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 TEMPLATE FOR PROCESSING OR DISPOSAL NEW/RENEWAL/AMENDMENT 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 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

City of Abilene (CN600242671) proposes to operate City of Abilene Water Treatment Plant Residuals Monofill (RN107131740). a water treatment plant residuals products disposal monofill. The facility is located approximately 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833 (East Lake Road), and 0.3 mile west of Ranch Road 2833 (East Lake Road), in Abilene, Taylor County, Texas 79601.

The City of Abilene has applied to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005118000 (EPA I.D. No. TXL005024) to authorize the disposal via monofill of water treatment plant residuals products on 19.242 acres of land. This permit will not authorize a discharge of pollutants into water in the state.

The disposal sludge unit is expected to contain water treatment plant residuals products. Examples of best management practices implemented by City of Abilene include but are not limited to: a liner system and monofill general provisions.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE PROCESAR O ELIMINAR

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 Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales exigibles de la solicitud de permiso.

City of Abilene (CN600242671) propone operar City of Abilene Water Treatment Plant Residuals Monofill (RN107131740) una planta de tratamiento de agua eliminación de productos residuales monorelleno (monofill). La instalación se encuentra aproximadamente 0,7 millas al sur de la intersección de County Road 503 y Ranch Road 2833 (East Lake Road), y 0,3 millas al oeste de Ranch Road 2822 (East Lake Road), en Abilene, Condado de Taylor, Texas 79601.
City of Abilene ha solicitado renovar el permiso no. WQ0005118000 del sistema de eliminación de descargas contaminantes de Texas (TPDES) (No de identificación de la EPA TXL005024) para autorizar la eliminación mediante monofill de productos residuales de plantas de tratamiento de agua en 19,242 acres de terreno. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.
El desecho se espera que la unidad de lodos contenga productos residuales de plantas de tratamiento de agua. Ejemplos de mejores prácticas de gestión implementadas por City of Abilene incluye, pero no se limita a: un sistema de revestimiento y disposiciones generales monofill.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN A SEWAGE SLUDGE OR BIOSOLIDS SURFACE DISPOSAL PERMIT RENEWAL

PERMIT NO. WQ0005118000

APPLICATION. City of Abilene, P.O. Box 60, Abilene, Texas 79604, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No.WQ0005118000 (EPA I.D. No. TXL005024) to authorize the disposal via monofill of water treatment plant residuals products on 19.242 acres of land. The disposal facility is located approximately 0.7 mile south of the intersection of County Road 503 and Ranch Road 2833 (East Lake Road), and 0.3 mile west of Ranch Road 2833 (East Lake Road), near the city of Abilene, in Taylor County, Texas 79601. TCEQ received this application on September 9, 2024. The permit application will be available for viewing and copying at Abilene City Hall, Water Administration Conference Room, 555 Walnut Street, Abilene, 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/sludge-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=-99.696944,32.506111&level=18

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

TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.]

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 City of Abilene at the address stated above or by calling Mr. Rodney Taylor, Director of Water Utilities, at (325) 676-6452.

Issuance Date: November 5, 2024

COMISIÓN DE CALIDAD AMBIENTAL DE TEXAS

AVISO DE RECIBIMIENTO DE LA SOLICITUD E INTENCIÓN DE OBTENER RENOVACIÓN DEL PERMISO DE UNA DISPOSICIÓN DE LODOS RESIDUALES DE PLANTA DE TRATAMIENTO DE AGUAS

PERMISO N.º WQ0005118000

SOLICITUD. City of Abilene, P.O. Box 60, Abilene, Texas 79604 ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ, por sus siglas en inglés) para renovar el Permiso del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES, por sus siglas en inglés) N.º WQ0005118000 (EPA I.D. No. TXL005024) para autorizar la eliminación superficial mediante monofill de residuos de plantas de tratamiento de agua en 19.242 acres. La instalación de eliminación se encuentra aproximadamente a 0,7 millas al sur de la interseccion de County Road 503 y Ranch Road 2833 (East Lake Road), y a 0,3 millas al oester de Ranch Road 2833 (East Lake Road) cerca de la cuidad de Abilene, en el condado de Tyalor, Texas 79601. La TCEQ recibió esta solicitud el 9 de septiembre de 2024. La solicitud de permiso estará disponible para ver y copiar en el Ayuntamiento de Abilene, Sala de Conferencias de Administración de Agua, 555 Walnut Street, Abilene, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud, incluidas las actualizaciones y los avisos asociados, están disponibles electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/sludge-applications
Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no como parte de la solicitud o aviso. Para conocer la ubicación exacta, consulte la solicitud.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-99.696944,32.506111&level=18

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud está administrativamente completa y llevará a cabo una revisión técnica de la solicitud. Una vez completada la revisión técnica de la solicitud, el Director Ejecutivo puede preparar un proyecto de permiso y emitirá una decisión preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar se publicarán y enviarán por correo a aquellos que están en la lista de correo de todo el condado y a aquellos que están en la lista de correo para esta solicitud. Ese aviso contendrá la fecha límite para enviar comentarios públicos.**

COMENTARIO PÚBLICO / REUNIÓN PÚBLICA. Puede enviar comentarios públicos o solicitar una reunión pública sobre esta solicitud. El propósito de una reunión pública es para brindar la oportunidad de enviar comentarios o hacer preguntas sobre la solicitud. La TCEQ convocará una reunión pública si el Director Ejecutivo determina que existe un grado significativo de interés público en la solicitud o si lo solicita un legislador local. Una reunión pública no es una audiencia de caso impugnado.

OPORTUNIDAD PARA UNA AUDIENCIA DE CASO IMPUGNADO. Después de la fecha límite para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios oportunos y preparará una respuesta a todos los comentarios públicos relevantes y materiales, o

significativos. **A menos que la solicitud se remita directamente para una audiencia de caso impugnado, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud se enviarán por correo a todos los que hayan presentado comentarios públicos y a las personas que estén en la lista de correo para esta solicitud. Si se reciben comentarios, el correo también proporcionará instrucciones para solicitar la reconsideración de la decisión del Director Ejecutivo y para solicitar una audiencia de caso impugnado. Una persona que pueda verse afectada por la solicitud puede solicitar una audiencia.** Una audiencia de caso impugnado es un procedimiento legal similar a un juicio civil en un tribunal de distrito estatal.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, DEBE INCLUIR LOS SIGUIENTES ELEMENTOS EN SU SOLICITUD: su nombre, dirección, número de teléfono; nombre del solicitante y número de permiso propuesto; la ubicación y distancia de su propiedad/actividades en relación con la instalación propuesta; una descripción específica de cómo se vería afectado negativamente por la instalación de una manera que no es común para el público en general; una lista de todas las cuestiones de hecho controvertidas que presente durante el periodo de comentarios y la declaración "[Yo/nosotros] solicito/amos una audiencia de caso impugnado". Si la solicitud de audiencia de caso impugnado se presenta en nombre de un grupo o asociación, la solicitud debe designar al representante del grupo para recibir correspondencia futura; identificar por nombre y dirección física a un miembro individual del grupo que se vería afectado negativamente por la instalación o actividad propuesta; proporcionar la información discutida anteriormente con respecto a la ubicación y distancia del miembro afectado de la instalación o actividad; explicar cómo y por qué el miembro se vería afectado; y explicar cómo los intereses que el grupo busca proteger están relacionados con el propósito del grupo.

Tras el cierre de todos los periodos de comentarios y solicitudes aplicables, el Director Ejecutivo remitirá la solicitud y cualquier solicitud de reconsideración o de una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración en una reunión programada de la Comisión.

La Comisión sólo podrá conceder una solicitud de audiencia de un asunto impugnado sobre cuestiones que el solicitante haya presentado en sus observaciones oportunas que no hayan sido retiradas posteriormente. **Si se concede una audiencia, el tema de una audiencia se limitará a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas con preocupaciones relevantes y materiales sobre la calidad del agua presentadas durante el periodo de comentarios.**

La TCEQ puede actuar sobre una solicitud para renovar un permiso sin brindar la oportunidad de una audiencia de caso impugnado si se cumplen ciertos criterios.

LISTA DE CORREO. Si envían comentarios públicos, una solicitud de una audiencia de caso impugnado o una reconsideración de la decisión del Director Ejecutivo, se le agregará a la lista de correo de esta solicitud específica para recibir futuros avisos públicos enviados por correo por la Oficina del Secretario Oficial. Además, puede solicitar ser colocado en: (1) la lista de correo permanente para un nombre de solicitante específico y número de permiso; y/o (2) la lista de correo para un condado específico. Si desea ser colocado en la lista de correo permanente y/o del condado, especifique claramente qué lista(s) y envíe su solicitud a la Oficina del Secretario Oficial de la TCEQ a la dirección a continuación.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para obtener detalles sobre el estado de la solicitud, visite la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Busque en la

base de datos utilizando el número de permiso para esta aplicación**,** que se proporciona en la parte superior de este aviso.

CONTACTOS E INFORMACIÓN DE LA AGENCIA. Todos los comentarios y solicitudes públicas deben enviarse electrónicamente a https://www14.tceq.texas.gov/epic/eComment/, o por escrito a Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Tenga en cuenta que cualquier información de contacto que proporcione, incluido su nombre, número de teléfono, dirección de correo electrónico y dirección física, se convertirá en parte del registro público de la agencia. Para obtener más información sobre esta solicitud de permiso o el proceso de permisos, llame al Programa de Educación Pública de la TCEQ, sin cargo, al 1-800-687-4040 o visite su sitio web en www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 1-800-687-4040.

También puede obtenerse más información de City of Abilene en la dirección indicada anteriormente o llamando al Sr. Rodney Taylor al 325-676-6452.

Fecha de emisión: 5 de noviembre de 2024

Enprotec | Hibbs & Todd

October 3, 2024

Via Email to Abesha.Michael@tceq.texas.gov

Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team (MC148)
P.O. Box 13087
Austin, Texas 78711-3087
Attn: Ms. Abesha Michael

Re: Response to TCEQ Letter, dated September 19, 2024
Application to Renew Permit No.: WQ0005118000 (EPA I.D. No. TXL005024)
Applicant Name: City of Abilene (CN600242671)
Site Name: City of Abilene Water Treatment Plant Residuals Monofill (RN107131740)
Type of Application: Renewal without changes

Dear Ms. Michael:

The TCEQ letter, dated September 19, 2024, indicates that additional information is required before the application can be declared administratively complete. A copy of the referenced TCEQ correspondence is attached for reference. The response to the item listed in the referenced TCEQ correspondence is as follows:

1. *Pease complete the Plain Language Summary (PLS) English and Spanish. Please use the attached PLS forms and instructions.*

   The PLS forms are completed and attached; the Word versions (English & Spanish) are attached to the email response.

2. *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.*

   APPLICATION. City of Abilene, P.O. Box 60, Abilene, Texas 79604, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No._WQ0005118000 (EPA I.D. No. TXL005024) to authorize the ~~surface~~ disposal via monofill of water treatment plant residuals products on 19.242 acres of land. The disposal facility is located approximately 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833 (East Lake Road), and 0.3 mile west of Ranch Road 2833 (East Lake Road), near the city of Abilene, in Taylor County, Texas 79601. TCEQ received this application on September 9, 2024. The permit application will be available for viewing and copying at Abilene City Hall, Water Administration Conference Room, 555 Walnut Street, Abilene, 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/sludge-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=-99.696944,32.506111&level=18
Further information may also be obtained from City of Abilene at the address stated above or by calling Mr. Rodney Taylor at 325-676-6452.

A few minor changes to the Notice of Receipt of Application and Intent to Obtain a Water Quality Permit (NORI) are requested as indicated above in redline/strikeout.

- Add a space after "Permit No. in the first sentence & add a 0 to the WQ #:
  - *… Permit No._WQ0005118000 (EPA I.D. No….)*
- *In first sentence, clarify the disposal method is via monofill (not surface disposal) to match the existing permit language:*
  - *… to authorize the ~~surface~~ disposal via monofill of water treatment plant residuals products …*
- In the 2nd sentence, clarify that Ranch Road 2833 and East Lake Road are the same road:
  - *… Ranch Road 2833 (East Lake Road), and 0.3 mile west of Ranch Road 2833 (East Lake Road)…*

3. *The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.*

   The NORI in Spanish with the corrections as noted above is attached in pdf and also in Word, as requested.

The response is provided as requested by the TCEQ original response deadline of October 3, 2024. Please feel free to call me at 817-694-8382, contact me in writing in the Abilene office, or email me at luci.dunn@e-ht.com with any questions or comments.

Sincerely,

Enprotec / Hibbs & Todd, Inc.

Luci Dunn

Luci Dunn, P.E.
Senior Project Manager

LD/jd

Attachments: TCEQ Administrative NOD Emails and Letter, dated 09/19/2024
PLS (English & Spanish) (Word versions attached to email response)
Spanish NORI (Word version attached to email response)

c: Rodney Taylor, City of Abilene, via email to rodney.taylor@abilenetx.gov
Katherine Beeman, City of Abilene, via email to katherine.beeman@abilenetx.gov
Matthew Dane, City of Abilene, Via email to matthew.dane@abilenetx.gov
Jordan Hibbs, eHT, via email to jordan.hibbs@e-ht.com
Project File 8802 P:\Projects\TPDES Permit Applications\Abilene WTP Sludge\8802 Monofill Renewal 2024\20240919 Admin NOD\202410 Response to Abi Monofill TCEQ Admin NOD.docx

TCEQ Administrative NOD Emails and Letter,
dated 09/19/2024

From: Abesha Michael <Abesha.Michael@tceq.texas.gov>
Sent: Thursday, September 19, 2024 3:14 PM
To: Luci Dunn
Subject: FW: Application to Renew Permit No. WQ005118000 - Notice of Deficiency Letter //UPDATED//
Attachments: WQ Sludge NORI surface disposal process (Spanish).docx; WQ0005118000-nod1.pdf; PLS For Process Surface Dispose or Incinerate Sludge.docx; PLS For Process Surface Dispose or Incinerate Sludge (Spanish).docx

Please use these attachments.
Thank you,

From: Luci Dunn <luci.dunn@e-ht.com>
Sent: Thursday, September 19, 2024 2:43 PM
To: Abesha Michael <Abesha.Michael@tceq.texas.gov>
Subject: RE: Application to Renew Permit No. WQ005118000 - Notice of Deficiency Letter //UPDATED//

Abesha,
I see that the Admin NOD changed by adding the PLS information; but both PLS Word documents are complete blank. Please resend.

Did the "WQ Sludge NORI surface disposal process (Spanish).docx" change? I already forwarded to Spanish newspaper translator (not to publish – just to translate).

Luci Dunn, PE
Senior Project Manager
Enprotec / Hibbs & Todd, Inc.

From: Abesha Michael <Abesha.Michael@tceq.texas.gov>
Sent: Thursday, September 19, 2024 2:36 PM
To: Luci Dunn <luci.dunn@e-ht.com>
Cc: rodney.taylor@abilenetx.gov
Subject: FW: Application to Renew Permit No. WQ005118000 - Notice of Deficiency Letter //UPDATED//

Please use the updated attachments.
Thank you,

From: Abesha Michael
Sent: Thursday, September 19, 2024 1:45 PM
To: Luci Dunn <luci.dunn@e-ht.com>

Cc: rodney.taylor@abilenetx.gov
Subject: Application to Renew Permit No. WQ005118000 - Notice of Deficiency Letter

Dear Ms. Dunn:

The attached Notice of Deficiency letter sent on September 19, 2024, requests additional information needed to declare the application administratively complete. Please send the complete response to my attention by October 3, 2024.

Thank you,

Abesha H. Michael
Applications Review & Processing Team
Water Quality Division Support Section
Water Quality Division, MC 148
PO Box 13087
Austin, Texas 78711
Phone: o: 512-239-4912; c: 346-802-8446
Email: abesha.michael@tceq.texas.gov

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

September 19, 2024

Ms. Luci Dunn, P.E.
Senior Project Manager
Enprotec / Hibbs and Todd (eHT)
402 Cedar Street
Abilene, Texas 79601

RE: Application to Renew Permit No.: WQ0005118000 (EPA I.D. No. TXL005024)
Applicant Name: City of Abilene (CN600242671)
Site Name: City of Abilene Water Treatment Plant Residuals Monofill (RN107131740)
Type of Application: Renewal without changes

VIA EMAIL

Dear Ms. Dunn:

We have received the application for the above referenced permit, and it is currently under review. Your attention to the following item(s) are requested before we can declare the application administratively complete. Please submit responses to the following items via email.

1. Pease complete the Plain Language Summary (PLS) English and Spanish. Please use the attached PLS forms and instructions.

2. 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.

   APPLICATION. City of Abilene, P.O. Box 60, Abilene, Texas 79604, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No.WQ005118000 (EPA I.D. No. TXL005024) to authorize the surface disposal of water treatment plant residuals products on 19.242 acres of land. The disposal facility is located approximately 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833, and 0.3 mile west of East Lake Road, near the city of Abilene, in Taylor County, Texas 79601. TCEQ received this application on September 9, 2024. The permit application will be available for viewing and copying at Abilene City Hall, Water Administration Conference Room, 555 Walnut Street, Abilene, 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/sludge-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=-99.696944,32.506111&level=18

Further information may also be obtained from City of Abilene at the address stated above or by calling Mr. Rodney Taylor at 325-676-6452.

3. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

Please submit the complete response, addressed to my attention by October 3, 2024. If you should have any questions, please do not hesitate to contact me by phone at (512) 239-4912 or by email at abesha.michael@tceq.texas.gov.

Sincerely,

Abesha Michael

Abesha Michael
Applications Review and Processing Team (MC148)
Water Quality Division
Texas Commission of Environmental Quality

Enclosure(s)

cc: Mr. Rodney Taylor, Director of Water Utilities, City of Abilene, P.O. Box 60, Abilene, Texas 79604

PLS (English & Spanish)
(Word versions attached to email response)

Plain Language Summary Template and Instructions to Process, Surface Dispose, or Incinerate Sewage Sludge or Biosolids Permit Applications

This template is intended as a guide to assist applicant's in developing a plain language summary as required by 30 Texas Administrative Code Chapter 39. Applicant's may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed processing or disposal unit; (2) the expected processing or disposal acreage; (3) the expected pollutants that may be processed or disposed; and (4) how the applicant will control those pollutants, so that the proposed processing or disposal unit will not have an adverse impact on human health or the environment.

Fill in the blanks below to describe your processing or disposal unit and application. Instructions or examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements.

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR PROCESSING OR DISPOSAL NEW/RENEWAL/AMENDMENT 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 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

City of Abilene (CN600242671) proposes to operate City of Abilene Water Treatment Plant Residuals Monofill (RN107131740). a water treatment plant residuals products disposal monofill. The facility is located approximately 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833 (East Lake Road), and 0.3 mile west of Ranch Road 2833 (East Lake Road), in Abilene, Taylor County, Texas 79601.

The City of Abilene has applied to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005118000 (EPA I.D. No. TXL005024) to authorize the disposal via monofill of water treatment plant residuals products on 19.242 acres of land. This permit will not authorize a discharge of pollutants into water in the state.

The disposal sludge unit is expected to contain water treatment plant residuals products. Examples of best management practices implemented by City of Abilene include but are not limited to: a liner system and monofill general provisions.

INSTRUCTIONS

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).
3. Select “operates” in this section for existing processing or disposal unit applications or select “proposes to operate” for new processing or disposal unit applications.
4. Enter the name of the facility in this section. The processing or disposal unit name should match the name associated with the regulated entity number.
5. 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).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the processing or disposal unit in this section.
    a. For example, a processing unit application might specify: via compost, lime stabilization, etc.
    b. For example, a disposal unit application might specify: disposal of wastewater treatment plant sludge, water treatment plant residuals (or include both), etc.
8. Enter the location of the processing or disposal unit in this section.
9. Enter the City nearest the processing or disposal unit in this section.
10. Enter the County nearest the processing or disposal unit in this section.
11. Enter the zip code for the processing or disposal unit address in this section.
12. Enter a summary of the application request in this section. For example: renewal to dispose of wastewater treatment plant sludge on a 5,000 acre monofill, or new application to process wastewater treatment plant sludge via compositing on 100 acres.
13. Choose the appropriate unit type, either processing or disposal
14. List all pollutants expected in the processing or disposal from this facility in this section. For example, the pollutants expected in the disposal of sewage sludge or biosolids are Arsenic, Chromium and Nickel (mg/kg).
15. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
16. Enter a description of the best management practices used at your unit to manage pollutants. Include a description of best management practices used for the entire process.

Examples

Example 1: Sewage Sludge Processing Permit Application

The following summary is provided for this pending water quality permit application being reviewed 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 are not federal enforceable representations of the permit application.

City of Texas (CN000000001), Texas Water Utility, P.O. Box 1088, Austin, Texas 78767, operates the Hornsby Bend sewage sludge processing unit. The processing unit is located at 2210 South Farm-to-Market Road 973, on the north bank of the Colorado River, approximately 0.9 mile northwest of the intersection of Farm-to-Market Road 973 and State Highway 71 in Travis County, Texas 78725 (RN100816685).

City of Texas processes wastewater treatment plant sludge via a 1,200 acre composting pad. This processing unit will not authorize a discharge of pollutants into water in the state. This sludge processing unit is expected to contain: Arsenic, Chromium and Nickel. Examples of best management practices implemented by City of Texas include but are not limited to: monitoring of metal pollutants, pathogen reduction and vector attraction reduction.

Example 2: Sewage Sludge and Water Treatment Residuals Disposal Individual Permit Application

The following summary is provided for this pending water quality permit application being reviewed 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 are not federal enforceable representations of the permit application.

ABC Industries, LLC (CN000000001), operates the Cerro Alto Sewage Sludge and Water Treatment Residuals Disposal Monofill on 219.74 acres of land. The disposal unit is located at 1 McKelligon Canyon Road, El Paso, Texas 79930 (RN103155024).

ABC Industries, LLC disposes of wastewater treatment plant sewage sludge and water treatment plant sludge products on 219.74 acres. The disposal will not authorize a discharge of pollutants into water in the state. This sludge disposal unit is expected to contain: Arsenic, Chromium and Nickel Examples of best management practices implemented by ABC Industries, LLC include but are not limited to: monitoring of metal pollutants, pathogen reduction and vector attraction reduction.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE PROCESAR O ELIMINAR

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 Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales exigibles de la solicitud de permiso.

City of Abilene (CN600242671) propone operar City of Abilene Water Treatment Plant Residuals Monofill (RN107131740) una planta de tratamiento de agua eliminación de productos residuales monorelleno (monofill). La instalación se encuentra aproximadamente 0,7 millas al sur de la intersección de County Road 503 y Ranch Road 2833 (East Lake Road), y 0,3 millas al oeste de Ranch Road 2822 (East Lake Road), en Abilene, Condado de Taylor, Texas 79601.
City of Abilene ha solicitado renovar el permiso no. WQ0005118000 del sistema de eliminación de descargas contaminantes de Texas (TPDES) (No de identificación de la EPA TXL005024) para autorizar la eliminación mediante monofill de productos residuales de plantas de tratamiento de agua en 19,242 acres de terreno. Este permiso no autorizará una descarga de contaminantes en el agua en el estado.
El desecho se espera que la unidad de lodos contenga productos residuales de plantas de tratamiento de agua. Ejemplos de mejores prácticas de gestión implementadas por City of Abilene incluye, pero no se limita a: un sistema de revestimiento y disposiciones generales monofill.

Spanish NORI
(Word version attached to email response)

COMISIÓN DE CALIDAD AMBIENTAL DE TEXAS

AVISO DE RECIBIMIENTO DE LA SOLICITUD E INTENCIÓN DE OBTENER RENOVACIÓN DEL PERMISO DE UNA DISPOSICIÓN DE LODOS RESIDUALES DE PLANTA DE TRATAMIENTO DE AGUAS

PERMISO N.º WQ0005118000

SOLICITUD. City of Abilene, P.O. Box 60, Abilene, Texas 79604 ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ, por sus siglas en inglés) para renovar el Permiso del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES, por sus siglas en inglés) N.º WQ0005118000 (EPA I.D. No. TXL005024) para autorizar la eliminación superficial mediante monofill de residuos de plantas de tratamiento de agua en 19.242 acres. La instalación de eliminación se encuentra aproximadamente a 0,7 millas al sur de la interseccion de County Road 503 y Ranch Road 2833 (East Lake Road), y a 0,3 millas al oester de Ranch Road 2833 (East Lake Road) cerca de la cuidad de Abilene, en el condado de Tyalor, Texas 79601. La TCEQ recibió esta solicitud el 9 de septiembre de 2024. La solicitud de permiso estará disponible para ver y copiar en el Ayuntamiento de Abilene, Sala de Conferencias de Administración de Agua, 555 Walnut Street, Abilene, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud, incluidas las actualizaciones y los avisos asociados, están disponibles electrónicamente en la siguiente página web:
https://www.tceq.texas.gov/permitting/wastewater/pending-permits/sludge-applications
Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no como parte de la solicitud o aviso. Para conocer la ubicación exacta, consulte la solicitud.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-99.696944,32.506111&level=18

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud está administrativamente completa y llevará a cabo una revisión técnica de la solicitud. Una vez completada la revisión técnica de la solicitud, el Director Ejecutivo puede preparar un proyecto de permiso y emitirá una decisión preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar se publicarán y enviarán por correo a aquellos que están en la lista de correo de todo el condado y a aquellos que están en la lista de correo para esta solicitud. Ese aviso contendrá la fecha límite para enviar comentarios públicos.**

COMENTARIO PÚBLICO / REUNIÓN PÚBLICA. Puede enviar comentarios públicos o solicitar una reunión pública sobre esta solicitud. El propósito de una reunión pública es para brindar la oportunidad de enviar comentarios o hacer preguntas sobre la solicitud. La TCEQ convocará una reunión pública si el Director Ejecutivo determina que existe un grado significativo de interés público en la solicitud o si lo solicita un legislador local. Una reunión pública no es una audiencia de caso impugnado.

