



Administrative Package Cover Page

This file contains the following documents:

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



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, el Aviso de Recepción de Solicitud e Intención de Obtener un Permiso)
 - Inglés
 - Idioma alternativo (español)
3. Solicitud original



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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 TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS **INDUSTRIAL WASTEWATER/STORMWATER**

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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

Frito Lay, Inc. (CN 603940792) operates Frito-Lay Rosenberg Facility (RN 100219229), a corn chip, potato chip, and tortilla chip producer. The facility is located at 3310 Highway 36 North, in Rosenberg, Fort Bend County, Texas 77471. The facility seeks to renew their permit to discharge 2 MGD of process wastewater, utility wastewater, and stormwater to Outfall 003, 0.031 MGD of domestic sanitary wastewater to Outfall 002, and intermittent discharge of process wastewater, utility wastewater, and stormwater to Outfall 001.

Discharges from the facility are expected to contain total suspended solids (TSS), biochemical oxygen demand (BOD), total aluminum, oil and grease, E. coli, and total residual chlorine. Process wastewater, stormwater runoff, and utility wastewater are treated by an overland flow system and disinfection system for E. coli. Wastewater from the production facility is discharged to a primary wastewater treatment plant (WWTP) followed by an aeration pond. Effluent from the pond is pumped to the land application fields for additional biochemical

oxygen demand (BOD) and total suspended solids (TSS) removal treatment. Overland flow runoff from the fields flows to a series of ditches before being collected in a wet well, thence to the Brazos River.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /AGUAS PLUVIALES

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 es una representación ejecutiva fedérale de la solicitud de permiso.

Frito Lay, Inc (CN 603940792) opera Frito-Lay Rosenberg Facility (RN 100219229), un productor de chips de maíz, papas fritas y chips de tortilla. La instalación está ubicada en 3310 Highway 36 North, en Rosenberg, Condado de Fort Bend, Texas 77471. La instalación busca renovar su permiso para descargar 2 MGD de aguas residuales de proceso, aguas residuales de servicios públicos y aguas pluviales al desagüe 003, 0.031 MGD de aguas residuales sanitarias domésticas al desagüe 002 y descarga intermitente de aguas residuales de proceso, aguas residuales de servicios públicos y aguas pluviales al desagüe 001.

Se espera que las descargas de la instalación contengan sólidos suspendidos totales (TSS), demanda bioquímica de oxígeno (DBO), aluminio, aceite y grasa totales, E. coli y cloro residual total. Aguas residuales de proceso, escorrentía de aguas pluviales y aguas residuales de servicios públicos. están tratado por un sistema de flujo terrestre y un sistema de desinfección para E. coli. Las aguas residuales de la planta de producción se descargan a una planta de tratamiento de aguas residuales primarias (EDAR) seguida de un estanque de aireación. El efluente del estanque se bombea a los campos de aplicación a la tierra para el tratamiento adicional de la demanda bioquímica de oxígeno (DBO) y la eliminación de sólidos suspendidos totales (TSS). La escorrentía de los campos fluye hacia una serie de zanjas antes de ser recogida en un pozo húmedo, de allí al río Brazos.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0002443000

APPLICATION. Frito-Lay, Inc., 3310 Highway 36 North, Rosenberg, Texas 77471, which owns a Frito-Lay Rosenberg Facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No.

WQ0002443000 (EPA I.D. No. TX0085782) to authorize the discharge of treated wastewater and stormwater at an intermittent and flow variable rate via Outfall 001; the discharge of treated wastewater at a volume not to exceed a daily average flow of 18,000 gallons per day via Outfall 002; and the discharge of treated wastewater and stormwater at a volume not to exceed a daily average flow of 1,100,000 gallons per day (dry weather flow) via Outfall 003. The facility is located at 3310 Highway 36 North, near the city of Rosenberg, in Fort Bend County, Texas 77471. The discharge route is from the plant site to via Outfalls 001 and 002 to an unnamed tributary; thence to Brazos River Below Navasota River; and via Outfall 003 directly to Brazos River Below Navasota River. TCEQ received this application on December 2, 2024. The permit application will be available for viewing and copying at George Memorial Library, reference desk, 1001 Golfview Drive, Richmond, 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/tpdes-applications>. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.868611,29.5775&level=18>

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

El aviso de idioma alternativo en español está disponible en

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-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 Frito-Lay, Inc. at the address stated above or by calling Mr. Jeff Macek, Environmental Coordinator, at 281-232-1523.

Issuance Date: January 9, 2025

Comisión de Calidad Ambiental del Estado de Texas



AVISO DE RECIBO DE LA SOLICITUD Y EL INTENTO DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA RENOVACION

PERMISO NO. WQ0002443000

SOLICITUD. Frito-Lay, Inc., 3310 Highway 36 North, Rosenberg, Texas 77471 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para renovar el Permiso No. WQ0002443000 (EPA I.D. No. TX0085782) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas y aguas de lluvia en un volumen intermitente y variable por Descarga n.º 001; la descarga de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 18,000 galones por día por Descarga n.º 002; y la descarga de aguas residuales tratadas y aguas de lluvia en un volumen que no sobrepasa un flujo promedio diario de 1,100,000 galones por día en tiempo seco por Descarga n.º 003. La planta está ubicada en 3310 Highway 36 North, en la ciudad de Rosenberg en el Condado de Fort Bend, Texas 77471. La ruta de descarga es del sitio de la planta a través de Descargas n.º 001 y 002 a un afluente sin nombre; de ahí al río Brazos debajo del río Navasota; y por Descarga n.º 003 directamente al río Brazos debajo del río Navasota. La TCEQ recibió esta solicitud el 2 de diciembre de 2024. La solicitud para el permiso está disponible para leerla y copiarla en la biblioteca George Memorial Library, detrás del mostrador de referencias, 1001 Golfview Drive, Richmond, Texas antes de la fecha de publicación de este anuncio en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.
<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.868611,29.5775&level=18>

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que**

están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.

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

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

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

miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

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

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

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

También se puede obtener información adicional del Frito-Lay, Inc. a la dirección indicada arriba o llamando al Sr. Jeff Macek, Coordinador Medioambiental, al 281-232-1523.

Fecha de emisión 9 de enero de 2025



Frito-Lay, Inc.

November 27, 2024

Executive Director
Applications Review and Processing Team (MC148)
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

RE: Permit Renewal Application—TPDES Permit No. WQ0002443000
Frito-Lay, Inc.

Dear Director:

The Frito-Lay Inc. (Frito-Lay) Rosenberg facility's TPDES permit for the discharge of wastewater, permit number WQ0002443000, expires May 29, 2025. This permit renewal application is being submitted 180 days prior to permit expiration, by November 30, 2024. The application fee of \$1,215 (for a minor facility subject to EPA categorical effluent guidelines requesting a renewal) was paid on November 25, 2024, via TCEQ's online payment portal ePay.

The facility is authorized to discharge process wastewater (and other waste streams) via permitted Outfall 003 to the Brazos River, with overflow permitted to discharge through Outfall 001 to an Unnamed Tributary thence to the Brazos River. The process wastewater is regulated by EPA effluent limitation guidelines (ELGs) at 40 CFR Part 407, Canned and Preserved Fruits and Vegetables Processing Point Source Category, Subpart H – Canned and Miscellaneous Specialties Subcategory, applicable to discharges resulting from the processing of specialty products: corn chips, potato chips, and tortilla chips. As presented in Worksheet 1.0, item 2.0, current production rates have increased. The corresponding technology based effluent limits based on the current production rates are provided in Tables 1 and 2 for BOD and TSS, respectively.

Table 1: BOD₅ Technology Based Effluent Limitation Calculation

Production Type	Production Rate	Factor for Daily Average	Daily Average Limit	Factor for Daily Maximum	Daily Maximum Limit
	lb/d	lbs/1000 lbs	lb/d	lbs/1000 lbs	lb/d
Corn	393,400	1.04	409	1.58	622
Tortilla	319,800	1.5	480	2.41	771
Potato	156,000	2.17	339	3.46	540
Total			1,227		1,932

Table 2: TSS Technology Based Effluent Limitation Calculation

Production Type	Production Rate	Factor for Daily Average	Daily Average Limit	Factor for Daily Maximum	Daily Maximum Limit
	lb/d	lbs/1000 lbs	lb/d	lbs/1000 lbs	lb/d
Corn	393,400	2.17	854	2.9	1,141
Tortilla	319,800	3.11	995	4.34	1,388
Potato	156,000	4.49	700	6.25	975
Total			2,549		3,504

When the permit is renewed, Frito-Lay assumes the production-based ELG limits at Outfalls 001 and 003 will be increased consistent with current production rates and 40 CFR 407.82. For BODs, Frito-Lay understands that the protection of water quality will need to be verified with the QUAL-TX Model and that the more stringent of the water quality-based and technology-based limits will apply.

The current permit includes four (4) phased permit limitation tables for Outfall 003 which reflected the plans for expansion when the permit was amended in 2022. Frito-Lay is currently operating in Phase IV. Based on no planned production changes during the next permit term impacting effluent limits, Frito-Lay assumes the updated permit limits and monitoring requirements for Outfall 003 will be included in a single table in the renewed permit and Other Requirement No. 13 will be removed in the renewed permit.

Because Outfall 001 has an infrequent discharge, comprehensive permit renewal application samples were not able to be collected prior to submittal of this application. Therefore, Frito-Lay understands Other Requirement No. 3 will be included in the renewed permit for sampling and effluent limitations screening when discharge occurs. Frito-Lay requests removal of the aluminum limit from the limitations and monitoring requirements table for Outfall 001 based on all four (4) of the Outfall 003 aluminum sample results being well below the screening level for an aluminum limit at Outfall 001.

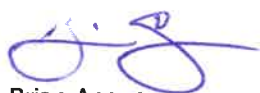
Since issuance of the minor modification on March 7, 2024, Frito-Lay has completed construction of the disinfection system and come into compliance with the e-coli limit at Outfall 003. As such, there is no longer a need for monitoring total residual chlorine (TRC) or *E. coli* at Internal Outfall 103. Final Outfall 003 replaced Internal Outfall 103 as the compliance point for TRC and *E. coli*; therefore, Frito-Lay requests removal of these parameters from the effluent limitations and monitoring requirements table for Internal Outfall 103.

During the preparation of this application, Frito-Lay became aware that the contract laboratory was not NELAC-accredited for analysis of *E. coli* after completing the four (4) weeks of sampling. Therefore, resampling has been scheduled and the required *E. coli* sample results will be submitted as an addendum to this application package after receipt of the four (4) weekly sample results.

The original and three copies of the TPDES permit application are enclosed to support the renewal application. An electronic copy was emailed to the Water Quality Division at WQDeCopy@tceq.texas.gov. We appreciate the opportunity to submit this renewal application and hope that it meets with your approval. We will proactively reach out to TCEQ through our consultant, Brown and Caldwell, to verify your receipt of the application, answer questions and provide additional information as quickly as possible. If you have any questions or need any additional information, please contact Jeff Macek, Environmental Coordinator, at (281) 232-1523 or Jeff.C.Macek@pepsico.com.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my enquiry 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,



Brian Angus
Brian Angus, Plant Director
Frito-Lay, Inc.

Industrial Administrative Report

November 2024

Frito-Lay Inc. Rosenberg Facility

TPDES Renewal

Permit Number: WQ0002443000



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the industrial wastewater permit application.

APPLICANT NAME: Frito Lay, Inc.

PERMIT NUMBER (If new, leave blank): WQ00 02443000

Indicate if each of the following items is included in your application.

	Y	N		Y	N
Administrative Report 1.0	☒	☐	Worksheet 8.0	☐	☒
Administrative Report 1.1	☐	☒	Worksheet 9.0	☐	☒
SPIF	☒	☐	Worksheet 10.0	☐	☒
Core Data Form	☒	☐	Worksheet 11.0	☐	☒
Public Involvement Plan Form	☐	☒	Worksheet 11.1	☐	☒
Plain Language Summary	☒	☐	Worksheet 11.2	☐	☒
Technical Report 1.0	☒	☐	Worksheet 11.3	☐	☒
Worksheet 1.0	☒	☐	Original USGS Map	☒	☐
Worksheet 2.0	☒	☐	Affected Landowners Map	☐	☒
Worksheet 3.0	☒	☐	Landowner Disk or Labels	☐	☒
Worksheet 3.1	☒	☐	Flow Diagram	☒	☐
Worksheet 3.2	☐	☒	Site Drawing	☒	☐
Worksheet 3.3	☐	☒	Original Photographs	☐	☒
Worksheet 4.0	☒	☐	Design Calculations	☐	☒
Worksheet 4.1	☐	☒	Solids Management Plan	☐	☒
Worksheet 5.0	☒	☐	Water Balance	☒	☐
Worksheet 6.0	☐	☒			
Worksheet 7.0	☒	☐			

For TCEQ Use Only

Segment Number _____ County _____
Expiration Date _____ Region _____
Permit Number _____



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION

ADMINISTRATIVE REPORT 1.0

This report is required for all applications for TPDES permits and TLAPs, except applications for oil and gas extraction operations subject to 40 CFR Part 435. Contact the Applications Review and Processing Team at 512-239-4671 with any questions about completing this report.

Applications for oil and gas extraction operations subject to 40 CFR Part 435 must use the Oil and Gas Exploration and Production Administrative Report ([TCEQ Form-20893 and 20893-inst¹](#)).

Item 1. Application Information and Fees (Instructions, Page 26)

- a. Complete each field with the requested information, if applicable.

Applicant Name: Frito Lay, Inc.

Permit No.: WQ0002443000

EPA ID No.: TX0085782

Expiration Date: May 29, 2025

- b. Check the box next to the appropriate authorization type.

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater only)

- c. Check the box next to the appropriate facility status.

☒ Active

☐ Inactive

- d. Check the box next to the appropriate permit type.

☒ TPDES Permit

☐ TLAP

☐ TPDES with TLAP component

- e. Check the box next to the appropriate application type.

☐ New

☒ Renewal with changes

☐ Renewal without changes

☐ Major amendment with renewal

☐ Major amendment without renewal

☐ Minor amendment without renewal

☐ Minor modification without renewal

- f. If applying for an amendment or modification, describe the request: Changes are provided in Item 13.b of Technical Report 1.0.

For TCEQ Use Only

Segment Number _____ County _____

Expiration Date _____ Region _____

Permit Number _____

¹ https://www.tceq.texas.gov/publications/search_forms.html

g. Application Fee

EPA Classification	New	Major Amend. (with or without renewal)	Renewal (with or without changes)	Minor Amend. / Minor Mod. (without renewal)
Minor facility not subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☐ \$350	☐ \$350	☐ \$315	☐ \$150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☐ \$1,250	☐ \$1,250	☒ \$1,215	☐ \$150
Major facility	N/A ²	☐ \$2,050	☐ \$2,015	☐ \$450

h. Payment Information

Mailed

Check or money order No.: [Click to enter text.](#)

Check or money order amt.: [Click to enter text.](#)

Named printed on check or money order: [Click to enter text.](#)

Epay

Voucher number: 732668, 732669

Copy of voucher attachment: Attachment A - Vouchers

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN603940792

Note: Locate the customer number using the [TCEQ's Central Registry Customer Search](#)³.

b. Legal name of the entity (applicant) applying for this permit: Frito Lay, Inc.

Note: The owner of the facility must apply for the permit. The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Mr. Full Name (Last/First Name): Johnson, Jeremy

Title: Senior Vice President of Central Region Credential: [Click to enter text.](#)

d. Will the applicant have overall financial responsibility for the facility?

☒ Yes ☐ No

² All facilities are designated as minors until formally classified as a major by EPA.

³ <https://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch>

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 3. Co-applicant Information (Instructions, Page 27)

☒ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: Click to enter text.

Note: The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CNClick to enter text.

Note: Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Click to enter text.

Full Name (Last/First Name): Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☐ No

Note: The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

Item 4. Core Data Form (Instructions, Pages 27)

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: B - Core Data Form

Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contact for additional information about this application. Indicate if the individual can be contact about administrative or technical information, or both.

a. ☒ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Macek, Jeff

Title: Environmental Coordinator

Credential: Click to enter text.

Organization Name: Frito Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Jeff.C.Macek@pepsico.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): David, Ben

Title: Director of Engineering and Maintenance

Credential: Click to enter text.

Organization Name: Frito Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Ben.David@pepsico.com

Attachment: N/A

Item 6. Permit Contact Information (Instructions, Page 28)

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

a. Prefix: Mr. Full Name (Last/First Name): Macek, Jeff

Title: Environmental Coordinator

Credential: Click to enter text.

Organization Name: Frito Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Jeff.C.Macek@pepsico.com

b. Prefix: Mr. Full Name (Last/First Name): David, Ben

Title: Director of Engineering and Maintenance

Credential: Click to enter text.

Organization Name: Frito Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Ben.David@pepsico.com

Attachment: N/A

Item 7. Billing Contact Information (Instructions, Page 28)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for permits **in effect on September 1 of each year**. The 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 (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Prefix: Mr. Full Name (Last/First Name): Macek, Jeff

Title: Environmental Coordinator

Credential: Click to enter text.

Organization Name: Frito-Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Jeff.C.Macek@pepsico.com

Item 8. DMR/MER Contact Information (Instructions, Page 28)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

Prefix: Mr. Full Name (Last/First Name): Macek, Jeff

Title: Environmental Coordinator

Credential: Click to enter text.

Organization Name: Frito-Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Item 9. Notice Information (Instructions, Pages 28)**a. Individual Publishing the Notices**Prefix: Ms. Full Name (Last/First Name): Ihaza, TamiTitle: Environmental ConsultantCredential: Click to enter text.Organization Name: Brown and CaldwellMailing Address: 10777 Westheimer Rd # 975 City/State/Zip: Houston, TX 77042Phone No: 713-646-1106 Email: tihaza@brwncald.com**b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)**☒ E-mail: tihaza@brwncald.com☐ Fax: Click to enter text.☐ Regular Mail (USPS)Mailing Address: N/ACity/State/Zip Code: N/A**c. Contact in the Notice**Prefix: Mr. Full Name (Last/First Name): Macek, JeffTitle: Environmental CoordinatorCredential: Click to enter text.Organization Name: Frito-Lay, Inc.Phone No: 281.232.1523Email: Jeff.C.Macek@pepsico.com**d. Public Viewing Location Information****Note:** If the facility or outfall is located in more than one county, provide a public viewing place for each county.Public building name: George Memorial Library Location within the building: Reference DeskPhysical Address of Building: 1001 Golfview DriveCity: Richmond County: Fort Bend**e. Bilingual Notice Requirements**

This information is required for new, major amendment, minor amendment or minor modification, and renewal applications.

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

Call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice(s) is required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

☒ Yes ☐ No

If no, publication of an alternative language notice is not required; skip to Item 8 (Regulated Entity and Permitted 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 ☐ N/A

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Spanish

- f. Plain Language Summary Template – Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment. Attachment: C – Plain Language Summary
- g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: N/A

Item 10. Regulated Entity and Permitted Site Information (Instructions Page 29)

- a. TCEQ issued Regulated Entity Number (RN), if available: RN100219229

Note: If your business site 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 the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

- b. Name of project or site (the name known by the community where located): Frito-Lay, Inc. Rosenberg Facility

- c. Is the location address of the facility in the existing permit the same?

☒ Yes ☐ No ☐ N/A (new permit)

Note: If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

- d. Owner of treatment facility:

Prefix: _ Full Name (Last/First Name):

or Organization Name: Frito-Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Jeff.C.Macek@pepsico.com

- e. Ownership of facility: ☐ Public ☒ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be:

Prefix: _ Full Name (Last/First Name):

or Organization Name: Frito-Lay, Inc.

Mailing Address: 3310 Highway 36 North

City/State/Zip: Rosenberg, TX 77471

Phone No: 281.232.1523

Email: Jeff.C.Macek@pepsico.com

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: N/A

g. Owner of effluent TLAP disposal site (if applicable): N/A

Prefix: Click to enter text.

Full Name (Last/First Name): Click to enter text.

or Organization Name: Click to enter text.

Mailing Address: Click to enter text.

City/State/Zip: Click to enter text.

Phone No: Click to enter text.

Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

h. Owner of sewage sludge disposal site (if applicable):

Prefix: N/A

Full Name (Last/First Name): Click to enter text.

or Organization Name: Click to enter text.

Mailing Address: Click to enter text.

City/State/Zip: Click to enter text.

Phone No: Click to enter text.

Email: Click to enter text.

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: Click to enter text.

Item 11. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Three-miles downstream information

☒ Applicant's property boundaries

☒ Treatment facility boundaries

☒ Labeled point(s) of discharge

☒ Highlighted discharge route(s)

☐ Effluent disposal site boundaries

☒ All wastewater ponds

☐ Sewage sludge disposal site

☒ New and future construction

Attachment: Attachment D

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No or New Permit

If no, or a new application, provide an accurate location description: N/A

- d. Are the point(s) of discharge in the existing permit correct?

☒ Yes ☐ No or New Permit

If no, or a new application, provide an accurate location description: N/A

- e. Are the discharge route(s) in the existing permit correct?

☒ Yes ☐ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: [Click to enter text.](#)

- f. City nearest the outfall(s): Rosenberg

- g. County in which the outfalls(s) is/are located: Fort Bend County

- h. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If yes, indicate by a check mark if: ☐ Authorization granted ☐ Authorization pending

For new and amendment applications, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: N/A

For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: N/A

- i. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes No or New Permit ☒ N/A

If no, or a new application, provide an accurate location description: N/A

- j. City nearest the disposal site: N/A

- k. County in which the disposal site is located: N/A

- l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

- m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

Item 12. Miscellaneous Information (Instructions, Page 33)

- a. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person: N/A

- b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: N/A

Total amount due: N/A

- c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: N/A

Amount due: N/A

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ0002443000

Applicant Name: Frito-Lay, Inc.

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

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

Signatory name (typed or printed): Jeremy Johnson

Signatory title: Senior Vice President of Central Region

Signature: [Handwritten Signature]
(Use blue ink)

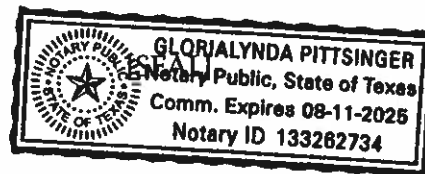
Date: 11/26/24

Subscribed and Sworn to before me by the said Glorialynda Pittsinger
on this 26th day of November, 2024.

My commission expires on the 11th day of August, 2025.

Notary Public

Collin
County, Texas



Note: If co-applicants are necessary, each entity must submit an original, separate signature page.

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

Item 1. Affected Landowner Information (Instructions, Page 35)

- a. Attach a landowner map or drawing, with scale, as applicable. Check the box next to each item to confirm it has been provided.
- ☐ The applicant's property boundaries.
 - ☐ The facility site boundaries within the applicant's property boundaries.
 - ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone.
 - ☐ The property boundaries of all landowners surrounding the applicant's property. (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
 - ☐ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream.
 - ☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge.
 - ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides.
 - ☐ The boundaries of the effluent disposal site (e.g., irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property.
 - ☐ The property boundaries of all landowners surrounding the applicant's property boundaries where the effluent disposal site is located.
 - ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners within one-quarter mile of the applicant's property boundaries where the sewage sludge land application site is located.
 - ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (e.g., sludge surface disposal site or sludge monofil) is located.

