut, SG mod graze VL - L	94	2672	A	51.5	4120
Total Effluent Application Acres									
637									
Maximum Effluent Application Allowable On-Site (ac in)									
22488									
Adequate									
Effluent to be used Off-Site (ac in)									

End of Table 4

Waste Utilization and Nutrient Management Plan

Table 5 - Nutrients Applied/Needed at Maximum Effluent Rates Permit #:

	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	49	234	898	345	0	0	0
2	560	2673	10280	0	0	0	0
3	73	348	1337	475	0	0	0
4	65	311	1198	355	0	0	0
5	345	1645	6328	0	0	0	0
6	357	1702	6548	170	0	0	0
7	560	2673	10280	0	0	0	0
8	445	2123	8164	0	0	0	0
9	560	2673	10280	0	0	0	0

Waste Utilization and Nutrient Management Plan

Table 6 - Planned Effluent Application Rates Permit #:

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	41.0		Silage - Corn21-25T;SG Silage-8-9T H	174	A	4.5	2.0	0.1	4
2	40.0		Coastal Hay 4 cut, SG mod graze VL - L	106	A	51.5	1.0	0.52	21
3	26.0		Coastal Hay 4 cut, SG mod graze M	44	A	6.7	1.0	0.07	2
4	90.0		Silage - Corn21-25T;SG Silage-8-9T M	122	A	6	2.0	0.12	11
5	46.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	235	A	31.7	2.0	0.63	29
6	28.0		Coastal Hay 4 cut, SG mod graze VL - L	311	A	32.8	1.0	0.33	9
7	126.0		Coastal Hay 4 cut, SG mod graze VL - L	127	A	51.5	1.0	0.52	66
8	160.0		Silage - Corn21-25T;SG Silage-8-9T VL - L	61	A	40.9	2.0	0.82	131
9	80.0		Coastal Hay 4 cut, SG mod graze VL - L	94	A	51.5	1.0	0.52	

Acres	637.0	Will the planned application rates use all of the Effluent?	272
			YES

Waste Utilization and Nutrient Management Plan

Table 7 - Nutrients Applied/Needed at the Planned Effluent Rates Permit #:

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	1	5	18	49	234	145	0
2	6	27	103	560	2673	270	0
3	1	3	13	73	348	370	0
4	1	6	24	65	311	205	0
5	7	33	127	345	1645	0	0
6	4	17	66	357	1702	155	0
7	6	27	103	560	2673	190	0
8	9	42	163	445	2123	15	0
9	6	27	103	560	2673	70	0

Table 8 - 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 Permit #:

LMU / Field #	AWC (inches)	Restrictive Texture
1	1.715	clay loam
2	2.16	clay loam
3	3.06	clay
4	2.16	clay loam
5	1.7	clay loam
6	2.16	clay loam
7	1.715	sandy clay loam
8	1.7	fine sand
9	1.715	clay loam

LMU / Field #	AWC (inches)	Restrictive Texture

Waste Utilization and Nutrient Management Plan

Table 9 - Non Application Areas by Field Permit #:

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	4.0	0.0	0.0		4.0
2	5.0	0.0	0.0		5.0
3	2.0	0.0	0.0		2.0
4	7.0	0.0	0.0		7.0
5	10.0	0.0	0.0		10.0
6	9.0	0.0	0.0		9.0
7	20.0	0.0	0.0		20.0
8	15.0	0.0	0.0		15.0
9	8.0	0.0	0.0		8.0

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

See Application Map for location of buffers

Totals	80.0	0.0	0.0	0.0	80.0

Total 590-633 application acres: 637.0

Total 590-633 Field Acres: 717.0

Waste Utilization and Nutrient Management Data Entries

General Data

Date :	12/2/2024
Farmer Name :	Hilltop Jersey Farm
County in which the Land is located :	Henderson
Type of Waste Plan :	Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients? Yes or No :	No
Is any field PERMITTED by TCEQ? Yes or No :	Yes
Permit # :	