OPORTUNIDAD PARA UNA AUDIENCIA DE CASO IMPUGNADO. Después de la fecha límite para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios

oportunos y preparará una respuesta a todos los comentarios públicos relevantes y materiales, o significativos. **A menos que la solicitud se remita directamente para una audiencia de caso impugnado, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud se enviarán por correo a todos los que hayan presentado comentarios públicos y a las personas que estén en la lista de correo para esta solicitud. Si se reciben comentarios, el correo también proporcionará instrucciones para solicitar la reconsideración de la decisión del Director Ejecutivo y para solicitar una audiencia de caso impugnado. Una persona que pueda verse afectada por la solicitud puede solicitar una audiencia.** Una audiencia de caso impugnado es un procedimiento legal similar a un juicio civil en un tribunal de distrito estatal.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, DEBE INCLUIR LOS SIGUIENTES ELEMENTOS EN SU SOLICITUD: su nombre, dirección, número de teléfono; nombre del solicitante y número de permiso propuesto; la ubicación y distancia de su propiedad/actividades en relación con la instalación propuesta; una descripción específica de cómo se vería afectado negativamente por la instalación de una manera que no es común para el público en general; una lista de todas las cuestiones de hecho controvertidas que presente durante el periodo de comentarios y la declaración "[Yo/nosotros] solicito/amos una audiencia de caso impugnado". Si la solicitud de audiencia de caso impugnado se presenta en nombre de un grupo o asociación, la solicitud debe designar al representante del grupo para recibir correspondencia futura; identificar por nombre y dirección física a un miembro individual del grupo que se vería afectado negativamente por la instalación o actividad propuesta; proporcionar la información discutida anteriormente con respecto a la ubicación y distancia del miembro afectado de la instalación o actividad; explicar cómo y por qué el miembro se vería afectado; y explicar cómo los intereses que el grupo busca proteger están relacionados con el propósito del grupo.

Tras el cierre de todos los periodos de comentarios y solicitudes aplicables, el Director Ejecutivo remitirá la solicitud y cualquier solicitud de reconsideración o de una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración en una reunión programada de la Comisión.

La Comisión sólo podrá conceder una solicitud de audiencia de un asunto impugnado sobre cuestiones que el solicitante haya presentado en sus observaciones oportunas que no hayan sido retiradas posteriormente. **Si se concede una audiencia, el tema de una audiencia se limitará a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas con preocupaciones relevantes y materiales sobre la calidad del agua presentadas durante el periodo de comentarios.**

La TCEQ puede actuar sobre una solicitud para renovar un permiso sin brindar la oportunidad de una audiencia de caso impugnado si se cumplen ciertos criterios.

LISTA DE CORREO. Si envían comentarios públicos, una solicitud de una audiencia de caso impugnado o una reconsideración de la decisión del Director Ejecutivo, se le agregará a la lista de correo de esta solicitud específica para recibir futuros avisos públicos enviados por correo por la Oficina del Secretario Oficial. Además, puede solicitar ser colocado en: (1) la lista de correo permanente para un nombre de solicitante específico y número de permiso; y/o (2) la lista de correo para un condado específico. Si desea ser colocado en la lista de correo permanente y/o del condado, especifique claramente qué lista(s) y envíe su solicitud a la Oficina del Secretario Oficial de la TCEQ a la dirección a continuación.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para obtener detalles sobre el estado de la solicitud, visite la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Busque en la

base de datos utilizando el número de permiso para esta aplicación**,** que se proporciona en la parte superior de este aviso.

CONTACTOS E INFORMACIÓN DE LA AGENCIA. Todos los comentarios y solicitudes públicas deben enviarse electrónicamente a https://www14.tceq.texas.gov/epic/eComment/, o por escrito a Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Tenga en cuenta que cualquier información de contacto que proporcione, incluido su nombre, número de teléfono, dirección de correo electrónico y dirección física, se convertirá en parte del registro público de la agencia. Para obtener más información sobre esta solicitud de permiso o el proceso de permisos, llame al Programa de Educación Pública de la TCEQ, sin cargo, al 1-800-687-4040 o visite su sitio web en www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 1-800-687-4040.

También puede obtenerse más información de City of Abilene en la dirección indicada anteriormente o llamando al Sr. Rodney Taylor al 325-676-6452.

Fecha de emisión: « Admin_Date »

Enprotec | Hibbs & Todd

September 9, 2024

Via TCEQ FTPS Upload (Share to WQDeCopy@tceq.texas.gov) and with Hard Copies to Follow

Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team (MC148)
P.O. Box 13087
Austin, Texas 78711-3087

Re: Water Treatment Plant Sludge (Residuals) Permit Renewal Application
Applicant: City of Abilene (CN600242671)
Permit No.: WQ0005118000 (EPA I.D. No. TXL005024)
Site Name: City of Abilene Water Treatment Plant Residuals Monofill (RN107131740)

Dear Sir / Madam:

Enclosed with this letter are one original and two copies of the renewal Application for Permit to Process, Surface Dispose, or Incinerate Sludge (TCEQ-00722) and applicable attachments. Per the new rule requirements under Title 30 Texas Administrative Code (TAC) Chapter 39 relating to public notices, the Plain Language Summaries (PLSs) in Word format in English and Spanish are submitted through the FTPS upload; the PLS hard copies are found in Administrative Report 1.0 form Attachment A. In addition, a Core Data form follows the cover letter and is also uploaded via FTPS. If there are any questions, please let me know at luci.dunn@e-ht.com or at (817) 694-8382.

Sincerely,

Enprotec / Hibbs & Todd, Inc.

Luci Dunn

Luci Dunn, P.E.
Senior Project Manager

LD/jd

Attachments TCEQ-00722 with Attachments (one original and 2 copies)
English & Spanish PLSs in WORD format (FTPS upload only)
Core Data form (Hard copy follows Cover Letter and via FTPS upload)

c: Rodney Taylor, City of Abilene, via email to rodney.taylor@abilenetx.gov
Katherine Beeman, City of Abilene, via email to katherine.beeman@abilenetx.gov
Matthew Dane, City of Abilene, via email to matthew.dane@abilenetx.gov
Jordan Hibbs, eHT, via email to jordan.hibbs@e-ht.com
Project File 8802
P:\Projects\TPDES Permit Applications\Abilene WTP Sludge\8802 Monofill Renewal 2024\1. Correspondence\Abi Monofill Permit Renewal Submittal Ltr to TCEQ.docx

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 600242671		**RN 107131740**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ 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:*

City of Abilene

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
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

PO Box 60

City	Abilene	**State**	TX	**ZIP**	79604	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	robert.hanna@abilenetx.gov

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(325) 676-6206		( ) -

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.)*

City of Abilene Water Treatment Plant Residuals Monofill

23. Street Address of the Regulated Entity: ***(No PO Boxes)***							
	City		**State**		**ZIP**		**ZIP + 4**
24. County	Taylor						

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

25. Description to Physical Location:	0.7 miles south of the intersection of County Road 503 and Ranch Road 2833, and 0.3 miles west of Ranch Road 2833				
26. Nearest City			**State**	**Nearest ZIP Code**	
Abilene			TX	79601	

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:	32.506111		**28. Longitude (W) In Decimal:**	99.696944	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
32	30	21.99	99	41	48.99

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)
4953		495303	

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

WTP residuals (sludge) monofill

34. Mailing Address:	**City of Abilene**						
	PO Box 60						
	City	**Abilene**	**State**	**TX**	**ZIP**	**79604**	**ZIP + 4**
35. E-Mail Address:	**rodney.taylor@abilenetx.gov**						

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(325) 676-6452		( ) -

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:
	WQ0005118000			

SECTION IV: Preparer Information

40. Name:	Luci Dunn, PE, with eHT	**41. Title:**	Senior Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(325) 698-5560		( ) -	luci.dunn@e-ht.com

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:	City of Abilene	**Job Title:**	City Manager	
Name *(In Print):*	Robert Hanna Robert Hanna		**Phone:**	(325) 676- **6206**
Signature:			**Date:**	8/27/2024

TPDES PERMIT RENEWAL APPLICATION

CITY OF ABILENE
WATER TREATMENT PLANT RESIDUALS MONOFILL

Permit No. WQ0005118000

AUGUST 2024

Abilene I Lubbock I Granbury
PE Firm Registration No. 1151
PG Firm Registration No. 50103
RPLS Firm Registration No. 10011900

Corporate Headquarters
402 Cedar Street
Abilene, Texas 79601
T: (325) 698-5560
F: (325) 690-3240

www.e-ht.com

Celebrating 35 years

Enprotec | Hibbs & Todd

City of Abilene Water Treatment Plant Residuals Monofill
Permit Renewal Application
Table of Contents

Application for Permit to Process, Surface Dispose, or Incinerate Sludge

ADMINISTRATIVE REPORT (Instructions, Page 1)

Applicant: City of Abilene

Permit Number: WQ0005118000

Type of application:

☐ New (Original, Unpermitted)

☐ Major amendment with Renewal

☐ Major amendment without Renewal (Retain current expiration date. Application requirements are limited to those items that relate to the proposed modification.)

☒ Renewal of existing permit

☐ Minor amendment to permit (Retain current expiration date. Application requirements are limited to those items that relate to the proposed modification.)

For an application to amend a permit, list the major proposed changes causing the amendment. (i.e., INCREASE PROCESSING VOLUME, REQUEST BUFFER ZONE VARIANCE, REDUCE OR REMOVE A MONITORING REQUIREMENT OR FREQUENCY) N/A

Type of Technical Report(s) attached to Administrative Report for Permit Application:

☐ Sewage Sludge Processing Technical Report

☒ Sewage Sludge Surface Disposal Technical Report NOTE: This application is for Water Treatment Plant Residuals Disposal

☐ Sewage Sludge Incineration Technical Report Sewage

☐ Sludge Beneficial Use Technical Report

Application fee:

New/Amend: ☐ $150

Renewal: ☒ $115

The permit application processing and postage fee in the amount of $115.00, has been submitted to the TCEQ. (See the instructions for the appropriate fee amount.)

For Commission Use Only:

Proposed/Current Permit Number _____Region: _____

Segment Number: _____County _____Expiration Date: _____

1. APPLICANT INFORMATION (Instructions, Page 3)

a. Facility Operator (the Operator must apply for the permit.)

What is the Legal Name of the entity (applicant) applying for this permit?
City of Abilene

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

If the applicant is currently a customer with TCEQ, what is the Customer Number (CN)? Search for your CN at:
http://www12.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN600242671

What is the name and title of the person signing the application?
(The person must be an executive official meeting signatory requirements in TAC 305.43(a).)
Prefix: Mr. (Mr. Ms, Miss)
First/Last Name: Robert Hanna
Suffix: N/A
Title: City Manager
Credential: N/A

What is the applicant's mailing address as recognized by the **US Postal Service**?
You may verify the address at: http://zip4.usps.com/zip4/welcome.jsp
Organization Name: N/A
Mailing Address: PO Box 60
Internal Routing (Mail Code, Etc.):N/A
City: Abilene State: Texas ZIP Code:79604

Mailing Information if outside USA
Territory: N/A Country Code: N/A Postal Code: N/A

Phone No.: (325) 676-6206 Extension: N/A
Fax No.: N/A E-mail Address: robert.hanna@abilenetx.gov

Indicate the type of Customer:

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

Independent entity
☐ Yes
☒ No *(If governmental entity, subsidiary, or part of a larger corporation)*

Number of Employees:
☐ 0-20; ☐ 21-100; ☐ 101-250; ☐ 251-500; or ☒ 501 or higher

Customer Business Tax and Filing Numbers
*(Not applicable to individuals, governments, general partnerships or sole proprietors. **REQUIRED** for corporations and limited partnerships)*
State Franchise Tax ID Number: N/A
TX SOS Charter (filing) Number: N/A
Federal Tax ID: N/A
DUNS Number (if known): N/A

b. Co-Permittee information (complete only if the entity must be a co-permittee)

What is the Legal Name of the entity applying for this permit?
N/A – no Co-Permittee

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal document forming the entity.)

If the entity is currently a customer with TCEQ, what is the Customer Number (CN)? Search for your CN at:
http://www12.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

N/A

What is the name and title of the person signing the application?
(The person must be an executive official meeting signatory requirements in TAC 305.43(a).)
Prefix: N/A (Mr. Ms, Miss)
First/Last Name: N/A
Suffix: N/A
Title: N/A Credential: N/A
What is the operator's mailing address as recognized by the **US Postal Service**?
You may verify the address at: http://zip4.usps.com/zip4/welcome.jsp
Organization Name: N/A
Mailing Address: N/A
Internal Routing (Mail Code, Etc.):
City: N/A State: TX ZIP Code: N/A

Mailing Information if outside USA
Territory: N/A Country Code: N/A Postal Code: N/A
Phone No.: N/A Extension: N/A
Fax No.: N/A E-mail Address: N/A
Indicate the type of Customer:

☐ Individual ☐ Sole Proprietorship-D.B.A.
☐ Limited Partnership ☐ Corporation
☐ Trust ☐ Estate
☐ Federal Government ☐ State Government

☐ County Government ☐ City Government
☐ Other Government ☐ Other:

Independent entity

☐ Yes
☐ No *(If governmental entity, subsidiary, or part of a larger corporation)*

Number of Employees:
☐ 0-20; ☐ 21-100; ☐ 101-250; ☐ 251-500; or ☐ 501 or higher

Customer Business Tax and Filing Numbers
*(Not applicable to individuals, governments, general partnerships or sole proprietors. **REQUIRED** for corporations and limited partnerships)*
State Franchise Tax ID Number: N/A
TX SOS Charter (filing) Number: N/A
Federal Tax ID: N/A
DUNS Number (if known): N/A
Provide a brief description of the need for a co-permittee: N/A

c. Individual information (*complete only if the site operator or co-permittee is an individual*)
What is the Full Legal Name of the individual applying for this permit?
N/A – Not an Individual

If the individual is currently a customer with TCEQ, what is the Customer Number (CN)? Search at:
http://www12.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch
CN N/A

What is the name and title of the person signing the application?
(The person must be the individual. See signatory requirements in TAC 305.43(a).)
Prefix: N/A
(Mr. Ms, Miss)
First: N/A Middle: N/A Last: N/A
Suffix: N/A
State Identification Number: N/A
Date of Birth: N/A
Assumed business or professional name: N/A
Business name: N/A

What is the individual's mailing address as recognized by the **US Postal Service**?
You may verify the address at: http://zip4.usps.com/zip4/welcome.jsp

Mailing Address: N/A

Internal Routing (Mail Code, Etc.): N/A

City: N/A State: TX ZIP Code: N/A

Mailing Information if outside USA
Territory: N/A Country Code: N/A Postal Code: N/A
Phone No.: N/A Extension: N/A
Fax No.: N/A E-mail Address: N/A

2. BILLING CONTACT INFORMATION (Instructions Page 6)

a. Billing Contact and Address Information

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***active on September 1 of each year.*** *TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed.*

Is the billing address the same as the permittee or co-permittee?

☐Permittee ☐Co-permittee ☒No, fill out this section

Prefix: (Mr. Ms, Miss) Mr.
First/Last Name: Rodney Taylor
Suffix: N/A
Title: Director of Water Utilities Credential: N/A
Organization Name: City of Abilene
Billing Mailing Address: PO Box 60
Internal Routing (Mail Code, Etc.): N/A
City: Abilene State: Texas ZIP Code: 79604
Mailing Information if outside USA.
Territory: Country Code: Postal Code:
Phone No.: (325) 676-6452 Extension: N/A
Fax No.: N/A E-mail Address: rodney.taylor@abilenetx.gov

3. APPLICATION CONTACT INFORMATION (Instructions, Page 6)

If TCEQ needs additional information regarding this application, who should be contacted?

a. Application Contact

Prefix (Mr. Ms, Miss): Ms.
First/Last Name: Luci Dunn
Suffix: N/A
Title: Senior Project Manager Credential: P.E.
Organization Name: Enprotec / Hibbs and Todd (eHT)
Mailing Address: 402 Cedar St.
Internal Routing (Mail Code, Etc.):N/A
City: Abilene State: TX ZIP Code:79601

Mailing Information if outside USA.
Territory: N/A Country Code: N/A Postal Code: N/A

Phone No.: (817) 694-8382 Extension: N/A Fax No.: N/A
E-mail Address: luci.dunn@e-ht.com
Check one or both: ☒ Administrative contact ☒Technical Contact

b. Application Contact
Prefix: Mr.
(Mr. Ms, Miss)
First/Last Name: Rodney Taylor
Suffix: N/A
Title: Director of Water Utilities Credential: N/A
Organization Name: City of Abilene
Mailing Address: PO Box 60
Internal Routing (Mail Code, Etc.): N/A
City: Abilene State: TX ZIP Code: 79604

Mailing Information if outside USA.
Territory: N/A Country Code: N/A Postal Code: N/A

Phone No.: (325) 676-6452 Extension: N/A Fax No. N/A
E-mail Address: rodney.taylor@abilenetx.gov
Check one or both: ☒ Administrative contact ☐Technical Contact

4. PERMIT CONTACT INFORMATION (Instructions, Page 7)

Provide two names of individuals that can be contacted throughout the permit term.

a. Prefix: Ms.
(Mr. Ms, Miss)
First/Last Name: Luci Dunn
Suffix: N/A
Title: Senior Project Manager Credential: P.E. Organization Name: eHT
Mailing Address:402 Cedar St.
Internal Routing (Mail Code, Etc.): N/A
City: Abilene State: TX ZIP Code: 79601

Mailing Information if outside USA.
Territory: N/A Country Code: N/A Postal Code: N/A
Phone No.: (817) 694-8382 Extension: N/A Fax No.: N/A
E-mail Address: luci.dunn@e-ht.com

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

First/Last Name: Rodney Taylor

Suffix: N/A

Title: Director of Water Utilities Credential: N/A

Organization Name: City of Abilene

Mailing Address: PO Box 60

Internal Routing (Mail Code, Etc.):N/A

City: Abilene State: TX ZIP Code: 79604

Mailing Information if outside USA.

Territory: N/A Country Code: N/A

Postal Code: N/A

Phone No.: (325) 676-6452 Extension: N/A Fax No.: N/A

E-mail Address: rodney.taylor@abilenetx.gov

5. NOTICE INFORMATION (Instructions, Page 7)

a. Individual publishing the notices

First/Last Name: Luci Dunn

Suffix: N/A

Title: Senior Project Manager Credential: P.E.

Organization Name: Enprotec / Hibbs & Todd, Inc. (eHT)

Mailing Address: PO Box 3097

Internal Routing (Mail Code, Etc.): N/A

City: Abilene State: TX ZIP Code:79604

Mailing Information if outside USA.

Territory: N/A Country Code: N/A Postal Code: N/A

Phone No.: (817) 694-8382 Extension: N/A Fax No.: N/A

E-mail Address: luci.dunn@e-ht.com

b. Method for receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒E-mail Address:luci.dunn@e-ht.com

☐ Fax No.:

☐ Overnight/Priority mail: (self addressed, prepaid envelope required)

☐ Regular Mail:

Mailing Address:

Internal Routing (Mail Code, Etc.):

City: State: TX

ZIP Code:

c. Contact to Be Listed In the Notice

Prefix: Mr.

(Mr. Ms, Miss)

First/Last Name: Rodney Taylor

Suffix: N/A

Title: Director of Water Utilities Credential: N/A

Organization Name: City of Abilene

Phone No.: (325) 676-6452 Extension: N/A

d. Public Place Information

If the facility and/or disposal location are located in more than one county, a public viewing place for each county must be provided.

Public Building name: City of Abilene City Hall

Location within the building: Water Administration Conference Room

Physical address of building: 555 Walnut Street

City: Abilene County: Taylor

Contact Name: Rodney Taylor

Phone No.: (325) 676-6452 Extension: N/A

e. Bilingual Notice Requirements:

For new permit applications, major amendment and renewal applications. Not applicable for minor amendment or minor modification applications. (See Appendix A for Instructions)

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice is required:

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 item 6. 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

This section of the application is only used to determine if alternative language notice will be needed. Complete instructions on publishing the alternative language notice will be in your public notice package.

f. Public Involvement Plan:
Complete the Public Involvement Plan (PIP) Form (TCEQ-20960) for each application for a **new permit** or **major amendment to a permit** and include as an attachment.

N/A - Renewal

6. SITE INFORMATION (Instructions, Page 8)

a. List any other permits, existing or pending, which pertain to pollution control activities conducted at this facility (site) and any other TCEQ permits or licenses.

NPDES Permit No. TX None – N/A to all below

Expiration Date:

Hazardous Waste Management Permit No. N/A

Non-attainment Permit No. N/A

National Emission Standards for Hazardous Pollutants Permit No. N/A

Water Right/Use Permit No. N/A

Water Right/Secondary Use Permit No: N/A

TCEQ Certificate of Adjudication N/A

TCEQ Certificate of Convenience and Necessity N/A

On-Site Subsurface Facility Permit N/A

Industrial Solid Waste Registration No. N/A

Dredge and Fill Permit No. N/A

UIC program under SWDA N/A

Sewage Sludge Registration N/A

Sludge/Septage Transporter Registration N/A

Municipal Solid Waste Landfill No. N/A

Other: N/A

b. Sludge Processing/Disposal Site Information:

If the site of your business is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search TCEQ's Central Registry to see if the larger site may already be registered as a regulated site at:
http://www12.tceq.texas.gov/crpub/index.cfm?fuseaction=regent.RNSearch

If the site is found, provide the assigned Regulated Entity Reference Number and provide the information for the site to be authorized through this application below.The site information for this authorization may vary from the larger site information.

TCEQ issued RE Reference Number (RN): RN107131740

c. Name of project or site (the name known by the community where located):

City of Abilene WTP Residuals Monofill

d. Is the location of the facility used in the existing permit correct?

Does the site have a physical address?

☐If Yes, complete Section A for a physical address.

☒Yes ☐ No

☒If No (the location description is not accurate or this is a new permit application, complete), complete Section B for site location information.

Section A: Enter the physical address for the site.

Verify the address with USPS. If the address is not recognized as a delivery address, provide the address as identified for overnight mail delivery, 911 emergencies, or other online map tool to confirm an address.

Physical Address of Project or Site:

Street Number: N/A Street Name: N/A City: N/A ZIP Code: N/A

Section B: Enter the site location information.

If no physical address (Street Number & Street Name), provide a written location access description to the site:

Located 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833, and 0.3 miles west of E. Lake Road

(Ex.: located 2 miles west from intersection of Hwy 290 & IH35 accessible on Hwy 290 South)

e. Are your waste disposal operations within the incorporated limits of a municipality?

☐Yes ☒No

Are your waste disposal operations within the extraterritorial jurisdiction of a municipality?

☒Yes ☐No

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

City of Abilene

g. ZIP Code where the site is located: 79601

h. County where the site is located: Taylor

i. Latitude: 32.506111 Longitude: -99.696944

j. In your own words, briefly describe the primary business of the Regulated Entity: (*Do not repeat the SIC and NAICS code)*

The primary business of the Regulated Entity is the Monofill Disposal of Water Treatment Plant Residuals generated by Grimes, Hargesheimer, and Northeast Water Treatment Plants from the City of Abilene.

k. Is facility located on Indian Land? ☐Yes ☒No

l. Owner of treatment facility (plant): City of Abilene

m. Owner of land where treatment facility is or will be: City of Abilene

(If not the same as the facility owner, there must be a long term lease agreement in effect for at least six years. In some cases, a lease may not suffice - see instructions.)

n. Owner of the land where sludge disposal/land application area is or will be located City of Abilene
(Required only if authorization is sought in the permit for sludge disposal on property owned/controlled by the applicant.)

o. ☒ Indicate by a checkmark that you have provided a copy of the deed of record and a copy of the meets and bounds giving the legal description of the site.

p. Provide a written description that traces the flow of process wastewater to final disposition including transportation and temporary storage (e.g., holding ponds). Identify the nearest identifiable watercourse to the disposal site to which rainfall/runoff might flow if not contained.

See Attachment AR 6.0-p for a description of the treatment process of surface water and final disposition of water treatment plant residuals. The nearest watercourse to which rainfall / runoff might flow is Rainy Creek, which is located approximately 2,000 feet west-southwest of the monofil site.

q. Site Drawing:

Attach a drawing on an 8 2" by 11" (to scale) sheet showing the following:

a. The boundaries of the treatment facility.
b. Each treatment unit and the distance from each unit to the property line.
c.

d. The required buffer zone (set back) in accordance with 30 TAC Chapter 30 TAC Chapter 285.

e. If sludge is disposed on property owned, leased or under direct control of the permittee by land application or surface disposal, show the location of the sludge use or disposal site with a scale sufficient to show the buffer zone (set back) in accordance with 30 TAC Section 312.44, for beneficial land application, or 30 TAC Section 312.63, surface disposal.

f. The direction of prevailing winds, indicated by wind rose.

g. For process wastewater surface land disposal or evaporation, show the location of all process wastewater storage/holding/evaporation ponds and disposal area(s). The map of the site should indicate the general slope of the land.

r. Is this processing facility or waste disposal activity subject to 30 TAC Chapter 213, entitled Edwards Aquifer Rules? ☐Yes ☒No

If YES, the applicant may be required to submit additional information concerning methods of aquifer protection.

s. Attachments to the application: See Table of Contents

Please index all attachments cross-referenced to the specific item (i.e. Item 8.a on Page 2) in this application.

Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

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Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

Attachment Number:_____Item cross-referenced to:_____

7. USGS MAP (Instructions, Page 11)

Attach a complete, **FULL-SIZED, ORIGINAL USGS TOPOGRAPHIC MAP(S)** (7 2 minute scale) which will show an area at least 1 mile in all directions of the site and includes the following:

a. Identify the location of the facility, showing the applicant's approximate property boundaries.

b. When requesting process wastewater surface land disposal, identify the location of all storage/holding/evaporation ponds and the area to be irrigated, showing the applicant's approximate property boundaries.

c. When requesting sludge disposal/land application, identify the location of the disposal/land application area, showing the applicant's approximate property boundaries.

d. Indicate the proximity of the facility site and/or disposal site(s) to any new or future commercial developments, housing developments, industrial sites, parks, schools and recreational areas.

e. Identify all springs, public water supply wells, surface water supply intakes, water treatment plants, potable water storage facilities and sewage treatment plants within one mile of the treatment facility.

8. MISCELLANEOUS INFORMATION (Instructions, Pages 12)

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

b. Do you owe fees to the TCEQ? If yes, please provide:

☐Yes ☒No

Account number: N/A Amount past due: N/A

c. Do you owe any penalties to the TCEQ? If yes, please provide: N/A

☐Yes ☒No

Enforcement order number: N/A Amount past due: N/A

9. CERTIFICATION (Instructions, Page 12)

APPLICANT/SITE OPERATOR:

I, Robert Hanna, City Manager
(Name) (Title)

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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.

Signature: Robert Hanna Date: 8/27/24
(Use blue ink)

Note: all applications must bear the signature and seal of notary public.

Subscribed and sworn to before me by the said Robert Hanna

on this 27th day of August ,20 24 .

My commission expires on the 13th day of August ,20 28 .