Attachment: N/A

- b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☐ Four sets of labels

Attachment: N/A

- d. Provide the source of the landowners' names and mailing addresses: N/A

- e. As required by Texas Water Code § 5.115, is any permanent school fund land affected by this application?

☐ Yes ☐ No

If yes, provide the location and foreseeable impacts and effects this application has on the land(s): N/A

Item 2. Original Photographs (Instructions, Page 37)

Provide original ground level photographs. Check the box next to each of the following items to indicate it is included.

- ☐ At least one original photograph of the new or expanded treatment unit location.
- ☐ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.
- ☐ At least one photograph of the existing/proposed effluent disposal site.
- ☐ A plot plan or map showing the location and direction of each photograph.

Attachment: N/A

INDUSTRIAL WASTEWATER PERMIT APPLICATION

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form applies to TPDES permit applications only. Complete and attach the Supplemental Permit information Form (SPIF) (TCEQ Form 20971).

Attachment: E - SPIF

NOT APPLICABLE

ATTACHMENT 1

INDIVIDUAL INFORMATION

Item 1. Individual information (Instructions, Page 38)

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

Prefix (Mr., Ms., or Miss): [Click to enter text.](#)

Full legal name (first, middle, and last): [Click to enter text.](#)

Driver's License or State Identification Number: [Click to enter text.](#)

Date of Birth: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone No.: [Click to enter text.](#)

Fax No.: [Click to enter text.](#)

E-mail Address: [Click to enter text.](#)

CN: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of industrial wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305 by checking the box next to the item. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until all items below are addressed.

- ☒ Core Data Form (TCEQ Form No. 10400)
(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)
- ☒ Correct and Current Industrial Wastewater Permit Application Forms
(TCEQ Form Nos. 10055 and 10411. Version dated 5/10/2019 or later.)
- ☒ Water Quality Permit Payment Submittal Form (Page 14)
(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)
- ☒ 7.5 Minute USGS Quadrangle Topographic Map Attached
*(Full-size map if seeking "New" permit.
8 ½ x 11 acceptable for Renewals and Amendments.)*
- ☒ N/A ☐ Current/Non-Expired, Executed Lease Agreement or Easement Attached
- ☒ N/A ☐ Landowners Map
(See instructions for landowner requirements.)

Things to Know:

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

- ☒ N/A ☐ Landowners Cross Reference List
(See instructions for landowner requirements.)
- ☒ N/A ☐ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)
- ☒ Original signature per 30 TAC § 305.44 – Blue Ink Preferred
(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached.)
- ☒ Plain Language Summary

Industrial Administrative Report Attachment A

Vouchers
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

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

Transaction Information

Voucher Number: 732668
Trace Number: 582EA000635918
Date: 11/25/2024 11:30 AM
Payment Method: CC - Authorization 0000227129
Voucher Amount: \$1,200.00
Fee Type: WW PERMIT - MINOR FACILITY SUBJECT TO 40 CFR 400-471 - RENEWAL
ePay Actor: ALLISON OSBORNE
Actor Email: aosborne@brwncald.com
IP: 165.85.62.84

Payment Contact Information

Name: ALLISON OSBORNE
Company: BROWN AND CALDWELL
Address: 10777 WESTHEIMER ROAD, HOUSTON, TX 77042
Phone: 713-646-1167

Site Information

RN: RN100219229
Site Name: FRITO LAY INC ROSENBERG FACILITY
Site Address: 3310 HIGHWAY 36 NORTH, ROSENBERG, TX 77471 9716
Site Location: ROSENBERG

Customer Information

CN: CN603940792
Customer Name: FRITO-LAY INC
Customer Address: 3310 HIGHWAY 36 NORTH, ROSENBERG, TX 77471 9716

Other Information

Program Area ID: WQ0002443000

[Close](#)

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

Transaction Information**Voucher Number:** 732669**Trace Number:** 582EA000635918**Date:** 11/25/2024 11:30 AM**Payment Method:** CC - Authorization 0000227129**Voucher Amount:** \$15.00**Fee Type:** 30 TAC 305.53B WQ RENEWAL NOTIFICATION FEE**ePay Actor:** ALLISON OSBORNE**Actor Email:** aosborne@brwncald.com**IP:** 165.85.62.84**Payment Contact Information****Name:** ALLISON OSBORNE**Company:** BROWN AND CALDWELL**Address:** 10777 WESTHEIMER ROAD, HOUSTON, TX 77042**Phone:** 713-646-1167[Close](#)

Industrial Administrative Report Attachment B

Core Data Form
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000



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 Major Amendment	
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 603940792		RN 100219229

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)					
<i>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).</i>					
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
Frito-Lay, Inc.					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0024676-00		12706595837		270659583	10-286-5203
11. Type of Customer:		☒ Corporation		☐ Individual	Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship		☐ Other:	
12. Number of Employees				13. Independently Owned and Operated?	
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher				☒ Yes ☐ No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
☐ Owner ☐ Operator ☒ Owner & Operator ☐ Other:					
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant					
15. Mailing Address:		3310 Highway 36 North			
City		Rosenberg	State	TX	ZIP
				77471	ZIP + 4
					9716
16. Country Mailing Information (if outside USA)				17. E-Mail Address (if applicable)	
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)	

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.)*

Frito-Lay Rosenberg Facility

23. Street Address of the Regulated Entity:

(No PO Boxes)

3310 Highway 36 North

City

Rosenberg

State

TX

ZIP

77471

ZIP + 4

9716

24. County

Fort Bend

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

25. Description to

Physical Location:

26. Nearest City

State

Nearest ZIP Code

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:

29.575640

28. Longitude (W) In Decimal:

-95.867490

Degrees

Minutes

Seconds

Degrees

Minutes

Seconds

29

34

32.304

- 95

52

2.964

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)

2096

2099

311919

311920

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

Facility produces corn chips, potato chips, and tortilla chips.

34. Mailing

Address:

3310 Highway 36 North

City

Rosenberg

State

TX

ZIP

77471

ZIP + 4

9716

35. E-Mail Address:

Jeff.C.Macek@pepsico.com

36. Telephone Number

37. Extension or Code

38. Fax Number *(if applicable)*

(281) 232-1523

(281) 232-1516

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.

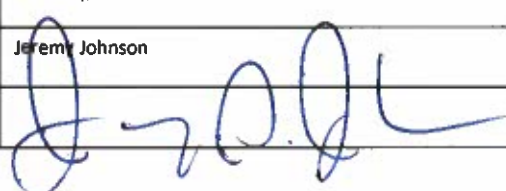
☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0002443000			

SECTION IV: Preparer Information

40. Name:	Jeff Macek	41. Title:	Environmental Coordinator
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(281) 232-1523		(281) 232-1516	Jeff.C.Macek@pepsico.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:	Frito-Lay, Inc.	Job Title:	Senior Vice President of Central Region
Name (In Print):	Jeremy Johnson	Phone:	(972) 407- 2660
Signature:		Date:	11/26/24

Industrial Administrative Report Attachment C

Plain Language Summary
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 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 TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS INDUSTRIAL WASTEWATER/STORMWATER

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 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

Frito Lay, Inc. (CN 603940792) operates Frito-Lay Rosenberg Facility (RN 100219229), a corn chip, potato chip, and tortilla chip producer. The facility is located at 3310 Highway 36 North, in Rosenberg, Fort Bend County, Texas 77471. The facility seeks to renew their permit to discharge 2 MGD of process wastewater, utility wastewater, and stormwater to Outfall 003, 0.031 MGD of domestic sanitary wastewater to Outfall 002, and intermittent discharge of process wastewater, utility wastewater, and stormwater to Outfall 001.

Discharges from the facility are expected to contain total suspended solids (TSS), biochemical oxygen demand (BOD), total aluminum, oil and grease, E. coli, and total residual chlorine. Process wastewater, stormwater runoff, and utility wastewater are treated by an overland flow system and disinfection system for E. coli. Wastewater from the production facility is discharged to a primary wastewater treatment plant (WWTP) followed by an aeration pond. Effluent from the pond is pumped to the land application fields for additional biochemical

oxygen demand (BOD) and total suspended solids (TSS) removal treatment. Overland flow runoff from the fields flows to a series of ditches before being collected in a wet well, thence to the Brazos River.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /AGUAS PLUVIALES

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 es una representación ejecutiva fedérale de la solicitud de permiso.

Frito Lay, Inc (CN 603940792) opera Frito-Lay Rosenberg Facility (RN 100219229), un productor de chips de maíz, papas fritas y chips de tortilla. La instalación está ubicada en 3310 Highway 36 North, en Rosenberg, Condado de Fort Bend, Texas 77471. La instalación busca renovar su permiso para descargar 2 MGD de aguas residuales de proceso, aguas residuales de servicios públicos y aguas pluviales al desagüe 003, 0.031 MGD de aguas residuales sanitarias domésticas al desagüe 002 y descarga intermitente de aguas residuales de proceso, aguas residuales de servicios públicos y aguas pluviales al desagüe 001.

Se espera que las descargas de la instalación contengan sólidos suspendidos totales (TSS), demanda bioquímica de oxígeno (DBO), aluminio, aceite y grasa totales, E. coli y cloro residual total. Aguas residuales de proceso, escorrentía de aguas pluviales y aguas residuales de servicios públicos. están tratado por un sistema de flujo terrestre y un sistema de desinfección para E. coli. Las aguas residuales de la planta de producción se descargan a una planta de tratamiento de aguas residuales primarias (EDAR) seguida de un estanque de aireación. El efluente del estanque se bombea a los campos de aplicación a la tierra para el tratamiento adicional de la demanda bioquímica de oxígeno (DBO) y la eliminación de sólidos suspendidos totales (TSS). La escorrentía de los campos fluye hacia una serie de zanjas antes de ser recogida en un pozo húmedo, de allí al río Brazos.

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. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility 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 facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

Example 1: Industrial Wastewater TPDES Application (ENGLISH)

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 TAC 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 Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas-fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred to as “previously monitored effluents” (low-volume wastewater, metal-cleaning waste, and stormwater (from diked oil storage area yards and storm drains)) via Outfall 001. Low-volume waste sources, metal-cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low-volume waste and metal-cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam.

Low-volume wastewater from blowdown of boiler Units 1 and 2 and metal-cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal-cleaning waste from equipment cleaning is generally disposed of off-site.

Example 2: Domestic Wastewater TPDES Renewal 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.

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to discharge at an annual average flow of 1,200,000 gallons per day of treated domestic wastewater via Outfalls 001 and 002.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), ammonia nitrogen (NH₃-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent and Domestic Worksheet 4.0 in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

Example 3: Domestic Wastewater TPDES New 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.

The City of Texas (CN000000000) proposes to operate the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the extended aeration mode. The facility will be located at 123 Texas Street, in the City of More Texas, Texas County, Texas 71234.

This application is for a new application to discharge at a daily average flow of 200,000 gallons per day of treated domestic wastewater.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD₅), total suspended solids (TSS), ammonia nitrogen (NH₃-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater will be treated by an activated sludge process plant and the treatment units will include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

Example 4: Domestic Wastewater TLAP Renewal 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.

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to dispose a daily average flow not to exceed 76,500 gallons per day of treated domestic wastewater via public access subsurface drip irrigation system with a minimum area of 32 acres. This permit will not authorize a discharge of pollutants into water in the state.

Land application of domestic wastewater from the facility are expected to contain five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, an equalization basin, an aeration basin, a final clarifier, an aerobic sludge digester, tertiary filters, and a chlorine contact chamber. In addition, the facility includes a temporary storage that equals to at least three days of the daily average flow.

Industrial Administrative Report Attachment D

USGS Topographic Map
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

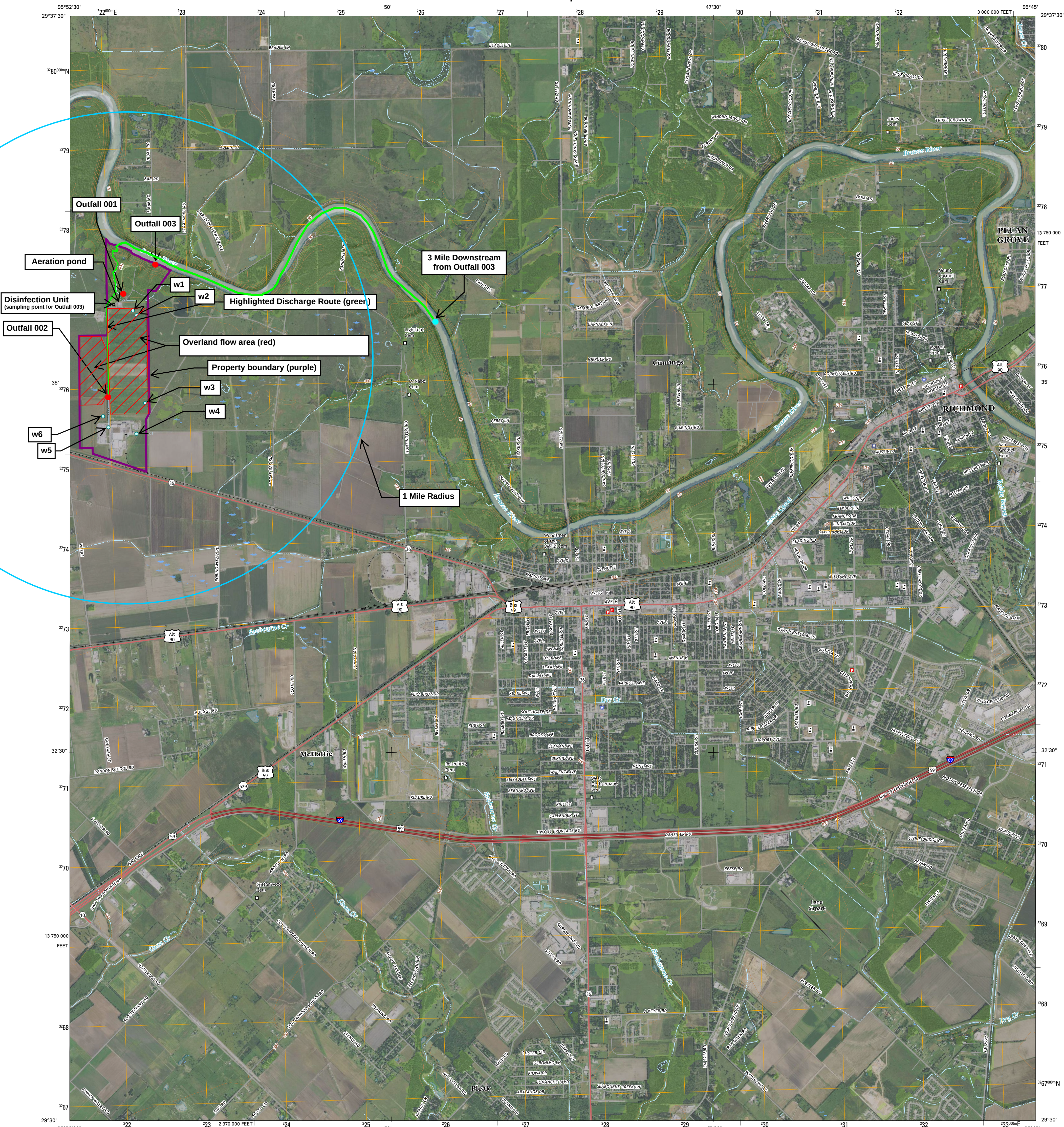
Permit Number: WQ0002443000



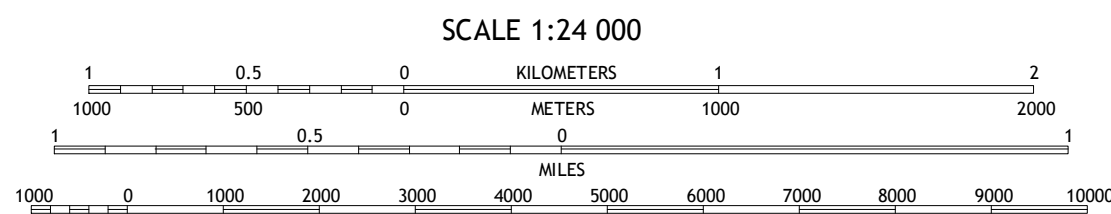
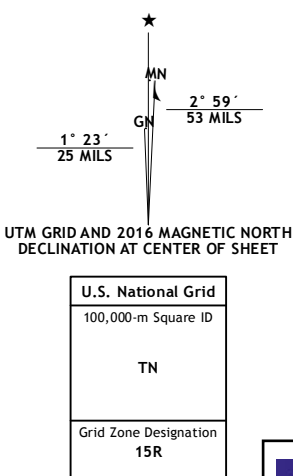
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



RICHMOND QUADRANGLE
TEXAS-FORT BEND CO.
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84), Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 15R
10 000-foot ticks: Texas Coordinate System of 1983 (south
central zone)
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.
Imagery.....NAIP, October 2014
Roads.....U.S. Census Bureau, 2014
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2008
Boundaries.....Multiple sources; see metadata file 1972 - 2015
Wetlands.....FWS National Wetlands Inventory 1977 - 2014



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19



1	2	3
4	5	6
7	8	9

1 Fulshear
2 Richmond NE
3 Glodine
4 Orchard
5 Sugar Land
6 Kendleton
7 Needville
8 Smithers Lake

Legend:
Water wells
Outfalls



Frito-Lay Inc.

Rosenberg Facility
TPDES Renewal

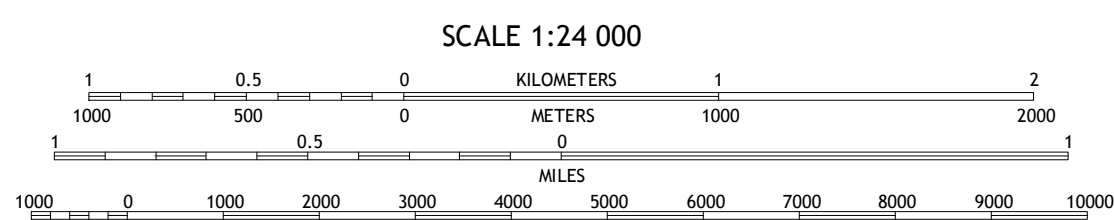
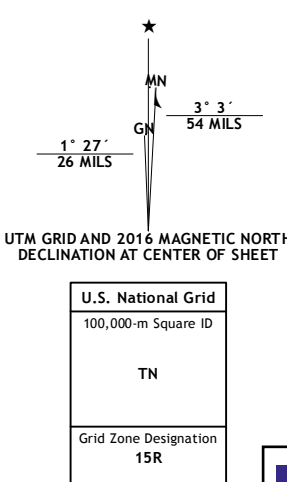
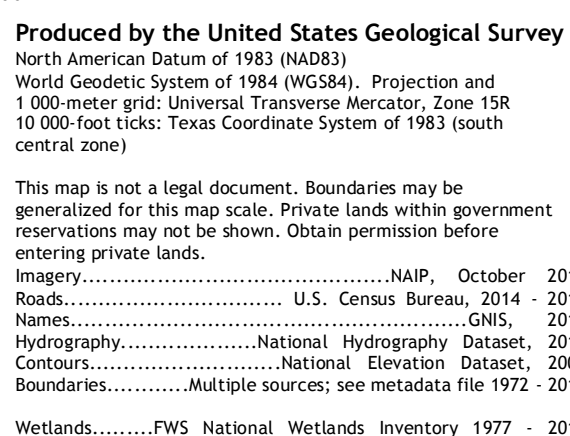
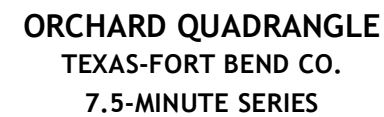
This map is based on information prepared by Brown and Gay Engineers in December 2013.
Brown and Caldwell makes no claims as to the accuracy of information provided by outside sources.

USGS Map Corresponds to
Industrial Administrative Report
Item 11, Page 8 of 17

Nov. 2024

Attachment D

7643016397924
NSN 7643016397924
NGA REF. NO. USGS 2437374



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19



1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

- 1 Wallis
- 2 Fulshear
- 3 Richmond NW
- 4 East Bernard
- 5 Richmond
- 6 Hungerford
- 7 Kendleton
- 8 Needville

ROAD CLASSIFICATION

Expressway		Local Connector	
Secondary Hwy		Local Road	
Ramp		4WD	

 Interstate Route  US Route  State Route

USGS Map Corresponds to
Industrial Administrative Report
Item 11, Page 8 of 17

Nov. 2024

Attachment D

NSN. 7643016397542
NGA REF NO. USGS X24K33359

Industrial Administrative Report Attachment E

Supplemental Permit Information Form (SPIF)
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL 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. (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

Do not refer to your response to any item in the permit application form. Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Frito-Lay, Inc.

Permit No. WQ00 02443000EPA ID No. TX 0085782

Address of the project (or a location description that includes street/highway, city/vicinity, and county):

3310 Highway 36 North, Rosenberg, Texas 77471

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

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

First and Last Name: Jeff Macek

Credential (P.E, P.G., Ph.D., etc.):

Title: Environmental Coordinator

Mailing Address: 3310 Highway 36 North

City, State, Zip Code: Rosenberg, TX 77471

Phone No.: 281.232.1523 Ext.: Fax No.: 281.232.1516

E-mail Address: Jeff.C.Macek@pepsico.com

2. List the county in which the facility is located: Fort Bend County
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. 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 classified segment number.

Unnamed tributary channel on facility property, thence the Brazos River (Segment No. 1202)

5. 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).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

- ☐ Proposed access roads, utility lines, construction easements
- ☐ Visual effects that could damage or detract from a historic property's integrity
- ☐ Vibration effects during construction or as a result of project design
- ☐ Additional phases of development that are planned for the future
- ☐ Sealing caves, fractures, sinkholes, other karst features

☐ Disturbance of vegetation or wetlands

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

N/A

2. Describe existing disturbances, vegetation, and land use:

The facility property includes office buildings, production facility, other structures related to manufacturing, and agricultural land use for an overland flow system.

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

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

N/A

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

N/A

Supplemental Permit Information Form (SPIF) Attachment E1

7.5 Minute USGS Quadrangle Map
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000



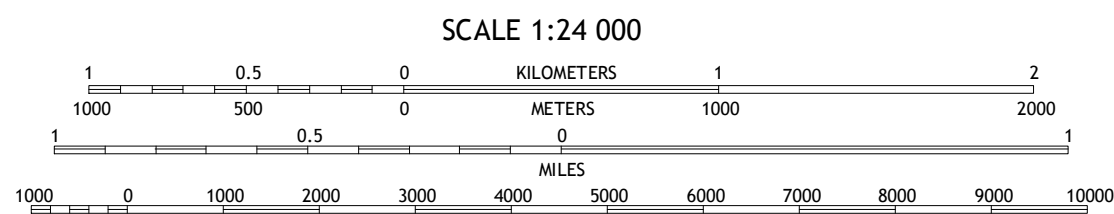
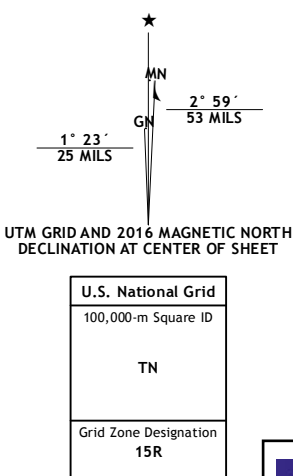
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



RICHMOND QUADRANGLE
TEXAS-FORT BEND CO.
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84), Projection and
1 000-meter grid: Universal Transverse Mercator, Zone 15R
10 000-foot ticks: Texas Coordinate System of 1983 (south
central zone)
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.
Imagery.....NAIP, October 2014
Roads.....U.S. Census Bureau, 2014
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2008
Boundaries.....Multiple sources; see metadata file 1972 - 2015
Wetlands.....FWS National Wetlands Inventory 1977 - 2014



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19



1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

1 Fulshear
2 Richmond NE
3 Glodine
4 Orchard
5 Sugar Land
6 Kendleton
7 Needville
8 Smithers Lake

This map is based on information prepared by Brown and Gay Engineers in December 2013.
Brown and Caldwell makes no claims as to the accuracy of information provided by outside sources.