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year :	2024
Are you receiving waste from another producer?	No
Number of animals :	999
Approximate Weight :	960
Days per year in confinement :	24
Hours per day confined :	365
ACRE FEET of effluent to be irrigated* :	22.6
Estimated annual gallons of effluent to be irrigated/applied annually :	7364164.8
For effluent, do you want application rates shown in gallons or acre inches? :	acre inches
Estimated Tons Solids to be Land Applied Annually ( )* :	0
Is this the first Year of the AFO-CAFO Operation? :	No

Analysis Information

Effluent Information

Date of Analysis:	12/1/2023
Manure Source:	Dairy Lagoon
Nitrogen % From Analysis:	0.006
Phosphorus % From Analysis:	0.01
Potassium % From Analysis:	0.0734
Moisture % From Analysis:	97

Manure / Solids Information

Date of Analysis:	
Manure Source:	
Nitrogen % From Analysis:	
Phosphorus % From Analysis:	
Potassium % From Analysis:	
Moisture % From Analysis:	
What will be Applied to Fields on this Farm?	Effluent Only
Is this Farm part of an AFO-CAFO?	No

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

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Field and Buffer Entries

Permit #:

Printed on: 12/2/24 1:24 PM

Plan is based on: 590 -633 Plan V 4.0_5

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	45	4				4.0	41.0	
2	45	5				5.0	40.0	
3	28	2				2.0	26.0	
4	97	7				7.0	90.0	
5	56	10				10.0	46.0	
6	37	9				9.0	28.0	
7	146	20				20.0	126.0	
8	175	15				15.0	160.0	
9	88	8				8.0	80.0	

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 12/2/24 1:24 PM Plan is based on: 590 -633 Plan V 4.0_5 Permit #:

Soil Test Analysis										Plant Analysis & Yield (optional)			
N (ppm)	P (ppm)	K (ppm)	Lime (enter amt or leave blank)		LMU or Field #	Appl. Area Acres		E = Effluent S = Solids	Plant Analysis (Y / N)	% N	% P	% K	Yield Air Dry Production (lbs/ac/yr)
26	174	135			1	41.0	Silage - Corn21-25T;SG Silage-8-9T H	E	N				
4	106	60			2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
5	44	51			3	26.0	Coastal Hay 4 cut, SG mod graze M	E	N				
12	122	49			4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	E	N				
81	235	215			5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	E	N				
16	311	190			6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
41	127	129			7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				
20	61	115			8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	E	N				
10	94	231			9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	E	N				

Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit #:

7364165	Gallons of Effluent to be used annually			Will the planned rates use all of the effluent?	Yes
271	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	41.0	Silage - Corn21-25T;SG Silage-8-9T H	174	155	Annual	4.5	2.0	0.09	4
2	40.0	Coastal Hay 4 cut, SG mod graze VL - L	106	175	Annual	51.5	1.0	0.52	21
3	26.0	Coastal Hay 4 cut, SG mod graze M	44	175	Annual	6.7	1.0	0.07	2
4	90.0	Silage - Corn21-25T;SG Silage-8-9T M	122	155	Annual	6	2.0	0.12	11
5	46.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	235	155	Annual	31.7	2.0	0.63	29
6	28.0	Coastal Hay 4 cut, SG mod graze VL - L	311	175	Annual	32.8	1.0	0.33	9
7	126.0	Coastal Hay 4 cut, SG mod graze VL - L	127	175	Annual	51.5	1.0	0.53	66
8	160.0	Silage - Corn21-25T;SG Silage-8-9T VL - L	61	155	Annual	40.9	2.0	0.82	131
9	80.0	Coastal Hay 4 cut, SG mod graze VL - L	94	175	Annual	51.5	1.0	0.52	42

Total Effluent This Page: 314

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Plan is based on: 590 -633 Plan V 4.0_5

Available Water Capacity Entries

Printed on: 12/2/24 1:24 PM | Plan is based on: 590 -633 Plan V 4.0_5 | Permit #:

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)
		0	3	0.12	0.2	3	14	0.16	0.21	14	18	0.08	0.12	18	24	0	0	
1	clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72
2	clay loam	0	4	0.11	0.16	4	16	0.11	0.16	16				0				2.16
3	clay	0	10	0.11	0.18	10	24	0.09	0.14	24				0				3.06
4	clay loam	0	7	0.11	0.16	7	16	0.11	0.16	16				0				2.16
5	clay loam	0	4	0.06	0.09	4	24	0.05	0.09	24				0				1.70
6	clay loam	0	7	0.11	0.16	7	16	0.11	0.16	16				0				2.16
7	sandy clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72
8	fine sand	0	4	0.06	0.09	4	24	0.05	0.09	24								1.70
9	clay loam	0	7	0.06	0.09	7	24	0.05	0.09	24				0				1.72

PI Index by Field

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This plan is based on: 590 -633 Plan V 4.0_2

Permit #:

Client Name: Hilltop Jersey Farm

Planner: Jim C. Wyrick

Date: 12/2/2024

Location: Henderson

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 - Corn21-25T;SG Silage-8-9T	3.2%	39	8	4	0.75	4	0.5	5	1	0	23.25	High	11/14/23
2	Coastal Hay 4 cut, SG mod graze	2.5%	64	2	0	0.75	0	0.5	0	1	1.5	5.75	Very Low - Low	11/14/23
3	Coastal Hay 4 cut, SG mod graze	1.0%	85	8	4	0.75	4	0.5	0	2	1.5	20.75	Medium	11/14/23
4	Silage - Corn21-25T;SG Silage-8-9T	2.3%	85	8	0	0.75	0	0.5	2.5	2	1.5	15.25	Medium	11/14/23
5	Silage - Corn21-25T;SG Silage-8-9T	2.5%	61	8	0	0.75	0	0.5	0	2	0	11.25	Very Low - Low	11/14/23
6	Coastal Hay 4 cut, SG mod graze	3.1%	61	8	0	0.75	0	0.5	0	1	0	10.25	Very Low - Low	11/14/23
7	Coastal Hay 4 cut, SG mod graze	4.0%	61	4	0	1.5	0	0.5	5	1	0	12	Very Low - Low	11/14/23
8	Silage - Corn21-25T;SG Silage-8-9T	3.2%	61	8	0	1.5	0	0.5	0	1	0	11	Very Low - Low	11/14/23
9	Coastal Hay 4 cut, SG mod graze	3.1%	64	8	0	0.75	0	0.5	0	1	0	10.25	Very Low - Low	11/14/23

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU #1

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643715
Customer Sample ID: 100
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

8

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.0	(6.8)		Slightly Acid							
Conductivity	89	(-)	umho/cm	None							
Nitrate-N	26	(-)	ppm**					CL*			45 lbs N/acre
Phosphorus	174	(50)	ppm								0 lbs P2O5/acre
Potassium	135	(150)	ppm								20 lbs K2O/acre
Calcium	874	(180)	ppm								0 lbs Ca/acre
Magnesium	65	(50)	ppm								0 lbs Mg/acre
Sulfur	33	(13)	ppm								0 lbs S/acre
Sodium	48	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Lime Requirement											0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 2

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643716
Customer Sample ID: 101
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	5.3	(5.8)		Mod. Acid	
Conductivity	32	(-)	umho/cm	None	
Nitrate-N	4	(-)	ppm**	CL*	90 lbs N/acre
Phosphorus	106	(50)	ppm		0 lbs P2O5/acre
Potassium	60	(150)	ppm		150 lbs K2O/acre
Calcium	675	(180)	ppm		0 lbs Ca/acre
Magnesium	42	(50)	ppm		5 lbs Mg/acre
Sulfur	13	(13)	ppm		0 lbs S/acre
Sodium	26	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.25 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU 3

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
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Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643717
Customer Sample ID: 102
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Med	High	VHigh	Excess	Fertilizer Recommended
pH	7.0	(5.8)		Neutral							
Conductivity	23	(-)	umho/cm	None							
Nitrate-N	5	(-)	ppm**					CL*			90 lbs N/acre
Phosphorus	44	(50)	ppm								15 lbs P2O5/acre
Potassium	51	(150)	ppm								160 lbs K2O/acre
Calcium	1,008	(180)	ppm								0 lbs Ca/acre
Magnesium	41	(50)	ppm								5 lbs Mg/acre
Sulfur	12	(13)	ppm								5 lbs S/acre
Sodium	19	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Lime Requirement											0.00 tons 100ECCE/acre