Karen M. Daniell
Notary Public

Taylor
County, Texas

[SEAL]
KAREN M DANIELL
Notary Public, State of Texas
My Comm. Exp 08-13-2028
NOTARY ID#: 132622768

THIS PAGE APPLIES TO SLUDGE SURFACE DISPOSAL OR LAND APPLICATION FACILITIES ONLY

SITE OPERATOR:

I, Robert Hanna, City Manager
(Name) (Title)

understand that I am responsible for operating the site described in the legal description in accordance with the Texas Commission on Environmental Quality requirements in 30 TAC, Chapter 312, the conditions set forth in this application, and any additional conditions as required by the Texas Commission on Environmental Quality. I also certify under penalty of law that all information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine, imprisonment for violations, and revocation of this registration.

Signature: Robert Hanna Date: 8/27/24
(Use blue ink)

Note: all applications must bear the signature and seal of notary public.

Subscribed and sworn to before me by the said Robert Hanna

on this 27th day of August ,20 24 .

My commission expires on the 13th day of August ,20 24 .

Karen M. Daniell
Notary Public

Taylor
County, Texas

[SEAL]

KAREN M DANIELL
Notary Public, State of Texas
My Comm. Exp 08-13-2028
NOTARY ID#: 132622768

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING MUNICIPAL TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: ☐ Renewal ☐ Major Amendment ☐ Minor Amendment ☐ New

County:_____ Segment Number_____Admin Complete Date:_____

Agency Receiving SPIF:

☐ Texas Historical Commission ☐ U.S. Fish and Wildlife_____

☐ Texas Parks and Wildlife Department ☐ U.S. Army Corps of Engineers_____

This form applies to TPDES permit applications only. The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed and/or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee: City of Abilene
2. Permit No. WQ0005118000 (EPA ID No.) TXL005024
3. Address of the project (location description that includes street/highway, city/vicinity, & county)

   Located 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833, and 0.3 miles west of E. Lake Road.
4. Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

   Name: Rodney Taylor Company: City of Abilene

   Phone number: (325) 676-6452 Fax number: N/A

   Street No.: N/A Street name: N/A Street type: N/A

   P.O. Box: 60 City: Abilene State: TX ZIP code: 79604

   Email: rodney.taylor@abilenetx.gov

5. List the county in which the facility is located: Taylor

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.
   N/A

7. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the Segment Number.

   N/A – No effluent is generated. The permit is to surface dispose water treatment plant residuals on land owned by the City of Abilene. The disposal unit will be self-contained.

8. Please provide a separate 7.5 minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required **in addition to** the map in the administrative report).

9. Provide original photographs of any structures 50 years or older on the property.
   N/A – There are no structures 50 years or older on the site.

10. Does your project involve any of the following? Check all that apply.
    a. ☒ Proposed access roads, utility lines, construction easements
    b. ☐ Visual effects that could damage or detract from a historic property's integrity
    c. ☐ Vibration effects during construction or as a result of project design
    d. ☒ Additional phases of development that are planned for the future
    e. ☐ Sealing caves, fractures, sinkholes, other karst features
    f. ☒ Disturbance of vegetation or wetlands (No Wetlands present)

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features).
    Approximately 20 acres will be cleared of vegetation, access roads will extend from the Northeast WTP to the disposal site, excavation of areas will be ongoing. Excavation is expected to extend no greater than approximately 12 feet.

12. Describe existing disturbances, vegetation and land use.
    The disposal site is currently undisturbed land with natural vegetation such as brush and trees covering nearly all of the site.

THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

13. List construction dates of all buildings and structures on the property.

    N/A – there are no structures or buildings located on the proposed disposal site.

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

    The disposal site is historically undisturbed land, with no buildings or structures located on the site. The Archaeological Survey completed on the proposed disposal site is associated with the Texas Antiquities Permit Number 6603. See Appendix SPIF-14.

TECHNICAL REPORT 2
SLUDGE SURFACE DISPOSAL

This section must be completed for all applications requesting authorization to dispose of sludge in a surface disposal unit.

Provide detailed technical information for the following items. Attach separate reports as necessary.

1. REQUIRED MAPS

Maps of the proposed application site are required with the application. (**Note**: A copy of each map showing the information as required, is to be attached to each required copy of the application)

a. Submit one **ORIGINAL General Highway (County) Map** showing all areas within 1000 feet of the site. (Copies may be submitted on 8.5 x 11 inch sheets). For County Highway Maps you may call the Texas Department of Transportation Map Sales in Austin at (512) 465-7397.

b. Submit a legible copy of a **USDA Natural Resources Conservation Service (NRCS) Soil Map** with soil legend and necessary interpretative information. Contact the nearest NRCS office for map information. If county is not mapped, have a soil scientist identify the soils. The phone number for the State NRCS Headquarters in Temple is (817) 774-1261.

c. Submit a copy of the **Federal Emergency Management Agency (FEMA) Map** showing the 100 year flood plain. Several options are available. These maps can be obtained by requesting a Flood Insurance Study (no charge) from the FEMA Flood Map Distribution Center at (800) 358-9616. The flood insurance study will contain a booklet and the FEMA maps. For further assistance in Texas, you may contact the TCEQ Floodplain Coordination Team at (512) 239-4773.

2. PREVIOUS DISPOSAL

Has sludge been previously disposed at this surface disposal site?

☐YES _ ☒NO

If Yes, provide a use history of the disposal area such as tons of sludge disposed so far, remaining capacity of active sludge unit, anticipated closure date for the surface disposal unit and a copy of the closure plan that has been developed for this active sludge unit.

3. DISPOSAL INFORMATION

Does the proposed/existing surface disposal unit area (check all that apply):

☐Overlap a designated 100-year flood plain area as shown on an attached FEMA map?
☐Contain soils with flooding classification (see the soil legend, NRCS Soil Maps.)
☐Contain wetlands
☐Overlap an unstable area
☐Located less than 60 meters from a fault
☒None of the above

a. Volume and frequency of sludge disposal(s):

Residuals will be transported at a variable frequency according to need. A maximum of 5,000 dry tons per year will be disposed of at the monofil site.

b. Disposal Rates

Total dry tons of sludge placed on the active sludge unit per 365-day period: N/A – No residuals have been placed in disposal site.

Total dry tons of sludge placed on the active sludge unit over the life of the unit: N/A – No residuals have been placed in disposal site.

c. Does the active sludge unit have a liner with a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec?

☐YES ☒NO

If Yes, describe the liner (or attach a description): The site is not constructed and thus is not active. The disposal site will have a liner meeting liner requirements of 30 TA 312 when constructed. See Attachment AR 6.0-p.

d. Does the active sludge unit have a leachate collection system?

☐YES ☒NO

If Yes, describe the leachate collection system (or attach a description). Also describe the method used for leachate treatment and disposal. If leachate is transported to another treatment facility please provide the TCEQ permit number(s).

N/A

e. If you answered No to either 3.d or 3.e, answer the following question:

Is the boundary of the active sludge unit less than 150 meters from the property line of the surface disposal site in any direction?

☒YES ☐NO

If Yes, provide the actual closest distance in meters: 122

4. FACILITY SITE

a. Are the proposed facilities to be located above the 100-year frequency flood level?

☒YES ☐NO

List source(s) used to determine 100-year frequency flood plain.
FEMA map numbers 481014 and 485450. See Attachment TR2-1.c.

b. If the proposed facility is not located above the 100-year flood level describe the protective measures to be utilized. Include a site map indicating location of the treatment plant within the 100-year frequency flood level. Provide size of dikes or other protective structures which may be required.
N/A

5. SITE DEVELOPMENT PLAN

Describe the methods used to deposit sludge in the active sludge unit. This description should include site layout plan, site entrance roads from public access roads, rate of sludge deposition, average lift size, maximum lift, average trench or cell size, maximum cell or trench size, active sludge unit cover, seismic impact design, protection from floods, and other information necessary to depict how the surface disposal unit will be developed. Also provide the following:

a. Please provide a plan view and cross-section of the surface disposal unit. See Attachment AR 1.0-6.p for Technical Information for Application

b. Provide the source and physical properties of the soil or other media for sludge bulking if applicable. N/A

c. Indicate locations of stockpiles of media and the area for sludge unloading and mixing.

d. Operational procedures detailing how the sludge is to be mixed, the ratio of the mixture, and the handling and placement of the mixture, and daily cover.

e. Provide, with this application, a copy of any closure plan that has been developed for this active sludge unit in accordance with 30 TAC '312.62 (c). The plan should describe what steps will be taken to ensure that the area shall be properly capped, vegetated and maintained for proper drainage after the fill is complete. N/A

f. Provide a copy of deed recordation for the site. N/A

g. Sludge to be disposed on 19.24 acres. Locate sludge disposal site on a site map (scale: 1"=100').

h. Describe method of controlling infiltration of ground and surface water from entering site: See Attachment AR 1.0-6.p

6. FINANCIAL ASSURANCE

Provide financial assurance to properly operate this surface disposal unit and to provide final closure of this surface disposal unit and storage (if applicable) (30 TAC 312.62(g)). See Attachment AR 6.0-p

COMPLETE ITEMS 7 THROUGH 12 FOR SEWAGE SLUDGE ONLY:

7. Which vector attraction reduction option in 30 TAC '312.83, is achieved before sludge leaves the wastewater treatment facility?

   N/A

8. Which vector attraction reduction option in 30 TAC '312.83, is met when sludge is placed on the active sludge unit?

   N/A

9. Which pathogen reduction option in 30 TAC '312.82, is achieved before sludge leaves the wastewater treatment facility?

   N/A

10. Which pathogen reduction option in 30 TAC '312.82, is met when sludge is placed on the active sludge unit?

    N/A

11. Site-Specific Limits.

    Are you seeking site-specific pollutant limits for the sludge placed on the active sludge unit?

    ☐YES ☐NO N/A

    If Yes, submit information to support the request for site-specific pollutant limits with this application. N/A

12. Provide a brief description of how methane gas is monitored, if cover is placed on unit and how public access to the site is restricted.

    N/A

13. Ground-Water Monitoring

    a. Is ground-water monitoring currently conducted at this active sludge unit, or are ground-water monitoring data otherwise available for this active sludge unit?

       ☐YES ☒NO

       If Yes, provide a copy of available ground-water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground-water monitoring procedures used to obtain these data.

       N/A

    b. Has a ground-water monitoring program been prepared for this active sludge unit?

       ☐YES ☒NO

If Yes, submit a copy of the ground-water monitoring program with this permit application. N/A

c. Provide a certification from a qualified ground-water scientist that the aquifer below the active sludge unit will not be contaminated in accordance with 30 TAC '312.64(n)? N/A

14. Provide design calculations of how the 25-year, 24-hour rainfall is prevented from leaving the surface disposal unit. Provide sources of all information and assumptions used. Provide design calculations on how the runoff from the storm will be stored and disposed of. Provide a scaled drawing of any detention pond along with the volume calculations; the type of liner proposed for any detention pond; and calculations for stormwater disposal and location along with any proposed acreage for irrigation in relation to stormwater run-on and run-off disposal. See Attachment TR 2-14.

15. Provide a profile of soil types encountered down to the groundwater table. See Attachment TR 2-15.

16. Provide depth to shallowest groundwater. Depth to shallowest groundwater is greater than 49 feet.

17. If no leachate collection system is in place, please provide the following soil and soil sample information:

a. Use USDA Natural Resources Conservation Service (NRCS) soil descriptions. Refer to Physical and Chemical Properties Table and Engineering Tables in the appropriate county soil survey. Provide map symbols, soil type, permeability, and depth to bedrock.

See Attachment TR 2-17.a

b. Attach a map of all fields sampled per site. It must match the scale of the soil survey map submitted with the application. The soil analysis data submitted must clearly be cross referenced to location of the sample.

N/A - See Attachment AR 6.0-p

c. Obtain one composite sample for each soil depth per 80 acres and per uniform (soils with the same characteristics and texture) soil type within the 80 acres, or per approved soil sampling plan. Composite samples shall be comprised of 10-15 random sample cores taken from each of the following soil depth zones: 0-6 inches; 6-18 inches and 18-36 inches. The soil shall be sampled for Nitrate Nitrogen (NO_3-N), Total Nitrogen (TKN), Soil Water pH (S.U.), Total Arsenic (mg/kg), Total Cadmium (mg/kg), Total Chromium (mg/kg), Total Copper (mg/kg), Total Lead (mg/kg), Total Mercury (mg/kg), Total Molybdenum (mg/kg), Total Nickel (mg/kg), Total Selenium (mg/kg) and Total Zinc (mg/kg). The soil samples should be analyzed using EPA SW846, Method 3050.

N/A - See Attachment AR 6.0-p

1. Describe the method of sludge dewatering (drying beds, etc.) and average percent

solids of surface disposed sludge: At the Grimes WTP and Northeast WTP, residuals are removed from temporary holding ponds and placed just outside of the temporary holding ponds to dry. Dried residuals will then be transported to the monofill for further drying or immediate disposal. At the Hargesheimer WTP, residuals are dewatered in a belt press. The typical solids content of the residuals is 28%.

2. If the surface disposal facility is a dedicated land application site, please provide a list of any crops to be grown on the site.

   N/A - The monofill is not a land application site.

CERTIFICATION STATEMENT FOR ANALYTICAL DATA

Effective July 1, 2008, all laboratory tests performed must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification with the following general exemptions:

a. The laboratory is an in-house laboratory and is:
   (1) periodically inspected by the TCEQ; or
   (2) located in another state and is accredited or inspected by that state; or
   (3) performing work for another company with a unit located in the same site; or
   (4) performing pro bono work for a governmental agency or charitable organization.
b. The laboratory is accredited under federal law.
c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review 30 TAC Chapter 25 for specific requirements. The following certification statement shall be signed and submitted with every application.

I, Robert Hanna, City Manager
(Name) (Title)

certify that all laboratory tests submitted with this application meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation.

Signature: Robert Hanna Date: 8/27/24
(Use blue ink)

Appendix A

Plain Language Summary Template and Instructions to Process, Surface Dispose, or Incinerate Sewage Sludge or Biosolids Permit Applications

This template is intended as a guide to assist applicant's in developing a plain language summary as required by 30 Texas Administrative Code Chapter 39. Applicant's may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed processing or disposal unit; (2) the expected processing or disposal acreage; (3) the expected pollutants that may be processed or disposed; and (4) how the applicant will control those pollutants, so that the proposed processing or disposal unit will not have an adverse impact on human health or the environment.

Fill in the blanks below to describe your processing or disposal unit and application. Instructions or examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements.

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR PROCESSING OR DISPOSAL NEW/RENEWAL/AMENDMENT 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 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

City of Abilene (CN600242671) proposes to operate City of Abilene WTP Residuals Monofill (RN107131740), a water treatment plant (WTP) residuals (WTP sludge) disposal site. The site is located 0.7 miles south of the intersection of County Road 503 and Ranch Road 2833, and 0.3 miles west of East Lake Road, in Abilene, Taylor County, Texas 79601.

City of Abilene has applied for a renewal of the existing permit WQ0005118000 that authorizes the disposal of WTP residuals at a maximum rate of 5,000 dry tons per year. This permit will not authorize a discharge of pollutants into water in the state.

The disposal sludge unit is expected to contain sediment, organic matter, and coagulant. Examples of best management practices to be implemented by City of Abilene include but are not limited to: a liner system and a perimeter berm.

SPANISH TEMPLATE FOR PROCESSING OR DISPOSAL NEW/RENEWAL/AMENDMENT APPLICATIONS

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Texas Commission on Environmental Quality según lo dispuesto en el capítulo 39 del Código Administrativo de Texas. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales ejecutables de la solicitud de permiso.

City of Abilene (CN600242671) se propone operar City of Abilene WTP Residuals Monofill (RN107131740). una planta de tratamiento de auga sitio de disposición final de residuos . El sitio están situadas a 0.7 milla al sur de la intersección de County Road 503 y Ranch Road 2833, y 0.3 milla al oeste de East Lake Road, en Abilene, Taylor Condado, Texas 79601.

City of Abilene has solicitado una renovación del permiso existente WQ0005118000 que authoriza la disposición de residuos a un rito maximo de 5.000 toneladas secas por año. Este permiso no autoriza el vertido de contaminantes en las aguas del Estado.

Se espaera que la unidad de eliminación de lodos contenga sedimentos, materia organica y coagulantes. Ejemplos de mejores prácticas de gestión aplicadas por City of Abilene incluyen, pero no se limitan a: un istem de revestimiento y una berma perimetral.

INSTRUCTIONS

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).
3. Select “operates” in this section for existing processing or disposal unit applications or select “proposes to operate” for new processing or disposal unit applications.
4. Enter the name of the facility in this section. The processing or disposal unit name should match the name associated with the regulated entity number.
5. 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).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the processing or disposal unit in this section.
    a. For example, a processing unit application might specify: via compost, lime stabilization, etc.
    b. For example, a disposal unit application might specify: disposal of wastewater treatment plant sludge, water treatment plant residuals (or include both), etc.
8. Enter the location of the processing or disposal unit in this section.
9. Enter the City nearest the processing or disposal unit in this section.
10. Enter the County nearest the processing or disposal unit in this section.
11. Enter the zip code for the processing or disposal unit address in this section.
12. Enter a summary of the application request in this section. For example: renewal to dispose of wastewater treatment plant sludge on a 5,000 acre monofill, or new application to process wastewater treatment plant sludge via compositing on 100 acres.
13. Choose the appropriate unit type, either processing or disposal
14. List all pollutants expected in the processing or disposal from this facility in this section. For example, the pollutants expected in the disposal of sewage sludge or biosolids are Arsenic, Chromium and Nickel (mg/kg).
15. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
16. Enter a description of the best management practices used at your unit to manage pollutants. Include a description of best management practices used for the entire process.

Examples

Example 1: Sewage Sludge Processing Permit Application

The following summary is provided for this pending water quality permit application being reviewed 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 are not federal enforceable representations of the permit application.

City of Texas (CN000000001), Texas Water Utility, P.O. Box 1088, Austin, Texas 78767, operates the Hornsby Bend sewage sludge processing unit. The processing unit is located at 2210 South Farm-to-Market Road 973, on the north bank of the Colorado River, approximately 0.9 mile northwest of the intersection of Farm-to-Market Road 973 and State Highway 71 in Travis County, Texas 78725 (RN100816685).

City of Texas processes wastewater treatment plant sludge via a 1,200 acre composting pad. This processing unit will not authorize a discharge of pollutants into water in the state. This sludge processing unit is expected to contain: Arsenic, Chromium and Nickel. Examples of best management practices implemented by City of Texas include but are not limited to: monitoring of metal pollutants, pathogen reduction and vector attraction reduction.

Example 2: Sewage Sludge and Water Treatment Residuals Disposal Individual Permit Application

The following summary is provided for this pending water quality permit application being reviewed 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 are not federal enforceable representations of the permit application.

ABC Industries, LLC (CN000000001), operates the Cerro Alto Sewage Sludge and Water Treatment Residuals Disposal Monofill on 219.74 acres of land. The disposal unit is located at 1 McKelligon Canyon Road, El Paso, Texas 79930 (RN103155024).

ABC Industries, LLC disposes of wastewater treatment plant sewage sludge and water treatment plant sludge products on 219.74 acres. The disposal will not authorize a discharge of pollutants into water in the state. This sludge disposal unit is expected to contain: Arsenic, Chromium and Nickel Examples of best management practices implemented by ABC Industries, LLC include but are not limited to: monitoring of metal pollutants, pathogen reduction and vector attraction reduction.

Attachment AR Fee

Fee Payment

Enprotec | Hibbs & Todd

September 9, 2024

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office (MC 214)
P.O. Box 13088
Austin, Texas 78711-3088

Re: SLUDGE PERMIT: DISPOSAL, INCINERATION & PROCESSING (NO CLASS B BLU) – RENEWAL
Applicant: City of Abilene (CN600242671)
Permit No.: WQ0005118000 (EPA I.D. No. TXL005024)
Site Name: City of Abilene Water Treatment Plant Residuals Monofill (RN107131740)
Fee Code: WQP

Dear Sir / Madam:

The enclosed check is submitted on behalf of the City of Abilene. The check, made payable to the Texas Commission on Environmental Quality, is the required permit renewal application fee for the Abilene Water Treatment Plant Residuals Monofill (RN107131740). The permit application has been or will soon be submitted to the Water Quality Application Team.

If you have any questions, please contact me at 817-694-8382.

Sincerely,

Enprotec / Hibbs & Todd, Inc.

Luci Dunn

Luci Dunn, P.E.
Senior Project Manager

LD/jd

c: Project File 8802
P:\Projects\TPDES Permit Applications\Abilene WTP Sludge\8802 Monofill Renewal 2024\1. Correspondence\Fee Transmittal Letter to TCEQ.docx

Attachment AR 1.0-6.p
Technical Information for Application

(AAR TR 2.0 Items 3.d, 5, 6, 17.b, and 17.c)

CITY OF ABILENE
WATER TREATMENT PLANT RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION
TECHNICAL INFORMATION FOR APPLICATION
ATTACHMENT AR1-6p

The City of Abilene (City) is authorized to dispose of Water Treatment Plant (WTP) residuals in a monofill site under the Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005118000. The monofill has not been developed yet, and therefore is not in operation. When the monofill is in operation, it will accept residuals from the Grimes, Hargesheimer, and Northeast WTPs, all of which are owned and operated by the City. These WTPs treat surface waters using conventional technology to produce potable water. The Hargesheimer WTP also provides for removal of dissolved salts using reverse osmosis treatment units. However, reverse osmosis waste will not be disposed of at the monofill site.

This attachment provides information related to the processing volume at the monofill site, the residuals (sediment, organic matter, and coagulant) generated at the WTPs, liner information, financial assurance, and soil sampling. This attachment presents responses to the first page of the Administrative Report 1.0, Item 6.p and Items 3.d, 5, 6, 17.b, and 17.c of Technical Report 2 (TCEQ Form No. 00744).

The City is currently authorized to dispose of WTP residuals at a maximum rate of 5,000 dry tons per year. No change is requested in this renewal application. The quantity of residuals being produced at each WTP and projected disposal quantities to the monofill can be found in Attachment A.

ADMINISTRATIVE REPORT 1.0 ITEM 6.p – Provide a written description that traces the flow of process wastewater to final disposition including transportation and temporary storage (e.g., holding ponds).

Residuals at the WTPs are generated in sedimentation basins and filters. The process of generation of residuals is the same for each of the City's three conventional plants.

Sedimentation basin residuals consist primarily of solids found naturally in the raw surface water source and the aluminum sulfate salts (or Alum), which is the coagulant to aid sedimentation of the solids. Polymers may also be used to aid coagulation. The treated (i.e., "clarified") water passes out of the sedimentation basins for further treatment. Solids from the raw surface water, coagulant, and polymers settle to the bottom of the sedimentation basins and are periodically removed via a drain line. The residuals are transmitted from the sedimentation basin by pipelines to temporary holding ponds.

The clarified water from the sedimentation basin is filtered to remove additional suspended solids. The filters are periodically cleaned by backwashing to remove solids collected in the filter media. The filter backwash water is pumped to the temporary holding ponds used to hold the solids removed from the sedimentation basins.

Residuals are temporarily stored in the holding ponds to allow further settling of solids in the ponds. Supernatant is periodically decanted from the holding pond and pumped into the City's sanitary sewer system. Upon removal of the supernatant, the partially dried residuals are excavated from the ponds and temporarily stored in piles in areas located adjacent to the holding ponds.

After drying, the partially dried residuals will be transported by truck to the monofill and placed on a dump pad in the staging area which is located within the perimeter berm of the monofill. Typically, residuals deposited in the staging area should be dry enough to be moved into the final disposal position at any time. On August 28, 2017 the City requested authorization to temporarily store partially dried residuals in the Phase II storage area for further drying. The City will either directly transfer the residuals to the monofill in Phase I or they will be placed in the temporary storage area in Phase II. Final disposal practice involves placing the residuals in lifts that are a maximum of one-foot across. The area is then compacted with a rubber-tired loader, bulldozer, or other similar heavy equipment.

The monofill will be constructed and operated based on the proposed cut depicted in Figure 1. The proposed final fill is depicted in Figure 2. The Phase 1 site life is in excess of 35 years.

TECHNICAL REPORT 2 ITEM 3.d SITE DEVELOPMENT PLAN – Describe the liner proposed for the monofill.

As required by Title 30, Texas Administrative Code, Chapter 312 (30 TAC 312), a clay liner will be constructed within all permitted disposal areas of the monofill. The onsite material was evaluated and is described in Attachment TR 2.0-15, Boring Summary. The onsite materials are suitable for use as a soil liner. Liner construction will generally consist of over-excavating the soil in the disposal area to a depth of at least two feet below proposed excavation grade. Suitable excavated soil will then be placed on the bottom and sides slopes of the excavation and the interior sides of the berms in lifts of no more than six inches thickness. Each lift will be hydrated as necessary and compacted using heavy equipment to at least 95% of Standard Proctor at optimum moisture content. The constructed clay liner will be a minimum of two feet in thickness and will have a coefficient of permeability of no more than $1.0X10^{-7}$ centimeters per second. The liner will prevent the exfiltration of water from the monofill.

TECHNICAL REPORT 2 ITEM 5 SITE DEVELOPMENT PLAN – Describe the methods used to deposit sludge in the active sludge unit. This description should include site layout plan, site entrance roads from public access roads, rate of sludge deposition, average lift size, maximum lift, average trench or cell size, maximum cell or trench size, active sludge unit cover, seismic impact design, protection from floods, and other information necessary to depict how the surface disposal unit will be developed.

The monofill is approximately 19.24 acres in size. It consists of a Phase 1 area and a Phase 2 area. The surface areas for Phase 1 and Phase 2 are 10.07 acres and 9.17 acres, respectively. The extent of each phase of operation is presented in Attachment C.

Phase I is designed with a five-foot tall perimeter berm to prevent runoff generated within the disposal area from exiting the fill area. A 10-foot wide drainage corridor will extend around the outside of the perimeter berm in Phase I. This zone will be maintained to shunt runoff from up- gradient of the site around and away from the monofill. Attachment L to the application contains drainage calculations related to Phase I of the monofill.

The monofill is not within the 100-year flood zone. Therefore, flood protection measures are not required.

The use of sludge bulking materials, such as tree trimmings, etc., is not anticipated to be necessary. The WTP residuals are primarily sediment and coagulants. Therefore, the residues are not expected to be odorous and will be relatively dry at the time of disposal. As such, they will not be difficult to move or manage within the monofill.

Cover will not be required for the residuals because the residuals should not be odorous. Residuals will grow weedy vegetation. Therefore, additional seeding to produce a vegetative cover is not required. The City may, at its discretion, seed or fertilize the fill area to promote vegetative cover.