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD

Interstate Route US Route State Route

USGS Map Corresponds to
Industrial Administrative Report
SPIF Item 5, Page 2 of 3

Nov. 2024 Attachment E1

7643016397924
NSN 7643 016 397924
NGA REF. NO. USGS 24K37924

Technical Report

November 2024

Frito-Lay Inc. Rosenberg Facility

TPDES Renewal

Permit Number: WQ0002443000



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION

TECHNICAL REPORT 1.0

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For **additional information** or clarification on the requested information, please refer to the [Instructions for Completing the Industrial Wastewater Permit Application](https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html)¹ available on the TCEQ website. Please contact the Industrial Permits Team at 512-239-4671 with any questions about this form.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

NOTE: This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

Item 1. Facility/Site Information (Instructions, Page 39)

- a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The facility manufactures food products including potato chips, corn chips, and tortilla chips.
SIC Codes: 2096, 2099

- b. Describe all wastewater-generating processes at the facility.

The wastewater streams are comprised of four source streams: process wastewater, utility wastewater (boiler blowdown, cooling tower blowdown, and air conditioning condensate), sanitary wastewater, and stormwater. Process and utility wastewater, as well as the precipitation falling directly on the fields, are treated through the overland flow system and discharged through Outfall 003 (flows up to 2 MGD). Outfall 001 is used to discharge excess flow greater than 2 MGD from the overland flow system. Sanitary wastewater is independent from other waste streams treated by a package plant system and discharges to Outfall 002. Stormwater generated by the plant is segregated and discharged under the facility Multi-Sector General Permit TXR05AX95. Current production capabilities of the plant are: Corn chips – 393,400 lb/day; Tortilla chips – 319,800 lb/day; Potato chips – 156,000 lb/day. Domestic sewage sludge is hauled by Aqua-Zyme Services to their plant located at 569 FM 2540 North, Van Vleck, TX 77482, where it is dried and composted or landfilled. Solids from the product wastewater stream are trucked to Ag-Row for land application.

¹

https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

- c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

Materials List

Raw Materials	Intermediate Products	Final Products
Raw whole potatoes	Raw, sliced, and peeled potatoes	Potato chips
Raw whole corn	Corn Masa	Tortilla chips
Food-grade vegetable oil		Corn chips
Lime		
Finished product seasonings		

Attachment: N/A

- d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

Attachment: Attachment A

- e. Is this a new permit application for an existing facility?

☐ Yes ☒ No

If **yes**, provide background discussion: [Click to enter text.](#)

- f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: FIRM Flood Map #48157C0230L

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: N/A

Attachment: N/A

- g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

☐ Yes ☐ No ☒ N/A (renewal only)

- h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

☐ Yes ☐ No

If **yes**, provide the permit number: N/A

If **no**, provide an approximate date of application submittal to the USACE: N/A

Item 2. Treatment System (Instructions, Page 40)

- a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

Process and utility wastewater passes through a rotor strainer to remove solids. A clarifier is used, as needed, to enhance solids removal, especially during winter months. Effluent from the strainer, or from the clarifier if used, is conveyed to the transfer sump and then pumped to the aeration basin. Overflow from the aeration basin may be diverted to a diversion basin and pumped back to the aeration basin. Wastewater from the aeration basin is sent to sprinklers and applied to the fields in the overland flow system. Treated effluent from the overland system is pumped to a disinfection system for E. coli treatment. After disinfection and dechlorination, the treated effluent is conveyed via pipe to Outfall 003 and discharges to the Brazos River Below Navasota River in Segment 1202 of the Brazos River (flows up to 2 MGD). Excess effluent flow at Outfall 003 (flows greater than 2 MGD) discharges via Outfall 001 into an unnamed tributary channel and travels to Segment 1202 of the Brazos River.

Sanitary wastewater is treated by a package treatment plant. The package plant includes unit operations for activated sludge treatment, settling, and chlorination. Treated sanitary effluent is discharged through Outfall 002 into the site stormwater channel then to an unnamed tributary channel that flows to Segment 1202 of the Brazos River.

- b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

Attachment: Attachment B

Item 3. Impoundments (Instructions, Page 40)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

☒ Yes ☐ No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a - 3.e.

- a. Complete the table with the following information for each existing, new, or proposed impoundment. Attach additional copies of the Impoundment Information table, if needed.

Use Designation: Indicate the use designation for each impoundment as Treatment (T), Disposal (D), Containment (C), or Evaporation (E).

Associated Outfall Number: Provide an outfall number if a discharge occurs or will occur.

Liner Type: Indicate the liner type as Compacted clay liner (C), In-situ clay liner (I), Synthetic/plastic/rubber liner (S), or Alternate liner (A). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Leak Detection System: If any leak detection systems are in place/planned, enter Y for yes. Otherwise, enter N for no.

Groundwater Monitoring Wells and Data: If groundwater monitoring wells are in place/planned, enter Y for yes. Otherwise, enter N for no. Attach any existing groundwater monitoring data.

Dimensions: Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

Compliance with 40 CFR Part 257, Subpart D: If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter Y for yes. Otherwise, enter N for no.

Date of Construction: Enter the date construction of the impoundment commenced (mm/dd/yy).

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	T			
Associated Outfall Number	001/003			
Liner Type (C) (I) (S) or (A)	Grout liner			
Alt. Liner Attachment Reference	Not applicable			
Leak Detection System, Y/N	No			
Groundwater Monitoring Wells, Y/N	No			
Groundwater Monitoring Data Attachment	N/A			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	No			
Length (ft)	184 ft			
Width (ft)	212 ft			
Max Depth From Water Surface (ft), Not Including Freeboard	34.5 ft			
Freeboard (ft)	5 ft (winter); 25 ft (summer)			
Surface Area (acres)	0.896 acres			
Storage Capacity (gallons)	6,000,000 gal			

Parameter	Pond #	Pond #	Pond #	Pond #
40 CFR Part 257, Subpart D, Y/N	No			
Date of Construction	1982			

Attachment: N/A

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

- b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

1. Liner data

☐ Yes ☐ No ☐ Not yet designed

2. Leak detection system or groundwater monitoring data

☐ Yes ☐ No ☐ Not yet designed

3. Groundwater impacts

☐ Yes ☐ No ☐ Not yet designed

NOTE: Item b.3 is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

Attachment: N/A

For TLAP applications: Items 3.c – 3.e are not required, continue to Item 4.

- c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

Attachment: N/A

- d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

Attachment: N/A

- e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

Attachment: N/A

Item 4. Outfall/Disposal Method Information (Instructions, Page 42)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/or numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

For TLAP applications: Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

Outfall Longitude and Latitude

Outfall No.	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
001	29° 35' 37"	-95° 52' 05"
002	29° 34' 53"	-95° 52' 12"
003	29° 35' 48"	-95° 51' 49"

Outfall Location Description

Outfall No.	Location Description
001	At the Parshall Flume downstream of the pump station on the applicant's property. Outfall 001 is only utilized when flows at Outfall 003 are greater than 2 MGD.
002	After the chlorination basin and prior to the unnamed channel on applicant's property.
003	To an unnamed tributary within 300 feet of the Brazos River on the eastern side of the applicant's property.

Description of Sampling Point(s) (if different from Outfall location)

Outfall No.	Description of sampling point
001	Same as outfall location
002	Directly downstream of the chlorination basin
003	At the new disinfection system, after final treatment and prior to conveyance of the treated effluent to Outfall 003.

Outfall Flow Information – Permitted and Proposed

Outfall No.	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
001	Variable	Variable	Variable	Variable	Current
002	0.018	0.031	0.018	0.031	Current
003	1.1	2.0	1.1	2.0	Current

Outfall Discharge – Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	N	Y	Parshall Flume

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
002	N	Y	Ultrasonic level transmitter
003	Y	N	Mag meter

Outfall Discharge - Flow Characteristics

Outfall No.	Intermittent Discharge? Y/N	Continuous Discharge? Y/N	Seasonal Discharge? Y/N	Discharge Duration (hrs/day)	Discharge Duration (days/mo)	Discharge Duration (mo/yr)
001	Y	N	N	Intermittent	Intermittent	Intermittent
002	N	Y	N	24	30	12
003	N	Y	N	24	30	12

Outfall Wastestream Contributions

There was no discharge at Outfall 001 during the permit renewal application sampling events.

Outfall No. 001 (003 overflow)

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Current Flows (overflow when Outfall 003 flow >2 MGD)	Intermittent and variable (wet weather)	Estimated percent flows when a discharge occurs
Process wastewater	0	<49%
Utility wastewater	0	<1%
Stormwater from fields	0	>50%

Outfall No. 002

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Domestic (sanitary) wastewater	0.013	100

Outfall No. 003

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process wastewater	0.981	99
Utility wastewater	0.01	1
Stormwater from fields	0 (dry weather)	0

Attachment: N/A

Item 5. Blowdown and Once-Through Cooling Water Discharges (Instructions, Page 43)

a. Indicate if the facility currently or proposes to:

- ☒ Yes ☐ No Use cooling towers that discharge blowdown or other wastestreams
☒ Yes ☐ No Use boilers that discharge blowdown or other wastestreams

☐ Yes ☒ No Discharge once-through cooling water

NOTE: If the facility uses or plans to use cooling towers or once-through cooling water, Item 12 **is required**.

b. If **yes** to any of the above, attach an SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

In addition to each SDS, attach a summary of the above information for each specific wastestream and the associated chemical additives. Specify which outfalls are affected.

Attachment: Attachment C

c. Cooling Towers and Boilers

If the facility currently or proposes to use cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s), complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Daily Avg Blowdown (gallons/day)	Daily Max Blowdown (gallons/day)
Cooling Towers	4	200	400
Boilers	2	11,300	12,300

Item 6. Stormwater Management (Instructions, Page 44)

Will any existing/proposed outfalls discharge stormwater associated with industrial activities, as defined at 40 CFR § 122.26(b)(14), commingled with any other wastestream?

☒ Yes ☐ No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in a manner which may result in exposure of the activities or materials to stormwater: Stormwater runoff, due to precipitation directly on the fields of the overland flow system, is discharged with the process and utility wastewater through Outfall 003 (flows up to 2 MGD) and Outfall 001 (excess flow greater than 2 MGD). All other site stormwater is segregated and discharged under the facility Multi-Sector General Permit TXR05AX95.

Item 7. Domestic Sewage, Sewage Sludge, and Septage Management and Disposal (Instructions, Page 44)

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

- a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.
- ☐ Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. Complete Item 7.b.
 - ☐ Domestic sewage disposed of by an on-site septic tank and drainfield system. Complete Item 7.b.
 - ☐ Domestic and industrial treatment sludge ARE commingled prior to use or disposal.
 - ☒ Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. Complete Worksheet 5.0.
 - ☐ Facility is a POTW. Complete Worksheet 5.0.
 - ☐ Domestic sewage is not generated on-site.
 - ☐ Other (e.g., portable toilets), specify and Complete Item 7.b: [Click to enter text.](#)
- b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
Aqua-Zyme Services at 569 FM 2540 North, Van Vleck, TX 77482	21480

Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

- a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?
- ☐ Yes ☒ No
- b. Has the permittee completed or planned for any improvements or construction projects?
- ☐ Yes ☒ No
- c. If **yes** to either 8.a or 8.b, provide a brief summary of the requirements and a status update: [Click to enter text.](#)

Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☐ Yes ☒ No

If **yes**, identify the tests and describe their purposes: N/A

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** N/A

Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

- a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

- b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: N/A

- c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

☐ Yes ☒ No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: N/A

- d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☒ No

If **yes**, **Worksheet 6.0** of this application **is required**.

Item 11. Radioactive Materials (Instructions, Page 46)

- a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material Name	Concentration (pCi/L)
N/A	

- b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material Name	Concentration (pCi/L)
N/A	

Item 12. Cooling Water (Instructions, Page 46)

- a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

- b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

☒ Yes ☐ No

If **yes**, stop here. If **no**, continue.

- c. Cooling Water Supplier

1. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

Cooling Water Intake Structure(s) Owner(s) and Operator(s)

CWIS ID				
Owner				
Operator				

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☐ Yes ☐ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. N/A

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☐ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: N/A

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☐ No

If **no**, proceed to Item 12.d. If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes and proceed: N/A

d. 316(b) General Criteria

1. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

☐ Yes ☐ No

2. At least 25% of the total water withdrawn by the CWIS is/will be used at the facility exclusively for cooling purposes on an annual average basis.

☐ Yes ☐ No

3. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

☐ Yes ☐ No

If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*: N/A

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

- e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses/proposes to use cooling towers**.

☐ Yes ☐ No

If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

1. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

☐ Yes ☐ No

If **yes**, continue. If **no**, skip to Item 12.g.

2. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

☐ Yes ☐ No

If **yes**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.3.

g. Compliance Phase and Track Selection

1. Phase I – New facility subject to 40 CFR Part 125, Subpart I

☐ Yes ☐ No

If **yes**, check the box next to the compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – AIF greater than 2 MGD, but less than 10 MGD

- Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.

☐ Track I – AIF greater than 10 MGD

- Attach information required by *40 CFR § 125.86(b)*.

☐ Track II

- Attach information required by *40 CFR § 125.86(c)*.

Attachment: N/A

2. Phase II – Existing facility subject to 40 CFR Part 125, Subpart J

☐ Yes ☐ No

If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

3. Phase III – New facility subject to 40 CFR Part 125, Subpart N

☐ Yes ☐ No

If **yes**, check the box next to the compliance track selection and provide the requested information.

☐ Track I – Fixed facility

- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – Not a fixed facility

- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except CWIS latitude/longitude under Item 2.a).

☐ Track II – Fixed facility

- Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

Attachment: N/A

Item 13. Permit Change Requests (Instructions, Page 48)

This item is only applicable to existing permitted facilities.

a. Is the facility requesting a **major amendment** of an existing permit?

☐ Yes ☒ No

If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

N/A

b. Is the facility requesting any **minor amendments** to the permit?

☒ Yes ☐ No

If **yes**, list and describe each change individually.

This permit renewal application includes a request for removal of the phased permit conditions (i.e., Effluent Limitations and Monitoring Requirements and Other Requirement No. 13), removal of total aluminum from the Effluent Limitations and Monitoring Requirements for Outfall 001, removal of TRC and E. coli from the Effluent Limitations and Monitoring Requirements for Outfall 103, and updating the ELG production basis and limits, as appropriate.

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

N/A

Item 14. Laboratory Accreditation (Instructions, Page 49)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
 - periodically inspected by the TCEQ; or
 - located in another state and is accredited or inspected by that state; or

- performing work for another company with a unit located in the same site; or
- performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- 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. See the *Signature Page* section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

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

Printed Name: Jeremy Johnson

Title: Senior Vice President of Central Region

Signature: _____

Date: 11/26/24

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 1.0: EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

Item 1. Categorical Industries (Instructions, Page 53)

Is this facility subject to any 40 CFR categorical ELGs outlined on page 53 of the instructions?

☒ Yes ☐ No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information below.

40 CFR Effluent Guideline

Industry	40 CFR Part
Canned and preserved fruits and vegetables	407

Item 2. Production/Process Data (Instructions, Page 54)

NOTE: For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

a. Production Data

Provide appropriate data for effluent guidelines with production-based effluent limitations.

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
Current Production			
Corn chips	393,400	393,400	lb/d
Potato chips	156,000	156,000	lb/d
Tortilla chips	319,800	319,800	lb/d

b. Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by *40 CFR Part 414, Appendices A and B*.

Percentage of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metals	Appendix A - Cyanide
N/A			

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

Item 3. Process/Non-Process Wastewater Flows (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

Current average process flows from: Corn chips - 103,000 gpd; Potato chips - 381,000 gpd; and Tortilla chips - 426,600 gpd.

Item 4. New Source Determination (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

Wastewater Generating Processes Subject to Effluent Guidelines

Process	EPA Guideline Part	EPA Guideline Subpart	Date Process/ Construction Commenced
Corn chip production	407	H	November, 1980
Potato chip production	407	H	November, 1980
Tortilla chip production	407	H	November, 1980

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 10/9/2024-10/31/2024
- ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: Attachment D

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** N/A

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

There was no discharge at Outfall 001 during the permit renewal application sampling events.

Table 1 for Outfall No.: 002

Samples are (check one): ☒ Composite ☒ Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	< 2	2.86	6.14	3.63
CBOD (5-day)	< 2	2.37	4.89	2.92
Chemical oxygen demand	29	31	52	22
Total organic carbon	10	12.2	13.7	15.6
Dissolved oxygen	4.5	4.4	3.9	4.1
Ammonia nitrogen	10.376	3.5088	0.7896	0.1406
Total suspended solids	7.6	5.2	15.2	4.6
Nitrate nitrogen	32.2	56.7	100	110
Total organic nitrogen	3.12	0.6412	3.78	3.23
Total phosphorus	7.36	9.4942	9.3	7.17
Oil and grease	< 2.78	< 2.78	< 2.78	< 2.78
Total residual chlorine	3.97	3.46	2.45	1.36

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	950	744	1194	1180
Sulfate	38.8	34.1	37.8	38.7
Chloride	118	145	163	161
Fluoride	0.254	0.273	0.277	0.287
Total alkalinity (mg/L as CaCO3)	156.2	54.1	40	50.1
Temperature (°F)	70.88	75.56	74.48	73.94
pH (standard units)	7.25	7	6.41	7

Table 2 for Outfall No.: **002**

Samples are (check one): ☒ Composite ☒ Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	9.27	7.38	16.2	9	2.5
Antimony, total	0.62	<0.5	<0.5	0.59	5
Arsenic, total	1.24	1	1.35	1.07	0.5
Barium, total	158	177	228	224	3
Beryllium, total	<0.5	<0.5	<0.5	<0.5	0.5
Cadmium, total	<0.5	<0.5	<0.5	<0.5	1
Chromium, total	0.83	0.6	0.73	0.58	3
Chromium, hexavalent	<1	<1	<1	<1	3
Chromium, trivalent	<0.83	<0.6	<0.73	<0.58	N/A
Copper, total	5.46	7.78	12.6	8.02	2
Cyanide, available	2	15	30	45	2/10
Lead, total	0.79	0.96	<0.5	0.51	0.5
Mercury, total	0.000571	0.000736	0.00209	0.000562	0.005/0.0005
Nickel, total	2.81	2.63	2.8	1.64	2
Selenium, total	<1	<1	<1	<1	5
Silver, total	<0.5	<0.5	<0.5	<0.5	0.5
Thallium, total	<0.5	<0.5	<0.5	<0.5	0.5
Zinc, total	133	155	134	111	5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 **is required** for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 **is required** for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile					50
Anthracene					10
Benzene					10
Benidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dichlorobromomethane]					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane [Dibromochloromethane]					10
Chloroform					10
Chrysene					5
m-Cresol [3-Methylphenol]					10
o-Cresol [2-Methylphenol]					10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]					10
Dichloromethane [Methylene chloride]					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropylene]					10
2,4-Dimethylphenol					10
Di-n-Butyl phthalate					10
Ethylbenzene					10
Fluoride					500
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Methyl ethyl ketone					50
Nitrobenzene					10
N-Nitrosodiethylamine					20
N-Nitroso-di-n-butylamine					20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol					5
Phenanthrene					10
Polychlorinated biphenyls (PCBs) (**)					0.2
Pyridine					20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethene [Trichloroethylene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)					10
Vinyl chloride					10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- ☐ Manufacturers and formulators of tributyltin or related compounds.
- ☐ Painting of ships, boats and marine structures.
- ☐ Ship and boat building and repairing.
- ☐ Ship and boat cleaning, salvage, wrecking and scaling.
- ☐ Operation and maintenance of marine cargo handling facilities and marinas.
- ☐ Facilities engaged in wood preserving.
- ☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. **E. coli (discharge to freshwater)**

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☒ Yes ☐ No

Domestic wastewater is/will be discharged.

☒ Yes ☐ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: **002**

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	N/A	N/A	N/A	N/A	0.010
Enterococci (cfu or MPN/100 mL)	N/A	N/A	N/A	N/A	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	*	*	*	*	N/A

**E. coli* samples were not analyzed by an accredited laboratory; 4 weekly

TABLE 5 (Instructions, Page 59) replacement samples are being collected and the results will be submitted as an addendum to this application.