2

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.
Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hill top
LMU 5'

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
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979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643719
Customer Sample ID: 104
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	6.1	(5.8)		Mod. Acid	
Conductivity	87	(-)	umho/cm	None	
Nitrate-N	81	(-)	ppm**		0 lbs N/acre
Phosphorus	235	(50)	ppm		0 lbs P2O5/acre
Potassium	215	(150)	ppm		0 lbs K2O/acre
Calcium	919	(180)	ppm		0 lbs Ca/acre
Magnesium	131	(50)	ppm		0 lbs Mg/acre
Sulfur	31	(13)	ppm		0 lbs S/acre
Sodium	65	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU 6

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
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College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643720
Customer Sample ID: 105
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	5.8	(5.8)		Mod. Acid							
Conductivity	76	(-)	umho/cm	None			CL*				Fertilizer Recommended
Nitrate-N	16	(-)	ppm**								65 lbs N/acre
Phosphorus	311	(50)	ppm								0 lbs P2O5/acre
Potassium	190	(150)	ppm								0 lbs K2O/acre
Calcium	1,130	(180)	ppm								0 lbs Ca/acre
Magnesium	135	(50)	ppm								0 lbs Mg/acre
Sulfur	21	(13)	ppm								0 lbs S/acre
Sodium	40	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Lime Requirement											0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU 1

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643721
Customer Sample ID: 106
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	5.8	(5.8)		Mod. Acid							
Conductivity	110	(-)	umho/cm	None				CL*			
Nitrate-N	41	(-)	ppm**								15 lbs N/acre
Phosphorus	177	(50)	ppm								0 lbs P2O5/acre
Potassium	129	(150)	ppm								30 lbs K2O/acre
Calcium	725	(180)	ppm								0 lbs Ca/acre
Magnesium	80	(50)	ppm								0 lbs Mg/acre
Sulfur	20	(13)	ppm								0 lbs S/acre
Sodium	44	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Lestone Requirement											0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Phosphorus: Phosphorus is highly elevated, avoid phosphorus containing fertilizers and organics for the next 5 years, retest annually.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
LMU8

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643722
Customer Sample ID: 107
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	5.1	(5.8)		Strongly Acid							
Conductivity	107	(-)	umho/cm	None							
Nitrate-N	20	(-)	ppm**					CL*			60 lbs N/acre
Phosphorus	61	(50)	ppm								0 lbs P2O5/acre
Potassium	115	(150)	ppm								55 lbs K2O/acre
Calcium	243	(180)	ppm								0 lbs Ca/acre
Magnesium	37	(50)	ppm								5 lbs Mg/acre
Sulfur	40	(13)	ppm								0 lbs S/acre
Sodium	25	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.25 tons 100ECCE/acre

4

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
979-845-4816 (phone)
979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Hilltop
LMU 9

Report generated for:
East Texas Environmental Services
Jim Wyrick
317 Highland Dr.
SULPHUR SPRINGS, TX 75482

Sample received on: 11/14/2023
Printed on: 11/20/2023
Area Represented: 40 acres

Hopkins County
Laboratory Number: 643723
Customer Sample ID: 108
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	6.3	(5.8)		Slightly Acid							
Conductivity	58	(-)	umho/cm	None			CL*				
Nitrate-N	10	(-)	ppm**								80 lbs N/acre
Phosphorus	94	(50)	ppm								0 lbs P2O5/acre
Potassium	231	(150)	ppm								0 lbs K2O/acre
Calcium	444	(180)	ppm								0 lbs Ca/acre
Magnesium	82	(50)	ppm								0 lbs Mg/acre
Sulfur	19	(13)	ppm								0 lbs S/acre
Sodium	35	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates.
http://soiltesting.tamu.edu/webpages/calculator.html