The permitted monofill does not overlap an unstable area and is not located near any known active fault. Therefore, seismic impact design for the site is not considered to be necessary.

Residuals from each plant will be transported at a frequency according to need. The total volume of residuals disposed of at the monofill site will not exceed 5,000 dry tons per year.

A closure plan is not required at this time. At least 180 days prior to the site closure, a closure plan will be prepared, in accordance with 30 TAC 312.62.

TECHNICAL REPORT 2, ITEM 6 FINANCIAL ASSURANCE – Provide financial assurance to properly operate this surface disposal unit and to provide final closure of this surface disposal unit and storage (if applicable) (30 TAC 312.62(g)).

The City of Abilene is an incorporated governmental entity with sufficient assets and financial capability to operate, close, and maintain the monofill. Evidence of financial responsibility is not necessary.

TECHNICAL REPORT 2, ITEMS 17.b and 17.c - Soil sampling

Item 17 of the Technical Report 2 requests soil sampling and analysis if a leachate collection system is not in place. Analysis is indicated for a variety of nutrients and metals characteristic of sewage sludge. The water treatment plant residuals are not sewage sludge; therefore, this analysis is not appropriate. Sampling and analysis as suggested in Item 17 is not included in this application.

Attachment
Attachment A Abilene WTP Monofill Residuals Quantities

Figures
Figure 1 Proposed Cut
Figure 2 Proposed Final Fill

Attachment AR1-6p

Attachment A

Abilene WTP Monofill Residuals Quantities

Grimes WTP hauled to landfill

2018 3,196 tons

dry metric tons= tons (scale weight) * 2000 lbs/ton * 1KG/2.2046 lbs * 1 MT/1000 KG * 28% Dry MT/MT

812 dry metric tons (MT)/year

Northeast WTP hauled to landfill

2019 2306 tons

June 2018 through May 2019

586 dry metric tons/year

Treated potable water flow is combined for Grimes WTP and NE WTP since same water source.

Treated water for the reporting year = 6,331 MG

17.3 MGD

Treated water capacity at each WTP = 25.0 MGD

50 MGD total

Combined WTP sludge at NE WTP & Grimes WTP 1,398 dry MT/year

WTP sludge generated at design capacity at both WTPs combined:

1398 dry MT * 50 MGD / 17.3 MGD

4,029 dry MT/year

Hargesheimer - Southside WTP

2019 671 tons

June 2018 through May 2019

170 dry metric tons

Treated water for the reporting year = 1,681 MG

4.6 MGD

Treated water capacity at Hargesheimer-SS WTP = 12.0 MGD

WTP sludge generated at design capacity:

170 dry MT * 12 MGD / 4.6 MGD

444 dry MT/year

Total projected WTP sludge generated at City of Abilene (Northeast WTP, Grimes WTP, and Hargesheimer-Southside WTP)

4,473 dry MT/year

Round up **4,500** dry MT/year

Notes & Data sources:
Per Kenny Hutchins on 6-24-2019
Per Kenny Hutchins on 5-10-2019 at 11:30 am

Justin Lane with eHT dried solids from Hargesheimer / Southside WTP and calculated the %solids from the belt press.

% Solids = 28%

This tested and calculated % solids is used by the City in waste manifests.
It is conservative for the other plants because there is currently no mechanical means of sludge drying at these WTPs.

Other data:
Combined Grime-NE from registration site annual report

2014 830 dry tons/year
4880 cubic yards
Estimated based on the # of trucks and capacity of the trucks

City handles removing NE WTP sludge from existing ponds and stages on the WTP site (NE WTP) to dry.
Contractor removes sludge from Grimes WTP ponds and stages on-site (on the Grimes WTP) to dry.
Currently, sludge is removed about once a year from the NE WTP Ponds.
Currently, sludge is removed every other year from Grimes WTP ponds.
City recently purchased a front end loader to load roll-offs.
City puts dried sludge into 4 roll-offs (20 cubic yards each)

2 at NE WTP
2 at Grimes WTP
Scale weight in tons is currently used to determine the amount of sludge disposed.
In future, roll-off capacity will be assumed to be a maximum of 18 cubic yards and transport trips will be totaled.

In future, mechanical means of sludge de-watering is planned (5-years).

From Hargesheimer BODR, Tables 4-17 & 4-19, pages 23 & 25, the design sludge flow is anticipated to be 5440 pounds per day. Calculating at 28% solids, dry MTs =

252 dry MT < 444 dry MT calculated above
use more conservative estimate of 444 dry MT

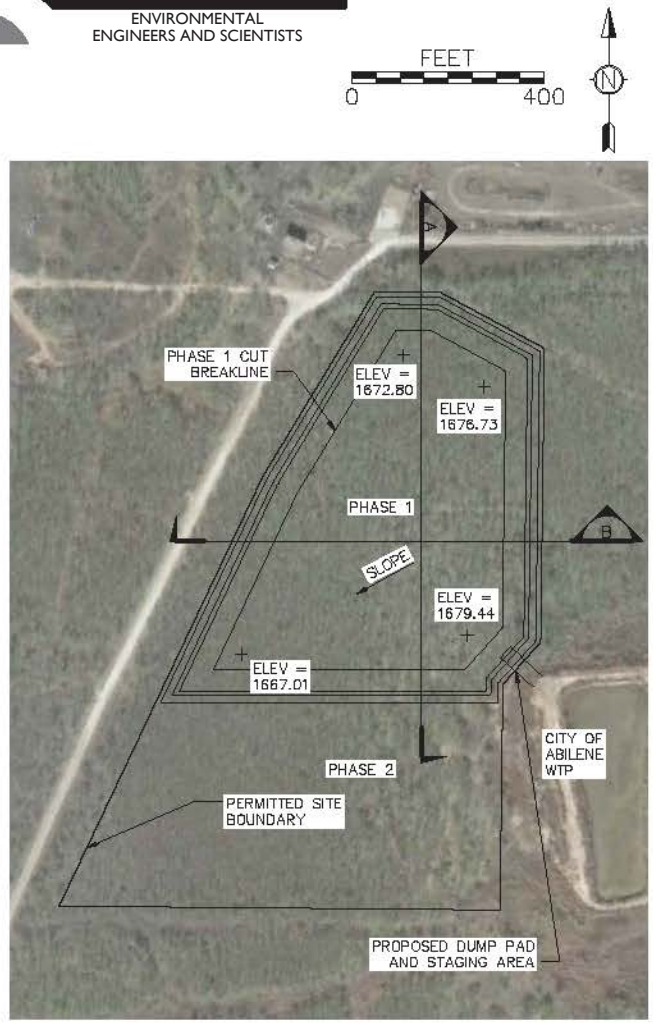
Attachment AR1-6p

Figures

Figure 1 Proposed Cut

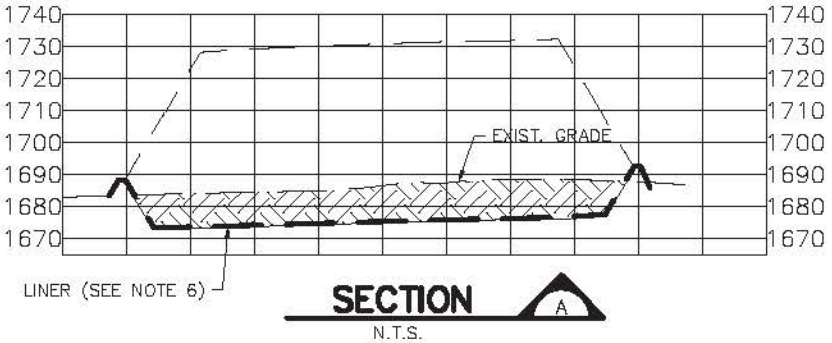
Figure 2 Proposed Final Fill

ALAN PLUMMER ASSOCIATES, INC.
ENVIRONMENTAL
ENGINEERS AND SCIENTISTS



NOTES:

1. PERMITTED SITE AREA = 19.24 AC
2. PROPOSED CUT/FILL SLOPES ARE 3:1 EXCEPT FOR THE TOP AND BOTTOM SLOPES.
3. NO PORTION OF THE PROPOSED SITE IS WITHIN A 100-YEAR FLOODPLAIN.
4. LINER SHALL BE AT LEAST 2-FEET THICK WITH A HYDRAULIC CONDUCTIVITY OF 1X10^-7 CM/S OR LESS, HAVE MORE THAN 30% PASSING A NUMBER 200 SIEVE, HAVE A LIQUID LIMIT GREATER THAN 30%, A PLASTICITY INDEX GREATER THAN 15, COMPACTION OF GREATER THAN 95% STANDARD PROCTOR AT OPTIMUM MOISTURE CONTENT, AND BE PLACED IN 6-INCH LIFTS.



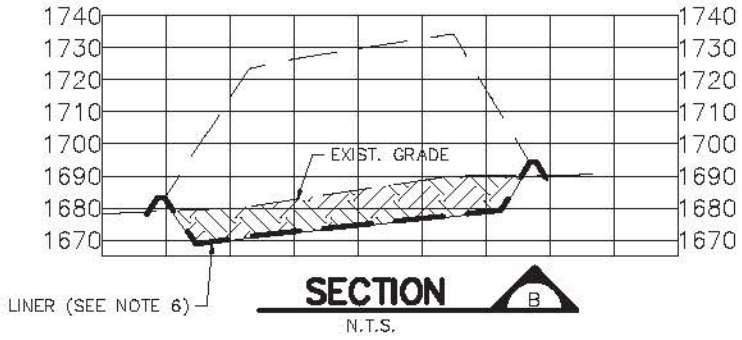
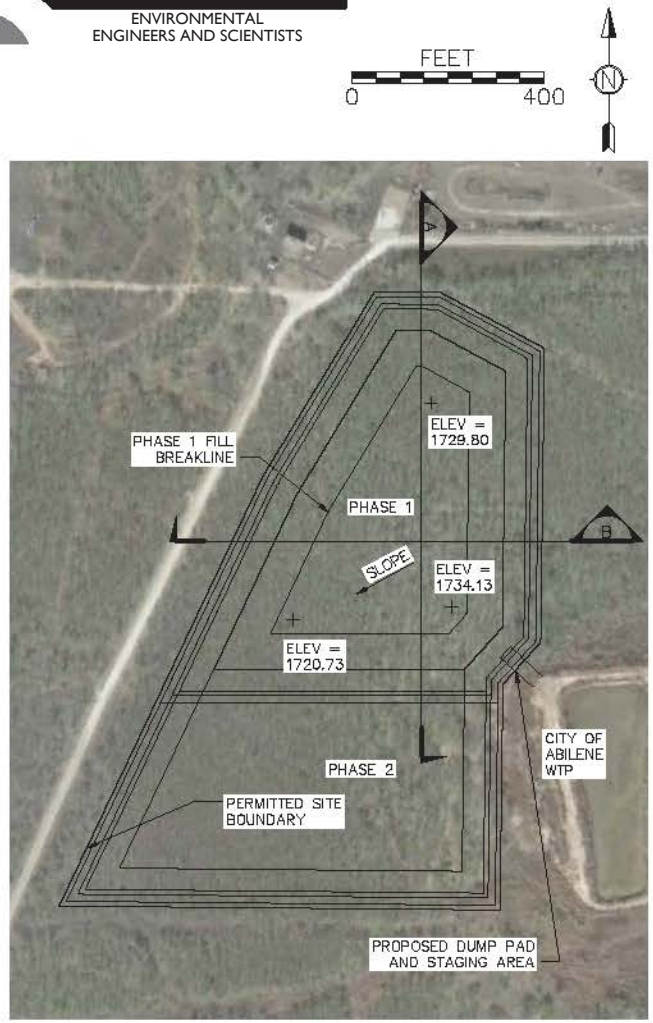


FIGURE 1
CITY OF ABILENE
WATER TREATMENT PLANT RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION
PROPOSED CUT

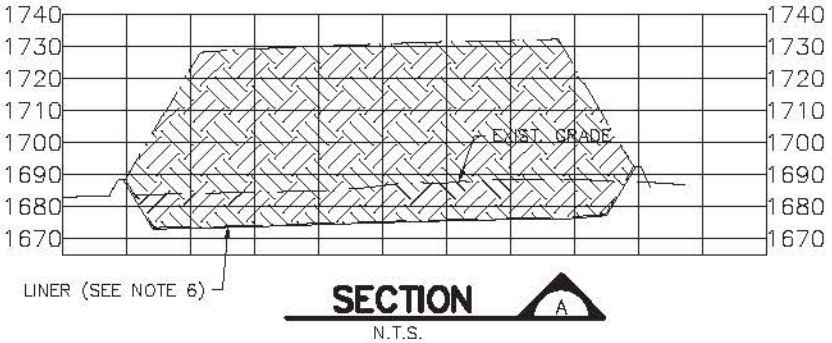
TEXAS REGISTERED ENGINEERING FIRM F-13
6/27/2019 3:00 PM m:\Projects\0922\018-01\2-0 wrk prod\2-1 ACAD\FIGURES\FIG-01.dwg Briand

ALAN PLUMMER ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS AND SCIENTISTS



NOTES:

1. PERMITTED SITE AREA = 19.24 AC
2. PROPOSED CUT/FILL SLOPES ARE 3:1 EXCEPT FOR THE TOP AND BOTTOM SLOPES.
3. NO PORTION OF THE PROPOSED SITE IS WITHIN A 100-YEAR FLOODPLAIN.
4. LINER SHALL BE AT LEAST 2-FEET THICK WITH A HYDRAULIC CONDUCTIVITY OF 1X10^-7 CM/S OR LESS, HAVE MORE THAN 30% PASSING A NUMBER 200 SIEVE, HAVE A LIQUID LIMIT GREATER THAN 30%, A PLASTICITY INDEX GREATER THAN 15, COMPACTION OF GREATER THAN 95% STANDARD PROCTOR AT OPTIMUM MOISTURE CONTENT, AND BE PLACED IN 6-INCH LIFTS.



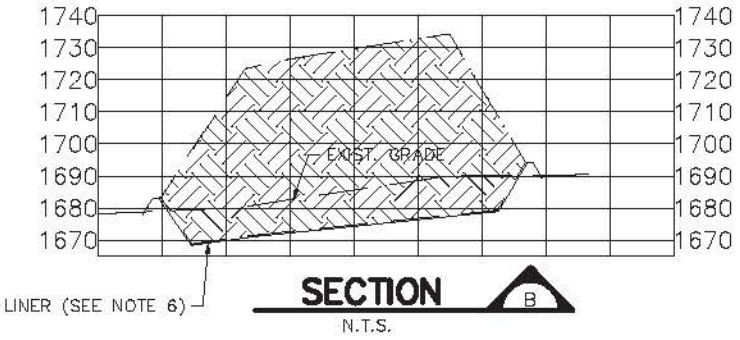


FIGURE 2
CITY OF ABILENE
WATER TREATMENT PLANT RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION
PROPOSED FINAL FILL

Attachment AR 1.0-6.o
Metes and Bounds Description with Plat

Enprotec / Hibbs & Todd

FIELD NOTES
FOR
A 19.242-ACRE TRACT
OUT OF
SECTION NO. 82, BLOCK 14, T. & P. RY. CO. SURVEY
TAYLOR COUNTY, TEXAS

BEING a 19.242-acre tract out of Section No. 82, Block 14, T. & P. Ry. Co. Survey, Taylor County, Texas, and being out of the remainder Section No. 82 conveyed to the City of Abilene, recorded in Volume 150, Page 403, Deed Records, Taylor County, Texas. The said 19.242-acre tract being more particularly described as follows:

Bearings are based on Grid North as established by GPS observations.

BEGINNING at a set ½" iron rod with cap, stamped "H&T", on the north line of Section No. 82, Block 14, T. & P. Ry. Co. Survey, same being the south line of the Ephraim Anderson Survey No.81, for the northernmost northeast corner of this tract, where the calculated northeast corner of Section No. 82, Block 14, T. & P. Ry. Co. Survey bears 1559.5' South 89 degrees 19 minutes 20 seconds East;

THENCE South 61 degrees 40 minutes 20 seconds East for a distance of 245.37 feet to a set ½" iron rod with cap, stamped "H&T", for the easternmost northeast corner of this tract;
THENCE South 00 degrees 45 minutes 30 seconds West for a distance of 611.95 feet to a set ½" iron rod with cap, stamped "H&T";
THENCE South 41 degrees 52 minutes 45 seconds West for a distance of 117.45 feet to a set ½" iron rod with cap, stamped "H&T";
THENCE South 00 degrees 45 minutes 30 seconds West for a distance of 470.45 feet to a set ½" iron rod with cap, stamped "H&T", for the southeast corner of this tract;
THENCE North 89 degrees 28 minutes 20 seconds West for a distance of 917.92 feet to a set ½" iron rod with cap, stamped "H&T", for the southwest corner of this tract;
THENCE North 25 degrees 21 minutes 35 seconds East for a distance of 989.78 feet to a set ½" iron rod with cap, stamped "H&T";
THENCE North 31 degrees 10 minutes 14 seconds East for a distance of 449.92 feet to a set ½" iron rod with cap, stamped "H&T" on the north line of Section No. 82, Block 14, T. & P. Ry. Co. Survey;
THENCE South 89 degrees 19 minutes 20 seconds East (being the Reference Bearing for this description, called: "EAST") for a distance of 137.84 feet to the Point of Beginning, containing 19.242 acres or 838197 square feet.

Plat Attached

George A. Forbis-Stokes, RPLS #4325

Date: July 25, 2013

Environmental, Civil & Geotechnical Engineers

Abilene Office
402 Cedar
Abilene, Texas 79601
P.O. Box 3097
Abilene, Texas 79604
325.698.5560 | 325.691.0058 fax

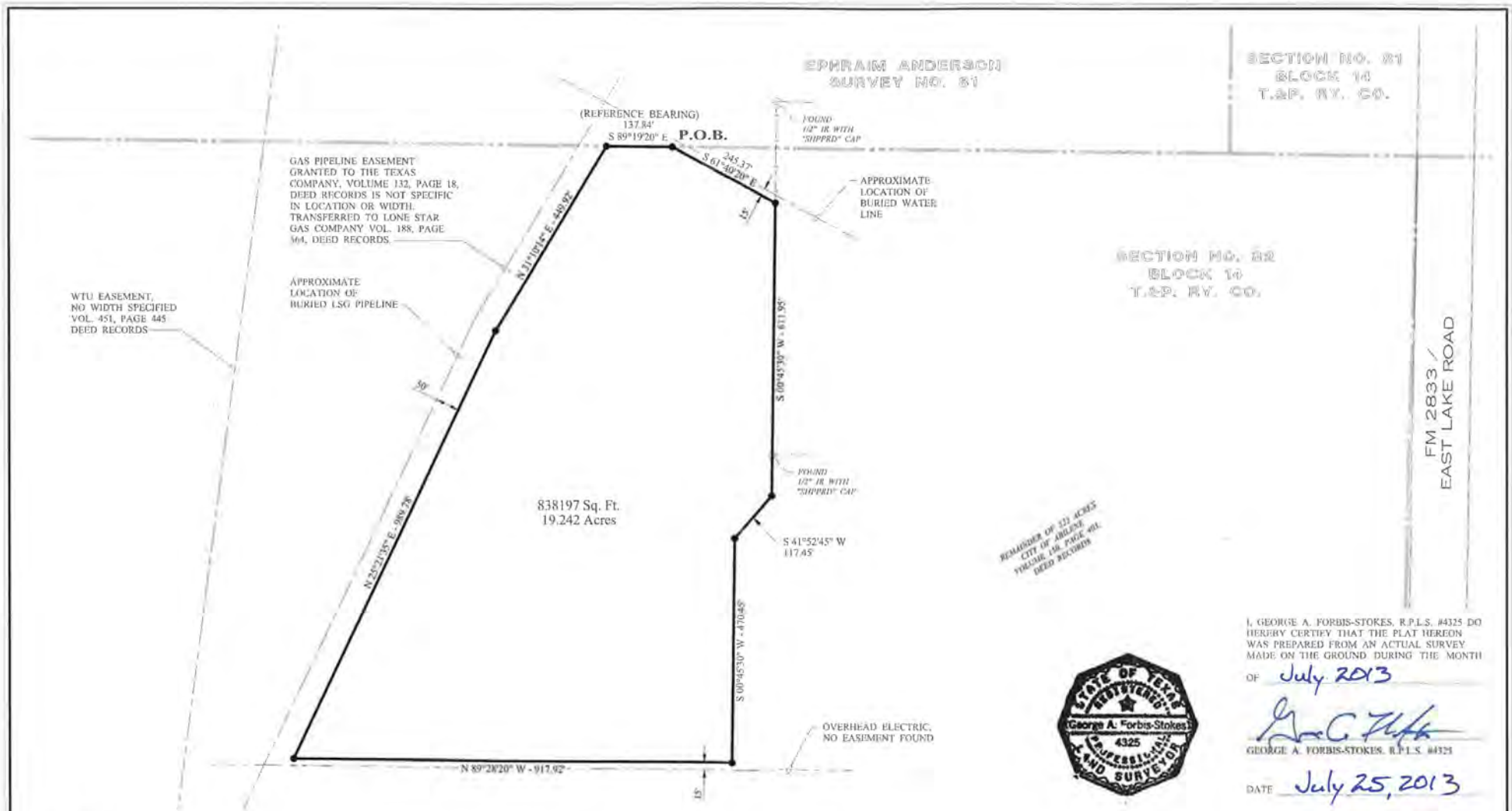
Lubbock Office
6310 Genoa Avenue, Suite E
Lubbock, Texas 79424
806.794.1100 | 806.794.0778 fax

Granbury Office
2901 Glen Rose Hwy, Suite 107
Granbury, Texas 76048
817.579.6791 | 817.579.8491 fax

Plano Office
One Preston Park
2301 Ohio Drive, Suite 105
Plano, Texas 75093
972.599.3480 | 972.599.3513 fax

www.e-ht.com

PG Firm Registration No. 50103
PE Firm Registration No. 1151



I, GEORGE A. FORBIS-STOKES, R.P.L.S. #4325 DO HEREBY CERTIFY THAT THE PLAT HEREON WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND DURING THE MONTH OF July 2013

GEORGE A. FORBIS-STOKES, R.P.L.S. #4325

DATE July 25, 2013

STATE OF TEXAS
REGISTERED
George A. Forbis-Stokes
4325
PROFESSIONAL
LAND SURVEYOR

LEGEND

EXISTING CHAINLINK FENCE

SET 1/2" IRON ROD WITH CAP STAMPED "H&T"

PLAT OF
A 19.242-ACRE TRACT
OUT OF
SECTION NO. 82, BLOCK 14, T.&P. RY. CO. SURVEY
TAYLOR COUNTY, TEXAS

N

100 0 200

SCALE IN FEET

FIELD NOTES ATTACHED

07/23/2013

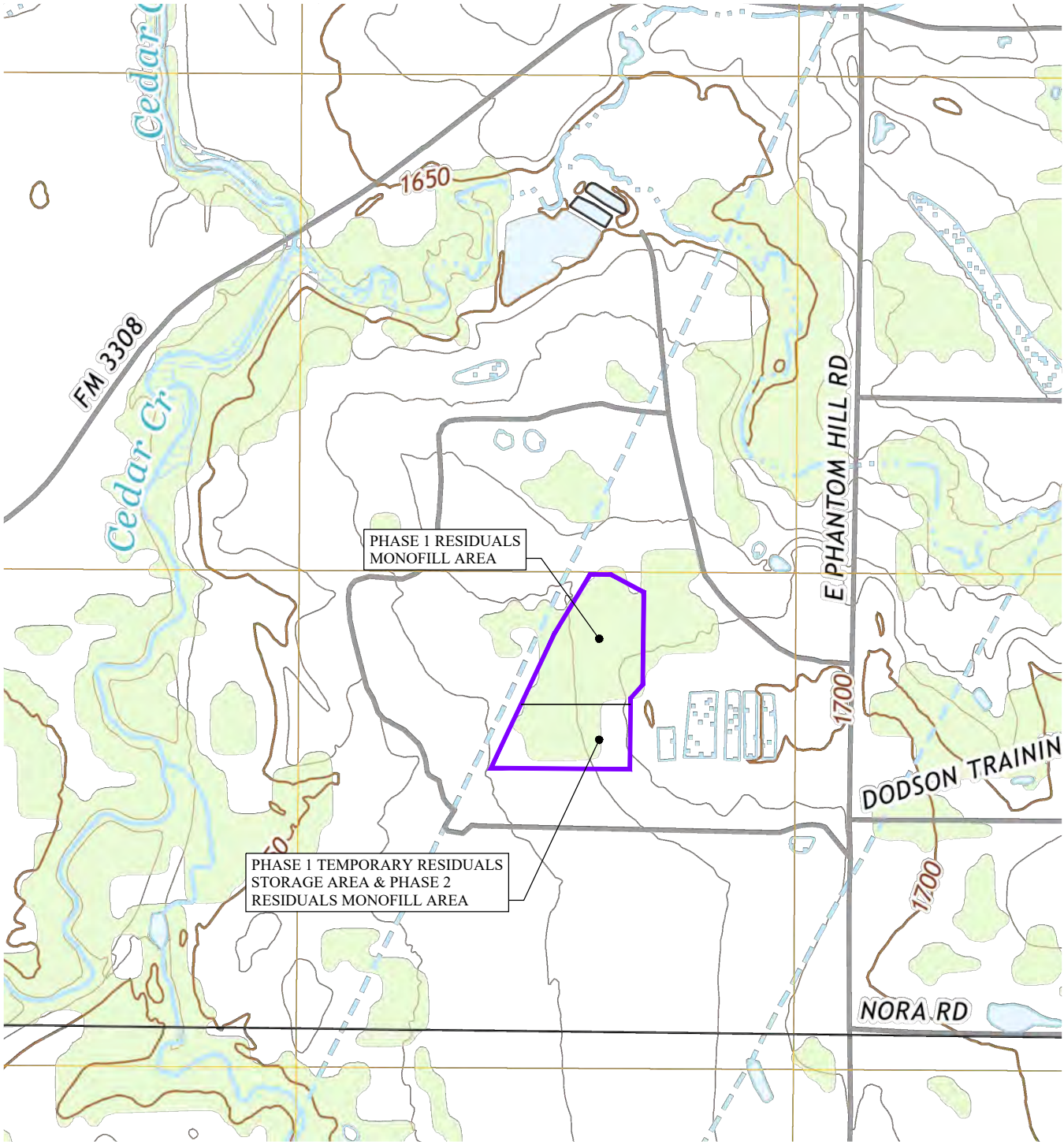
ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING

07-4065

Attachment AR 1.0-6.q

Site Drawing

Wind Rose



LEGEND

MONOFILL FACILITY BOUNDARY

N

500 0 1000

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

SITE DRAWING

8802

08/07/2024

Enprotec | Hibbs & Todd
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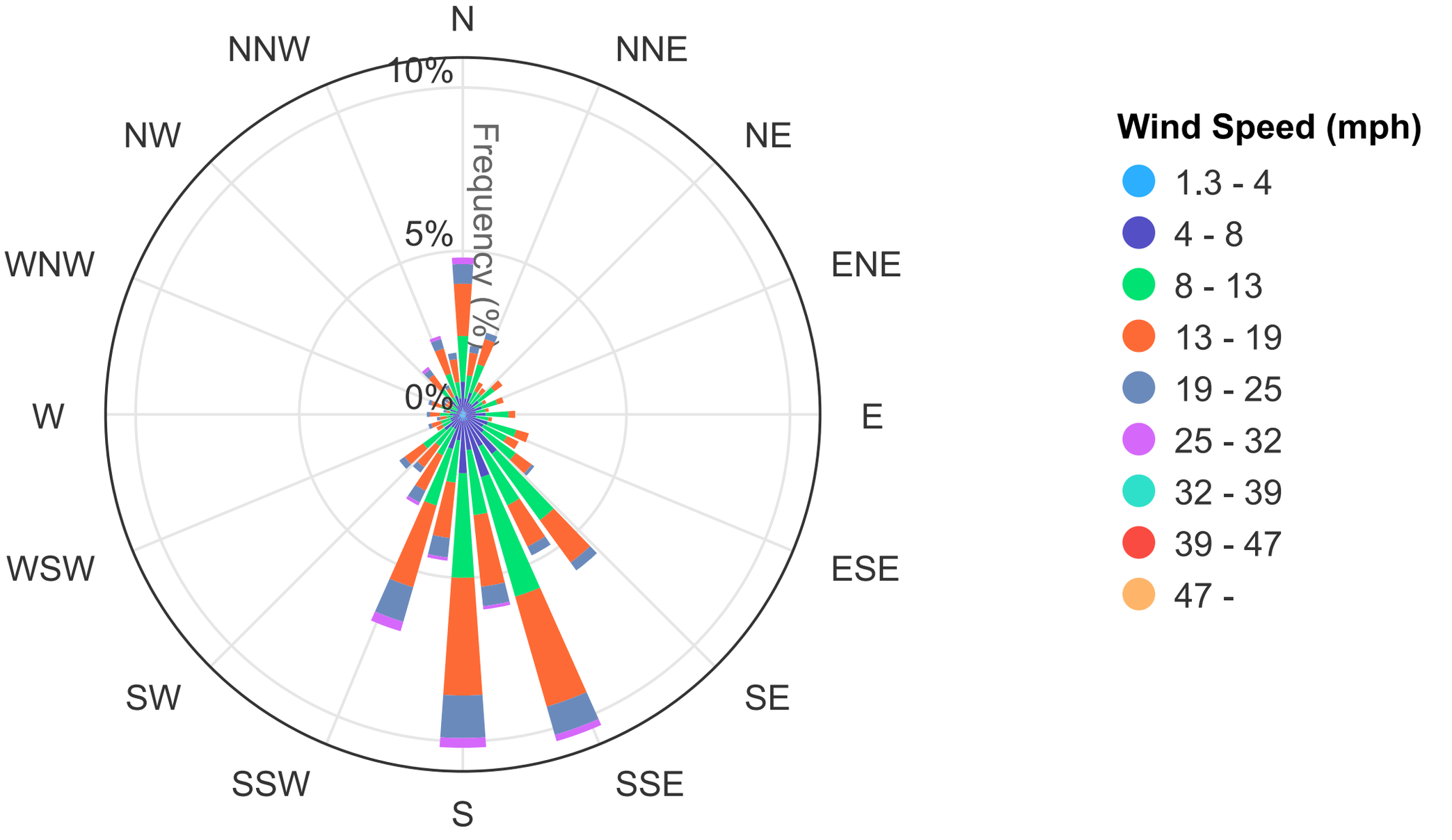
PE Firm Registration No. 1151 • PG Firm Registration No. 50103 • RPLS Firm Registration No. 10011900

P:\Projects\Abilene, City of\8802 Monofill Renewal 202410\CAD\MAPS\8802 - SITE MAP.dwg

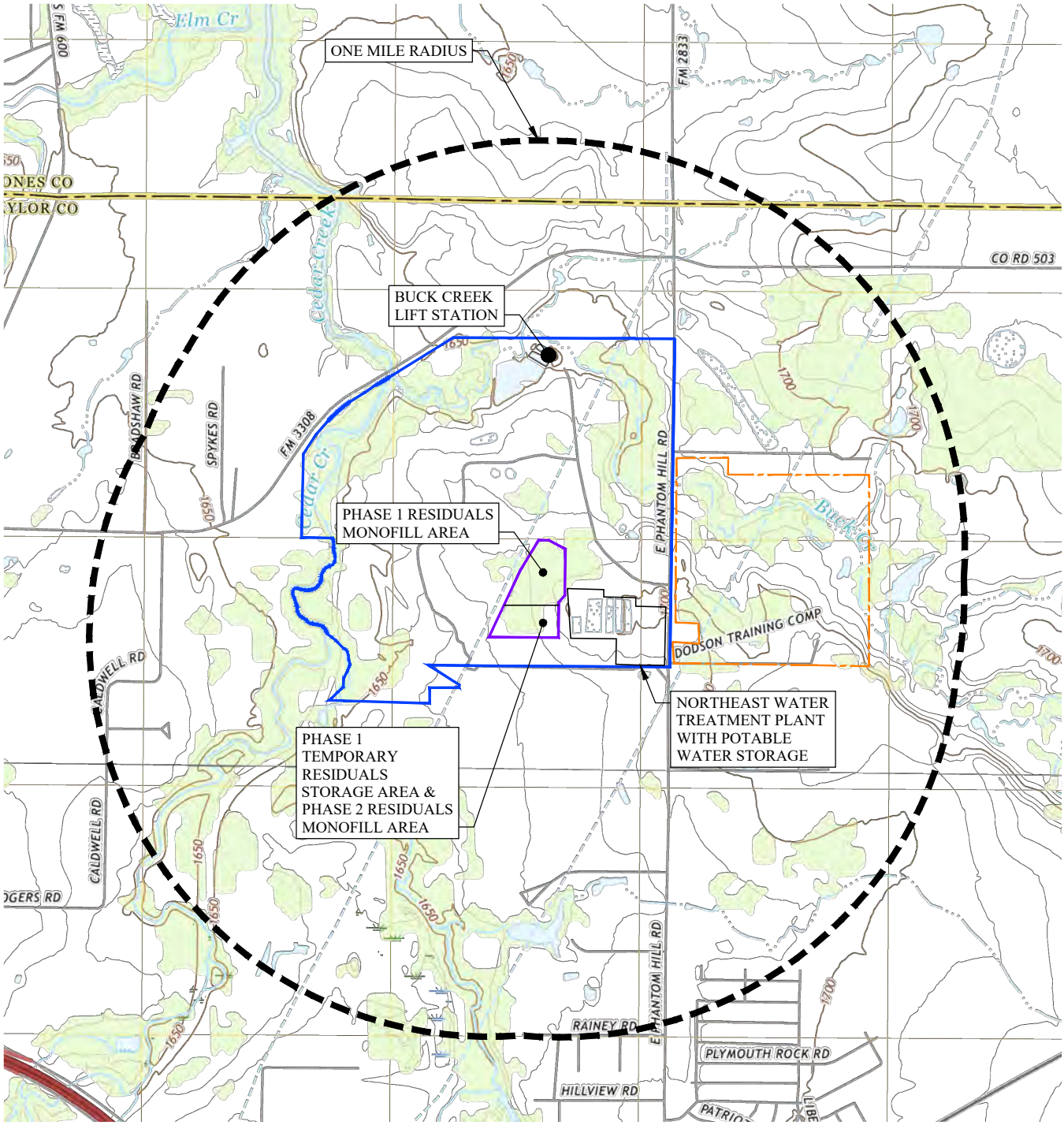
ABILENE REGIONAL AP (TX) Wind Rose

August 01, 1946 - August 05, 2024
Sub-Interval: January 1 - December 31, 0 - 24



Click and drag to zoom

Attachment AR 1.0-7
USGS Topographic Map



NOTES

1. NO NEW OR PROPOSED FUTURE COMMERCIAL DEVELOPMENTS, HOUSING DEVELOPMENTS, INDUSTRIAL SITES, PARKS OR SCHOOLS ARE LOCATED WITHIN 1 MILE OF THE SITE.

2. NO SPRINGS, PUBLIC WATER SUPPLY WELLS, SURFACE WATER SUPPLY INTAKES OR WASTEWATER TREATMENT PLANTS ARE LOCATED WITHIN ONE MILE OF THE SITE.

LEGEND

- APPLICANT'S PROPERTY BOUNDARY
- MONOFILL FACILITY BOUNDARY
- BUCK CREEK MOUNTAIN BIKE TRAIL (RECREATIONAL AREA)

N

1000 0 2000

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

USGS MAP

8802 08/07/2024

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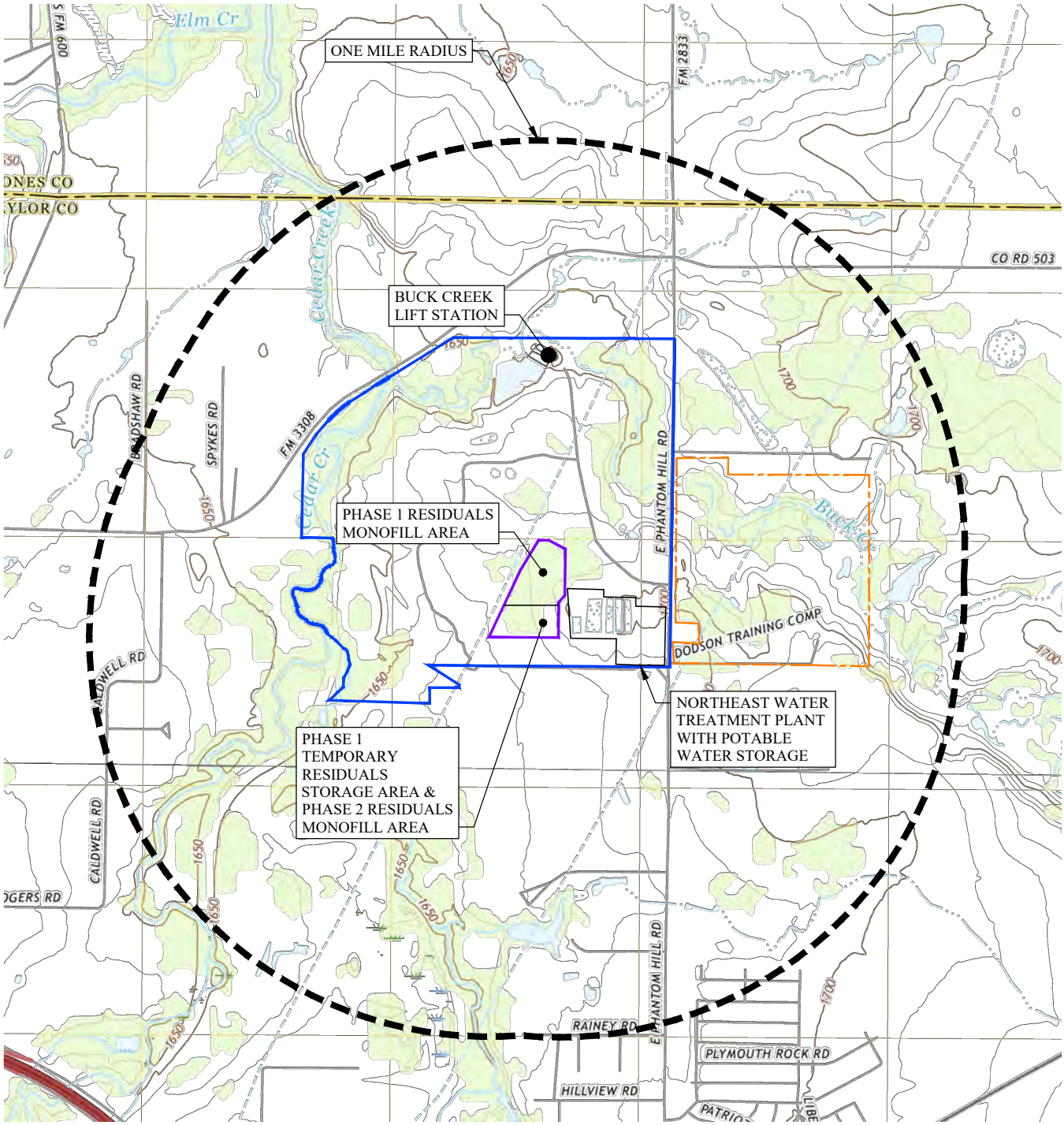
Attachment SPIF 8

USGS Topographic Map



NOTES

1. NO NEW OR PROPOSED FUTURE COMMERCIAL DEVELOPMENTS, HOUSING DEVELOPMENTS, INDUSTRIAL SITES, PARKS OR SCHOOLS ARE LOCATED WITHIN 1 MILE OF THE SITE.

2. NO SPRINGS, PUBLIC WATER SUPPLY WELLS, SURFACE WATER SUPPLY INTAKES OR WASTEWATER TREATMENT PLANTS ARE LOCATED WITHIN ONE MILE OF THE SITE.

LEGEND

- APPLICANT'S PROPERTY BOUNDARY
- MONOFILL FACILITY BOUNDARY
- BUCK CREEK MOUNTAIN BIKE TRAIL (RECREATIONAL AREA)

N

1000 0 2000

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

USGS MAP

8802 08/07/2024

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Attachment SPIF 14

Archaeological Survey Approval, SHPO-stamped 10/3/2013

NI LCH

RECEIVED 9/10/2013

AR Consultants, Inc.

Archaeological and Environmental Consulting
805 Business Parkway, Richardson, TX 75081
Phone: (214) 368-0478
Fax: (214) 221-1519
E-mail: arcdigs@aol.com

RECEIVED
SEP 09 2013
Texas Historical Commission

September 5, 2013

Ms. Tiffany Osburn, Archeologist
Texas Historical Commission
P. O. Box 12276
Austin, Texas 78711-2276

Dear Ms. Osburn:

The City of Abilene intends to construct a 22.8-acre disposal location at their water treatment plant in Abilene, Texas. Under the authority of TAP#6603, AR Consultants, Inc. surveyed the entire tract by conducting pedestrian survey on August 1, 2013. Enclosed is the draft report titled *An Archaeological Survey of the Proposed Abilene Monofill Site D, Taylor County, Texas* for your review. No sites were recorded; however, though one isolated historic ceramic drop was identified during the survey.

Based on the lack of significant archaeological sites, AR Consultants, Inc. recommends that the City of Abilene be allowed to construct the disposal location as planned without the need for further cultural resource investigations. We also recommend that the Archeology Division of the Texas Historical Commission be notified if buried cultural deposits are encountered and request that the Archeology Division of the Texas Historical Commission concur with our recommendations.

If you have questions or concerns, please contact me at 214.368.0478.

Sincerely,

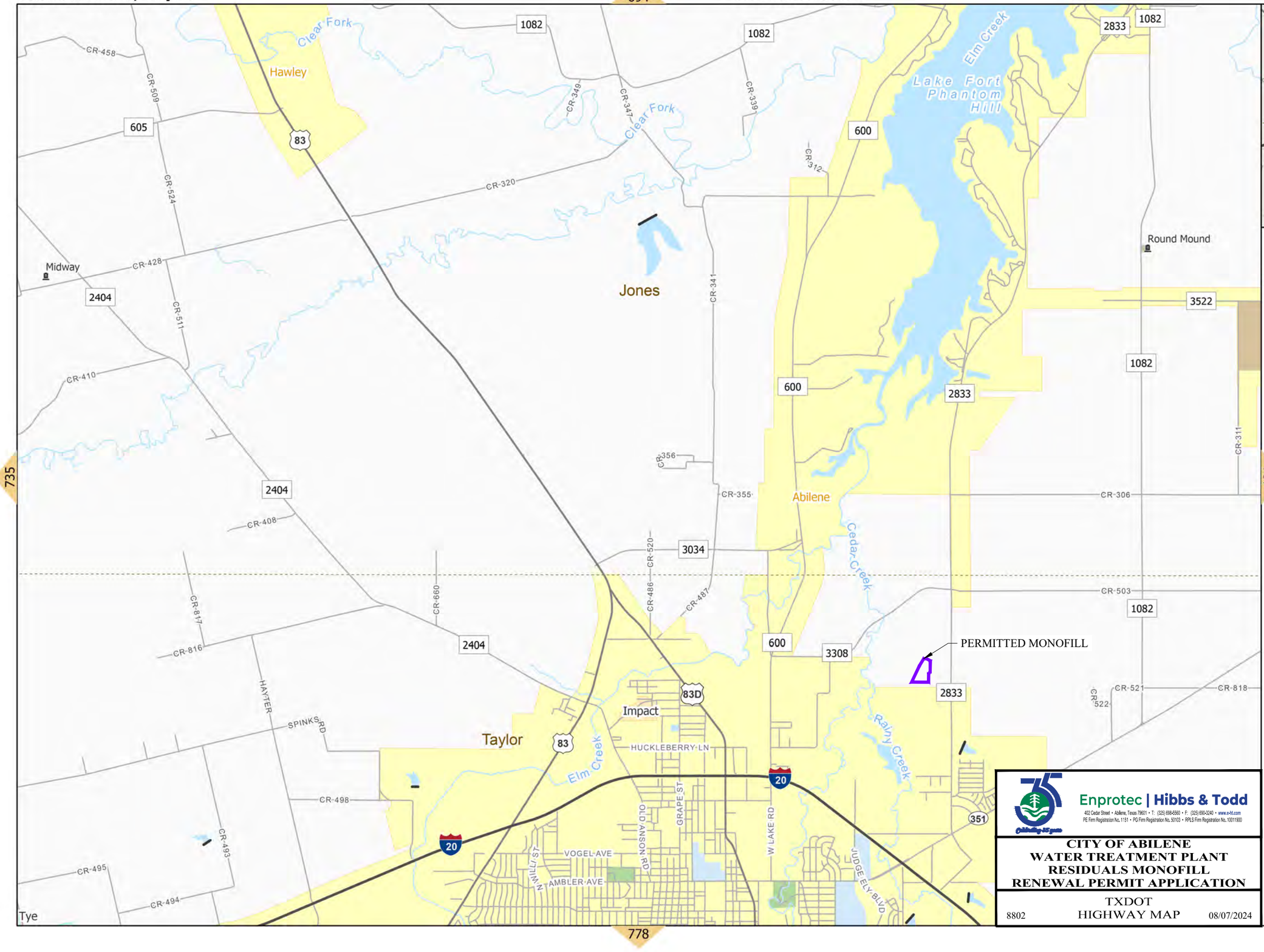
Molly Hall

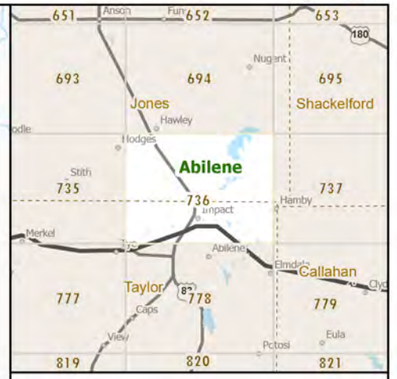
Molly Hall, MA

ANTIQUITIES CODE OF TEXAS REVIEW
NO SIGNIFICANT SITES
PROJECT MAY PROCEED
by William D. Martin
for Mark Wolfe
Executive Director, THC
Date 10/3/13
Track# 201400280

Encl.: draft copy of cultural resources report

Attachment TR 2.0-1.a
General Highway (County) Map





Texas Department of Transportation

- Unincorporated Community
- County Seat
- Border Crossing
- Cemetery
- Cemetery (Inside City)
- Deep Draft Port
- Shallow Draft Port
- Railroad
- Dam
- River or Stream
- TXDOT District
- Lakes
- Education
- Military
- Airport Runway
- Airport
- Prison
- Parks and Other Public Land

N

2000 0 5000

SCALE IN FEET

Enprotec | Hibbs & Todd

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PE Firm Registration No. 1151 • PG Firm Registration No. 50103 • RPLS Firm Registration No. 10011900

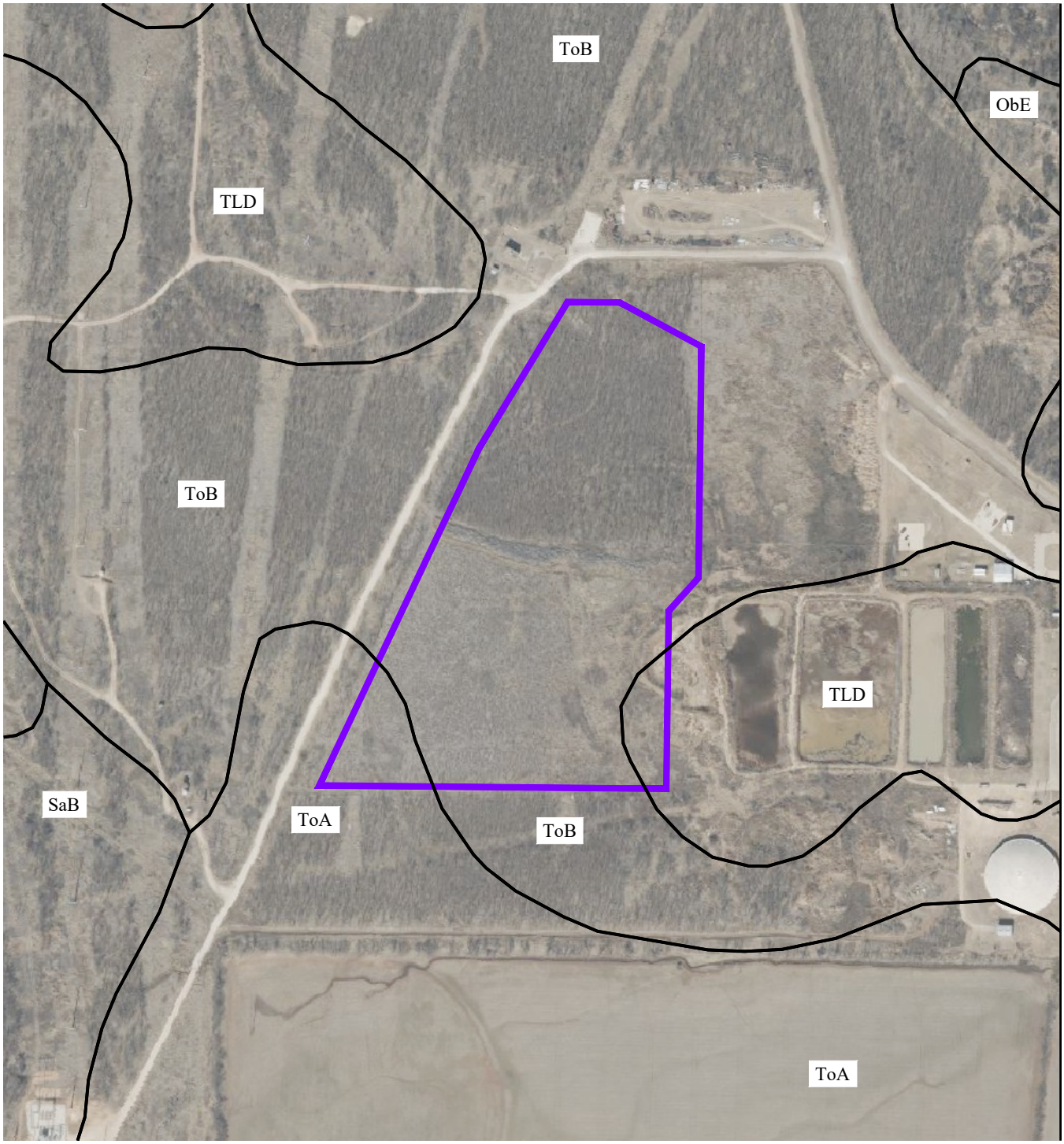
CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

TXDOT
8802 HIGHWAY MAP 08/07/2024

Scale 1:72,224

Attachment TR 2.0-1.b
USDA NRCS Soil Map & Soil Tables

(AAR TR 2.0-17.a)



LEGEND

MONOFILL FACILITY BOUNDARY

MAP SYMBOL	SOIL TYPE	SOIL SERIES
TLD	TARRANT AND VERNON SOILS, UNDULATING	TARRANT AND VERNON SERIES
ToA	TOBOSA CLAY, 0 TO 1 PERCENT SLOPES	TABOSA SERIES
ToB	TOBOSA CLAY, 1 TO 3 PERCENT SLOPES	TABOSA SERIES

N

200 0 400

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

SOIL MAP

8802 08/07/2024

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P:\Projects\Abilene, City of\8802 Monofill Renewal 2024\10 CAD\MAPS\8802 - SOIL MAP.dwg

Physical Soil Properties

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Report—Physical Soil Properties

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

Physical Soil Properties–Taylor 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*					
TLD—Oplin-Vernon complex, 1 to 8 percent slopes														
Oplin	0-4	-34-	-38-	20-28- 35	1.35-1.45 -1.55	4.00-9.00-14.00	0.10-0.13-0. 15	0.0- 1.5- 2.9	2.0- 6.0-10. 0	.05	.17	1	6	48
	4-10	-34-	-38-	20-28- 35	1.35-1.45 -1.55	4.00-9.00-14.00	0.10-0.13-0. 15	0.0- 1.5- 2.9	2.0- 6.0-10. 0	.05	.17			
	10-40	—	—	—	—	1.40-7.70-14.00	—	—	—					
Vernon	0-6	-22-	-28-	40-50- 60	1.35-1.45 -1.55	0.01-0.21-0.42	0.10-0.14-0. 17	6.0- 7.5- 8.9	0.5- 1.3- 2.0	.24	.24	3	4	86
	6-22	20-30-	-32-	39-39- 60	1.50-1.58 -1.65	0.01-0.21-0.42	0.10-0.13-0. 15	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.32	.32			
	22-36	20-22-	-28-	40-50- 60	1.60-1.68 -1.75	0.01-0.21-0.42	0.06-0.08-0. 10	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.24	.24			
	36-80	20-22-	-28-	40-50- 60	1.70-1.85 -2.00	0.01-0.21-0.42	0.01-0.04-0. 06	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.24	.24			

Physical Soil Properties–Taylor 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*					
ToA—Tobosa clay, 0 to 1 percent slopes														
Tobosa	0-10	-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.12-0.15-0. 18	9.0-17.0-25.0	1.0- 2.5- 4.0	.24	.24	5	7	38
	10-36	20-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.12-0.15-0. 18	9.0-17.0-25.0	0.5- 0.8- 1.0	.24	.24			
	36-72	20-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.10-0.13-0. 16	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.24	.24			
ToB—Tobosa clay, 1 to 3 percent slopes														
Tobosa	0-6	-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.12-0.15-0. 18	9.0-17.0-25.0	1.0- 2.5- 4.0	.24	.24	5	7	38
	6-55	20-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.12-0.15-0. 18	9.0-17.0-25.0	0.5- 0.8- 1.0	.24	.24			
	55-72	20-22-	-28-	40-50- 60	1.35-1.38 -1.40	0.01-0.21-0.42	0.10-0.13-0. 16	6.0- 7.5- 8.9	0.1- 0.6- 1.0	.24	.24			

Data Source Information

Soil Survey Area: Taylor County, Texas
Survey Area Data: Version 14, Sep 16, 2018

Engineering Properties

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.