Completion of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: **N/A**

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (<i>alpha</i>)					0.01
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **002**

Samples are (check one): ☒ Composite ☒ Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	☒	☐	< 0.1				400
Color (PCU)	☒	☐	30				—
Nitrate-Nitrite (as N)	☒	☐	33.29				—
Sulfide (as S)	☒	☐	< 0.05				—
Sulfite (as SO ₃)	☒	☐	< 5				—
Surfactants	☒	☐	< 0.05				—
Boron, total	☒	☐	0.067				20
Cobalt, total	☒	☐	< 0.0005				0.3
Iron, total	☒	☐	0.0806				7
Magnesium, total	☒	☐	8.03				20
Manganese, total	☒	☐	0.0192				0.5
Molybdenum, total	☒	☐	< 0.0005				1
Tin, total	☒	☐	0.01				5
Titanium, total	☒	☐	0.00122				30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

☒ N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
☐ Adhesives and Sealants		☐ Yes	☐ Yes	☐ Yes	No
☐ Aluminum Forming	467	☐ Yes	☐ Yes	☐ Yes	No
☐ Auto and Other Laundries		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Battery Manufacturing	461	☐ Yes	No	☐ Yes	No
☐ Coal Mining	434	No	No	No	No
☐ Coil Coating	465	☐ Yes	☐ Yes	☐ Yes	No
☐ Copper Forming	468	☐ Yes	☐ Yes	☐ Yes	No
☐ Electric and Electronic Components	469	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Electroplating	413	☐ Yes	☐ Yes	☐ Yes	No
☐ Explosives Manufacturing	457	No	☐ Yes	☐ Yes	No
☐ Foundries		☐ Yes	☐ Yes	☐ Yes	No
☐ Gum and Wood Chemicals - Subparts A,B,C,E	454	☐ Yes	☐ Yes	No	No
☐ Gum and Wood Chemicals - Subparts D,F	454	☐ Yes	☐ Yes	☐ Yes	No
☐ Inorganic Chemicals Manufacturing	415	☐ Yes	☐ Yes	☐ Yes	No
☐ Iron and Steel Manufacturing	420	☐ Yes	☐ Yes	☐ Yes	No
☐ Leather Tanning and Finishing	425	☐ Yes	☐ Yes	☐ Yes	No
☐ Mechanical Products Manufacturing		☐ Yes	☐ Yes	☐ Yes	No
☐ Nonferrous Metals Manufacturing	421,471	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	☐ Yes	☐ Yes	☐ Yes	No
☐ Ore Mining - Subpart B	440	No	☐ Yes	No	No
☐ Organic Chemicals Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Paint and Ink Formulation	446,447	☐ Yes	☐ Yes	☐ Yes	No
☐ Pesticides	455	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Petroleum Refining	419	☐ Yes	No	No	No
☐ Pharmaceutical Preparations	439	☐ Yes	☐ Yes	☐ Yes	No
☐ Photographic Equipment and Supplies	459	☐ Yes	☐ Yes	☐ Yes	No
☐ Plastic and Synthetic Materials Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Plastic Processing	463	☐ Yes	No	No	No
☐ Porcelain Enameling	466	No	No	No	No
☐ Printing and Publishing		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Pulp and Paperboard Mills - Subpart C	430	☐ *	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts F, K	430	☐ *	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	☐ Yes	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts I, J, L	430	☐ Yes	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subpart E	430	☐ Yes	☐ Yes	☐ Yes	☐ *
☐ Rubber Processing	428	☐ Yes	☐ Yes	☐ Yes	No
☐ Soap and Detergent Manufacturing	417	☐ Yes	☐ Yes	☐ Yes	No
☐ Steam Electric Power Plants	423	☐ Yes	☐ Yes	No	No
☐ Textile Mills (Not Subpart C)	410	☐ Yes	☐ Yes	☐ Yes	No
☐ Timber Products Processing	429	☐ Yes	☐ Yes	☐ Yes	☐ Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein					50
Acrylonitrile					50
Benzene					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroethane					50
2-Chloroethylvinyl ether					10
Chloroform					10
Dichlorobromomethane [Bromodichloromethane]					10
1,1-Dichloroethane					10
1,2-Dichloroethane					10
1,1-Dichloroethylene [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3-Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol					10
2,4-Dichlorophenol					10
2,4-Dimethylphenol					10
4,6-Dinitro-o-cresol					50
2,4-Dinitrophenol					50
2-Nitrophenol					20
4-Nitrophenol					50
p-Chloro-m-cresol					10
Pentachlorophenol					5
Phenol					10
2,4,6-Trichlorophenol					10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene					10
Acenaphthylene					10
Anthracene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]					10
Benzo(ghi)perylene					20
Benzo(k)fluoranthene					5
Bis(2-chloroethoxy)methane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether					10
Bis(2-chloroisopropyl)ether					10
Bis(2-ethylhexyl)phthalate					10
4-Bromophenyl phenyl ether					10
Butylbenzyl phthalate					10
2-Chloronaphthalene					10
4-Chlorophenyl phenyl ether					10
Chrysene					5
Dibenzo(a,h)anthracene					5
1,2-Dichlorobenzene [o-Dichlorobenzene]					10
1,3-Dichlorobenzene [m-Dichlorobenzene]					10
1,4-Dichlorobenzene [p-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
Diethyl phthalate					10
Dimethyl phthalate					10
Di-n-butyl phthalate					10
2,4-Dinitrotoluene					10
2,6-Dinitrotoluene					10
Di-n-octyl phthalate					10
1,2-Diphenylhydrazine (as Azobenzene)					20
Fluoranthene					10
Fluorene					10
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Indeno(1,2,3-cd)pyrene					5
Isophorone					10
Naphthalene					10
Nitrobenzene					10
N-Nitrosodimethylamine					50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodi-n-propylamine					20
N-Nitrosodiphenylamine					20
Phenanthrene					10
Pyrene					10
1,2,4-Trichlorobenzene					10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-Hexachlorocyclohexane]					0.05
Chlordane					0.2
4,4'-DDT					0.02
4,4'-DDE					0.1
4,4'-DDD					0.1
Dieldrin					0.02
Endosulfan I (alpha)					0.01
Endosulfan II (beta)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Endrin aldehyde					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
PCB 1242					0.2
PCB 1254					0.2
PCB 1221					0.2
PCB 1232					0.2
PCB 1248					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnell) CASRN 299-84-3
- ☐ 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- ☐ hexachlorophene (HCP) CASRN 70-30-4
- ☐ None of the above

Description: N/A

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

- ☐ Yes ☒ No

Description: N/A

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50
2,3,4,7,8-PeCDF	0.3					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

☐ Yes ☒ No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If **yes** to either Items a or b, complete Table 13 as instructed.

Table 13 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 10/9/2024-10/31/2024
- ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: [Click to enter text.](#)

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: **003**

Samples are (check one): ☒ Composite ☒ Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	35.04	273.5	174	44
CBOD (5-day)	32.1	251.5	140	37.5
Chemical oxygen demand	192	802	528	198
Total organic carbon	232	306	158	124
Dissolved oxygen	3.8	5.1	5.0	3.7
Ammonia nitrogen	1.6672	0.2396	1.8576	1.6471
Total suspended solids	972	400	90	52
Nitrate nitrogen	0.118	< 0.1	< 1	<0.1
Total organic nitrogen	19.43	25.46	16.94	10.9
Total phosphorus	4.81	6.8712	4.37	4.97
Oil and grease	< 2.85	14.1	< 2.78	<2.78
Total residual chlorine	0.0	0	4.6	0

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	1760	1350	1850	1630
Sulfate	8.87	6.3	6.84	4.93
Chloride	270	308	311	370
Fluoride	0.227	< 0.1	0.177	0.177
Total alkalinity (mg/L as CaCO ₃)	686.7	730.7	686.7	772.8
Temperature (°F)	72.68	70.52	69.44	71.42
pH (standard units)	7.3	7.41	7.62	7.67

Table 2 for Outfall No.: **003**

Samples are (check one): ☒ Composite ☒ Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	144	301	244	211	2.5
Antimony, total	<0.5	<0.5	<0.5	<0.5	5
Arsenic, total	32.4	35.5	22.8	33.3	0.5
Barium, total	320	423	345	356	3
Beryllium, total	<0.5	<0.5	<0.5	<0.5	0.5
Cadmium, total	<0.5	<0.5	<0.5	<0.5	1
Chromium, total	1.68	2.53	2.41	1.48	3
Chromium, hexavalent	<0.5	<1	<1	<1	3
Chromium, trivalent	<1.68	<1.53	<1.41	<0.48	N/A
Copper, total	4.68	6.98	6.3	2.81	2
Cyanide, available	48	22.5	64	26	2/10
Lead, total	<0.5	0.7	0.53	<0.5	0.5
Mercury, total	0.00389	0.00492	0.00507	0.00615	0.005/0.0005
Nickel, total	4.84	5.43	5.96	4.26	2
Selenium, total	<1	<1	<1	<1	5
Silver, total	<0.5	<0.5	<0.5	<0.5	0.5
Thallium, total	<0.5	<0.5	<0.5	<0.5	0.5
Zinc, total	46.5	82.7	24.9	11	5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 is required for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 is required for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: **003**Samples are (check one): ☒ Composite ☒ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile	<20	<20	<20	<20	50
Anthracene	<5	<5	<5	<5	10
Benzene	<5	<5	<5	<5	10
Benzidine	<5	<5	<5	<5	50
Benzo(a)anthracene	<5	<5	<5	<5	5
Benzo(a)pyrene	<5	<5	<5	<5	5
Bis(2-chloroethyl)ether	<5	<5	<5	<5	10
Bis(2-ethylhexyl)phthalate	<5	<5	<5	<5	10
Bromodichloromethane [Dichlorobromomethane]	43.9	8.59	9.93	22.5	10
Bromoform	<5	<5	<5	<5	10
Carbon tetrachloride	<5	<5	<5	<5	2
Chlorobenzene	<5	<5	<5	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	<5	<5	<5	10
Chloroform	359	115	120	163	10
Chrysene	<5	<5	<5	<5	5
m-Cresol [3-Methylphenol]	14.6	27	16.9	<10	10
o-Cresol [2-Methylphenol]	<5	<5	<5	<5	10
p-Cresol [4-Methylphenol]	14.6	27	16.9	<10	10
1,2-Dibromoethane	<6	<6	<6	<6	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<5	<5	<5	<5	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<5	<5	<5	<5	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<5	<5	<5	<5	10
3,3'-Dichlorobenzidine	<5	<5	<5	<5	5
1,2-Dichloroethane	<5	<5	<5	<5	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5	<5	<5	10
Dichloromethane [Methylene chloride]	<5	<5	<5	<5	20
1,2-Dichloropropane	<6	<6	<6	<6	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<6	<6	<6	<6	10
2,4-Dimethylphenol	<5	<5	<5	<5	10
Di-n-Butyl phthalate	<5	<5	<5	<5	10
Ethylbenzene	<5	<5	<5	<5	10
Fluoride	227	<100	177	177	500
Hexachlorobenzene	<5	<5	<5	<5	5
Hexachlorobutadiene	<5	<5	<5	<5	10
Hexachlorocyclopentadiene	<5	<5	<5	<5	10
Hexachloroethane	<5	<5	<5	<5	20
Methyl ethyl ketone	9.51	11.8	14.2	6.73	50
Nitrobenzene	<5	<5	<5	<5	10
N-Nitrosodiethylamine	<5	<5	<5	<5	20
N-Nitroso-di-n-butylamine	<5	<5	<5	<5	20
Nonylphenol	<5	<5	<5	<5	333
Pentachlorobenzene	<5	<5	<5	<5	20
Pentachlorophenol	<5	<5	<5	<5	5
Phenanthrene	<5	<5	<5	<5	10
Polychlorinated biphenyls (PCBs) (**)	<0.05	<0.05	<0.05	<0.05	0.2
Pyridine	<5	<5	<5	<5	20
1,2,4,5-Tetrachlorobenzene	<5	<5	<5	<5	20
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	<5	<5	<5	10
Toluene	17.3	12.9	18.2	<5	10
1,1,1-Trichloroethane	<5	<5	<5	<5	10
1,1,2-Trichloroethane	<5	<5	<5	<5	10
Trichloroethene [Trichloroethylene]	<5	<5	<5	<5	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol	<5	<5	<5	<5	50
TTHM (Total trihalomethanes)	383.39	123.316	129.93	187.364	10
Vinyl chloride	<5	<5	<5	<5	10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- ☐ Manufacturers and formulators of tributyltin or related compounds.
- ☐ Painting of ships, boats and marine structures.
- ☐ Ship and boat building and repairing.
- ☐ Ship and boat cleaning, salvage, wrecking and scaling.
- ☐ Operation and maintenance of marine cargo handling facilities and marinas.
- ☐ Facilities engaged in wood preserving.
- ☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. **E. coli (discharge to freshwater)**

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☒ Yes ☐ No

Domestic wastewater is/will be discharged.

☒ Yes ☐ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: **003**

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	N/A	N/A	N/A	N/A	0.010
Enterococci (cfu or MPN/100 mL)	N/A	N/A	N/A	N/A	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	*	*	*	*	

**E. coli* samples were not analyzed by an accredited laboratory; 4 weekly

TABLE 5 (Instructions, Page 59) replacement samples are being collected and the results will be submitted as an addendum to this application.

Completion of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (<i>alpha</i>)					0.01
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **003**

Samples are (check one): ☒ Composite ☒ Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	☒	☐	0.238	0.151	0.2516	0.39	400
Color (PCU)	☒	☐	80				—
Nitrate-Nitrite (as N)	☒	☐	0.118	< 0.1	< 0.1	< 0.1	—
Sulfide (as S)	☒	☐	< 0.05				—
Sulfite (as SO ₃)	☒	☐	< 5				—
Surfactants	☒	☐	0.067				—
Boron, total	☒	☐	0.143				20
Cobalt, total	☒	☐	0.00245				0.3
Iron, total	☒	☐	0.783				7
Magnesium, total	☒	☐	15.4				20
Manganese, total	☒	☐	0.5				0.5
Molybdenum, total	☒	☐	0.00171				1
Tin, total	☒	☐	< 0.05				5
Titanium, total	☒	☐	0.00232				30

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

☐ Irrigation	☐ Subsurface application
☐ Evaporation	☐ Subsurface soils absorption
☐ Evapotranspiration beds	☐ Surface application
☐ Drip irrigation system	☒ Other, specify: <u>Overland flow system</u>

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)
Current Flow			
859, 167 (average*)	200	Bermuda grass, ryegrass, Kentucky 31 fescue, Reed canarygrass	N
* Calculated based on previous year average flow (9/2023-9/2024), after production increased in 2023			

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment: Attachment E

Item 4. Well and Map Information (Instructions, Page 70)

- a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

- ☒ The exact boundaries of the land application area
- ☒ On-site buildings
- ☐ Waste-disposal or treatment facilities
- ☐ Effluent storage and tailwater control facilities
- ☐ Buffer zones
- ☒ All surface waters in the state onsite and within 500 feet of the property boundaries
- ☒ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries
- ☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: Admin Report, Attachment D

- b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice
6526104 – w1	Unused		Plugged	
6526105 – w2	Irrigation			
6526401 – w3	Irrigation			
6526407/6526408 – w4	Industrial			
6526409 – w5	Public supply			
G0790169D - w6	Public supply	Y		

Attachment: N/A

- c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☒ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: N/A

- d. Attach a short groundwater technical report using 30 TAC § 309.20(a)(4) as guidance.

Attachment: N/A

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

- a. ☒ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.
- b. ☒ Breakdown of acreage and percent of total acreage for each soil type.
- c. ☒ Copies of laboratory soil analyses. **Attachment:** Attachment F

Item 6. Effluent Monitoring Data (Instructions, Page 72)

- a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: **003**

Samples are (check one): ☒ Composite ☐ Grab

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5* (mg/L)	TSS* (mg/L)	Nitrogen** (mg/L)	Conductivity (mmhos/cm)	Total ** acres irrigated	Hydraulic *** Application rate (acre-feet/month)
10/2022	494,000	102.48	30.51	N/A	N/A	168	53.39
11/2022	762,000	93.77	56.57	N/A	N/A	168	60.75
12/2022	646,000	86.96	38.61	N/A	N/A	168	63.52
1/2023	991,000	39.98	15.09	N/A	N/A	168	60.75
2/2023	605,000	76.04	56.84	N/A	N/A	168	59.01
3/2023	507,000	50.97	31.88	N/A	N/A	168	67.20
4/2023	787,000	47.85	59.59	N/A	N/A	168	66.28
5/2023	630,000	96.32	62.52	N/A	N/A	168	76.40
6/2023	246,000	195.50	68.29	N/A	N/A	168	83.77
7/2023	271,000	42.48	29.38	N/A	N/A	200	78.24
8/2023	97,000	116.94	70.58	N/A	N/A	200	82.85
9/2023	343,000	34.82	8.42	N/A	N/A	200	81.01
10/2023	574,000	131.69	25.05	N/A	N/A	200	89.29
11/2023	631,000	103.98	21.74	N/A	N/A	200	73.64
12/2023	647,000	99.98	24.96	N/A	N/A	200	78.24
1/2024	799,000	123.37	17.68	N/A	N/A	200	79.17
2/2024	591,000	58.57	40.54	N/A	N/A	200	84.69
3/2024	529,000	78.38	47.44	N/A	N/A	200	58.91
4/2024	453,000	55.16	24.67	N/A	N/A	200	76.40

*Monthly average concentration; **Based on total overland flow area of 168 acres and 200 acres; ***Hydraulic application rate based on daily average flows

Date (mo/yr)	Daily Avg Flow (gpd)	BOD5 (mg/L)	TSS (mg/L)	Nitrogen (mg/L)	Conductivity (mmhos/cm)	Total acres irrigated	Hydraulic Application rate (acre-feet/month)
5/2024	767,000	28.69	20.32	N/A	N/A	200	73.64
6/2024	586,000	34.62	40.66	N/A	N/A	200	77.32
7/2024	722,000	39.62	19.21	N/A	N/A	200	79.17
8/2024	537,000	56.36	32.04	N/A	N/A	200	93.89
9/2024	494,000	35.17	46.21	N/A	N/A	200	84.69

- b. Use this table to provide effluent analysis for parameters regulated in the current permit which are not listed in Table 14.

Additional Parameter Effluent Analysis

Date (mo/yr)	Oil & Grease (mg/L) *	pH (s.u.) **	E. coli (mpn/100 mL)				
10/2022	4	7.82	4480.0				
11/2022	3	7.87					
12/2022	3.1	8.08					
1/2023	3	7.69	435200.0				
2/2023	3.1	7.75					
3/2023	3	7.85					
4/2023	5.8	7.78	1379.0				
5/2023	7.9	7.92					
6/2023	3	7.85					
7/2023	4.3	8	17890.0				
8/2023	3	7.92					
9/2023	3	8.08					
10/2023	3	8.01	10390				
11/2023	3	8.05					
12/2023	5.2	7.63					
1/2024	3	7.85	4480				
2/2024	8.7	7.87					
3/2024	3	7.77					
4/2024	3	7.84	1553100				
5/2024	3.2	7.83					
6/2024	6.8	7.74					

Date (mo/yr)	Oil & Grease (mg/L) *	pH (s.u.) **	E. coli (mpn/100 mL)				
7/2024	3	7.96	34480				
8/2024	3	7.71					
9/2024	3	8.09					

- c. Attach an explanation of all persistent excursions to permitted parameters and corrective actions taken. **Attachment:** N/A

Item 7. Pollutant Analysis (Instructions, Page 72)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): N/A
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Complete Tables 15 and 16.

Table 15 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)				2.5
CBOD (5-day)				5
Chemical oxygen demand				0.5
Total organic carbon				3
Dissolved oxygen				0.5
Ammonia nitrogen				20
Total suspended solids				1
Nitrate nitrogen				3
Total organic nitrogen				3
Total phosphorus				N/A
Oil and grease				2
Total residual chlorine				2/10
Total dissolved solids				0.5
Sulfate				0.005/0.0005
Chloride				2
Fluoride				5
Total alkalinity (mg/L as CaCO ₃)				0.5
Temperature (°F)				0.5

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
pH (standard units)				5.0

Table 16 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet **is required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☒ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b and 1.c.

b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A

☐ 30 TAC Chapter 213, Subchapter B

c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: [Click to enter text.](#)

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

a. Provide the following information on the irrigation operations:

Area under irrigation (acres): N/A

Design application rate (acre-ft/acre/yr): N/A

Design application frequency (hours/day): N/A

Design application frequency (days/week): N/A

Design total nitrogen loading rate (lbs nitrogen/acre/year): N/A

Average slope of the application area (percent): N/A

Maximum slope of the application area (percent): N/A

Irrigation efficiency (percent): N/A

Effluent conductivity (mmhos/cm): N/A

Soil conductivity (mmhos/cm): N/A

Curve number: N/A

Describe the application method and equipment: N/A

- b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** N/A

Item 3. Evaporation Ponds (Instructions, Page 74)

- a. Daily average effluent flow into ponds: N/A gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** N/A

Item 4. Evapotranspiration Beds (Instructions, Page 74)

- a. Provide the following information on the evapotranspiration beds:
- Number of beds: N/A
- Area of bed(s) (acres): N/A
- Depth of bed(s) (feet): N/A
- Void ratio of soil in the beds: N/A
- Storage volume within the beds (include units): N/A
- Description of any lining to protect groundwater: N/A
- b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** N/A
- c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** N/A

Item 5. Overland Flow (Instructions, Page 74)

- a. Provide the following information on the overland flow:
- Area used for application (acres): 200
- Slopes for application area (percent): 2
- Design application rate (gpm/foot of slope width): 0.2
- Slope length (feet): 200
- Design BOD5 loading rate (lbs BOD5/acre/day): 60 (maximum loading rate)
- Design application frequency (hours/day): 24
- Design application frequency (days/week): 7
- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212. **Attachment:** N/A

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

- a. Check the box next to the type of subsurface land disposal system requested:
- ☐ Conventional drainfield, beds, or trenches
- ☐ Low pressure dosing
- ☐ Other: [Click to enter text.](#)
- b. Provide the following information on the irrigation operations:
- Application area (acres): [Click to enter text.](#)
- Area of drainfield (square feet): [Click to enter text.](#)
- Application rate (gal/square ft/day): [Click to enter text.](#)
- Depth to groundwater (feet): [Click to enter text.](#)
- Area of trench (square feet): [Click to enter text.](#)
- Dosing duration per area (hours): [Click to enter text.](#)
- Number of beds: [Click to enter text.](#)
- Dosing amount per area (inches/day): [Click to enter text.](#)
- Soil infiltration rate (inches/hour): [Click to enter text.](#)
- Storage volume (gallons): [Click to enter text.](#)
- Area of bed(s) (square feet): [Click to enter text.](#)
- Soil classification: [Click to enter text.](#)
- c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** [Click to enter text.](#)

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL
SYSTEMS

This worksheet **is required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDS).

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

- a. Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility: [Click to enter text.](#)

- b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the WWTF is/will be located: [Click to enter text.](#)

- c. Provide the legal name of the owner of the SADDS: [Click to enter text.](#)

- d. The owner of the SADDS is the same as the owner of the WWTF or the site where the WWTF is/will be located.

☐ Yes ☐ No

If **no**, identify the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.c: [Click to enter text.](#)

- e. Provide the legal name of the owner of the land where the SADDS is located: [Click to enter text.](#)

- f. The owner of the land where the SADDs is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDs.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.e: [Click to enter text.](#)

Item 3. SADDs (Instructions, Page 77)

- a. Check the box next to the type SADDs requested by this application:

☐ Subsurface drip/trickle irrigation
☐ Surface drip irrigation
☐ Other: [Click to enter text.](#)

- b. Attach a description of the SADDs proposed/used by the facility (see instructions for guidance). **Attachment:** [Click to enter text.](#)

- c. Provide the following information on the SADDs:

Application area (acres): [Click to enter text.](#)

Soil infiltration rate (inches/hour): [Click to enter text.](#)

Average slope of the application area: [Click to enter text.](#)

Maximum slope of the application area: [Click to enter text.](#)

Storage volume (gallons): [Click to enter text.](#)

Major soil series: [Click to enter text.](#)

Depth to groundwater (feet): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

- d. The facility is/will be located west of the boundary shown in 30 TAC § 222.83 **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft²/day.

- e. The facility is/will be located east of the boundary shown in 30 TAC § 222.83 **or** is the facility proposing any crop other than non-native grasses.

☐ Yes ☐ No

If **yes**, the facility must use the formula in 30 TAC § 222.83 to calculate the maximum hydraulic application rate.

- f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): [Click to enter text.](#)
- Nitrogen application rate (gal/square foot/day): [Click to enter text.](#)

g. Provide the following dosing information:

Number of doses per day: [Click to enter text.](#)

Dosing duration per area (hours): [Click to enter text.](#)

Rest period between doses (hours): [Click to enter text.](#)

Dosing amount per area (inches/day): [Click to enter text.](#)

Number of zones: [Click to enter text.](#)

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

If **yes**, attach the following information:

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.

Attachment: [Click to enter text.](#)

- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.

Attachment: [Click to enter text.](#)

Item 4. Required Plans (Instructions, Page 78)

a. Attach a Soil Evaluation with all information required in *30 TAC § 222.73*.