TEXAS A&M AGRILIFE EXTENSION

Hilltop
104

Bio-Liquid Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
(979)321-5960

Visit our website:
http://soiltesting.tamu.edu

epo[illegible]nerated for:
ast Texas Environmental Services

17 Highland Dr.
ULPHUR SPRINGS, TX 75482

ate Printed: 12/18/2023

ample(s) from Hopkins County

ction 1: **Bio-liquids are analyzed on an as received basis**

Laboratory #	Customer Sample Identification	Total Nitrogen %	Total Phosphorus %	Total Potassium %	Total Calcium %	Total Magnesium %	Total Sodium %	Total Zinc ppm	Total Iron ppm
15021454	100	0.0003	0.0039	0.0367	0.0055	0.0032	0.0350	2.22	1.56
15021455	101	0.0010	0.0039	0.0749	0.0063	0.0040	0.0221	2.32	1.33
15021456	102	0.0031	0.0043	0.0260	0.0258	0.0029	0.0255	3.00	1.21
15021457	103	0.0094	0.0104	0.1243	0.0280	0.0182	0.0874	5.01	1.87
15021458	104	0.0060	0.0100	0.0734	0.0245	0.0077	0.0408	3.94	3.56

Laboratory #	Total Copper ppm	Total Manganese ppm
150[illegible]4	0.06	0.00
15021455	0.06	0.10
15021456	0.24	1.11
15021457	0.75	2.40
15021458	4.16	2.33

ction 2: **Interpretation of Bio-Liquid Analysis—pounds of nutrients per acre inch of effluent.**

.aboratory #	Customer Sample Identification	Nitrogen lbs/acre inch	P_2O_5 lbs/acre inch	K_2O lbs/acre inch	Calcium lbs/acre inch	Magnesium lbs/acre inch	Sodium lbs/acre inch	Zinc lbs/acre inch	Iron lbs/acre inch
5021454	100	1	20	100	13	7	79	0.50	0.35
5021455	101	2	20	203	14	9	50	0.53	0.30
5021456	102	7	22	71	58	6	58	0.68	0.27
5021457	103	21	54	338	63	41	198	1.13	0.42
5021458	104	14	52	199	56	18	92	0.89	0.81

.aboratory #	Copper lbs/acre inch	Manganese lbs/acre inch
5021454	0.01	0.00
5021455	0.01	0.02
5021456	0.06	0.25
5[illegible]7	0.17	0.54
5021458	0.94	0.53