Report—Engineering Properties

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–Taylor 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*
TLD—Oplin-Vernon complex, 1 to 8 percent slopes														
Oplin	46	D	0-4	Cobbly clay loam	CL, GC, GM, ML	A-2, A-4, A-6, A-7-6	0- 7- 15	15-30-45	40-58-75	35-55-75	30-48-65	25-43-60	30-43-56	8-17-25
			4-10	Very cobbly clay loam	CL, GC, GM, ML	A-2, A-4, A-6, A-7-6	0- 7- 15	15-30-45	40-58-75	35-55-75	30-48-65	25-43-60	30-43-56	8-17-25
			10-40	Bedrock	—	—	—	—	—	—	—	—	—	—
Vernon	23	D	0-6	Clay	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 0	95-98-100	90-95-100	90-95-100	80-89-98	38-49-60	20-29-38
			6-22	Clay, silty clay, clay loam	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 0	95-98-100	90-95-100	90-95-100	80-89-98	38-49-60	20-30-40
			22-36	Clay, silty clay	CH, CL	A-6, A-7-6	0- 0- 0	0- 3- 5	90-95-100	85-93-100	65-83-100	65-81-96	30-45-60	15-27-38
			36-80	Clay, silty clay	CH, CL	A-6, A-7-6	0- 0- 0	0- 3- 5	90-95-100	85-93-100	65-83-100	65-81-96	30-45-60	15-27-38

Engineering Properties–Taylor 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*
ToA—Tobosa clay, 0 to 1 percent slopes														
Tobosa	85	D	0-10	Clay	CH	A-7-6	0- 0- 0	0- 1- 2	98-99-100	97-99-100	90-95-100	85-92-98	51-61-70	30-38-45
			10-36	Clay, silty clay	CH	A-7-6	0- 0- 0	0- 1- 2	98-99-100	96-98-100	90-95-100	85-92-98	55-64-72	35-42-48
			36-72	Clay, silty clay	CH, CL	A-7-6	0- 0- 0	0- 1- 2	96-98-100	95-98-100	90-95-100	80-88-95	45-55-65	30-38-45
ToB—Tobosa clay, 1 to 3 percent slopes														
Tobosa	85	D	0-6	Clay	CH	A-7-6	0- 0- 0	0- 1- 2	98-99-100	97-99-100	90-95-100	85-92-98	51-61-70	30-38-45
			6-55	Clay, silty clay	CH	A-7-6	0- 0- 0	0- 1- 2	98-99-100	96-98-100	90-95-100	85-92-98	55-64-72	35-42-48
			55-72	Clay, silty clay	CH, CL	A-7-6	0- 0- 0	0- 1- 2	96-98-100	95-98-100	90-95-100	80-88-95	45-55-65	30-38-45

Data Source Information

Soil Survey Area: Taylor County, Texas
Survey Area Data: Version 14, Sep 16, 2018

Chemical Soil Properties

This table shows estimates of some chemical 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.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties–Taylor County, Texas								
Map symbol and soil name	**Depth**	**Cation-exchange capacity**	**Effective cation-exchange capacity**	**Soil reaction**	**Calcium carbonate**	**Gypsum**	**Salinity**	**Sodium adsorption ratio**
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
TLD—Oplin-Vernon complex, 1 to 8 percent slopes								
Oplin	0-4	10-25	—	7.9-8.4	10-30	0	0	0
	4-10	10-25	—	7.9-8.4	10-30	0	0	0
	10-40	—	—	—	—	—	—	—
Vernon	0-6	15-25	—	7.9-8.4	1-5	0	0.0-2.0	0-2
	6-22	20-35	—	7.9-8.4	3-10	0-2	0.0-2.0	2-15
	22-36	20-35	—	7.9-8.4	3-15	0-2	2.0-8.0	5-15
	36-80	15-25	—	7.9-8.4	1-5	0-2	2.0-8.0	10-25
ToA—Tobosa clay, 0 to 1 percent slopes								
Tobosa	0-10	35-50	—	7.4-8.4	0-10	0	0.0-2.0	0-8
	10-36	35-50	—	7.9-8.4	2-30	0	0.0-2.0	0-15
	36-72	35-50	—	7.9-8.4	2-45	0	0.0-2.0	0-15
ToB—Tobosa clay, 1 to 3 percent slopes								
Tobosa	0-6	35-50	—	7.4-8.4	0-10	0	0.0-2.0	0-8
	6-55	35-50	—	7.9-8.4	2-30	0	0.0-2.0	0-15
	55-72	35-50	—	7.9-8.4	2-45	0	0.0-2.0	0-15

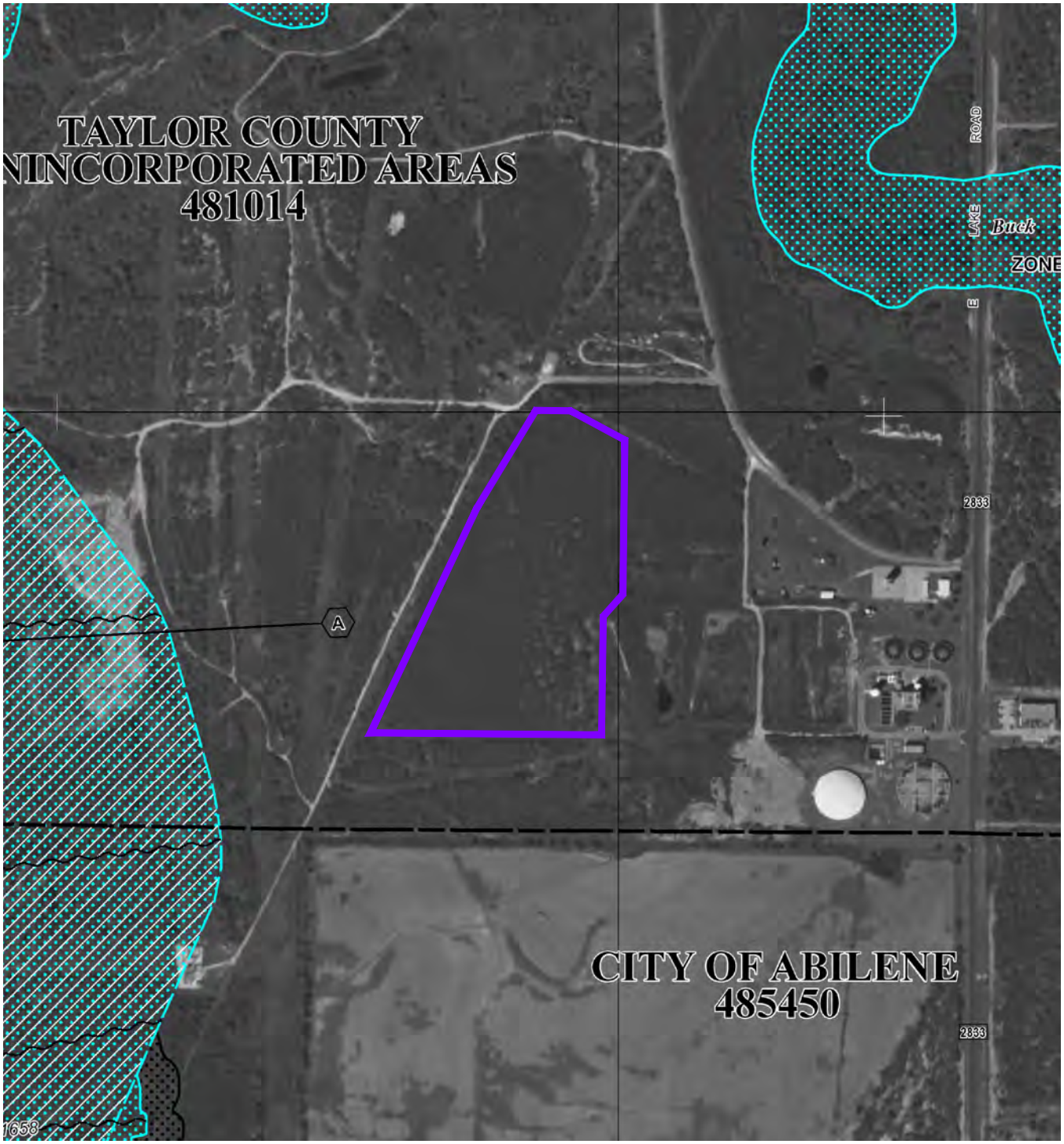
Data Source Information

Soil Survey Area: Taylor County, Texas
Survey Area Data: Version 14, Sep 16, 2018

Attachment TR 2.0-1.c

FEMA Map

(AAR TR 2.0-4.a)



LEGEND

MONOFILL FACILITY BOUNDARY

N

200 0 600

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

8802 FEMA MAP 08/07/2024

Enprotec | Hibbs & Todd
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PE Firm Registration No. 1151 • PG Firm Registration No. 50103 • RPLS Firm Registration No. 10011900

P:\Projects\Abilene, City of\8802 Monofill Renewal 202410\CAD\APS\8802 - FEMA MAP.dwg

Attachment TR 2.0-14
Surface Water Drainage Plan

Enprotec / Hibbs & Todd

Technical Memorandum

To: Tony Buonodono, P.E., APAI

From: Jonathan Baum, P.E.

CC: Rex Hunt, P.E., APAI

Scott F. Hibbs, P.E., eHT

Date: October 4, 2013

Subject: Drainage Evaluation for the City of Abilene WTP Monofill Site

10/4/2013

I. DESCRIPTION

The proposed residuals disposal site is located just west and slightly north of the current facilities at the City of Abilene's Northeast Water Treatment Plant. The proposed site is currently in natural conditions consisting of mesquite trees, brush, and native grasses. The existing drainage patterns flow generally flow to the west while existing grades are mild ranging from 1% to 2.5%. Due to the mild grades and strong vegetative cover existing surface water runoff can be assumed to be minimal. The proposed residuals disposal site will be an excavation of approximately 15 feet deep with a 5 foot high berm around the perimeter. Surface water runoff upstream of the berm should be collected and routed around the proposed disposal site to the existing bar ditch along the existing road to the west. Watershed boundaries, flow paths, and the existing road and bar ditch are shown on the included Exhibits. Exhibit 1 depicts the proposed conditions during use of the residual disposal site. Exhibit 2 depicts the ultimate conditions once the disposal site has been filled and is capped.

II. HYDROLOGIC / HYDRAULIC ANALYSIS

Surface water run-off for the watershed areas upstream of the proposed residual disposal site has been calculated using the Rational Method. Peak runoff rates for each watershed have been determined for various return periods using the City of Abilene Drainage Standards Manual IDF curves (see Appendix).

Watershed characteristics and base assumptions for this evaluation are discussed in the following sections as well as calculations for run-off coefficient values, Time of Concentration (T_c) values and other computations. A summary of peak run-off values are provided in Tables 1, 2, 3, & 4.

Drainage Basin Characteristics

The drainage basins for the proposed ditches around the residual disposal site are shown on Exhibit 1 for proposed conditions and Exhibit 2 for ultimate conditions. Under the proposed conditions state, the ditches will collect surface water runoff from the area between the existing drying beds and the proposed residuals disposal site. These basins will consist of 5.2 acres flowing to the north ditch and 2.3 acres flowing to the south ditch. Once the residuals disposal site has been filled and capped additional runoff from the cap will also need to be carried in the ditches. In the ultimate conditions the acreage collected by the ditches will increase to 10.2 acres for the north ditch and 7.0 acres for the south ditch.

Run-off Coefficient Determination

Runoff Coefficient values have been selected from Table 5.1 of the City of Abilene Drainage Standards Manual. The runoff coefficient used for natural ground is:

$$C = \mathbf{0.30}$$

Run-off coefficient adjustment factors were also used in these calculations. At less frequent, higher intensity rainfall events a higher run-off coefficient will be used because infiltration and other obstructions will have a proportionately smaller effect on run-off. Adjustment factors used are from the City of Abilene Drainage Standards Manual Table 5.2.

Run-off Coefficient Adjustment Factors

Storm Frequency	Adjustment Factor
0-10-yr	1.0
25-yr	1.1
50-yr	1.2
100-yr	1.25

Time of Concentration

The Time of Concentration (T_c) is the amount of time it takes for the entire drainage basin to contribute runoff to the point of discharge. Therefore, the time it takes for water to travel from the most hydraulic remote point of the drainage basin to the point of discharge is the T_c. The T_c for the drainage basin has been calculated assuming the rainfall occurs at a constant rate. In lieu of the nomographs include as Figure 5-1 and Figure 5-2 in the City of Abilene Drainage Standards Manual, the T_c was determined by using the Seelye nomograph (see Appendix) for estimating overland flow, the SCS TR-55 method for shallow concentrated flow and Manning's Equation for estimating channel flow. These alternate methods were used in an effort to break up the T_c into individual parts in order to determine a more accurate T_c than would be determined from the general nomographs. The total time of concentration for the drainage basin was calculated by summing the overland flow components and the channel flow components (there are no shallow concentrated sections within the drainage basins as flows quickly become collected by the proposed ditches). The time of concentration values calculated are as follows:

$$T_c = t_{ov1} + t_{conc1}$$

North Watershed

Overland Flow

t_{ov1} = Flow from top of hill west of existing lagoons
L = 95 ft
S = 15.7%
t_{ov1} = 8 min. (from nomograph)

Concentrated Channel Flow

t_{conc1} = Flow through proposed North Channel around monofill site
L = 1,035 ft

An example of the calculations used to determine t_{conc1} is as follows:

Manning's Equation: $Q = 1.49/n \times A \times R_h^{2/3} \times S_o^{1/2}$

Where:

n = Roughness Coefficient

Selected from Table A3 on Page 68 of the City of Abilene Drainage Standards Manual
n = 0.035 for straight channels without shrubs or tress and Bermuda grass

A = Flow Area

R_h = Hydraulic Radius

Hydraulic Radius = Flow Area ÷ Wetted Perimeter

S_o = Channel Slope

Estimated from existing topography
Starting Elevation = 1693
Ending Elevation = 1681
Length = 1,035 ft
(1693 - 1681) ÷ 1,035 ≈ 1.0%

Because we do not know the total Q for the north watershed at this time an iterative process will have to be used until the results converge. The geometry of the proposed channel must also be assumed at this time. In this case a trapezoidal channel with a 2 ft bottom width and a depth of 1.25 ft is assumed. By using a spreadsheet Manning's Equation can be solved for multiple flow depths and then the correct Q and V can be selected from the spreadsheet.

Step 1: Starting with the t_{ov1} of 8 minutes the Intensity can be selected from the IDF curve presented on Page 21 of the City of Abilene Drainage Standards Manual.
$I = 8.5$ in/hr

Step 2: Using the Rational Method Q_{100} can be determined.
$Q_{100} = C_w \times f_c \times I \times A$
$Q_{100} = 0.30 \times 1.25 \times 8.5 \times 5.20 = 16.575$ cfs

Step 3: From the spreadsheet used 16.575 cfs through the assumed channel will have a velocity of 3.11 ft/s.

Step 4: Channel length ÷ velocity = flow time
1,035 ÷ 3.11 = 332.8 sec = 5.55 min

Step 5: Adjust T_c
8 min + 5.55 min ≈ 14 min

Step 6: Select a new intensity.
$I = 7.3$ in/hr

Step 7: $Q_{100} = 0.30 \times 1.25 \times 7.3 \times 5.20 = 14.235$ cfs

Step 8: From the spreadsheet used 14.235 cfs through the assumed channel will have a velocity of 3.00 ft/s.

Step 9: 1,035 ÷ 3.00 = 345 sec = 5.75 min

Step 10: Adjust T_c
8 min + 5.75 min ≈ 14 min

At this point the results have converged and t_{conc1} has been determined to be 5.75 min. The total T_c for the North Watershed will:

$$T_c = 8 + 5.75 = 13.75 \text{ min.} \approx \mathbf{14 \text{ min.}}^*$$

**It should be noted that the City of Abilene Drainage Standards Manual states that the time of concentration should not be less than 15 minutes. Because the actual velocity through the proposed channel has been calculated, the time of concentration of 14 minutes is assumed to be accurate. Also, by using a shorter time of concentration, the intensity will be higher and produce a larger runoff amount which will give a more conservative channel design than if a 15 minute time of concentration was used.*

South Watershed

Overland Flow

t_{ov1} = Flow from top of hill west of existing lagoons
$L = 95$ ft
$S = 15.7\%$
$t_{ov1} = 8$ min. (from nomograph)

Concentrated Channel Flow

t_{conc1} = Flow through proposed South Channel around monofill site
L = 1,400 ft
S = 1.0%
V = 2.37 ft/s (from Manning's Equation)
t_{conc1} = 1,400 ft ÷ 2.37 ft/s = 590.72 sec. = 9.85 min.

T_c = 8 + 9.85 = 17.85 min. ≈ **18 min**

Hydrologic and Hydraulic Results

The hydrologic computations were performed for the 2-year through 100-year storm events per the IDF curves presented in Figure 4.1 of the City of Abilene Drainage Standards Manual. Peak run-off values are calculated by use of the Rational Method and with results presented in Table 1 and Table 2.

Rational Method Equation: $Q = C_w \times f_c \times I \times A$

TABLE 1: North Watershed Peak Run-off (Proposed Conditions)

Storm Frequency (years)	C_w	f_c	$C_w * f_c$	Rainfall Intensity, I (in/hr)	Area (Acres)	Flow, Q (cfs)
2	0.30	1.00	0.30	4.00	5.20	**6.24**
5	0.30	1.00	0.30	4.90	5.20	**7.64**
10	0.30	1.00	0.30	5.40	5.20	**8.42**
25	0.30	1.10	0.33	6.10	5.20	**10.47**
50	0.30	1.20	0.36	6.80	5.20	**12.73**
100	0.30	1.25	0.375	7.30	5.20	**14.24**

TABLE 2: South Watershed Peak Run-off (Proposed Conditions)

Storm Frequency (years)	C_w	f_c	$C_w * f_c$	Rainfall Intensity, I (in/hr)	Area (Acres)	Flow, Q (cfs)
2	0.30	1.00	0.30	3.60	2.30	**2.48**
5	0.30	1.00	0.30	4.50	2.30	**3.11**
10	0.30	1.00	0.30	4.90	2.30	**3.38**
25	0.30	1.10	0.33	5.70	2.30	**4.33**
50	0.30	1.20	0.36	6.30	2.30	**5.22**
100	0.30	1.25	0.375	6.70	2.30	**5.78**

Ultimate Conditions

Run-off Coefficient Determination

It is assumed that once the cap is placed on the residuals disposal site that it will be seeded and a permanent grass cover will remain. Therefore the runoff coefficient used for ultimate conditions will remain:

$$C = \mathbf{0.30}$$

The same Run-off coefficient adjustment factors were also used in the ultimate conditions calculations.

Run-off Coefficient Adjustment Factors

Storm Frequency	Adjustment Factor
0-10-yr	1.0
25-yr	1.1
50-yr	1.2
100-yr	1.25

Time of Concentration

The time of concentration values calculated for the ultimate conditions are as follows:

$$T_c = t_{ov1} + t_{conc1}$$

North Watershed

Overland Flow

t_{ov1} = Flow from top of hill west of existing lagoons
L = 200 ft
S = 20%
t_{ov1} = 11.1 min. (from nomograph)

Concentrated Channel Flow

t_{conc1} = Flow through proposed North Channel around monofill site
L = 1,035 ft
S = 1.0%
V = 3.52 ft/s (from Manning's Equation)
t_{conc1} = 1,035 ft ÷ 3.52 ft/s = 294.03 sec. = 4.90 min.

$$T_c = 11.1 + 4.90 = 16.00 \text{ min.} \approx \mathbf{16 \text{ min.}}$$

South Watershed

Overland Flow

t_{ov1} = Flow from top of hill west of existing lagoons
L = 200 ft
S = 20%
t_{ov1} = 11.1 min. (from nomograph)

Concentrated Channel Flow

t_{conc1} = Flow through proposed south channel around monofill site
L = 1,400 ft
S = 1.0%
V = 3.16 ft/s (from Manning's Equation)
t_{conc1} = 1,400 ft ÷ 3.16 ft/s = 443.04 sec. = 7.38 min.

T_c = 11.1 + 7.38 = 18.48 min. ≈ **18 min.**

Hydrologic and Hydraulic Results

The hydrologic computations were performed for the 2-year through 100-year storm events per the IDF curves presented in Figure 4.1 of the City of Abilene Drainage Standards Manual. Peak run-off values for the ultimate conditions are presented in Table 3 and Table 4.

TABLE 3: North Watershed Peak Run-off (Ultimate Conditions)

Storm Frequency (years)	C_w	f_c	C_w*f_c	Rainfall Intensity, I (in/hr)	Area (Acres)	Flow, Q (cfs)
2	0.30	1.00	0.30	3.80	10.20	**11.63**
5	0.30	1.00	0.30	4.60	10.20	**14.08**
10	0.30	1.00	0.30	5.20	10.20	**15.91**
25	0.30	1.10	0.33	5.90	10.20	**19.86**
50	0.30	1.20	0.36	6.50	10.20	**23.87**
100	0.30	1.25	0.375	7.00	10.20	**26.78**

TABLE 4: South Watershed Peak Run-off (Ultimate Conditions)

Storm Frequency (years)	C_w	f_c	C_w*f_c	Rainfall Intensity, I (in/hr)	Area (Acres)	Flow, Q (cfs)
2	0.30	1.00	0.30	3.60	7.00	**7.56**
5	0.30	1.00	0.30	4.50	7.00	**9.45**
10	0.30	1.00	0.30	5.00	7.00	**10.50**
25	0.30	1.10	0.33	5.70	7.00	**13.17**
50	0.30	1.20	0.36	6.30	7.00	**15.88**
100	0.30	1.25	0.375	6.70	7.00	**17.59**

Proposed Ditch Section

To effectively carry the surface water flows around the disposal site, an earthen ditch should be constructed around the perimeter. The dimensions of the ditch are shown in Figure 1.

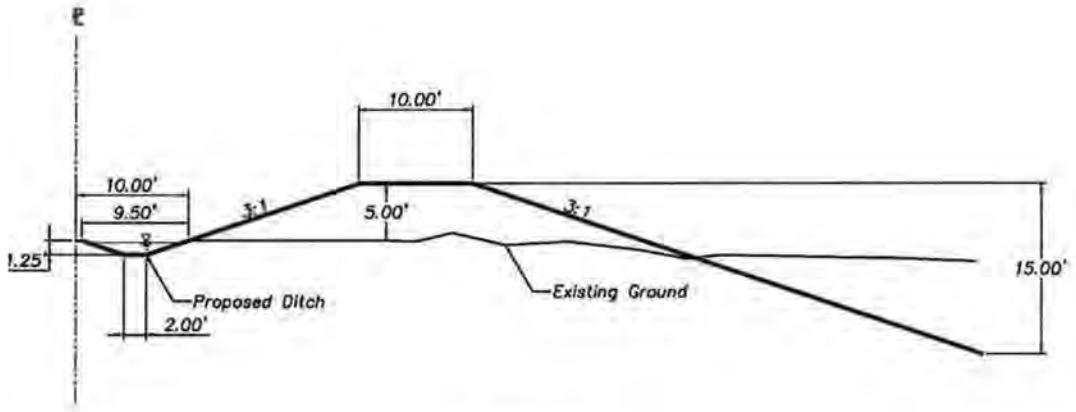


Figure 1

The depth of water in the ditch during the various storm frequencies has been calculated by Manning's equation. Per the City of Abilene Drainage Standards Manual, open channels should be designed to carry the 10-year storm within the channel banks while still conveying the 100-year storm within the property limits. Table 5 contains the depth of water in the proposed ditch for the 10-year, 25-year, and 100-year storms.

An example of the calculations used to determine the water depth in the proposed channel is as follows:

Manning's Equation: $Q = 1.49/n \times A \times R_h^{2/3} \times S_o^{1/2}$
The variables and coefficients used are the same as defined in the previous sample calculation.

Again because both the flow area and the hydraulic radius are dependent on the water depth that we do not know yet, the easiest way to solve the equation is by using the spreadsheet to solve for multiple water depths and then selecting the water depth that will carry the total ***Q***. For the 10-year storm frequency for the North Channel during the proposed conditions the Q_{10} from Table 1 is 8.42 cfs and the following steps would be done.

Step 1: Select a depth of 1.00 feet.
Step 2: From the spreadsheet at this depth:
$Q = 15.15$ cfs
$A = 5.00$ ft^2
$R_h = 0.60$

Step 3: Select a depth of 0.75 feet.
Step 4: From the spreadsheet at this depth:
$Q = 8.23$ cfs
$A = 3.19$ ft^2
$R_h = 0.47$
Step 5: Select a depth of 0.80 feet.
Step 6: From the spreadsheet at this depth:
$Q = 9.42$ cfs
$A = 3.52$ ft^2
$R_h = 0.50$
Step 7: Select a depth of 0.77 feet.
Step 8: From the spreadsheet at this depth:
$Q = 8.70$ cfs
$A = 3.32$ ft^2
$R_h = 0.48$
Step 9: Select a depth of 0.76 feet.
Step 10: From the spreadsheet at this depth:
$Q = 8.46$ cfs
$A = 3.25$ ft^2
$R_h = 0.48$

The result is that for $Q_{10} = 8.42$ cfs the channel will flow at 0.76 feet deep.