Attachment: [Click to enter text.](#)

b. Attach a Site Preparation Plan with all information required in *30 TAC § 222.75*.

Attachment: [Click to enter text.](#)

c. Attach a Recharge Feature Plan with all information required in *30 TAC § 222.79*.

Attachment: [Click to enter text.](#)

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: [Click to enter text.](#)

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDs located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: [Click to enter text.](#)

If **yes**, describe how the site will be protected from inundation: [Click to enter text.](#)

b. Is the existing/proposed SADDs within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** [Click to enter text.](#)

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** [Click to enter text.](#)

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 4.0: RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

- a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

☐ Yes ☒ No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

☐ Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

- a. Width of the receiving water at the outfall: [Click to enter text.](#) feet

- b. Are there oyster reefs in the vicinity of the discharge?

☐ Yes ☒ No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: [Click to enter text.](#)

- c. Are there sea grasses within the vicinity of the point of discharge?

☐ Yes ☒ No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: [Click to enter text.](#)

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

☒ Yes ☐ No **For Outfall 003**

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

For Outfalls 001 and 002 only

- a. Name of the immediate receiving waters: unnamed tributary (Outfalls 001 and 002)
- b. Check the appropriate description of the immediate receiving waters:
- ☐ Lake or Pond
 - Surface area (acres): Click to enter text.
 - Average depth of the entire water body (feet): Click to enter text.
 - Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.
 - ☐ Man-Made Channel or Ditch
 - ☐ Stream or Creek
 - ☐ Freshwater Swamp or Marsh
 - ☐ Tidal Stream, Bayou, or Marsh
 - ☐ Open Bay
 - ☒ Other, specify: Unnamed tributary

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c – 4.g below:

- c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

- ☒ Intermittent (dry for at least one week during most years)
- ☐ Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)
- ☐ Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

- ☐ USGS flow records
- ☒ personal observation
- ☐ historical observation by adjacent landowner(s)
- ☐ other, specify: Click to enter text.

- d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Brazos River Segment 1202
- e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).
- ☒ Yes ☐ No

If **yes**, describe how: Flow increases when tributary meets Brazos River Segment 1202

- f. General observations of the water body during normal dry weather conditions: Outfall 001 – dry ditch during normal dry weather, no evidence of pollution. Outfall 002 – some water is normally present, no evidence of pollution.

Date and time of observation: 02/12/2019 at 11am

- g. The water body was influenced by stormwater runoff during observations.

☐ Yes ☒ No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

- a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

☐ oil field activities	☐ urban runoff
☒ agricultural runoff	☐ septic tanks
☐ upstream discharges	☐ other, specify: <u>Click to enter text.</u>

- b. Uses of water body observed or evidence of such uses (check all that apply):

☐ livestock watering	☐ industrial water supply
☐ non-contact recreation	☐ irrigation withdrawal
☐ domestic water supply	☐ navigation
☐ contact recreation	☐ picnic/park activities
☐ fishing	☒ other, specify: <u>None</u>

- c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

☐ **Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional

☒ **Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ **Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid

☐ **Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

NOT APPLICABLE

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPS permit.

Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

- a. Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)
Waterbody name: [Click to enter text.](#)
General location: [Click to enter text.](#)
- b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):
☐ perennial ☐ intermittent with perennial pools ☐ impoundment
- c. No. of defined stream bends:
Well: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)
- d. No. of riffles: [Click to enter text.](#)
- e. Evidence of flow fluctuations (check one):
☐ Minor ☐ Moderate ☐ Severe
- f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: [Click to enter text.](#)
- g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								

* riffle, run, glide, or pool

** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

Number well defined: [Click to enter text.](#)

Number moderately defined: [Click to enter text.](#)

Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☒ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:** [Click to enter text.](#)

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- ☒ Permitted landfill
- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Registered land application site, attach Form TCEQ-00565
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Transported to another WWTP
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: N/A

b. Provide the following information for each disposal site:

Disposal site name: Aqua-Zyme Services

TCEQ Permit/Registration Number: 21480

County where disposal site is located: Matagorda County

c. Method of sewage sludge transportation:

☒ truck ☐ train ☐ pipe ☐ other: [Click to enter text.](#)

TCEQ Hauler Registration Number: [Click to enter text.](#)

d. Sludge is transported as a:

☒ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☒ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: [N/A](#)

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: [N/A](#)

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit.** New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information is **required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

- a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU - Non-categorical		
Other IU		

- b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: [Click to enter text.](#)

- c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: [Click to enter text.](#)

- d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

- a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to 40 CFR § 403.18?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: [Click to enter text.](#)

- b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: [Click to enter text.](#)

- c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: [Click to enter text.](#)

- d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: [Click to enter text.](#)

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

- a. Mr. or Ms.: [Click to enter text.](#) First/Last Name: [Click to enter text.](#)

Organization Name: [Click to enter text.](#)

SIC Code: [Click to enter text.](#)

Phone number: [Click to enter text.](#)

Email address: [Click to enter text.](#)

Physical Address: [Click to enter text.](#)

City/State/ZIP Code: [Click to enter text.](#)

Attachment: [Click to enter text.](#)

- b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): [Click to enter text.](#)

c. Provide a description of the principal products(s) or service(s) performed: [Click to enter text.](#)

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

☐ Yes ☐ No

If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

f. Has the SIU or CIU caused or contributed to any problem(s) (e.g., interferences, pass through, odors, corrosion, blockages) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☒ Yes ☐ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
004	☒	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility's boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in 30 TAC § 327.4) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☐ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: N/A

Item 4. Facility/Site Information (Instructions, Page 90)

- a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)
N/A		

- b. Provide the following local area rainfall information and the source of the information.

Wettest month: N/A

Average rainfall for wettest month (total inches): Click to enter text.

25-year, 24-hour rainfall (inches): Click to enter text.

Source: Click to enter text.

- c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** N/A
- d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** N/A
- e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: N/A

Item 5. Pollutant Analysis (Instructions, Page 91)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): N/A
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: N/A

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003
Copper, total						0.002
Lead, total						0.0005

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
Mercury, total						0.000005
Nickel, total						0.002
Selenium, total						0.005
Silver, total						0.0005
Zinc, total						0.005

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

d. Complete Table 18 as directed on pages 92-94 of the Instructions.

Table 18 for Outfall No.: N/A

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled

* Taken during first 30 minutes of storm event

** Flow-weighted composite sample

Attachment: [Click to enter text.](#)

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: _____

Duration of storm event (minutes): _____

Total rainfall during storm event (inches): _____

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): _____

Maximum flow rate during rain event (gallons/minute): _____

Total stormwater flow from rain event (gallons): _____

Provide a description of the method of flow measurement or estimate:

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

- a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: [Click to enter text.](#)

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: [Click to enter text.](#)

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: [Click to enter text.](#)

d. Provide the number of aquaculture facilities located within 25-miles of this facility: [Click to enter text.](#)

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: [Click to enter text.](#)

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: [Click to enter text.](#)

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): [Click to enter text.](#)

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: [Click to enter text.](#)

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: [Click to enter text.](#)

NOT APPLICABLE
WORKSHEET 9.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form to:

TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only

Reg. No. _____

Date Received _____

Date Authorized _____

Item 1. General Information (Instructions Page 99)

1. TCEQ Program Area

Program Area (PST, VCP, IHW, etc.): [Click to enter text.](#)

Program ID: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

2. Agent/Consultant Contact Information

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

3. Owner/Operator Contact Information

☐ Owner ☐ Operator

Owner/Operator Name: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

4. Facility Contact Information

Facility Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Location description (if no address is available): [Click to enter text.](#)

Facility Contact Person: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

5. Latitude and Longitude, in degrees-minutes-seconds

Latitude: [Click to enter text.](#)

Longitude: [Click to enter text.](#)

Method of determination (GPS, TOPO, etc.): [Click to enter text.](#)

Attach topographic quadrangle map as attachment A.

6. Well Information

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☐ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: [Click to enter text.](#)

Number of Injection Wells: [Click to enter text.](#)

7. Purpose

Detailed Description regarding purpose of Injection System:

[Click to enter text.](#)

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. Water Well Driller/Installer

Water Well Driller/Installer Name: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

License Number: [Click to enter text.](#)

Item 2. Proposed Down Hole Design

Attach a diagram signed and sealed by a licensed engineer as Attachment C.

Down Hole Design Table

Name of String	Size	Setting Depth	Sacks Cement/Grout – Slurry Volume – Top of Center	Hole Size	Weight (lbs/ft) PVC/Steel
Casing					
Tubing					
Screen					

Item 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

Attach a diagram signed and sealed by a licensed engineer as Attachment D.

System(s) Dimensions: [Click to enter text.](#)

System(s) Construction: [Click to enter text.](#)

Item 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: [Click to enter text.](#)

2. Receiving Formation Name of Injection Zone: [Click to enter text.](#)

3. Well/Trench Total Depth: [Click to enter text.](#)

4. Surface Elevation: [Click to enter text.](#)

5. Depth to Ground Water: [Click to enter text.](#)

6. Injection Zone Depth: [Click to enter text.](#)

7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No

Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

Name: [Click to enter text.](#)

Thickness: [Click to enter text.](#)

8. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.

9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.

10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., as Attachment G.

11. Injection Fluid Chemistry in PPM at point of injection. Attach as Attachment H.

12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: [Click to enter text.](#)

13. Maximum injection Rate/Volume/Pressure: [Click to enter text.](#)

14. Water wells within 1/4 mile radius (attach map as Attachment I): [Click to enter text.](#)

15. Injection wells within 1/4 mile radius (attach map as Attachment J): [Click to enter text.](#)

16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): [Click to enter text.](#)

17. Sampling frequency: [Click to enter text.](#)

18. Known hazardous components in injection fluid: [Click to enter text.](#)

Item 5. Site History

1. Type of Facility: [Click to enter text.](#)
2. Contamination Dates: [Click to enter text.](#)
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations. Attach as Attachment L.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

- 5A07 Heat Pump/AC return (IW used for groundwater to heat or cool buildings)
- 5A19 Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
- 5B22 Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
- 5D02 Stormwater Drainage (IW designed for the disposal of rain water)
- 5D04 Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
- 5F01 Agricultural Drainage (IW that receive agricultural runoff)
- 5R21 Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
- 5S23 Subsidence Control Wells (IW used to control land subsidence caused by groundwater withdrawal)
- 5W09 Untreated Sewage
- 5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
- 5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
- 5W12 WTP disposal
- 5W20 Industrial Process Waste-disposal Wells
- 5W31 Septic System (Well Disposal method)
- 5W32 Septic System Drainfield Disposal
- 5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, or fill sections of a mine)
- 5X25 Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
- 5X26 Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
- 5X27 Other Wells
- 5X28 Motor Vehicle Waste-disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
- 5X29 Abandoned Drinking Water Wells (waste disposal)

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC
RIVERWAY

This worksheet **is required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

- a. Is this a municipal solid waste facility?
☐ Yes ☐ No
- b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?
☐ Yes ☐ No
- c. Is this a coal mine?
☐ Yes ☐ No
- d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?
☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in 30 TAC § 311.72(c), at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

- ☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry **is prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

- a. Attach a Restoration Plan: [Click to enter text.](#)
- b. Amount of Financial Assurance for Restoration: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)
- c. Attach a Technical Demonstration: [Click to enter text.](#)
- d. Attach a Reclamation Plan: [Click to enter text.](#)
- e. Amount of Financial Assurance for Reclamation: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet is **required** for all TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12.

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	
Total AIF	
Intake Flow Use(s) (%)	
Contact cooling	
Non-contact cooling	
Process Wastewater	
Other	

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).
2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.
3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).
4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.
5. Previous year (a minimum of 12 months) of AIF data.
6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: [Click to enter text.](#)

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

- a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID				
DIF (include units)				
AIF (include units)				
Intake Flow Use(s) (%)				
Contact cooling				
Non-contact cooling				
Process Wastewater				
Other				
Latitude (decimal degrees)				
Longitude (decimal degrees)				

- b. Attach the following information regarding the CWIS(s):
1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.
 2. Engineering calculations for each CWIS.

Attachment: [Click to enter text.](#)

Item 3. Source Water Physical Data (Instructions, Page 105)

- a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID				
Source Waterbody				
Mean Annual Flow				
Source				

- b. Attach the following information regarding the source waterbody.
1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.
3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.
4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: [Click to enter text.](#)

Item 4. Operational Status (Instructions, Page 106)

- a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.
2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.
3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).
4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: [Click to enter text.](#)

- b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors

- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: [Click to enter text.](#)

c. Is this an application for a nuclear power production facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: [Click to enter text.](#)

d. Is this an application for a manufacturing facility?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: [Click to enter text.](#)

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

- ☐ Closed-cycle recirculating system(CCRS) [40 CFR § 125.94(c)(1)]
- ☐ 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] – Proceed to Worksheet 11.2
- ☐ 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]
- ☐ Existing offshore velocity cap [40 CFR § 125.94(c)(4)] – Proceed to Worksheet 11.2
- ☐ Modified traveling screens [40 CFR § 125.94(c)(5)]
- ☐ System of technologies [40 CFR § 125.94(c)(6)]
- ☐ Impingement mortality performance standard [40 CFR § 125.94(c)(7)]
- ☐ De minimis rate of impingement [40 CFR § 125.94(c)(11)]
- ☐ Low capacity utilization power-generation facilities [40 CFR § 125.94(c)(12)]

If 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] or existing offshore velocity cap [40 CFR § 125.94(c)(4)] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [40 CFR § 125.94(c)(1)]

- ☐ Check this box to confirm the CWS meets the definition of CCRS located at 40 CFR § 125.91(c) and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

- ☐ Yes ☐ No

If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

- CWIS ID
- 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Attachment: [Click to enter text.](#)

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): [Click to enter text.](#)
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: [Click to enter text.](#)

b. 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

c. Modified traveling screens [40 CFR § 125.94(c)(5)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

d. System of technologies [40 CFR § 125.94(c)(6)] or impingement mortality performance standard [40 CFR § 125.94(c)(7)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

- e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

Attachment: [Click to enter text.](#)

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

Attachment: [Click to enter text.](#)

- f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet **is required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: [Click to enter text.](#)

Item 1. Species Management (Instructions, Page 109)

- a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☐ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: [Click to enter text.](#)

- b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☐ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: [Click to enter text.](#)

- c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☐ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: [Click to enter text.](#)

- a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through (vi) that are not available, and efforts made to identify sources of the data.
- b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
 - all life stages and their relative abundance,
 - identification of all species and life stages that would be most susceptible to impingement and entrainment,
 - forage base,
 - significance to commercial fisheries,
 - significance to recreational fisheries,
 - primary period of reproduction,
 - larval recruitment, and
 - period of peak abundance for relevant taxa.
- c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).
- d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).
- e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

- f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
- g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

NOT APPLICABLE
INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 11.3: ENTRAINMENT

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☐ No

- If **no** or the facility has selected **CCRS** [40 CFR § 125.94(c)(1)] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance with 40 CFR § 125.95, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: [Click to enter text.](#)

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

- a. Attach an entrainment characterization study, as described at 40 CFR § 122.21(r)(9): [Click to enter text.](#)
- b. Attach a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10): [Click to enter text.](#)
- c. Attach a benefits valuation study, as described as 40 CFR § 122.21(r)(11): [Click to enter text.](#)
- d. Attach a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12): [Click to enter text.](#)
- e. Attach a peer review analysis, as described as 40 CFR § 122.21(r)(13): [Click to enter text.](#)

NOT APPLICABLE
**INDUSTRIAL WASTEWATER PERMIT APPLICATION
WORKSHEET 12.0: OIL AND GAS EXPLORATION,
DEVELOPMENT, AND PRODUCTION WASTEWATER
DISCHARGES**

This worksheet **is required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

- a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

- b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

- a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

- b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

- f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

- g. List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): [Click to enter text.](#)
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** [Click to enter text.](#)
- d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

Table 19 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (mg/L)*	Sample 2 (mg/L)*	Sample 3 (mg/L)*	Sample 4 (mg/L)*
Calcium				
Potassium				
Sodium				

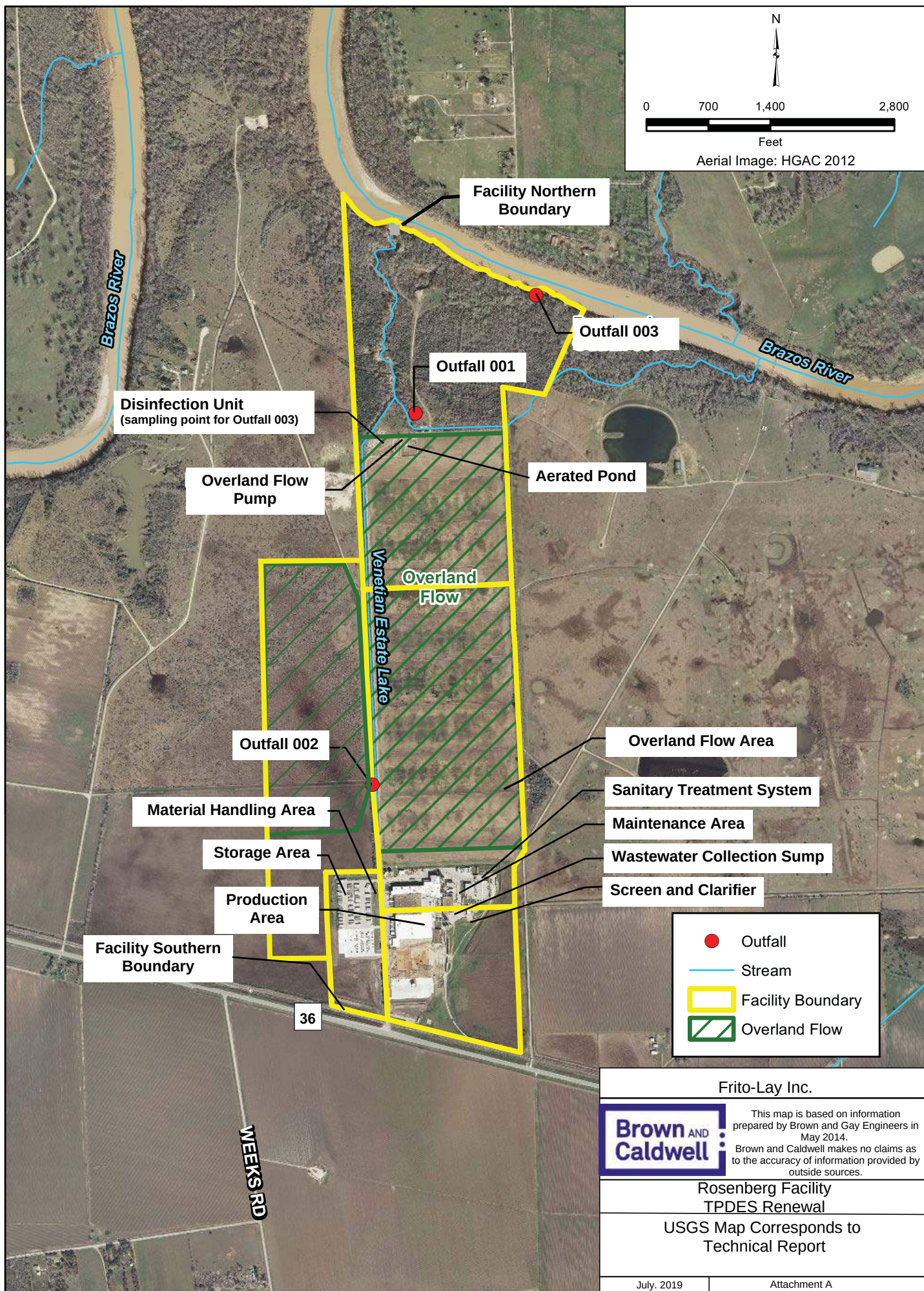
*Indicate units if different from mg/L.

Technical Report Attachment A

Site Map
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

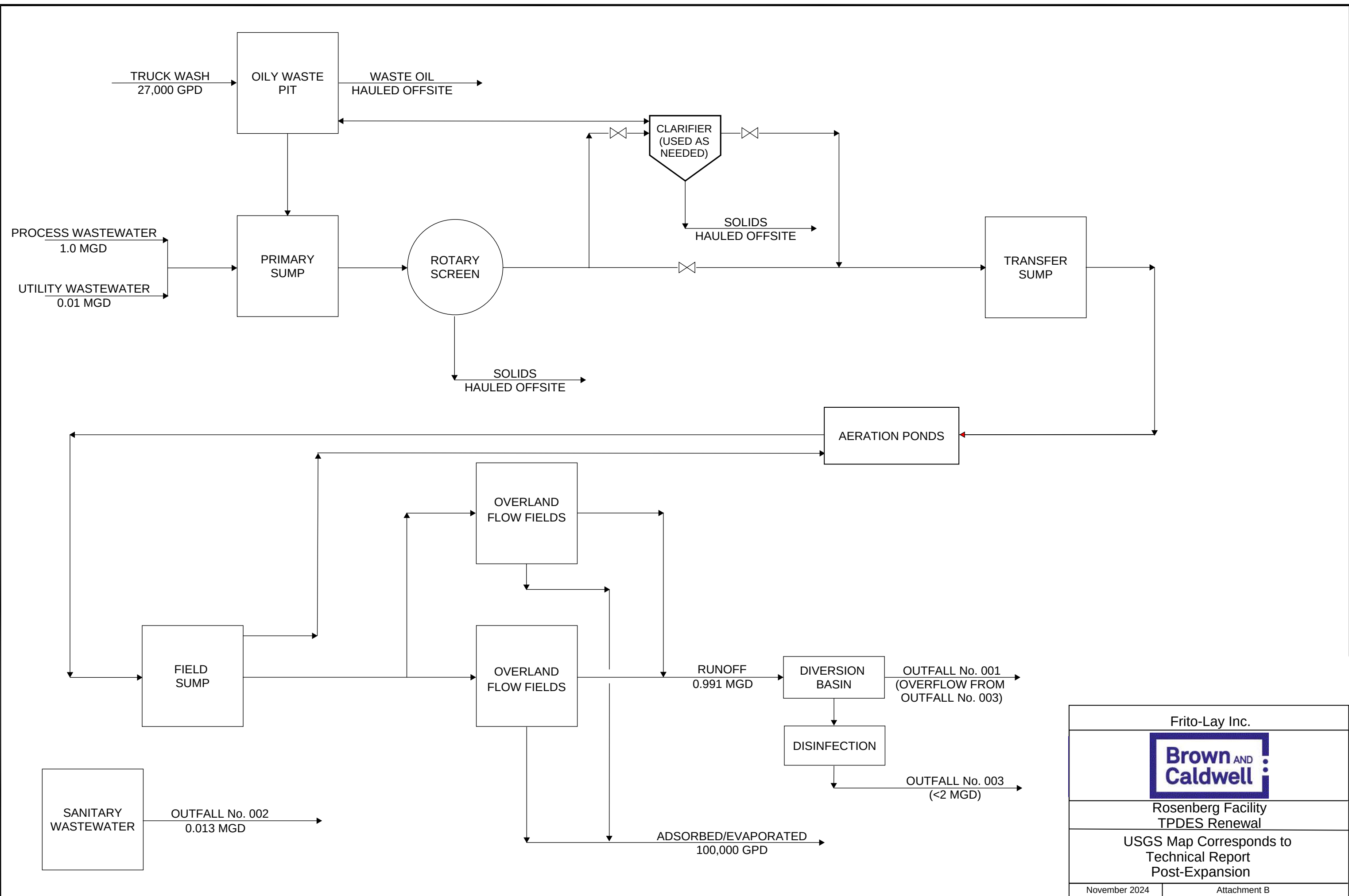


Technical Report Attachment B

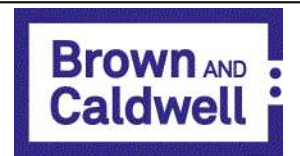
Flow Schematic
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000



Frito-Lay Inc.