ne acre inch equals 27150 gallons

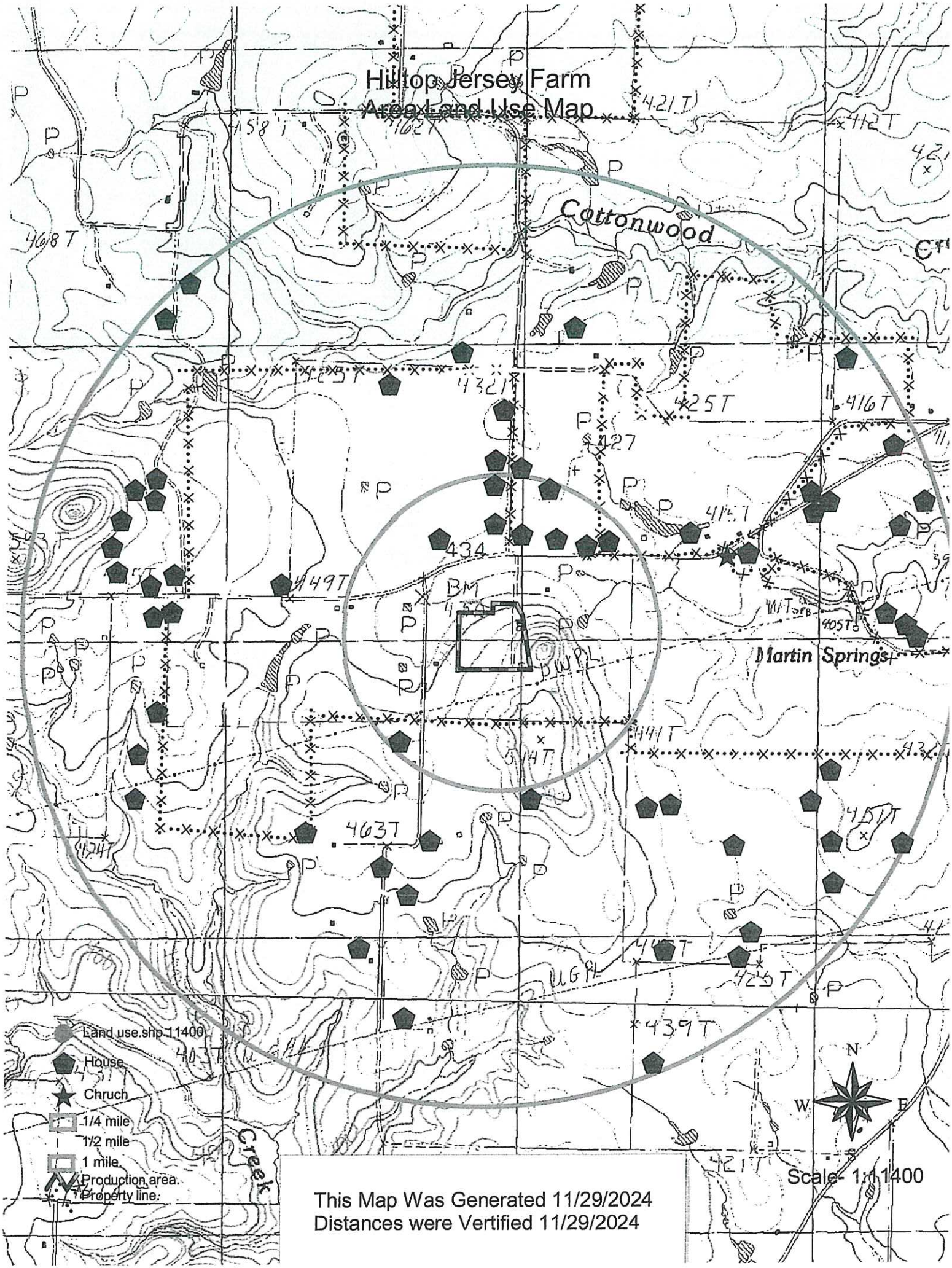
Odor Control Plan
for
Hilltop Jersey Farm

Odors from the facility are mainly associated with agricultural operations, including other CAFOs. Odors from CAFO's are not consistently predictable, and may have a periodic impact on nearby residents depending on sources and weather conditions. Odors may be less noticeable during calm days and tend to be strongest during the cleaning of animal buildings and during withdrawal of water from the lagoons and land application. It is the intention of the faculty to limit odors to an absolute minimum.

The following are practices to be used for an Odor Control Plan:

- Pens will be scraped off on as needed basis. Solid waste will be removed as needed to best reduce nuisance odors.
- All dead animals should be removed within 24 hours or will be buried at a minimum depth of three feet in designated area.
- Cleaning of the barns will be done at times consistent with the least nuisance problems.
- Irrigation will be done during daylight hours when wind velocity and humidity are lower. Irrigation will be monitored by an employee or management trained in waste disposal. This training will be accomplished by attending waste management training provided by the Agriculture Extension Service and TCEQ
- All lounging areas around the barn will be maintained so that there is no ponding of liquids.
- Pump retention ponds before the liquid level reaches the 24 hr-25 yr marker.
- The RCS is properly sized using USDA-Natural Resource Conservation Service Waternuter spreadsheet.
- In an effort to reduce air-bound particulate the dairy will add moisture to feed when mixing under windy conditions. Controlling the speed of farm vehicles will reduce dust generated at the facility
- The dairy would urge anyone who lives in the vicinity of the dairy, to notify the management when a perceived problem develops so that the source can be identified immediately.
- Dust when necessary will be controlled by water the area until the dust is controlled.

Hilltop Jersey Farm
Area Land Use Map



This Map Was Generated 11/29/2024
Distances were Vertified 11/29/2024