Table 5: Depth of Flow in Ditch

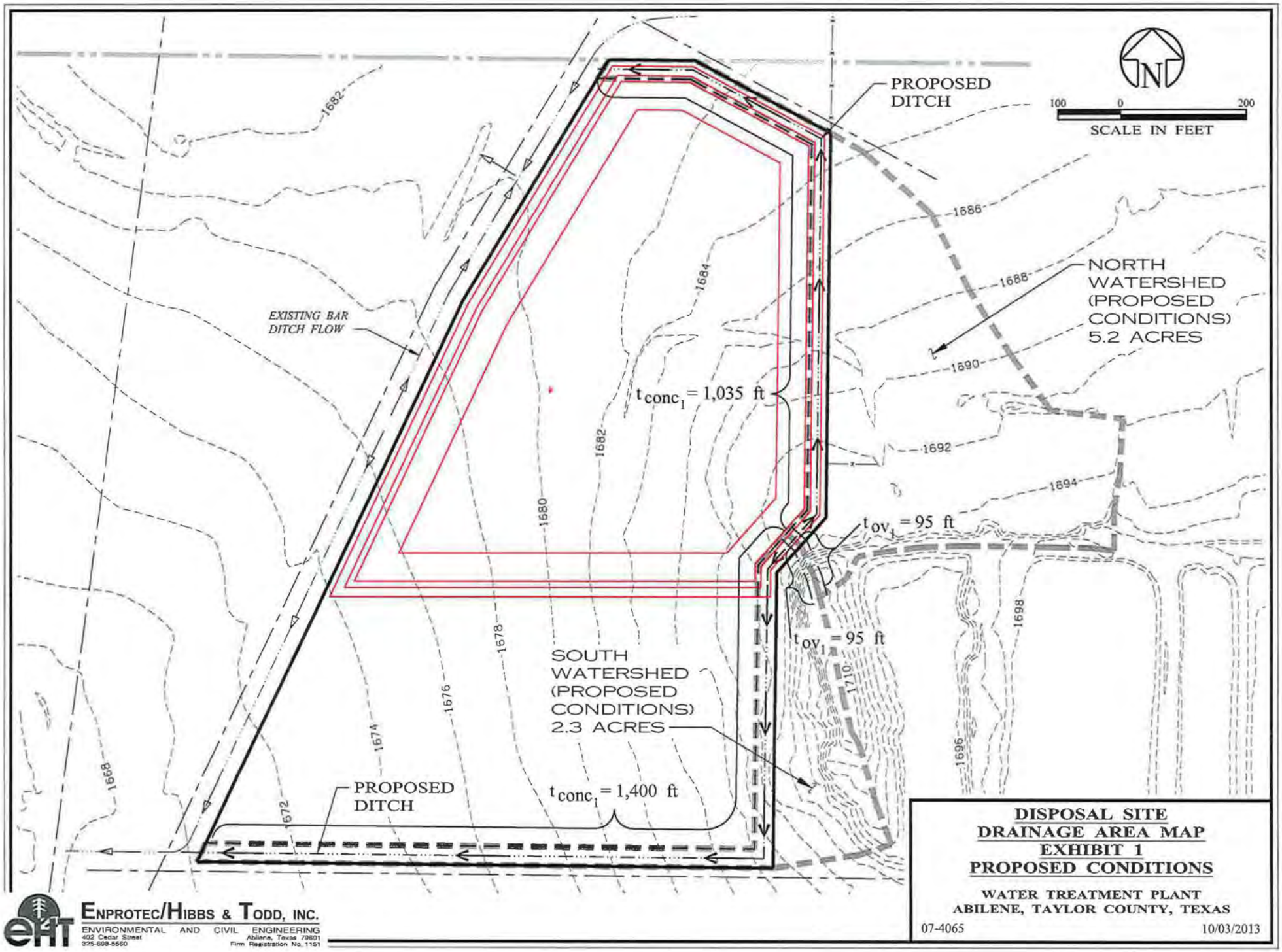
Proposed Conditions				
	North Ditch		South Ditch	
Storm Frequency (years)	**Flow, Q (cfs)**	**Water Depth (ft)**	**Flow, Q (cfs)**	**Water Depth (ft)**
10	8.42	**0.76**	3.38	**0.49**
25	10.47	**0.85**	4.33	**0.55**
100	14.24	**0.98**	5.78	**0.64**
Ultimate Conditions				
	North Ditch		**South Ditch**	
Storm Frequency (years)	**Flow, Q (cfs)**	**Water Depth (ft)**	**Flow, Q (cfs)**	**Water Depth (ft)**
10	15.91	**1.03**	10.50	**0.85**
25	19.86	**1.14**	13.17	**0.94**
100	26.78	**1.30***	17.59	**1.08**

*100-year storm will overtop the proposed ditch by 0.6" which will not cause problems due to the 5' berm around the disposal site.

III. CONCLUSION

The proposed ditches will collect and route surface water around the proposed residuals disposal site. The ditches will empty to the existing bar ditch along the existing road west of the site. This bar ditch currently contains the surface water runoff from the entire site and conveys it adequately. In the proposed conditions the surface water runoff flowing to the existing bar ditch will be less than the current conditions due to the fact that the excavation for the residual disposal site will reduce the amount of area draining to the bar ditch. In the ultimate conditions, the residuals disposal site will be capped and the acreage of surface water runoff reaching the bar ditch will be the same as current conditions. Because the site will remain in permanent grass cover there will be no expected increase in surface water runoff at the ultimate conditions state. Therefore there will be no adverse impacts to the drainage patterns of the City of Abilene's Water Treatment Plant due to the construction of the residuals disposal site.

EXHIBITS



DISPOSAL SITE
DRAINAGE AREA MAP
EXHIBIT 1
PROPOSED CONDITIONS

WATER TREATMENT PLANT
ABILENE, TAYLOR COUNTY, TEXAS

07-4065 10/03/2013

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
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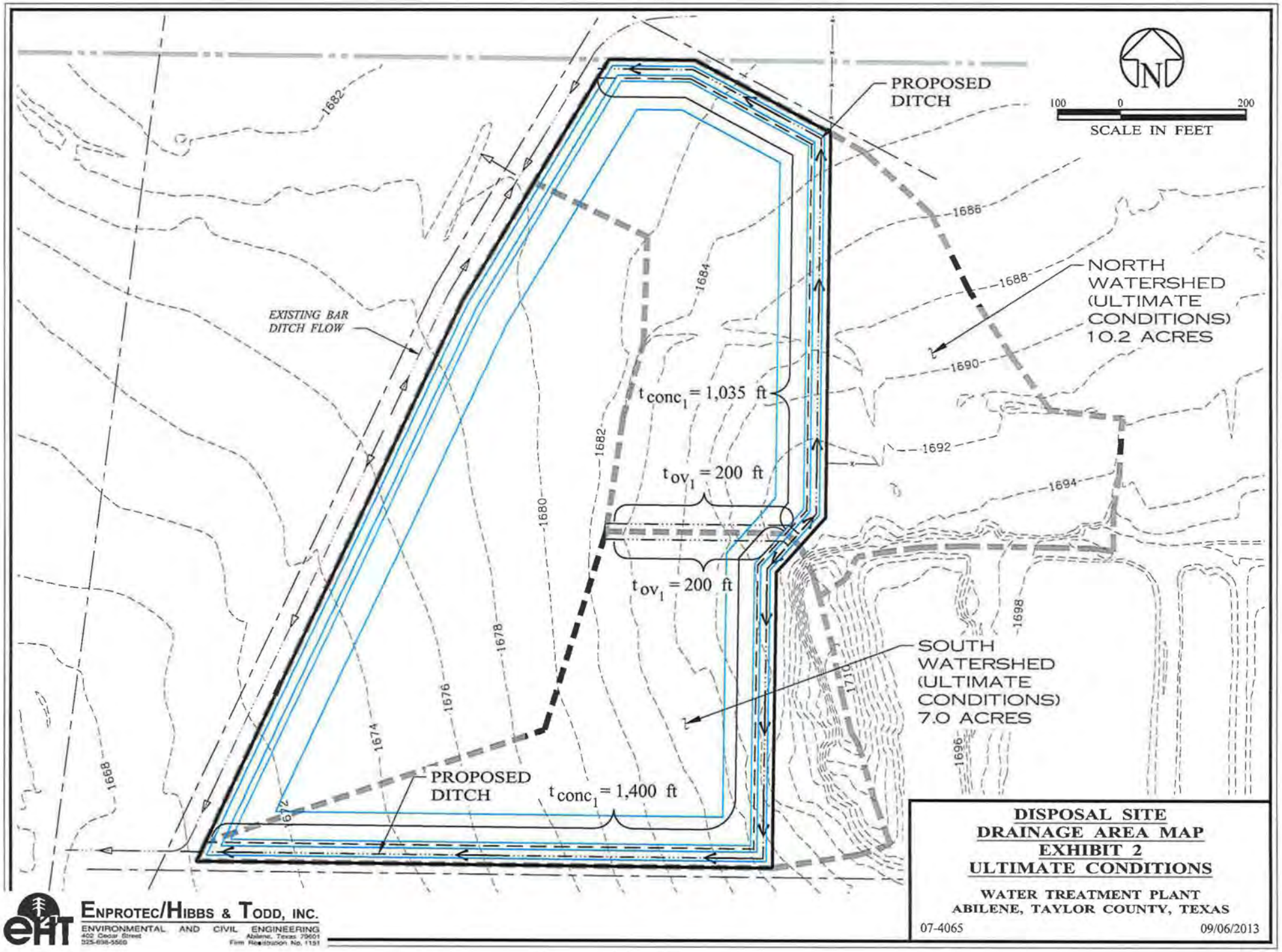
Abilene, Texas 79601
Firm Registration No. 1151



DISPOSAL SITE
DRAINAGE AREA MAP
EXHIBIT 2
ULTIMATE CONDITIONS

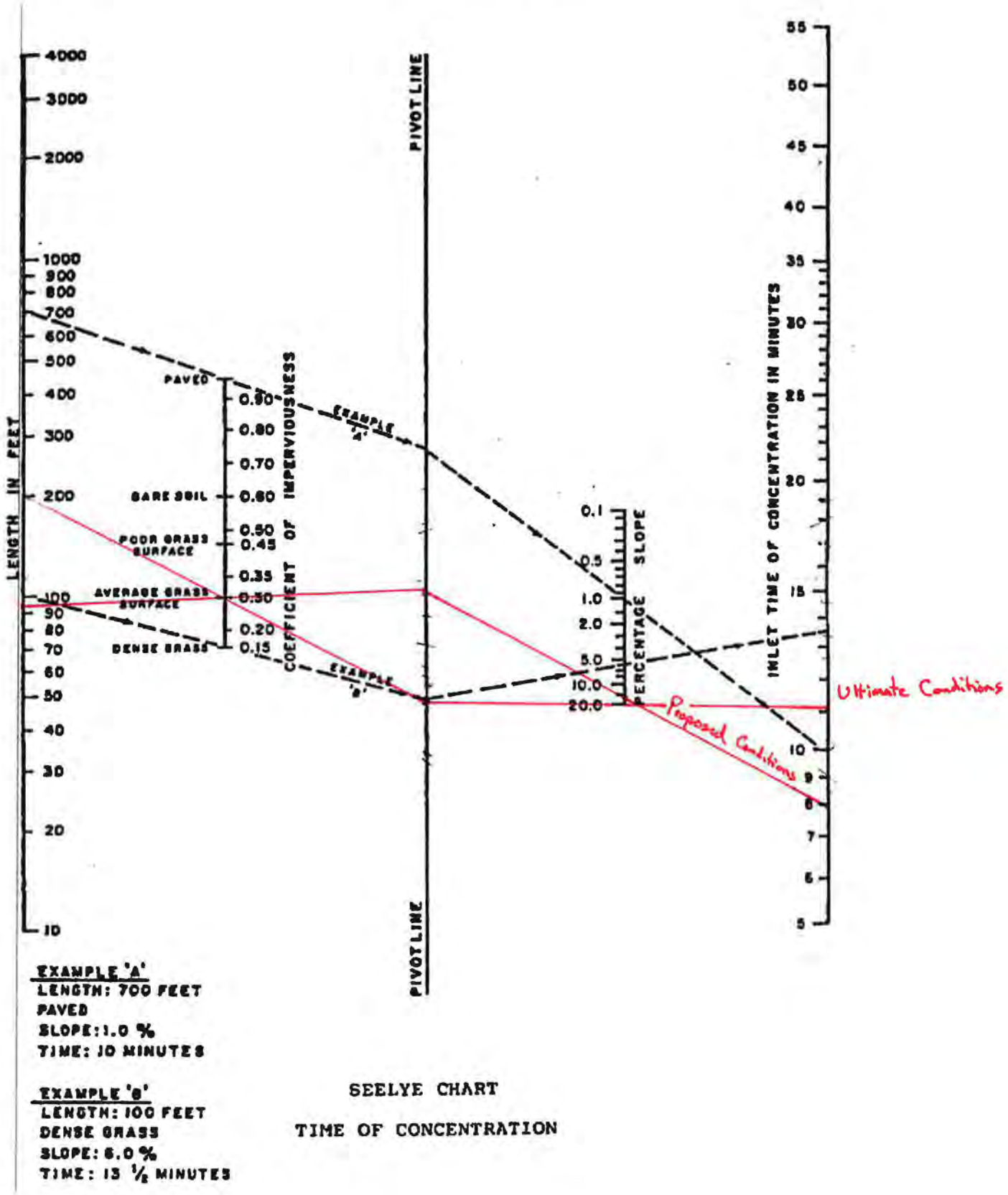
WATER TREATMENT PLANT
ABILENE, TAYLOR COUNTY, TEXAS

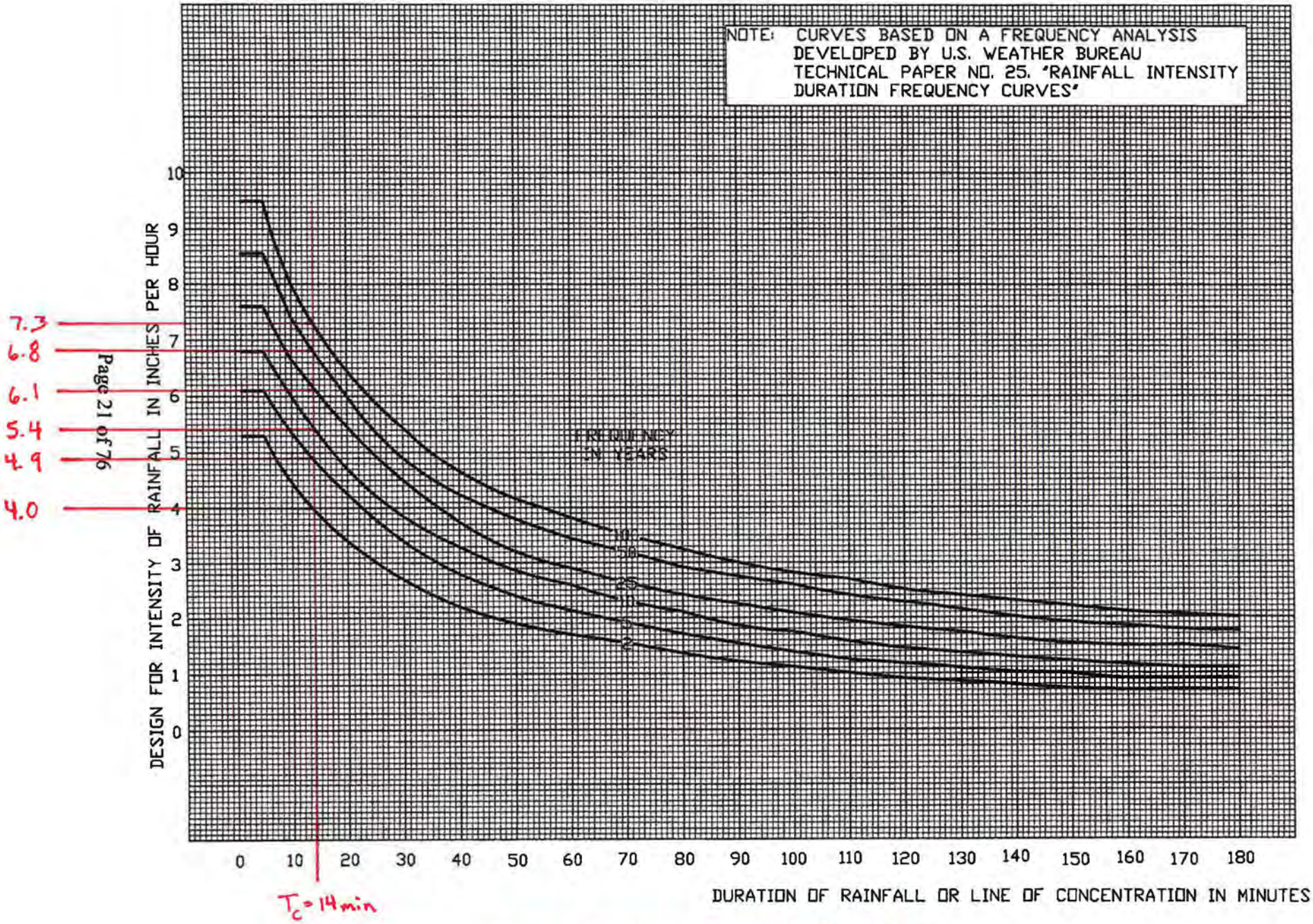
07-4065 09/06/2013

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street
Abilene, Texas 79601
325-698-5560
Firm Registration No. 1151

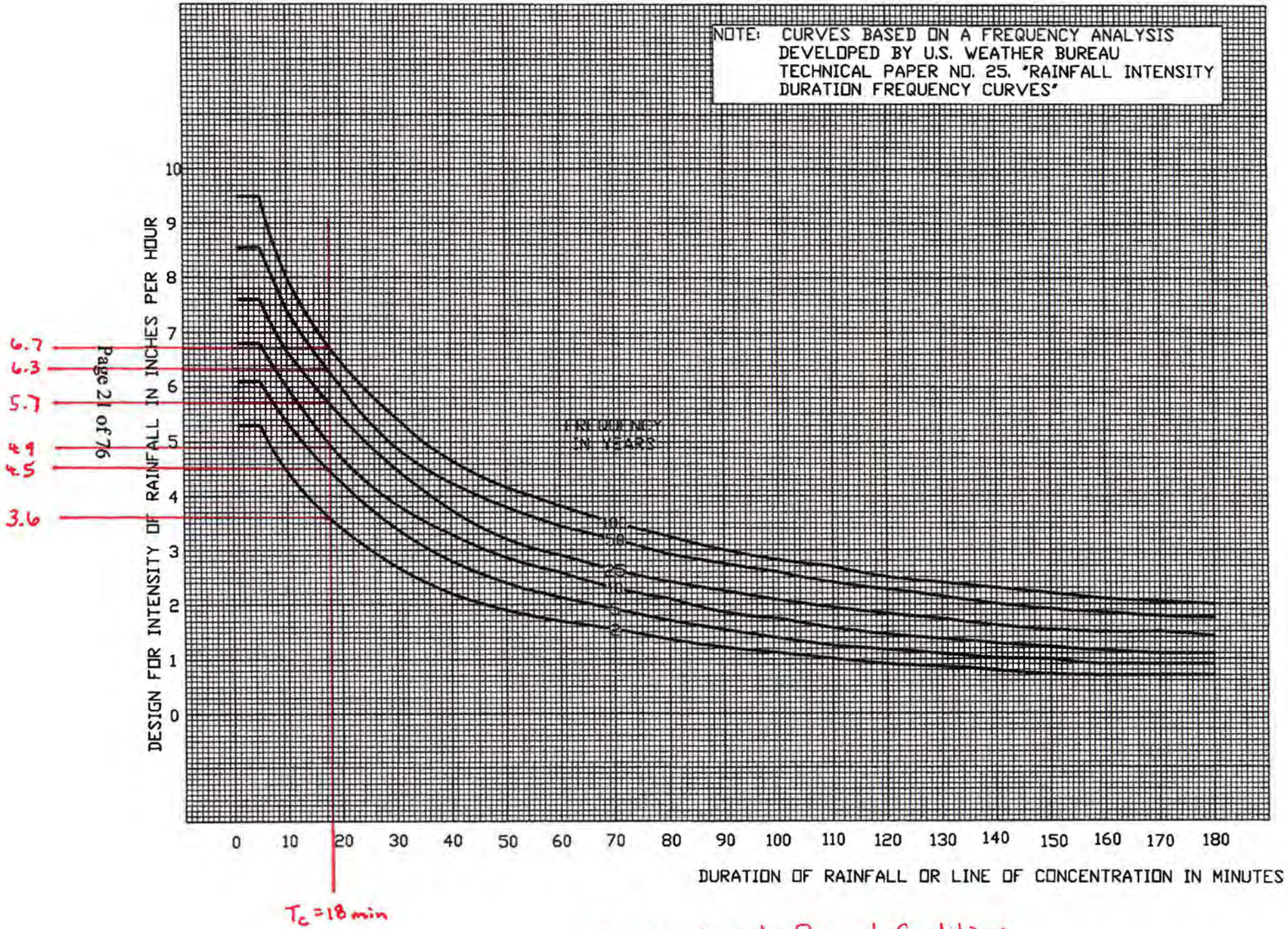
APPENDIX
Time of Concentration Graphs

Seelye Chart

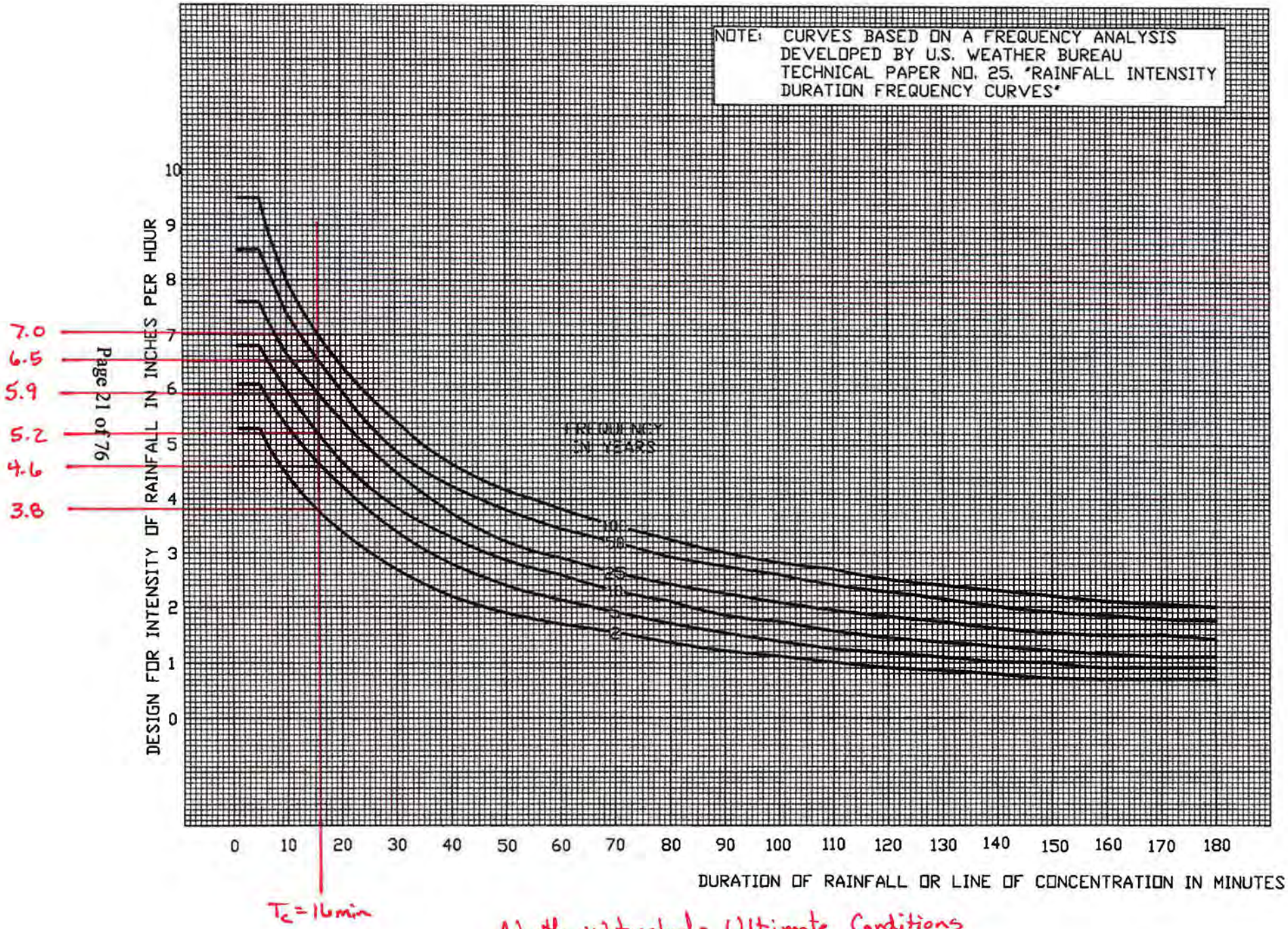




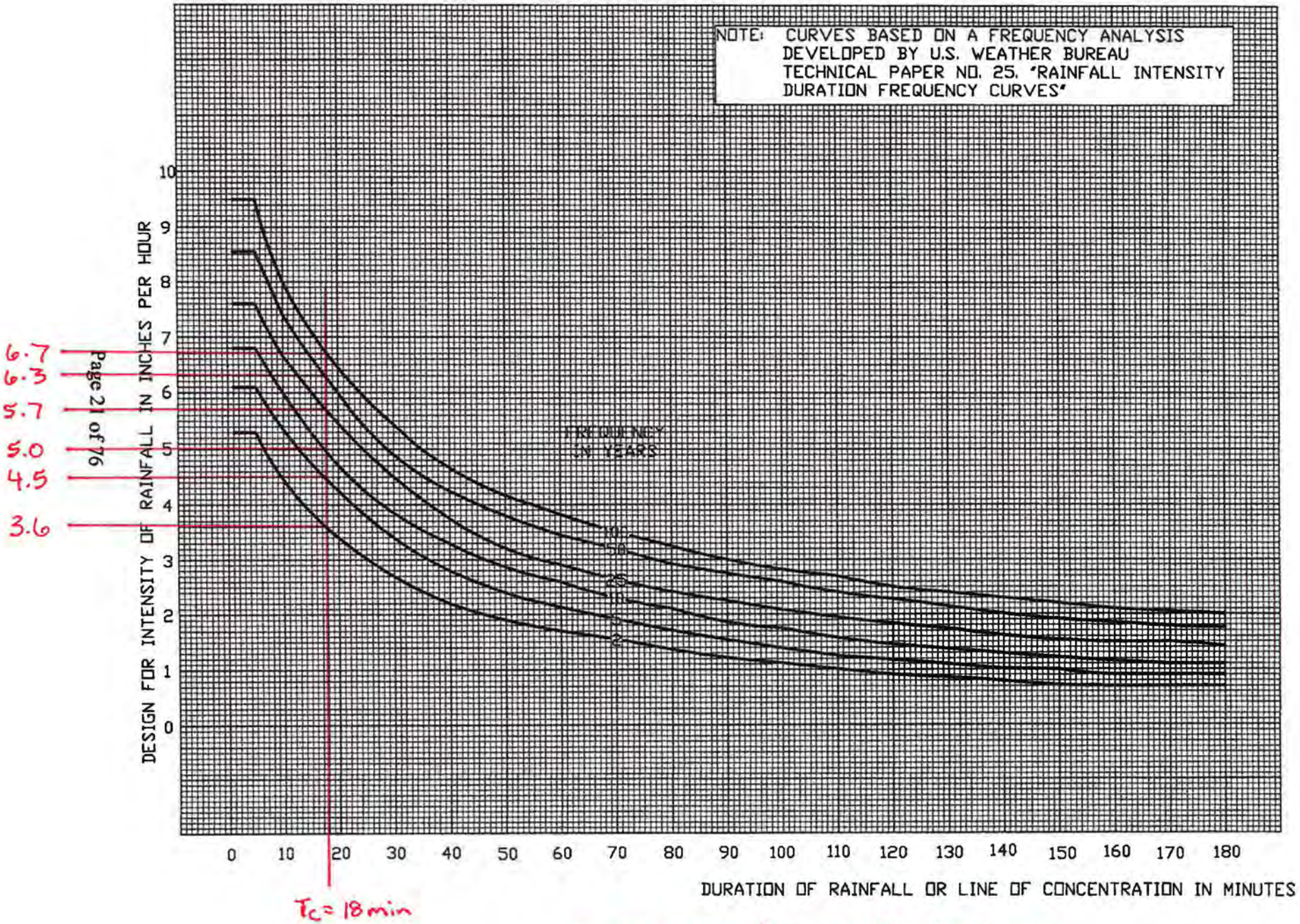
North Watershed - Proposed Conditions



South Watershed - Proposed Conditions



North Watershed - Ultimate Conditions



South Watershed - Ultimate Conditions

Attachment TR 2.0-15
Boring Summary

(AAR TR 2.0-17.a)

Enprotec / Hibbs & Todd

Technical Memorandum

To: Jared Stockton, APAI

From: Luci English, P.E.