Rosenberg Facility
TPDES Renewal

USGS Map Corresponds to
Technical Report
Post-Expansion

November 2024

Attachment B

Technical Report Attachment C

Safety Data Sheets
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

Technical Report Attachment C Frito-Lay, Inc.
TPDES Permit No. WQ0002443000
Attachment C: SDS Summary

[illegible]

Technical Report Attachment C-1

**Safety Data Sheet - Sodium Hydroxide
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Page 1 of 7

Sodium Hydroxide, 0.5M

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : Sodium Hydroxide, 0.5M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: S25881

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:



Corrosive

Serious eye damage, category 1

Corrosive to metals, category 1

Skin corrosion, category 1B

Skin Corr. 1B

Eye corr. 1

Metal Corr. 1

Signal word : Danger

Hazard statements:

May be corrosive to metals

Causes severe skin burns and eye damage

Causes serious eye damage

Precautionary statements:

If medical advice is needed, have product container or label at hand

Keep out of reach of children

Read label before use

Keep only in original container

Do not breathe dust/fume/gas/mist/vapours/spray

Wash ... thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Absorb spillage to prevent material damage

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.

Continue rinsing

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

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Sodium Hydroxide, 0.5M

Immediately call a POISON CENTER or doctor/physician
Store in a corrosive resistant/... container with a resistant inner liner
Store locked up
Dispose of contents/container to ...

Other Non-GHS Classification:

WHMIS



NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

SECTION 3 : Composition/information on ingredients

Ingredients:		
CAS 1310-73-2	Sodium Hydroxide	2 %
CAS 7732-18-5	Deionized Water	98 %
Percentages are by weight		

SECTION 4 : First aid measures

Description of first aid measures

After inhalation: Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen.

After skin contact: Take off contaminated clothing and shoes immediately. Wash affected area with soap and water. Seek medical attention if irritation, discomfort persist.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Immediately get medical assistance.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation, Nausea, Headache, Shortness of breath.;

Indication of any immediate medical attention and special treatment needed:

Sodium Hydroxide, 0.5M

If seeking medical attention, provide SDS document to physician.

SECTION 5 : Firefighting measures

Extinguishing media

Suitable extinguishing agents: If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors. Sodium oxides.

Advice for firefighters:

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Transfer to a disposal or recovery container. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Collect liquid and dilute with water. Neutralize with dilute acid solutions. Decant water to drain with excess water. Absorb with suitable material. Dispose of remaining solid as normal refuse. Always obey local regulations.

Reference to other sections:

SECTION 7 : Handling and storage

Precautions for safe handling:

Absorb spillage to prevent material damage due to corrosiveness to metal. Avoid contact with eyes, skin, and clothing. Wash hands after handling. Do not mix with acids. Follow good hygiene procedures when handling chemical materials. Use only in well ventilated areas.

Conditions for safe storage, including any incompatibilities:

Protect from freezing and physical damage. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Store with Corrosives.

SECTION 8 : Exposure controls/personal protection



Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

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Sodium Hydroxide, 0.5M

Control Parameters:	1310-73-2, Sodium Hydroxide, OSHA PEL TWA 2 mg/m3 1310-73-2, Sodium Hydroxide, ACGIH TLV TWA 2 mg/m3
Appropriate Engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
Respiratory protection:	Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.
Protection of skin:	The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Eye protection:	Safety glasses with side shields or goggles.
General hygienic measures:	The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9 : Physical and chemical properties

Appearance (physical state,color):	Clear, colorless liquid	Explosion limit lower: Explosion limit upper:	Non Explosive Non Explosive
Odor:	Odorless	Vapor pressure:	14mmHg @ 20C
Odor threshold:	Not Determined	Vapor density:	>1
pH-value:	Alkaline	Relative density:	Approx 1
Melting/Freezing point:	Approx 0°C	Solubilities:	Soluble in Water
Boiling point/Boiling range:	Approx 100°C	Partition coefficient (n-octanol/water):	Not Determined
Flash point (closed cup):	Not Determined	Auto/Self-ignition temperature:	Not Determined
Evaporation rate:	Not Determined	Decomposition temperature:	Not Determined
Flammability (solid,gaseous):	Not Determined	Viscosity:	a. Kinematic: Not Determined b. Dynamic: Not Determined
Density: Not Determined			

SECTION 10 : Stability and reactivity

Reactivity:

Chemical stability: No decomposition if used and stored according to specifications.

Possible hazardous reactions:

Conditions to avoid: Incompatible materials, excess heat

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

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Sodium Hydroxide, 0.5M

Incompatible materials: acids, Organic materials, Chlorinated solvents, Aluminum, Phosphorus, Tin/tin oxides, Zinc

Hazardous decomposition products: sodium oxides, hydrogen. Carbon oxides (CO, CO2).

SECTION 11 : Toxicological information

Acute Toxicity: No additional information.	
Chronic Toxicity: No additional information.	
Corrosion Irritation: No additional information.	
Sensitization:	No additional information.
Single Target Organ (STOT):	No additional information.
Numerical Measures:	No additional information.
Carcinogenicity:	No additional information.
Mutagenicity:	No additional information.
Reproductive Toxicity:	No additional information.

SECTION 12 : Ecological information

Ecotoxicity Persistence and degradability: Readily degradable in the environment.

Bioaccumulative potential: Not Bioaccumulative.

Mobility in soil:

Other adverse effects:

SECTION 13 : Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Neutralize with dilute acid solutions.

SECTION 14 : Transport information

UN-Number

1824

UN proper shipping name

Sodium hydroxide solution

Transport hazard class(es)



Class:

8 Corrosive substances

Packing group:II

Environmental hazard:

Transport in bulk:

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

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Sodium Hydroxide, 0.5M

Special precautions for user:

SECTION 15 : Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

None of the ingredients is listed

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

1310-73-2 Sodium Hydroxide 1000 lb

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

1310-73-2 Sodium Hydroxide

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases:

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

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Sodium Hydroxide, 0.5M

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
PNEC: Predicted No-Effect Concentration (REACH)
CFR: Code of Federal Regulations (USA)
SARA: Superfund Amendments and Reauthorization Act (USA)
RCRA: Resource Conservation and Recovery Act (USA)
TSCA: Toxic Substances Control Act (USA)
NPRI: National Pollutant Release Inventory (Canada)
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)

Effective date : 12.14.2014

Last updated : 03.25.2015

Technical Report Attachment C-2

**Safety Data Sheet - Sodium Chloride
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

Material Safety Data Sheet

Sodium chloride

ACC# 21105

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium chloride

Catalog Numbers: AC194090000, AC194090010, AC194090050, AC1940900510, AC194090250, AC207790000, AC207790010, AC207790050, AC327300000, AC327300010, AC424290000, AC424290030, AC424290250, 42429-0010, 42429-5000, BP358-1, BP358-10, BP358-212, NC9269808, NC9380133, NC9460864, NC9634552, NC9780594, NC9821620, NC9826699, NC9919051, NC9974906, S271-1, S271-10, S271-10LC, S271-1LC, S271-3, S271-350LB, S271-50, S271-500, S271-50LC, S640-10, S640-10LC, S640-3, S640-350LB, S640-50, S640-500, S640SAM1, S640SAM2, S640SAM3, S641-212, S641-350LB, S641-500, S641P-350LB, S641P350LLC, S642-12, S642-212, S642-350LB, S642-500, S64212LC, S642350LBLC, S642SAM1, S642SAM2, S642SAM3, S671-10, S671-3, S671-500

Synonyms: Common salt; Halite; Rock salt; Saline; Salt; Sea salt; Table salt.**Company Identification:**

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7647-14-5	Sodium chloride	99+	231-598-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.

Caution! May cause eye, skin, and respiratory tract irritation. Hygroscopic (absorbs moisture from the air).**Target Organs:** None known.**Potential Health Effects****Eye:** May cause eye irritation. Exposure to solid may cause pain and redness.**Skin:** May cause skin irritation. May be harmful if absorbed through the skin.**Ingestion:** May cause irritation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause nausea and vomiting, rigidity or convulsions. Continued exposure can produce coma, dehydration, and internal organ

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: Do not induce vomiting. Get medical aid if irritation or symptoms occur.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. May be combustible at high temperatures.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations

low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium chloride	none listed	none listed	none listed

OSHA Vacated PELs: Sodium chloride: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: white

Odor: odorless

pH: 5.0 - 8.0 (5% aq.sol. 20°C)

Vapor Pressure: 1 mm Hg @ 865 deg C

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 1461 deg C @ 760 mmHg

Freezing/Melting Point: 801 deg C

Decomposition Temperature: Not available.

Solubility: 360 g/L (20°C)

Specific Gravity/Density: 2.165

Molecular Formula: NaCl

Molecular Weight: 58.44

Section 10 - Stability and Reactivity

Chemical Stability: Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: High temperatures, incompatible materials, dust generation, exposure to moist air or water.

Incompatibilities with Other Materials: Metals, strong oxidizing agents, strong acids, bromine trifluoride, nitro compounds, dichloromaleic anhydride + urea.

Hazardous Decomposition Products: Hydrogen chloride, sodium oxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7647-14-5: VZ4725000

LD50/LC50:

CAS# 7647-14-5:

Draize test, rabbit, eye: 100 mg Mild;
 Draize test, rabbit, eye: 100 mg/24H Moderate;
 Draize test, rabbit, eye: 10 mg Moderate;
 Draize test, rabbit, skin: 50 mg/24H Mild;
 Draize test, rabbit, skin: 500 mg/24H Mild;
 Inhalation, rat: LC50 = >42 gm/m³/1H;
 Oral, mouse: LD50 = 4 gm/kg;
 Oral, rat: LD50 = 3000 mg/kg;
 Skin, rabbit: LD50 = >10 gm/kg;

Carcinogenicity:

CAS# 7647-14-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: The only adverse effect noted from occupational exposures have been mild nasal irritation with exposure to high dust levels and hypertension.

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: No information available.

Other: Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated	Not Regulated
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7647-14-5 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7647-14-5: immediate.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7647-14-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 7647-14-5: 0

Canada - DSL/NDSL

CAS# 7647-14-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of Not controlled..

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 7/12/1999

Revision #13 Date: 2/15/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Technical Report Attachment C-3

**Safety Data Sheet - BL1553
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: ChemTreat BL1553
Product Use: Steam Line Treatment
Supplier's Name: ChemTreat, Inc.
Emergency Telephone Number: (800) 424-9300 (Toll Free)
(703) 527-3887
Address (Corporate Headquarters): 5640 COX ROAD
Glen Allen, VA 23060
Telephone Number for Information: (800) 648-4579
Date of MSDS: August 16, 2013

Section 2. Hazard(s) Identification



Signal Word: DANGER!

Hazard Statement(s): Causes severe skin burns and eye damage.
Causes serious eye damage.
Harmful in contact with skin.
Harmful if inhaled.
Harmful if swallowed.

Precautionary Statement(s): Wear protective gloves/clothing and eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Cyclohexylamine	108-91-8	10 - 30
Morpholine	110-91-8	7 - 13
2-diethylaminoethanol	100-37-8	7 - 13

Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Notes to Physician:	N/A
Additional First Aid Remarks:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Negative results obtained in sustained combustion test.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

Section 7. Handling and Storage

Handling:

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage:

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Cyclohexylamine	ACGIH TLV	41 mg/m ³ TWA
Morpholine	ACGIH TLV	71 mg/m ³ TWA Skin
	OSHA PEL	70 mg/m ³ TWA Skin
2-diethylaminoethanol	ACGIH TLV	9.6 mg/m ³ TWA Skin
	OSHA PEL	50 mg/m ³ TWA Skin

Carcinogenicity Category

Component	Source	Code	Brief Description
Cyclohexylamine	ACGIH	TLV-A4	Not classifiable as a human carcinogen.
Morpholine	ACGIH	TLV-A4	Not classifiable as a human carcinogen.
	IARC	IARC-3	Unclassifiable as to carcinogenicity in humans
2-diethylaminoethanol			N/E

Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:

Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin:

Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

If misting occurs, use NIOSH approved organic vapor/acid gas dual

cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	0.984 @ 20°C
pH:	12.3 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	125°F
Odor:	Strong
Melting Point:	N/A
Boiling Point:	212°F
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.21 lb/ga
Vapor Pressure:	N/D
% VOC:	50

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen
Possibility of Hazardous Reactions:	None known.

Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
Cyclohexylamine	Oral	LD50	156 mg/kg	Rat
	Dermal	LD50	277 mg/kg	Rabbit
Morpholine	Oral	LD50	1050 mg/kg	Rat
	Dermal	LD50	500 mg/kg	Rabbit
2-diethylaminoethanol	Oral	LD50	1300 mg/kg	Rat
	Dermal	LD50	1260 mg/kg	Rabbit

Comments: None.

Section 12. Ecological Information

Species	Duration	Type of Effect	Test Results
Fathead Minnow	96h	LC50	517.632 mg/l
Ceriodaphnia dubia	48h	LC50	171 mg/l
	7d	NOEC	100 mg/l
	7d	LOEC	200 mg/l
	7d	IC25	37 mg/l

Comments: NOEC effect = Survival

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA ignitibility characteristic hazardous waste D001 when disposed of in the original product form.

Section 14. Transport Information

DOT

Proper Shipping Name:	AMINES, LIQUID, CORROSIVE, N.O.S.
Technical Name:	(CYCLOHEXYLAMINE AND MORPHOLINE)
Hazard Class:	Corrosive
UN/NA#:	UN2735
Packing Group:	PGIII

TDG

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.
Technical Name: (CYCLOHEXYLAMINE AND MORPHOLINE)
Hazard Class: Corrosive
UN/NA#: UN2735
Packing Group: PGIII

ICAO

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S.
Technical Name: (CYCLOHEXYLAMINE AND MORPHOLINE)
Hazard Class: Corrosive
UN/NA#: UN2735
Packing Group: PGIII

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations**SARA Title III Rules****Sections 311/312 Hazard Classes**

Fire Hazard: Yes
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Cyclohexylamine	N/A	10000	10000
Morpholine	N/A	N/A	N/A
2-diethylaminoethanol	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Cyclohexylamine	MA, MN, NJ, NY, PA, WA
Morpholine	MA, MN, PA, WA
2-diethylaminoethanol	MA, MN, PA, WA

International Regulations

Canada

WHMIS Classification: D2B (Toxic Material)
E (Corrosive Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16. Other Information

HMIS Hazard Rating

Health: 2
Flammability: 2
Physical Hazard: 0
PPE: X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

NSF: This product conforms to the requirements of the NSF Nonfood Compounds Registration Program, Registration #148348; Category G6, G7.

FDA/USDA/GRAS: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.



KOSHER: This product is certified by the Orthodox Union as kosher pareve. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Vernon, CA.

FIFRA: N/A

Other: None

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Regulatory Affairs Department

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

Technical Report Attachment C-4

**Safety Data Sheet - BL1280
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000



SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1280
Product Use:	Boiler Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	April 21, 2020
Revision Date:	April 21, 2020
Revision Number:	20042101AN

Section 2. Hazard(s) Identification



Signal Word:	WARNING
GHS Classification(s):	Eye damage/irritation – Category 2b Skin corrosion/irritation – Category 2 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4 Hazardous to the aquatic environment Acute – Category 2
Hazard Statement(s):	H320 Causes eye irritation. H315 Causes skin irritation. H332 Harmful if inhaled. H302 Harmful if swallowed. H401 Toxic to aquatic life.
Precautionary Statement(s):	
Prevention:	P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P271 Use only outdoors or in a well-ventilated area. P270 Do not eat, drink, or smoke when using this product. P273 Avoid release into the environment.

**Response:**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists, get medical advice/attention.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P332 + P313 If skin irritation develops or persists, get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 Rinse mouth.

Storage:

None.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Diethylhydroxylamine	3710-84-7	10 – 30
Hydroquinone	123-31-9	5 – 10

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Vapor is heavier than air. Product emits toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.



Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 157 Gal.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Diethylhydroxylamine	N/E	N/E
Hydroquinone	ACGIH TLV	1 mg/m ³ TWA
	OSHA PEL	2 mg/m ³ TWA Skin; Sensitizer

Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.



Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Straw, Clear
Specific Gravity:	1.015 @ 20°C
pH:	8.8 @ 20°C, 100.0%
Freezing Point:	28°F
Flash Point:	N/D
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.47 LB/GA
Vapor Pressure:	N/D
% VOC:	1.5
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong acids, Carbon steel, Copper/copper alloys, Polyvinylchloride.
Hazardous Decomposition Products:	Ammonia, Oxides of carbon, Oxides of nitrogen, Diethylamine.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Diethylhydroxylamine	Oral	LD50	2190 MG/KG	Rat
	Dermal	LD50	1300 MG/KG	Rabbit
Hydroquinone	Oral	LD50	320 MG/KG	Rat
	Oral	LD50	245 MG/KG	Mouse
	Dermal	LD50	>900 MG/KG	Rat
	Dermal	LD50	>2000 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Diethylhydroxylamine	N/E	N/E	N/E
Hydroquinone	ACGIH	TLV-A3	Confirmed animal carcinogen with unknown relevance to humans
	IARC	IARC-3	Unclassifiable as to carcinogenicity in humans
	MAK	MAK-2	Considered to be carcinogenic based on animal studies

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Daphnia magna	48h	LC50	1.26 mg/l
Daphnia pulex	48h	LC50	4.2 mg/l
Fathead Minnow	96h	LC50	0.732 mg/l
	48h	LC50	0.64 mg/l
Ceriodaphnia dubia	48h	LC50	6.4 mg/l
Mysid Shrimp	48h	LC50	4.1 mg/l
Inland Silverside	96h	LC50	1.3 mg/l

Persistence and Biodegradability: N/D



Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
Over 157 GA	RQ UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.	(HYDROQUINONE)	9	PGIII
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDL):

All ingredients listed.
All ingredients listed.



Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Diethylhydroxylamine	N/A	N/A	N/A
Hydroquinone	Yes	500/10000	100

Comments: None.

State Regulations

California Proposition 65:

WARNING: This product can expose you to chemicals including benzophenotone, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including catechol, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Special Regulations

Component	States
Diethylhydroxylamine	None.
Hydroquinone	MA, MI, MN, NY, PA, WA



Compliance Information

NSF:	N/A
Food Regulations:	N/A
KOSHER:	This product is certified by the Orthodox Union as Kosher for Passover and year-round use. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	1
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept



Abbreviation	Definition
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: April 21, 2020

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

Technical Report Attachment C-5

**Safety Data Sheet - CL5685
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

1. Identification

Product identifier CL5685

Other means of identification

Product code Flexpro CL5685

Recommended use Cooling Water Treatment

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name ChemTreat, Inc.

Address 5640 Cox Road
Glen Allen, VA 23060
United States

Telephone 800-648-4579

Website chemtreat.com

E-mail productcompliance@chemtreat.com

Emergency phone number 800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1
Sensitization, skin Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage.

Precautionary statement

Prevention Do not breathe mist/vapors. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 48.87% of the mixture consists of component(s) of unknown acute oral toxicity. 31.62% of the mixture consists of component(s) of unknown acute dermal toxicity. 54.47% of the mixture consists of component(s) of unknown acute inhalation toxicity. 31.62% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 28.72% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Sodium hydroxide		1310-73-2	20 - < 30
Chlorotolyltriazole sodium salt		202420-04-0	1 - < 3
Other components below reportable levels			70 - < 80

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Clear

Physical state

Liquid.

Form

Liquid. Liquid

Color

Brown

Odor

Mild

Odor threshold

Not available.

pH

13.2

Melting point/freezing point

21.20 °F (-6.00 °C)

Initial boiling point and boiling range

Not available.

Flash point

Not available.

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 0 - 200 cps

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Pounds per gallon 10.48

Specific gravity 1.24 - 1.27 @ 20C

10. Stability and reactivity

Reactivity Reacts violently with strong acids. This product may react with oxidizing agents.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials. Do not mix with other chemicals.

Incompatible materials Strong acids. Oxidizing agents.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes severe skin burns. May cause an allergic skin reaction.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Not known.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** Not classified.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Not an aspiration hazard.**Chronic effects** Prolonged inhalation may be harmful.**12. Ecological information****Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species		Test Results
CL5685			
Aquatic			
Crustacea	IC25	Opossum shrimp order (Mysida)	543 mg/l, 7 days
	LC50	Ceriodaphnia dubia	1193 mg/l, 48 hours
	LOEC	Opossum shrimp order (Mysida)	250 mg/l, 7 days
	NOEC	Opossum shrimp order (Mysida)	125 mg/l, 7 days
Fish	IC25	Inland silverside (Menidia beryllina)	1090 mg/l, 7 days
	LC50	Fathead minnow (Pimephales promelas)	583 mg/l, 96 hours
	LOEC	Inland silverside (Menidia beryllina)	2000 mg/l, 7 days
	NOEC	Inland silverside (Menidia beryllina)	1000 mg/l, 7 days

Components		Species	Test Results
Sodium hydroxide (CAS 1310-73-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/l, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	125 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.**Bioaccumulative potential** No data available.**Mobility in soil** No data available.**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.**13. Disposal considerations****Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.**Local disposal regulations** Dispose in accordance with all applicable regulations.**Hazardous waste code** D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Sodium hydroxide and Halogenated aromatic heterocycle sodium salt)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Sodium hydroxide and Halogenated aromatic heterocycle sodium salt)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Sodium hydroxide and Halogenated aromatic heterocycle sodium salt)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Compliance Information: Halal

Compliance Information: Kosher

This product is certified by the Orthodox Union as Kosher pareve

Ashland VA
Eldridge IA
Nederland TX
Fontana CA



Compliance Information: NSF Whitebook

This product conforms to the requirements of the NSF Nonfood Compounds Registration Program, Registration # 161286; Category G5.



16. Other information, including date of preparation or last revision

Issue date	02-01-2023
Revision date	02-28-2023
Version #	02
HMIS® ratings	Health: 3 Flammability: 1 Physical hazard: 0 Personal protection: X
Disclaimer	ChemTreat, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.
Revision information	Transport Information: Material Transportation Information
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Technical Report Attachment C-6

**Safety Data Sheet - Sodium Hypochlorite
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

SAFETY DATA SHEET

Creation Date 25-Aug-2010

Revision Date 24-Dec-2021

Revision Number 9

1. Identification

Product Name Sodium hypochlorite

Cat No. : AC219250000; AC219250025; AC219250100; AC219255000

CAS No 7681-52-9
Synonyms Antiformin

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals	Category 1
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word

Danger

Hazard Statements

May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep only in original container

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Spills

Absorb spillage to prevent material damage

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant polypropylene container with a resistant inliner
Store in a dry place

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life
Toxic to aquatic life with long lasting effects
Contact with acids liberates toxic gas

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	> 84 - < 95
Sodium hypochlorite	7681-52-9	> 5 - < 16

4. First-aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician

	immediately.
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
Most important symptoms and effects	Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Chlorine. Oxygen.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	1	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Environmental Precautions	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling	Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on

clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Storage.