CC: Rex Hunt, P.E., APAI

Scott F. Hibbs, P.E., eHT

Date: July 10, 2013

Subject: Boring Summary for City of Abilene WTP Monofill Site

STATE OF TEXAS
LUCI A. ENGLISH
73943
REGISTERED
PROFESSIONAL ENGINEER
7-10-2013

On April 9, 2013, soil borings were drilled at the proposed Abilene WTP monofill site. The purpose of the borings was to determine if the existing soil would be suitable material for construction of the monofill liner in accordance with 30 TAC § 312.

Per 30 TAC § 312.8(51), Liner is defined as: *Soil or synthetic material that has a hydraulic conductivity of 1 x 10^{-7} centimeters per second or less. Soil liners must be of suitable material with more than 30% passing a number 200 sieve, have a liquid limit greater than 30%, a plasticity index greater than 15, compaction of greater than 95% Standard Proctor at optimum moisture content, and will be at least two feet thick placed in six-inch lifts. Synthetic liners must be a membrane with a minimum thickness of 20 mils and include an under drain leak detection system.*

Five soil borings were drilled at the site to determine if the existing soil would meet the requirements listed above. The soil boring locations with their respective latitudes and longitudes are shown on the attached Soil Boring Map. The target depth for the drilling activities was intended to be five (5) feet below the maximum excavation depth at the site. A maximum excavation depth is assumed to be twenty (20) feet to allow maximum flexibility in monofill design. Therefore, a drilling depth of 25 feet below the lowest surface elevation at the site is assumed. The lowest elevation occurs in the southwest corner of the site with an elevation of 1,668.98 feet (ft). The maximum excavation depth for the site is assumed to be 20 ft deep or to an elevation of 1,648.98 ft. The target drilling elevation is 5 ft below 1,648.98 ft resulting in a minimum drilling elevation of 1,643.98 ft. Boring depths were adjusted based on the existing ground elevation at each boring location to ensure that the target elevation was achieved during drilling. Boring elevations and depths are summarized in Table 1.

Table 1 – Boring Elevations and Depths.				
	Ground Elevation (ft)	**Boring Depth (ft)**	**Elevation at Bottom of Boring (ft)**	**Depth in ft below Maximum Excavation Elevation of 1,648.98 ft**
Boring 1	1,680.76	38	1,642.76	5
Boring 2	1,676.91	34	1,642.91	5
Boring 3	1,691.91	49	1,642.91	5
Boring 4	1,672.50	30	1,642.50	5
Boring 5	1,680.90	38	1,642.90	5

In the case of all 5 borings, groundwater was not present during or at the completion of drilling activities, although shallower perched water may exist. The water table may fluctuate seasonally and during periods of heavy rainfall.

The soil borings were tested for conformity to the minus 200 sieve test, liquid limit, plasticity index, and compaction requirements stated previously (results attached). The tested soil samples were suitable as soil liner material. Cross sections of limestone encountered in the borings were excluded from the soil liner suitability testing since limestone is generally unsuitable as liner material. There appears to be sufficient suitable liner material to replace the unsuitable limestone layer if encountered during liner construction. If limestone is encountered during excavation, care will need to be taken during excavation to separate the suitable liner material from the limestone layer. Testing of excavated material for liner suitability will ensure proper separation.

N

100 0 300

SCALE IN FEET

LEGEND

⊙ B-1	LATITUDE:	32°30'29.50"	N
	LONGITUDE:	99°41'46.95"	W
⊙ B-2	LATITUDE:	32°30'24.14"	N
	LONGITUDE:	99°41'50.38"	W
⊙ B-3	LATITUDE:	32°30'23.64"	N
	LONGITUDE:	99°41'44.28"	W
⊙ B-4	LATITUDE:	32°30'18.55"	N
	LONGITUDE:	99°41'52.40"	W
⊙ B-5	LATITUDE:	32°30'18.64"	N
	LONGITUDE:	99°41'46.79"	W

NOTE

1 IMAGE FROM GOOGLE EARTH

SOIL BORING MAP
PROPOSED SITE

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS PROJECT

07-4065 07/02/2013

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
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Firm Registration No. 1151

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street (325) 588-9560 Abilene, Texas 79601 Firm Registration No. 1151

LOG OF BORING

Project: **MONOFILL DISPOSAL SITE D** Date: APRIL 9, 2013

Elevation: 1680.76
Boring No.: **B-1**
Latitude: 32°30'29.50" N
Longitude: 99°41'46.95" W

Location: **ABILENE WATER TREATMENT PLANT** Type: AIR ROTARY

DEPTH IN FEET	SYMBOL	SAMPLE	MATERIAL DESCRIPTION	N-BLOWS PER FOOT	TEXAS CONE PENETROMETER 1st 6"	TEXAS CONE PENETROMETER 2nd 6"	Qp (tsf)	DEPTH SCALE
		ST	BROWN SANDY CLAY				4.5+	
		ST					4.5+	
5			LIGHT RED-BROWN SANDY CLAY					
		ST					4.5+	
10			BROWN, TAN AND GRAY SILTY SHALEY CLAY					
		AU						
5			TAN WEATHERED LIMESTONE					
			TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS					
		AU	GRAY HIGHLY WEATHERED SHALE (SILTY CLAY)					
20			TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS					
		AU						
5								
		AU						
30			RED-BROWN WEATHERED SHALE					
		AU						
5								
		AU						

TOTAL DEPTH OF BORING 38 FEET

NOTE

NO GROUNDWATER WAS PRESENT DURING OR AT COMPLETION OF DRILLING ACTIVITIES.

07-4065

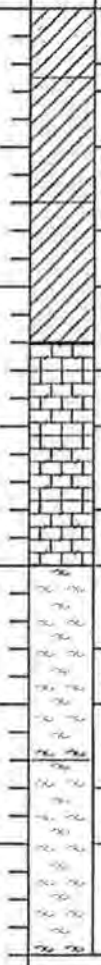
ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street (325) 696-5560
Abilene, Texas 79601 Firm Registration No. 1151

LOG OF BORING

Project: **MONOFILL DISPOSAL SITE D** Date: APRIL 9, 2013

Elevation: 1676.91
Boring No.: **B-2**
Latitude: 32°30'24.14" N
Longitude: 99°41'50.38" W

Location: **ABILENE WATER TREATMENT PLANT** Type: AIR ROTARY



DEPTH IN FEET	SAMPLE	MATERIAL DESCRIPTION	N-BLOWS PER FOOT	TEXAS CONE PENETROMETER 1st 6"	TEXAS CONE PENETROMETER 2nd 6"	Qp (tsf)
	ST	BROWN SANDY CLAY				4.5+
5	ST	RED-BROWN SANDY CLAY WITH CALCAREOUS NODULES				4.5+
10	ST	RED-BROWN SANDY CLAY WITH CALCAREOUS NODULES				4.5+
5	AU	TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS				
20	AU					
5	AU	RED-BROWN WEATHERED SHALE				
30	AU	RED-BROWN WEATHERED SHALE WITH INTERBEDDED BROWN AND GRAY SHALE LAYERS AND FINE SANDSTONE SEAMS				

TOTAL DEPTH OF BORING 34 FEET

NOTE

NO GROUNDWATER WAS PRESENT DURING OR AT COMPLETION OF DRILLING ACTIVITIES.

07-4065

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street
(325) 698-5560
Abilene, Texas 79601
Firm Registration No. 1151

LOG OF BORING

Project: **MONOFILL DISPOSAL SITE D** Date: APRIL 9, 2013 Elevation: 1691.91

Boring No.: **B-3**

Location: **ABILENE WATER TREATMENT PLANT** Type: AIR ROTARY Latitude: 32°30'23.64" N

Longitude: 99°41'44.28" W

DEPTH IN FEET	SYMBOL	SAMPLE	MATERIAL DESCRIPTION	N-BLOWS PER FOOT	TEXAS CONE PENETROMETER 1st 6"	TEXAS CONE PENETROMETER 2nd 6"	Qp (tsf)	DEPTH SCALE
		ST	BROWN SANDY CLAY WITH LIMESTONE FRAGMENTS AND CALCAREOUS NODULES				4.5+	
		AU						
5			BROWN HIGHLY WEATHERED SHALE (SILTY CLAY) WITH THIN LIMESTONE SEAMS					
		ST					4.5+	
10			GRAY HIGHLY WEATHERED SHALE (SILTY CLAY)					
		AU						
5								
		AU	LIGHT BROWN AND GRAY HIGHLY WEATHERED SHALE (SILTY CLAY) WITH THIN INTERBEDDED LIMESTONE SEAMS					
20								
		AU						
5								
		AU	LIGHT BROWN SANDSTONE					
30								
		AU						
5			TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS					
		AU						
40			RED-BROWN WEATHERED SHALE					
		AU						
5								
		AU						

TOTAL DEPTH OF BORING 49 FEET

NOTE

NO GROUNDWATER WAS PRESENT DURING OR AT COMPLETION OF DRILLING ACTIVITIES.

07-4065

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street
(325) 698-5560
Abilene, Texas 79601
Firm Registration No. 1151

LOG OF BORING

Project: **MONOFILL DISPOSAL SITE D** Date: APRIL 9, 2013

Elevation: 1672.50
Boring No.: **B-4**
Latitude: 32°30'18.55" N
Longitude: 99°41'52.40" W

Location: **ABILENE WATER TREATMENT PLANT** Type: AIR ROTARY

DEPTH IN FEET	SYMBOL	SAMPLE	MATERIAL DESCRIPTION	N-BLOWS PER FOOT	TEXAS CONE PENETROMETER 1st 6"	TEXAS CONE PENETROMETER 2nd 6"	Qp (tsf)	DEPTH SCALE
		ST	BROWN SANDY CLAY				4.5+	
5		ST	RED-BROWN SANDY CLAY WITH CALCAREOUS NODULES				4.5+	
		AU	TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS					
10								
5		AU	GRAY WEATHERED SHALE WITH INTERBEDDED THIN LIMESTONE SEAMS					
		AU						
20								
5		AU	RED-BROWN AND BROWN HIGHLY WEATHERED SHALE (SILTY CLAY)					
		AU						
30			TOTAL DEPTH OF BORING 30 FEET					

NOTE

NO GROUNDWATER WAS PRESENT DURING OR AT COMPLETION OF DRILLING ACTIVITIES.

07-4065

ENPROTEC/HIBBS & TODD, INC.
ENVIRONMENTAL AND CIVIL ENGINEERING
402 Cedar Street
(325) 698-5560
Abilene, Texas 79601
Firm Registration No. 1151

LOG OF BORING

Project: **MONOFILL DISPOSAL SITE D** Date: APRIL 9, 2013 Elevation: 1680.90

Boring No.: **B-5**

Location: **ABILENE WATER TREATMENT PLANT** Type: AIR ROTARY Latitude: 32°30'18.64" N

Longitude: 99°41'46.79" W

DEPTH IN FEET	SYMBOL	SAMPLE	MATERIAL DESCRIPTION	N-BLOWS PER FOOT	TEXAS CONE PENETROMETER 1st 6"	TEXAS CONE PENETROMETER 2nd 6"	Qp (tsf)	DEPTH SCALE
		ST	BROWN SANDY CLAY				4.5+	
5		ST	RED-BROWN SILTY SHALEY CLAY				4.5+	
		ST					4.5+	
10			BROWN, TAN AND GRAY SILTY SHALEY CLAY					
		AU						
5								
			TAN WEATHERED LIMESTONE WITH INTERBEDDED SHALE SEAMS					
		AU						
20			GRAY WEATHERED SHALE WITH INTERBEDDED THIN LIMESTONE SEAMS					
		AU						
5								
		AU						
30			RED-BROWN AND BROWN HIGHLY WEATHERED SHALE (SILTY CLAY)					
		AU						
5								
		AU						

TOTAL DEPTH OF BORING 38 FEET

NOTE

NO GROUNDWATER WAS PRESENT DURING OR AT COMPLETION OF DRILLING ACTIVITIES.

07-4065

PROPOSED LINER MATERIAL
MONOFIL DISPOSAL SITE D
ABILENE WATER TREATMENT PLANT
ABILENE, TEXAS

SUMMARY OF CLASSIFICATION TESTS

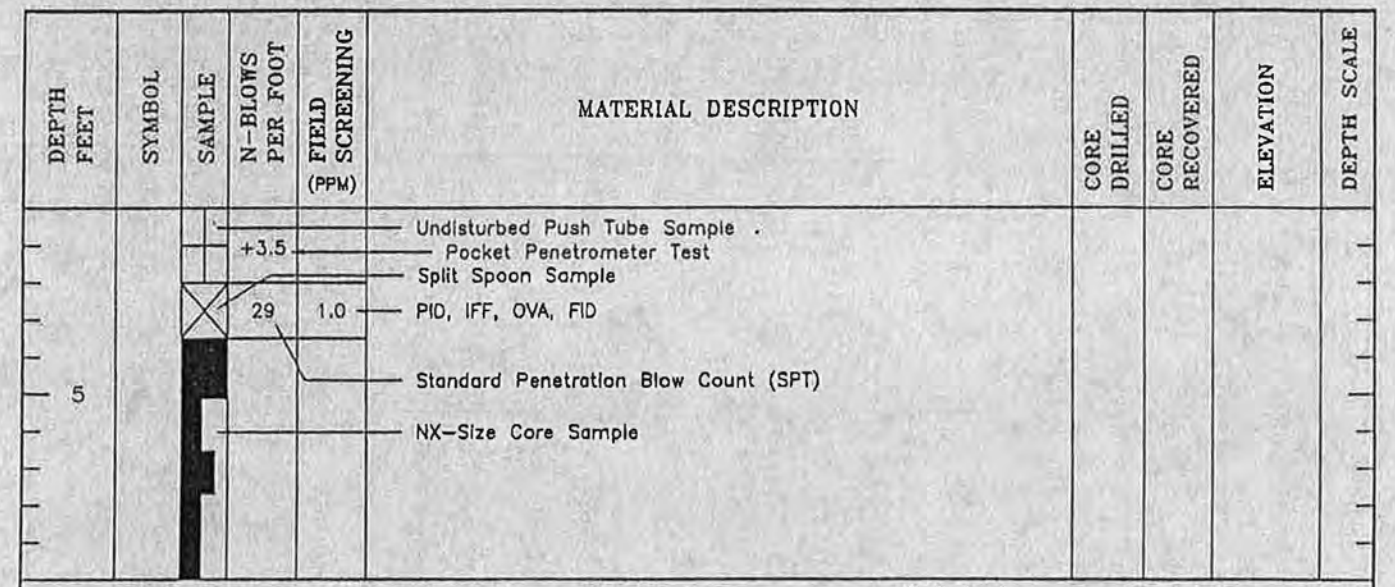
Boring No.	Depth (ft)	Liquid Limit %	Plasticity Index	% Passing #200 Mesh Sieve	Moisture Content %	Unified Soil Classification System
B-1	3-5'	61	47	91	15.3	CH
B-1	28-30'	46	27	99	10.9	CH
B-2	8-10'	49	30	99	10.6	CL-CH
B-2	23-25'	45	26	98	8.5	CL
B-3	18-20'	45	27	99	9.0	CL
B-3	38-40'	39	22	87	8.8	CL
B-4	3-5'	39	22	88	12.3	CL
B-4	18-20'	44	25	94.6	9.5	CL
B-5	18-20'	50	29	88	13.2	CH-CL

Boring No.	Depth (ft)	Moisture Content %	Dry Density (pcf)	Falling Head Permeability* (cm/sec)
B-1	33-35'	11.9	117.2	5.41×10^{-9}
B-3	13-15'	14.6	117.0	9.53×10^{-9}
B-5	13-15'	12.8	119.3	1.13×10^{-8}

Perms from remolded/moisture conditioned samples

ENPROTEC, INC.

EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS



Water Encountered — Water Level Encountered During Drilling

Static Level (date) — Stabilized Water Level

UNIFIED SOIL CLASSIFICATION
DESCRIPTION OF SYMBOLS AND DIVISIONS

- Well-Graded Gravels, Gravel Sand Mixtures (GW)
- Poorly-Graded Gravels, Gravel Sand Mixtures (GP)
- Silty Gravel, Gravel Sand-Silt Mixtures (GM)
- Clayey Gravels, Gravel-Sand-Clay Mixtures (GC)
- Well-Graded Sands, Gravelly Sands (SW)
- Poorly-Graded Sands, Gravelly Sands (SP)
- Silty Sands, Poorly-Graded, Sand-Silt Mixtures (SM)
- Clayey Sands, Poorly-Graded, Sand-Clay Mixtures (SC)
- Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands (ML)
- Inorganic Clays of Low to Medium Plasticity Gravelly, Sandy or Silty Clays, Lean Clays (CL)
- Organic Silts and Organic Silty Clays of Low Plasticity (OL)
- Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils (MH)
- Inorganic Clays of High Plasticity, Fat Clays (CH)
- Organic Clays of Medium to High Plasticity, Organic Silts (OH)
- Caliche and Other Impervious Layer (HP)

BEDROCK SYMBOLS

- Conglomerate (CGL)
- Sandstone (SS)
- Limestone (LS)
- Shale (Sh)
- Weathered Shale (WS)
- Sandy Shale (SSh)
- Shaley Limestone (Sh LS)
- Dolomite (DOL)

MISCELLANEOUS SYMBOLS

- Asphaltic Concrete (HMAC)
- Cement Grout (CMT)
- Bentonite (BENT)

The LOG of BORING is a representation of the subsurface material at specific boring location and within the depth explored. The transition between strata may be gradual and variations in material types and depths between borings can be expected. Water level observations represent those conditions at the time of exploration and may vary with time and location of site.

SOIL COLOR CLASSIFICATION

Determined by MUNSELL SOIL COLOR CHARTS 1990 EDITION REVISED

GENERAL NOTES

SAMPLE IDENTIFICATION

Soil Samples are visually classified in general accordance with the Unified Soil Classification System (ASTM D2487 or D 2488)

DRILLING AND SAMPLING SYMBOLS

ST:	Shelby Tube - 3" O.D., except where noted
SS:	Split-Spoon
THD:	THD Cone Penetrometer
AU:	Auger Sample
DB:	Diamond Bit
CB:	Carbide Bit
WS:	Wash Sample

SOIL PROPERTY SYMBOLS

N:	Standard "N" penetration: Blows per foot, or fraction thereof, of a 140 pound hammer 30 inches on a split-spoon
Qp:	Calibrated Penetrometer Resistence, TSF
Qu:	Unconfined Compression Strength, TSF
LL:	Liquid Limit, %
PI:	Plasticity Index

SOIL STRENGTH CHARACTERISTICS

NON-COHESIVE (GRANULAR) SOILS

RELATIVE DENSITY	BLOWS PER FOOT(N)
Very Loose	0-4
Loose	5-10
Firm	11-30
Dense	31-50
Very Dense	51 +

COHESIVE (CLAYEY) SOILS

COMPARATIVE CONSISTENCY	BLOWS PER FOOT(N)	UNCONFINED COMPRESSIVE STRENGTH (Qu)
Very Soft	0-2	0 - 0.25
Soft	3-4	0.25 - 0.50
Medium Stiff	5-8	0.50 - 1.00
Stiff	9-15	1.00 - 2.00
Very Stiff	16-30	2.00 - 4.00
Hard	31 +	4.00 +

SOIL CHARACTERISTICS

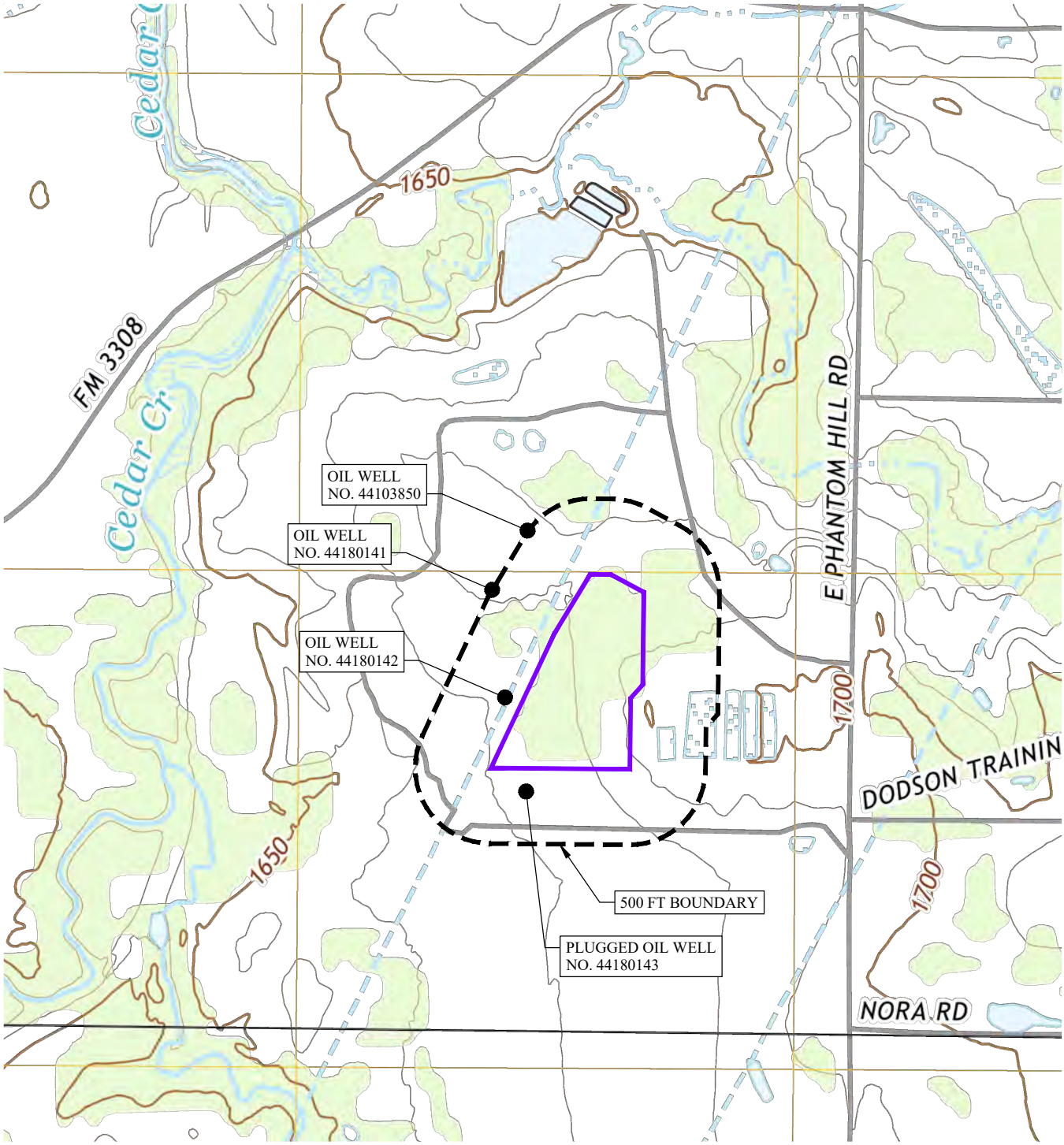
PARTICLE SIZE

Boulders	8 in. +	Coarse Sand	5mm-0.6 mm	Silt	0.074mm-.005mm
Cobbles	8 in.-3 in.	Medium Sand	0.6mm-0.2mm	Clay	-0.005mm
Gravel	3 in.-5mm	Fine Sand	0.2mm-0.074 mm		

DEGREE OF EXPANSIVE POTENTIAL	PI
Low	0-15
Moderate	15-25
High	25 +

DEGREE OF PLASTICITY	PI
None to Slight	0-4
Slight	5-10
Moderate	11-30
High	31 +

Attachment TR 2.0-20
Well Map



LEGEND

MONOFILL FACILITY BOUNDARY

N

500 0 1000

SCALE IN FEET

CITY OF ABILENE
WATER TREATMENT PLANT
RESIDUALS MONOFILL
RENEWAL PERMIT APPLICATION

WELL MAP

8802

08/07/2024

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