Keep container tightly closed in a dry and well-ventilated place. Do not store in metal containers. Protect from direct sunlight. Keep refrigerated. Incompatible Materials. Acids. Strong oxidizing agents. Metals. Amines.

8. Exposure controls / personal protection

Exposure GuidelinesLegend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Tight sealing safety goggles. Face protection shield.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Yellow
Odor	pungent Chlorine
Odor Threshold	No information available
pH	11-13
Melting Point/Range	-16 °C / 3.2 °F
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	1.2 - 1.3
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Cl Na O
Molecular Weight	74.44

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Stable under normal conditions. Sensitivity to light.
Conditions to Avoid	Incompatible products. Excess heat.
Incompatible Materials	Acids, Strong oxidizing agents, Metals, Amines
Hazardous Decomposition Products	Chlorine, Oxygen
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Sodium hypochlorite	LD50 = 8.91 g/kg (Rat)	LD50 > 20000 mg/kg (Rabbit)	> 10500 mg/l (Rat) 1h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium hypochlorite	7681-52-9	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium hypochlorite	EC50: = 0.05 mg/L, 72h (Pseudokirchnerella subcapitata)	Clupea pallasii: LC50=0.065 mg/L 96h	-	0.032 mg/L LC50 = 48 h

Persistence and Degradability Soluble in water Persistence is unlikely based on information available. Miscible with water

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Should not be released into the environment.

14. Transport information

DOT

UN-No UN1791
 Proper Shipping Name HYPOCHLORITE SOLUTIONS
 Hazard Class 8
 Packing Group III

TDG

UN-No UN1791
 Proper Shipping Name HYPOCHLORITE SOLUTION
 Hazard Class 8
 Packing Group III

IATA

UN-No UN1791
 Proper Shipping Name HYPOCHLORITE SOLUTION
 Hazard Class 8
 Packing Group III

IMDG/IMO

UN-No UN1791
 Proper Shipping Name HYPOCHLORITE SOLUTION
 Hazard Class 8
 Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Sodium hypochlorite	7681-52-9	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea

(KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-35400
Sodium hypochlorite	7681-52-9	X	-	231-668-3	X	X	X	X	X	KE-31506

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313****SARA 311/312 Hazard Categories** See section 2 for more information**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium hypochlorite	X	100 lb	-	-

Clean Air Act**OSHA** - Occupational Safety and Health Administration Not applicable**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sodium hypochlorite	100 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals.**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Sodium hypochlorite	X	X	X	-	-

U.S. Department of TransportationReportable Quantity (RQ): Y
DOT Marine Pollutant Y
DOT Severe Marine Pollutant N**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.**Other International Regulations****Mexico - Grade** No information available**Authorisation/Restrictions according to EU REACH**

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Sodium hypochlorite	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Sodium hypochlorite	7681-52-9	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Sodium hypochlorite	7681-52-9	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 25-Aug-2010
Revision Date 24-Dec-2021
Print Date 24-Dec-2021
Revision Summary SDS sections updated. 2. 3. 9. 10. 11. 16.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Technical Report Attachment C-7

**Safety Data Sheet - Sulfuric Acid
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

SAFETY DATA SHEET

Creation Date 23-Jun-2009

Revision Date 26-Dec-2021

Revision Number 9

1. Identification

Product Name Sulfuric acid

Cat No. : AC424520000; AC424520025; AC424520026; AC424520100;
AC424525000; AC424525001, AC424528000

CAS No 7664-93-9
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet**Company**

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Danger

Hazard Statements

Causes severe skin burns and eye damage
May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

WARNING. Cancer - <https://www.p65warnings.ca.gov/>.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Sulfuric acid	7664-93-9	>95

4. First-aid measures

General Advice

Immediate medical attention is required. Remove and isolate contaminated clothing and shoes.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion	Rinse mouth. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician or poison control center immediately.
Most important symptoms and effects	Causes burns by all exposure routes. . Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Unsuitable Extinguishing Media	DO NOT USE WATER
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Corrosive material. Reacts violently with water. Reaction with water may generate much heat which will increase the concentration of fumes in the air. Contact with metals may evolve flammable hydrogen gas. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Hazardous Combustion Products

Hydrogen. Sulfur oxides.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
3

Flammability
0

Instability
2

Physical hazards
W

6. Accidental release measures

Personal Precautions	Use personal protective equipment as required. Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing.
Environmental Precautions	Avoid release to the environment. See Section 12 for additional Ecological Information.
Methods for Containment and Clean Up	Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. After cleaning, flush away traces with water.

7. Handling and storage

Handling	Handle product only in closed system or provide appropriate exhaust ventilation. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

Incompatible Materials. Strong oxidizing agents. Combustible material. Bases. Organic materials. Reducing Agent. Finely powdered metals. Peroxides.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Sulfuric acid	TWA: 0.2 mg/m ³	(Vacated) TWA: 1 mg/m ³ TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³	TWA: 0.2 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Handle in a place equipped with local exhaust ventilation. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Odorless
Odor Threshold	No information available
pH	1 1N aq.sol
Melting Point/Range	10 °C / 50 °F
Boiling Point/Range	290 °C / 554 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 146 °C
Vapor Density	No information available
Specific Gravity	1.840
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	340 °C
Viscosity	21mPa.s @ 25 °C
Molecular Formula	H2 O4 S
Molecular Weight	98.07

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Water reactive. Hygroscopic.
Conditions to Avoid	Incompatible products. Excess heat. Exposure to moist air or water.
Incompatible Materials	Strong oxidizing agents, Combustible material, Bases, Organic materials, Reducing Agent, Finely powdered metals, Peroxides
Hazardous Decomposition Products	Hydrogen, Sulfur oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	Contact with metals may evolve flammable hydrogen gas. Reacts violently with water.

11. Toxicological information

Acute Toxicity

Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg (Rat)	Not listed	LC50 = 0.375 mg/L (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation	Causes severe burns by all exposure routes
Sensitization	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Sulfuric acid	7664-93-9	Group 1	Known	A2	X	A2

IARC (International Agency for Research on Cancer)

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.
STOT - single exposure	Respiratory system
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sulfuric acid	-	LC50: > 500 mg/L, 96h static (Brachydanio rerio)	-	EC50: 29 mg/L/24h

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

TDG

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

IATA

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

IMDG/IMO

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Sulfuric acid	7664-93-9	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Sulfuric acid	7664-93-9	X	-	231-639-5	X	X	X	X	X	KE-32570

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations**SARA 313**

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Sulfuric acid	7664-93-9	>95	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sulfuric acid	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sulfuric acid	1000 lb	1000 lb

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Sulfuric acid	7664-93-9	Carcinogen	-	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Sulfuric acid	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Sulfuric acid	7664-93-9	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Sulfuric acid	7664-93-9	Not applicable	Not applicable	Not applicable	Annex I - Y34

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 23-Jun-2009

Revision Date 26-Dec-2021

Print Date 26-Dec-2021

Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Technical Report Attachment C-8

**Safety Data Sheet - Brommax 7.1
November 2024**

**Frito-Lay Inc. Rosenberg Facility
TPDES Renewal**

Permit Number: WQ0002443000

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product Identifier: BROMMAX 7.1
Product Use: Water Treatment Antimicrobial Solution
Chemical Family: Stabilized Liquid Bromine
Registration Number: 63838-5

Product Code: 28

Enviro Tech Chemical Services, Inc.
500 Winmoore Way Modesto, CA 95358
(209) 581-9576 (7 AM to 5 PM, PST, Monday to Friday)

24 Hr. Emergency Tel.#: 800-424-9300

SECTION 2 - HAZARDS IDENTIFICATION

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). These requirements differ from the classification criteria and hazard information required for safety data sheets of non-pesticide chemicals. Please see Section 15 for FIFRA labeling information.

Classification of the Substance or Mixture:

Skin Corrosion - Category 1
Serious Eye Damage - Category 1
Corrosive to Metals - Category 1
Acute Toxicity - Inhalation Category 4
Acute Toxicity - Dermal Category 5



Signal Word: DANGER

Hazard Statements:

Causes severe skin burns and eye damage
May be corrosive to metals
May be harmful if inhaled
May be harmful in contact with skin

Precautionary Statements:

Prevention

Wash hands thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection.
Keep only in original container.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician

Wash contaminated clothing before reuse.

Absorb spillage to prevent material damage.

Storage

Store locked up.
Store in a corrosive resistant container with a resistant inner liner.

Disposal

Dispose of contents/container in accordance with local regulations.

SAFETY DATA SHEET

Hazards not Otherwise Classified:

No other hazards classified.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Synonym	CAS Number	Concentration
SULFAMIC ACID, N-BROMO, SODIUM SALT	N-BROMOSULFAMATE	1004542-84-0	15-25%
SODIUM HYDROXIDE	CAUSTIC SODA	1310-73-2	1-5%

SECTION 4 - FIRST-AID MEASURES

Inhalation: Get medical advice/attention if you feel unwell or are concerned.

Skin Contact: Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash with plenty of lukewarm, gently flowing water with a flushing duration of 15-20 minutes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before re-use or discard.

Eye Contact: Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or into the face. Immediately call a POISON CENTER/doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Most Important Symptoms and Effects, both Acute and Delayed: Causes irritation/burns that may result in permanent impairment of vision, even blindness. Contact with skin can cause irritation. May be harmful if swallowed.

Indication of any Immediate Medical Attention and Special Treatment Needed: Treat symptomatically

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media: Use water spray, powder, foam, carbon dioxide.

Special hazards arising from the substance or mixture: Non combustible. May give off irritating or toxic fumes (or gases) in a fire.

Flammability classification (OSHA 29 CFR 1910.106) (Hazcom 2012): Non flammable

Hazardous Combustion Products: May cause fire and explosions when in contact with incompatible materials.

Special protective equipment and precautions for firefighters: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Methods and materials for containment and cleaning up: SMALL SPILLS (less than 1 gallon): Dike small spills with inert material (sand, earth, etc.). Collect in plastic containers only. Wash area and let dry. LARGE SPILL: Should be diked with sand ahead of spill. Collect in plastic containers only. Ensure adequate decontamination of tools and equipment following clean up.

Special spill response procedures: Collect spills in plastic containers only. Prevent from entering sewers, waterways, or low areas.

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling: Wear at least chemical resistant gloves and eye protection, face shield, and chemical resistant garments when handling, moving or using this product. Do not contaminate water, food, or feed by storage or disposal.

Conditions for Safe Storage: Store in a cool, dry, well ventilated place away from direct sunlight. Keep container closed when not in use.

Incompatible Materials: Strong reducing agents such as sulfite and metabisulfite, strong acids and bases. Never mix this product with undiluted sodium hypochlorite bleach. The mixture will result in a violent exothermic reaction that produces a great deal of heat and nitrogen gas bubbles.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation and engineering measures: Forced air, local exhaust, or open air is adequate.

Respiratory Protection: Not a respiratory irritant unless dealing with a mist form, then wear appropriate NIOSH respirator.

Skin Protection: Wear chemical resistant gloves and chemical resistant garments when handling, wash garments before re-use.

Eye/Face Protection: Wear chemical goggles; also wear a face shield if splashing hazard exists.

Other Protective Equipment: Eye wash facility and emergency shower should be in close proximity.

General Hygiene Conditions: Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industry hygiene and safety practice.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Bright orange liquid

Odor: Mild chlorine like odor

SAFETY DATA SHEET

pH: 12.0-13.0 (1:100)

Melting/Freezing point: < -4°C / 25°F

Initial boiling point and boiling range: No information available

Flash Point: Not applicable

Flammability (solid, gas): Non flammable

Specific gravity: 1.3 - 1.35 g/mL

Solubility in water: Complete

Decomposition temperature: No information available.

Viscosity: 15-25 cSt at 20°C / 68°F

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Reactive with oxidizing agents, reducing agents, organic materials, metals, acids and alkalis.

Chemical Stability: Stable for up to 1 year when stored under normal conditions.

Possibility of Hazardous Reactions: May react with incompatible materials

Conditions to Avoid: Avoid contact with strong acids and oxidizers. Incompatible materials and cold temperatures.

Incompatible Materials: Strong reducing agents such as sulfite and metabisulfite, strong acids and bases. Never mix this product with undiluted sodium hypochlorite bleach. The mixture will result in a violent exothermic reaction that produces a great deal of heat and nitrogen gas bubbles.

Hazardous Decomposition Products: Nitrogen oxides, bromine and hydrobromic acid vapors.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry - inhalation: YES

Routes of entry - skin & eye: YES

Routes of entry - ingestion: YES

Routes of entry - skin absorption: NO

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Inhalation: May cause irritation to respiratory system in mist/vapor form.

Ingestion: Corrosive! Swallowing causes severe burns of mouth, throat, and stomach. Severe scarring of tissue, corrosion, permanent tissue destruction and death may result. Symptoms may include severe pain, nausea, vomiting, diarrhea, shock, hemorrhaging and/or fall in blood pressure. Damage may appear days after exposure.

Skin: Corrosive! Contact with skin causes irritation or severe burns and scarring with greater exposures.

Eye: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Potential Chronic Health Effects:

Mutagenicity: May have mutagenic and tumorigenic effects with long term exposure.

Carcinogenicity: No ingredients are listed as carcinogens by ACGIH, IARC, OSHA, or NTP.

Reproductive effects: May cause reproductive effects.

Sensitization to material: Not a known sensitizer in humans or animals.

Specific target organ effects: No information available

Medical conditions aggravated by overexposure: No information available

Toxicological data: The calculated ATE values for this mixture are:

ATE oral = > 5000 mg/kg

ATE dermal = > 2000 mg/kg

ATE inhalation (mist) = 2.85 mg/L

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: May be harmful to aquatic life.

Persistence and degradability: No information available.

Bioaccumulation potential: No information available.

Enviro Tech Chemical Services, Inc. 500 Winmoore Way Modesto, CA 95358

SAFETY DATA SHEET

Mobility in soil: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for disposal: Do not contaminate water, food, or feed by storage and/or disposal. When handling refer to protective measures listed in sections 7 and 8. Empty residue from containers, rinse container well.

Method of disposal: Dispose of in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA: If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Corrosivity D002

SECTION 14 - TRANSPORTATION INFORMATION

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.

Please note the GHS and DOT Standards are NOT identical and therefore can have varying classifications

US 49 CFR/DOT/IATA/IMDG Information:

UN No.: 1760

UN Proper Shipping Name: Corrosive Liquid, n.o.s. (bromide salts)

Transportation hazard class(es): 8

Packing Group: III

Environmental hazards: Not a Marine Pollutant

SECTION 15 - REGULATORY INFORMATION

FIFRA Classification/Typical Hazard Labeling, as outlined in EPA Label Review Manual

Hazard Data

Signal Word	DANGER
Acute Toxicity, oral	Not Classified (NC)
Acute Toxicity, dermal	Not Classified (NC)
Acute Toxicity, inhalation	Not classified (NC)
Skin irritation/corrosion	Category I: Corrosive. Causes skin burns
Serious eye damage	Category I: Corrosive, Causes irreversible eye damage
Sensitization	Not Classified (NC)
Environmental (aquatic) toxicity	This pesticide is toxic to fish and other aquatic organisms.

US Federal Information:

TSCA information: All components are listed on the TSCA inventory.

US CERCLA reportable quantity (RQ): Non Regulated Material.

SARA Title III: Acute Health Hazard

SECTION 16 - OTHER INFORMATION

Legend:

SARA: The Superfund Amendments and Reauthorization Act

RCRA: Resource Conservation and Recovery Act

TSCA: Toxic Substances Control Act

CFR: Code of Federal Regulations

DOT: Department of Transportation

ATE: Acute Toxicity Estimate

Preparation date: 3/22/2016

Technical Report Attachment D

Laboratory Parameters
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

Technical Report Attachment D Frito-Lay, Inc.**TPDES Permit No. WQ0002443000****Attachment D: Laboratory Parameters**

Analyzed by A&B Labs

10100 East Freeway, Suite 100, Houston, TX 77029

(713) 453-6060

Parameter	Method	Parameter	Method
BOD	SM 5210B	Benzo(a)pyrene	EPA 625.1
CBOD	SM 5210B	Bis(2-chloroethyl) ether	EPA 625.1
COD	SM 5220D	Bis(2-ethylhexyl)phthalate	EPA 625.1
TOC	SM 5310B	Bromodichloromethane	EPA 624.1
Ammonia as N	EPA 350.1	Bromoform	EPA 624.1
TSS	SM 2540D	Carbon tetrachloride	EPA 624.1
Nitrate-N	EPA 300.0	Chlorobenzene	EPA 624.1
TKN	EPA 351.2	Dibromochloromethane	EPA 624.1
Phosphorus	SM 4500P-E	Chloroform	EPA 624.1
Oil & Grease	EPA 1664B	Chrysene	EPA 625.1
TDS	SM 2540C	3- & 4-Methylphenols	EPA 625.1
Sulfate	EPA 300.0	2-Methylphenol	EPA 625.1
Chloride	EPA 300.0	1,2-Dibromoethane	EPA 624.1
Fluoride	EPA 300.0	1,2-Dichlorobenzene	EPA 625.1
Alkalinity	SM 2320B	1,3-Dichlorobenzene	EPA 625.1
Aluminum	EPA 200.8	1,4-Dichlorobenzene	EPA 625.1
Antimony	EPA 200.8	Benzo(a)anthracene	EPA 625.1
Arsenic	EPA 200.8	3,3-Dichlorobenzidine	EPA 625.1
Barium	EPA 200.8	1,2-Dichloroethane	EPA 624.1
Beryllium	EPA 200.8	1,1-Dichloroethylene	EPA 624.1
Cadmium	EPA 200.8	Methylene chloride	EPA 624.1
Chromium	EPA 200.8	1,2-Dichloropropane	EPA 624.1
Chromium, Hexavalent	SM 3500Cr B	cis-1,3-Dichloropropene	EPA 624.1
Copper	EPA 200.8	trans-1,3-Dichloropropene	EPA 624.1
Cyanide, Available	SM 4500CN-CG	2,4-Dimethylphenol	EPA 625.1
Lead	EPA 200.8	Di-n-butyl phthalate	EPA 625.1
Mercury	EPA 1631E	Ethylbenzene	EPA 624.1
Mercury	EPA 1631E	Hexachlorobenzene	EPA 625.1
Nickel	EPA 200.8	Hexachlorobutadiene	EPA 625.1
Selenium	EPA 200.8	Hexachlorocyclopentadiene	EPA 625.1
Silver	EPA 200.8	Hexachloroethane	EPA 625.1
Thallium	EPA 200.8	MEK	EPA 624.1
Zinc	EPA 200.8	Nitrobenzene	EPA 625.1
E. coli	SM 9221F	Nitroso-N-diethylamine	EPA 625.1
Bromide	EPA 300.0	N-Nitrosodibutylamine	EPA 625.1
Color	SM 2120B	Nonylphenol	ASTM D7065-11
Nitrate/Nitrite as N	EPA 300.0	Pentachlorobenzene	EPA 625.1
Sulfide	SM 4500-S D	Pentachlorophenol	EPA 625.1
Sulfite	SM 4500SO3-B	Phenanthrene	EPA 625.1

Technical Report Attachment D Frito-Lay, Inc.
TPDES Permit No. WQ0002443000
Attachment D: Laboratory Parameters Continued

Parameter	Method
Boron	EPA 200.7
Cobalt	EPA 200.8
Iron	EPA 200.8
Magnesium	EPA 200.8
Manganese	EPA 200.8
Molybdenum	EPA 200.8
Tin	EPA 200.7
Titanium	EPA 200.8
Acrylonitrile	EPA 624.1
Anthracene	EPA 625.1
Benzene	EPA 624.1
Benzidine	EPA 625.1

Parameter	Method
Total PCBs	EPA 608.3
Pyridine	EPA 625.1
1,2,4,5-Tetrachlorobenzene	EPA 625.1
1,1,2,2-Tetrachloroethane	EPA 624.1
Tetrachloroethylene	EPA 624.1
Toluene	EPA 624.1
1,1,1-Trichloroethane	EPA 624.1
1,1,2-Trichloroethane	EPA 624.1
Trichloroethylene	EPA 624.1
2,4,5-Trichlorophenol	EPA 625.1
TTHMs	EPA 624.1
Vinyl Chloride	EPA 624.1

Technical Report Attachment E

2019 Annual Land Application
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000



2019 Annual Land Application Report

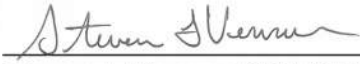
Rosenberg Facility

Frito Lay, Inc.
Rosenberg, Texas
March 2021

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2019 Annual Land Application Report Frito Lay, Inc. – Rosenberg, Texas

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EXECUTIVE SUMMARY

Frito Lay, Inc. produces snack food products at its facility in Rosenberg, Texas. During the 2019 operating year (January through December 2019), the Rosenberg facility applied combined process water to an overland flow land application site for treatment as part of the water and nutrient requirements of agricultural crops. The operations are monitored according to the Frito Lay Environmental Audit Program for land application systems. This report is prepared to meet the requirements of the Frito Lay Environmental Audit Program for land application systems.

Combined process water was applied, primarily on Fields 2 through 9. The measured combined process water application rates to the fields ranged from 0 inches per acre on Field 10 to 69.64 inches per acre on Field 6. Precipitation contributed an additional 44.45 inches to each field. The combined process water quality testing results for electrical conductivity, total dissolved solids, oil, and grease were fairly consistent with previous years.

The nitrogen load per field ranged from 15 to 280 pounds per acre (lb/ac). Phosphorus loads ranged from 3 to 63 lb/ac, biochemical oxygen demand loads ranged from 1 to 19 pounds per acre per day, and total suspended solids loads ranged from 336 to 4,640 lb/ac. Combined process water was applied in limited amounts or not at all to Fields 1, 10, and 11.

Nitrogen uptake ranged from 52 to 181 pounds nitrogen per acre. The nitrogen balances for 3 of 11 fields were negative. Nitrogen balances ranged from -159 to 94 pounds nitrogen per acre. The phosphorus balances ranged from -14 to 53 pounds per acre.

Process water applications could be improved by more regular applications to Fields 1, 10, and 11. Water from the pond should be monitored when it is applied to land application fields to improve loading calculations and monitoring accuracy. Crop tissue samples should be collected during each harvest to better estimate annual nutrient balances.

1.0 INTRODUCTION

Frito Lay, Inc. (Frito Lay) operates a snack-food production facility in Rosenberg, Texas. The facility manages its process water by screening large solids and then applying it by overland flow to Frito Lay-owned agricultural land adjacent to the facility (Figure 1).

The process water is combined from 3 individual sources (combined process water) that consist of corn and potato process water, oily process water from fryer “boil-outs” during production cleaning, and starch water from potato slice washer overflow. The combined process water moves through the primary treatment area to a rotostrainer then to a clarifier. Solids, oil, and grease that are separated from the process water at the clarifier are transferred to an oil/grease pit for off-site disposal/recycling.

The starch water from the potato slice washer overflow is directed to a Sweco liquid/solids separator that separates solids and pulp from the starch water. Collected solids and pulp are sent to a belt press and the water continues to the starch removal system. After starch removal, the water is returned to the primary treatment area and combined with the other process water.

Overflow from the clarifier is transferred by pipe to pumps on the north side of the land treatment fields where it is either directed to the pond or applied by overland flow to the fields. The land treatment system consists of 11 overland flow fields that cover approximately 168 acres. The flow from the fields that is not absorbed by the soil or consumed by the crop is collected in a ditch on the east side of the fields and discharged to the Brazos River.

Sanitary wastewater from restrooms and other domestic facilities is managed separately from combined process water. It flows to a series of sanitary wastewater treatment tanks. After treatment, the sanitary wastewater flows out through Outfall 002, which is a ditch that also transports stormwater runoff from the plant to the Brazos River.

The land treatment system is operated under Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0002443000 (TPDES Permit) for discharge to the Brazos River (Outfall 003)¹ The operations are also monitored according to the Frito Lay Environmental Audit Program (Audit Program) for land application systems. This report is prepared and submitted to meet the Operational Review and Reporting requirements of the Audit Program.

2.0 MONITORING

The overland flow land treatment system is different from typical land treatment systems that do not discharge to surface water. The overland flow system discharges to agricultural fields for treatment and the runoff then discharges to surface water. Constituent loading rates, irrigation practices, crop performance, and soil and groundwater conditions are monitored according to the provisions of the Audit Program. One exception to the Audit Program is that the facility is not required by its TPDES Permit to conduct groundwater monitoring and has no monitoring wells. Therefore, groundwater monitoring is not part of the required reporting.

¹ Texas Commission on Environmental Quality. (2008). TPDES Permit No WQ0002443000. Austin, TX: Author.

3.0 PROCESS WATER LAND TREATMENT AREA

Frito Lay monitored the cropping and management of 11 overland flow treatment fields totaling 168 acres (Figure 1). Process water was divided among the fields. Coastal bermudagrass was grown on all 11 fields.

4.0 QUANTITY AND QUALITY OF COMBINED PROCESS WATER

The quantity and quality of the combined process water for 2019 is described in the following sections.

4.1 Quantity

The Rosenberg facility produced 262.49 million gallons (MG) of combined process water and 1.89 MG of sanitary wastewater (Table 1). Supplemental irrigation water is not available to the land application fields; therefore, no flow is reported. Measured monthly combined process water flows ranged from 12.88 MG in November to 25.95 MG in May (Table 1). Available combined process water flows to the pond and each field are summarized in Table 2. The daily average combined process water flow was 0.72 MG.

Tables 3a-3l provide the recorded irrigation totals for combined process water on a monthly basis for each field. The measured total annual flow to the fields ranged from 0.00 MG (Field 10) to 34.04 MG (Field 6). The average monthly flow to each field that received combined process water ranged from 0.11 MG per acre (MG/ac) for Field 1 to 1.86 MG/ac for Field 6. The pond received 10.77 MG (Table 3l, 4.10% of measured total annual flow), which was later distributed to individual fields.

4.2 Hydraulic Balance

The approximate hydraulic balances for each field are provided on a monthly basis in Tables 4a-4k. The total gross hydraulic load is based on reported precipitation (assuming 100% effective) and combined process water irrigation at 100% irrigation. Daily evapotranspiration (ET) was calculated from data reported by the weather station at the Sugar Lane Regional Airport in Rosenberg, Texas using a spreadsheet developed for the Rosenberg facility by CES. The weather station is approximately 14 miles east of the processing plant. The monthly total input is calculated from daily precipitation recorded at the Sugar Lane Regional Airport weather station (assuming 100% effective) and daily combined process water irrigation (assuming 70% irrigation efficiency).

These balances are for general interpretation, for perspective only, and do not consider changes in soil water content, crop harvest, or crop rotation that can cause actual crop ET rates to be different than potential ET. Actual effective precipitation that recharges the soil and does not runoff or evaporate may be less than shown and actual irrigation efficiency may be greater or less than estimated. The use of the water balances is for reference in understanding the potential overland runoff flow or percolation of water through the soil to groundwater (positive balance). The water balance can also provide insight to periods that could indicate a deficit in water supply, which could result in decreased crop yield (negative balance) and reduced treatment. The water balances, as shown, should not be considered accurate enough for irrigation scheduling.

Precipitation recorded at the facility and presumably received by all fields was 44.45 inches during 2019 (Tables 4a-4k). The measured combined process water total irrigation to the fields that received irrigation ranged from 3.99 inches per acre (in/ac) on Field 1 to 69.64 in/ac on Field 6. Field 10 did not receive any combined process water. Assuming that 100% of the combined process water was applied to the fields, the measured total water input (precipitation plus combined process water) to the fields ranged from 48.44 in/ac (Field 1) to 114.09 in/ac (Field 6).

Monthly potential ET values totaled 60.08 inches for the year. Subtracting the monthly potential ET from the monthly total input produces a monthly water balance value for each field. Due to the volume of combined process water applied to each field, the precipitation for the month and the crop water demand, monthly water balances can be either negative or positive. During 2019, all but 2 fields that received combined process water had positive annual water balances as is expected for overland flow treatment fields.

An excess hydraulic load is part of the design of the overland flow system with the excess expected to runoff to the discharge point. The amount of runoff will vary in the summer since ET can exceed rainfall and irrigation rates resulting in a monthly deficit. In the winter, irrigation and rainfall may exceed the ET, and more water will runoff to the discharge point. The most important management function in the overland flow system is managing the hydraulic load distribution to each field to allow adequate treatment between doses of process water on a daily to weekly basis and maintain a healthy crop. Excessive overloading or under loading could damage the crop.

Distribution of equal amounts of combined process water across the farm provides for optimum crop growth, nutrient distribution across the fields, and process water treatment. The water was distributed to the fields in a similar pattern as previous years. Field 6 received the most flow and Fields 1, 10, and 11 received little or no flow. Actual land treatment performance could benefit from improved application rate management.

4.3 Process Water Quality

The Rosenberg facility is required by The Audit Program to conduct monthly sampling and testing of combined process water for electrical conductivity (EC), total dissolved solids (TDS), coliform (total and fecal), and oil and grease. Samples are collected on 2 consecutive days each month for EC, TDS, and oil and grease. When more than one sample is collected in a month, the results are averaged. These data are summarized in Table 5. Analytical results for weekly combined process water samples are contained in Appendix A.

The Audit Program requires the combined process water to be sampled and analyzed on a weekly basis for pH, chemical oxygen demand (COD), biochemical oxygen demand (BOD), total suspended solids (TSS), total Kjeldahl nitrogen (TKN), nitrate-nitrogen (NO₃-N), and total phosphorus (P). Samples are collected from the Rosenberg facility twice per month on consecutive days. The analytical data are contained in Appendix A and their monthly averages are contained in Table 6.

The combined process water quality data prior to land treatment appears relatively consistent with previous years.

5.0 NUTRIENT LOADS

The average monthly combined process water analytical results (nitrogen [TKN and NO₃-N], P, BOD, TSS) and measured flows provide data to compute the monthly nutrient loads to the land treatment fields. The mass load of these nutrients, based on available data, is shown in Tables 6, 7, and 8.

The annual total mass nutrient load of the combined process water was: 36,309 pounds (lb) of nitrogen; 8,090 lb of P; 902,267 lb of BOD; and 642,398 lb of TSS (Table 7). Site wide total nutrient load on a pounds per acre (lb/ac) basis averaged: 216 pounds nitrogen per acre (lb N/ac); 48 pounds phosphorus per acre (lb P/ac); 5,371 lb of BOD per acre; and 3,824 lb of TSS per acre.

The total mass nutrient loads per field are summarized in Tables 8a-8l. For the fields that received combined process water, the total loading rate ranges are summarized as follows:

- The nitrogen load per field ranged from 15 lb/ac on Field 1 to 280 lb/ac on Field 2.
- The P load ranged from 3 lb/ac on Field 1 to 63 lb/ac on Field 6.
- The TSS load ranged from 336 lb/ac on Field 1 to 4,640 lb/ac on Field 2.
- The BOD load ranged from an average 1 pound per acre per day (lb/ac-d) on Field 11 to 19 lb/ac-d on Fields 2 and 3.

The combined process water directed to the Pond contained an additional 1,349 lb of nitrogen; 289 lb of P; 30,210 lb of TSS; and an average 64 lb of BOD per day during 2019 (Table 8l). Records of the disposition of water from the Pond to the fields would be appropriate to keep in the future.

With the exception of the smaller fields (Fields 1, 10, and 11), the combined process water irrigation rates were reasonably uniform. Improvements to the uniformity could be made by improving the application rates to Fields 1, 10, and 11. A uniform distribution of combined process water among all fields would result in an even distribution of nutrients and consistent treatment for the runoff to Outfall 003. A summary of Outfall 003 monitoring data is included in Appendices B1-B3.

6.0 CROP PRODUCTION

Bermudagrass was grown and harvested on all 11 fields during 2019. Crop harvest yield data on a per field basis are provided in Tables 9a-9c. All yields were reported as gross yields of crop removed per field for the year. Although the yields are reported in harvested weight, all nutrient uptake data in Tables 9a-9c is calculated on a dry weight basis based on crop tissue testing. Nutrient uptake is calculated based on the crop tissue analytical results during one harvest in 2019 for all fields and all harvest events. Crop tissue samples should be collected from each harvest event to provide a more accurate measure of nutrient uptake. Overall, yields were lower than previous years and reasonably uniform with the exception of Fields 1, 3, 5, 8, and 9. Yields ranged from 1.6 to 5.6 tons per acre with Fields 2, 4, and 11 having the highest yields.

7.0 NITROGEN AND PHOSPHORUS BALANCE

The nitrogen balance calculation is an element of the overland flow land treatment system performance and crop management evaluation. Effective treatment system performance requires healthy, adequately fertilized crops. Crops require more nitrogen to grow than can be removed during harvest. The nitrogen balance calculations in this report focus on the adequacy of the nitrogen supply to the growing crop.

Using the crop yield data with nitrogen and dry matter percentage data from the crop tissue results, CES calculated the nitrogen uptake for the bermudagrass crops (Table 10). Calculated nitrogen uptake ranged from 52 lb N/ac on Field 9 to 181 lb N/ac on Field 2. Phosphorus uptake ranged from 5 pounds per acre on Field 9 to 17 pounds per acre on Fields 2, 4, and 11.

In an agricultural recycling system, nitrogen is removed from the combined process water by several pathways. These pathways include crop uptake, denitrification, volatilization, adsorption exchange, and organic matter formation in the soil. The net available nitrogen was estimated by reducing the total gross nitrogen load by 30% to account for denitrification and volatilization.

The nitrogen balance (Table 11a) compares net total load inputs from combined process water to the outputs that include nitrogen uptake (harvest) and denitrification-volatilization (30%). The nitrogen balances for 3 of the 11 fields were negative. Fields that received higher loadings of combined process water (Fields 2-9) had positive nitrogen balances. Nitrogen balances ranged from -159 to 94 lb N/ac. A positive nitrogen balance, in general, indicates that more nitrogen was applied to the field through combined process water applications than required for crop production. Improved focus on obtaining 3 harvests from all fields and more uniform combined process water application across the 11 fields would improve management of the nitrogen load, crop productivity, and nitrogen removal which improves overall combined process water treatment.

The phosphorus balance (Table 11b) provides perspective on treatment and removal of combined process water phosphorus by crop uptake. The phosphorus balances ranged from -14 lb P/ac on Field 10 to 53 lb P/ac on Field 8. Over time, as excess phosphorus accumulates in the soil, the potential for phosphorus leaching to groundwater and running off to surface water increases.

8.0 SOIL TESTING

The Audit Program requires soil sampling analysis on a semi-annual (spring and fall) and annual (fall) basis.

8.1 Semi-Annual Soil Testing

The Audit Program requires soil sampling on a semi-annual basis for the following parameters: moisture; NO₃-N, pH, electrical conductivity of saturation extract (ECe), cation exchange capacity (CEC), and percent base saturation. Samples are to be collected from depths of 15 and 30 inches. Soil samples from the 0- to 15-inch and 15- to 30-inch depths were collected from the land treatment fields in the spring and fall of 2019. The samples were analyzed for all required parameters. Tables 12a-12c summarize the data for the semi-annual soil analysis list as collected and analyzed from the overland flow fields.

8.1.1 Soil Moisture

Soil moisture results from the 0- to 15-inch soil depth ranged from 12.2% to 45.5% and from 10.7% to 27.8% for the 15- to 30-inch soil depth in the spring. In the fall, soil moisture results from the 0- to 15-inch soil depth ranged from 12.2% to 24.0% and from 12.6% to 23.1% for the 15- to 30-inch soil depth. Soil moisture in all of the fields would be considered adequate for crop growth.

8.1.1 Soil Nitrogen

The spring soil NO₃-N concentrations were low in all fields at both the 0- to 15-inch and 15- to 30-inch depths. In the spring, soil NO₃-N concentrations ranged from 1.0 to 5.3 milligrams per kilograms (mg/kg) for the 0- to 15-inch and 15- to 30-inch depths. In October, soil NO₃-N concentrations ranged from 3.4 to 24.9 mg/kg for the 0- to 15-inch depth and from 1.9 to 12.4 mg/kg for the 15- to 30-inch soil depth. Overall, the fall NO₃-N concentrations in the majority of fields are low in the range of 1.9 to 24.9 mg/kg. The predominately low NO₃-N concentrations indicate that applied nitrogen is being consumed and treated or is regularly leached from the soil.

8.1.2 Soil pH

The availability of phosphorus, calcium, magnesium, and micronutrients important to crop production, may become limited when soil pH is outside the optimum agronomic range of 6.0 to 8.0. Soil pH within the fields ranged from 7.9 to 8.5 in the spring of 2019 and 7.1 to 8.4 in the fall of 2019 in the 0- to 30-inch depth. Soil pH values are higher than the typical optimum range. Soil pH has been trending outside of the optimum range since 2009.

8.1.3 Soil Electrical Conductivity

The fall 2019 ECe ranged between 0.38 and 1.42 millimhos per centimeter (mmhos/cm) indicating a healthy soil. The soils at the site are considered non-saline (0 to 2 mmhos/cm). The soil ECe is below the soil ECe threshold limit of 6.9 mmhos/cm for bermudagrass.²

8.1.4 Soil Cation-Exchange-Capacity

Cation-exchange capacity (CEC) is defined as the degree to which a soil can adsorb and exchange cations such as calcium, magnesium, potassium, and sodium. The CEC of a soil is dependent on the soil clay content and the organic matter content. The spring 2019 CEC values within the fields in the 0- to 15-inch depth ranged from 25 to 31 milliequivalents per 100 grams of soil, which is considered moderate to high. The range of CEC values are indicative of loam to clay soil textures. The soil clays are likely the source of the majority of the CEC in these soils.

8.1.5 Soil Base Saturation

Base saturation percentage indicates the percentage of the soil exchange sites that are occupied by basic cations (calcium, magnesium, potassium, and sodium). The formula for computing base saturation percentage is:

² Ayers, R. S., & Westcot, D. W. (1985). *Water quality for agriculture*, (FAO Irrigation and Drainage Paper 29 Rev. 1). Rome, Italy: Food and Agriculture Organization of the United Nations.

$$\sum (basic\ cations) \div CEC * 100$$

Where: basic cations and CEC are in units of milliequivalents per 100 grams of soil.

Base saturation percentage values were reported for both depths in the spring and fall. The average values for each field ranged from 40% to 97% in the 0- to 30-inch depths across both sampling periods. These values indicate there is capacity in the soil to hold additional cation nutrient, which could be provided by fertilizers. Ideally, base saturation is near 100% in a fertile soil.

8.2 Annual Soil Testing

The Audit Program also requires the annual analysis of one sample per 25 acres from the top 0- to 15-inch soil zone in addition to annual TPDES Permit requirements. Soil samples are to be analyzed for the following parameters: organic matter, ammonia-nitrogen, phosphorus, potassium, sulfate-sulfur, calcium, magnesium, sodium, boron, zinc, TKN, copper, manganese, and iron. Annual soil samples were collected in the spring from all fields (Table 13). The test methods used for the 2019 analysis provide results for extractable, available, or exchangeable nutrients, which are appropriate for the agricultural interpretations needed for this site.

8.2.1 Soil Organic Matter, Ammonia Nitrogen, and Total Kjeldahl Nitrogen

Soil organic matter ranged from 0.2% to 6.4%, which is in a low to moderate, but normal range. Ammonia-nitrogen was low, and ranged from 2 to 6 mg/kg for all samples. Soil TKN concentrations were moderately low and ranged from 0.03% to 0.50% and tended to vary with the organic matter concentration.

8.2.2 Soil Phosphorus, Potassium, and Sulfate-Sulfur

The soil phosphorus concentrations ranged from 14 to 192 mg/kg.

The potassium concentrations are considered high (223 to 585 mg/kg) in all fields. High potassium concentrations are typical of many food processing water land treatment system soils, especially those with potatoes as part of the processing operations. The concentrations at the Rosenberg facility are high but not excessive for crop production.

Soil sulfur concentrations (18 to 201 mg/kg) are in an appropriate range for crop production.

8.2.3 Calcium, Magnesium, and Sodium

The calcium, magnesium, and sodium concentrations reflect generally fertile soils. The predominance of calcium, to an extent, is good for crop production and a healthy soil.

8.2.4 Boron, Zinc, Copper, Manganese, and Iron

The concentrations of micronutrients generally appear to be within an adequate range for the bermudagrass production. Boron, zinc, copper, iron, and manganese appear to be adequate in all fields. Soil organic matter can supply micronutrients in excess of the soil test result, so the best indicator is to occasionally test the crops from each field to evaluate the actual availability.

8.3 Soil Profile Nitrate and Salinity Trend Analysis

The Audit Program requests the evaluation of soil NO₃-N and salinity on an annual basis. The semi-annual soil sampling results (Tables 12a-12c) are utilized to generate the trend analysis (Charts 1-11).

8.3.1 Soil Nitrate-Nitrogen

Soil NO₃-N contained in the 0- to 30-inch soil sampling depths for 2019 was calculated on a pounds per acre basis using the soil laboratory analysis for NO₃-N and summing the 0- to 15-inch and 15- to 30-inch sampling depths (Charts 1-11). The September 2010 data points represent the pounds of NO₃-N for only the 15- to 30-inch sampling depth, as a soil sample was not collected from the 0- to 15-inch depth. For this reason, September 2010 data points cannot be directly compared to the spring and fall 2011 through 2019 data points, which represent the soil NO₃-N for the 0- to 30-inch depths.

Soil NO₃-N in lb N/ac increased in Fields 1, 2, 3, 7, and 9 from spring to fall in 2019 (Charts 1-11). Regardless of the trend, the amount of NO₃-N was low in the majority of fields despite the positive nitrogen balances and is not sufficient for crop growth without nitrogen addition from a source such as combined process water. However, the low NO₃-N concentration is the intended result of the land treatment process at the end of the growing season. All fields contained less than 50 lb N/ac in the fall of 2019 except for Field 4, which was just over 50 lb N/ac. During the 2019 cropping season, the soils have relatively similar NO₃-N in the fall compared to the spring, which indicates the treatment system is working as designed. Addition of high BOD combined process water to these soils appears to result in buildup of organic matter and denitrification of nitrate in the clay soils at the site.

8.3.2 Electrical Conductivity

Soil EC in all fields for the 0- to 15-inch and 15- to 30-inch depths, from 2009 through 2019 are summarized in Charts 1-11. The soil EC increased in Fields 1, 2, 3, 4, 7, 8, and 10 and decreased or was similar to the previous year in the remainder of the fields. Changes in EC from 2011 to 2012 are likely the result of a change in test methods from the 1:1 soil:water EC tested by the environmental laboratory before 2012 to the saturation paste extract EC (ECe) method used by the agricultural testing laboratory from 2012 to current. The ECe provides a relevant test for comparison with crop salinity tolerance. All results were less than 2 mmhos/cm, which is considered acceptable for most crops. The Coastal bermudagrass grown at Rosenberg is salt tolerant and can grow well with salinity as high as 7 mmhos/cm.

9.0 SANITARY WATER MONITORING RESULTS

The Audit Program requires the weekly monitoring of BOD and monthly monitoring of the facility sanitary wastewater quality for the following constituents: TKN, total P, NO₃-N, residual chlorine, and fecal and total coliform. Table 14 summarizes the sanitary wastewater quality data collected weekly during 2019. Data for BOD and settleable solids are available from January 2 through December 28, 2019.

10.0 SUMMARY AND CONCLUSIONS

During the 2019 operating year (January through December 2019), the Rosenberg facility produced 262.49 MG of combined process water (Table 1). The combined process water application rates to the fields ranged from 3.99 in/ac on Field 1 to 69.64 in/ac on Field 6 (Tables 3a-3l). Supplemental irrigation water is not available to the land treatment fields; therefore, no flow is reported.

The combined process water was sampled and analyzed in compliance with the TPDES Permit and Audit Program. The combined process water quality was reasonably consistent with previous years.

Overall, yields were reasonably uniform but with lower yields than previous years, ranging from 1.6 to 5.6 tons per acre (Tables 9a-9c). The nitrogen balances for 3 of the 11 fields were negative. Nitrogen balances ranged from -159 to 94 lb N/ac (Table 11a). Increased sampling and testing would help improve the accuracy of the nutrient uptake calculations.

Soil testing was performed by an agricultural testing laboratory using appropriate soil testing methods. The soil sampling was completed as required on all fields. The soils appear to be in acceptable fertility ranges with the exception of high pH in some fields. The soil pH is in the range of 7.1 to 8.5 across all fields, higher than the optimum range (Tables 12a-12c). Soil EC trends indicated the soil salinity is being maintained in an acceptable range and the soil nitrate trends indicate effective treatment is occurring on the majority of fields.

11.0 RECOMMENDATIONS

Monitor combined process water application to each field at least monthly and manage application rates to achieve a similar application rate to all fields across the site. This approach should result in applying similar combined process water nutrient loads to all fields and help provide consistent treatment to maintain discharge quality at Outfall 003.

Include regular application to Fields 1, 10, and 11 and use the Water Sentinel to monitor process water loading to allow more similar application rates to all the fields.³

Monitor and record the locations and amounts of water delivered from the Pond to the land treatment fields to provide a complete dataset for field loading rates.

Collect and analyze crop tissue samples for each harvest in order to better estimate the nutrient uptake and better evaluate the nutrient balances on an annual basis.

Continue testing one crop harvest from each field for micronutrients (boron, copper, iron, manganese, and zinc) to check for sufficiency.

Soil amendments such as sulfur should be considered to adjust the soil pH downward to 8.0 or less in the 0- to 15-inch depth if the soil pH exceeds 8.5.

³ www.watersentinel.com

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Table 1. Total Flow By Month - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Sanitary Wastewater		Combined Process Water		Supplemental Water	
	gallons	MG	gallons	MG	gallons	MG
Jan	165,600	0.17	24,147,005	24.15	0	0.00
Feb	184,500	0.18	20,383,992	20.38	0	0.00
Mar	176,300	0.18	22,940,006	22.94	0	0.00
Apr	186,300	0.19	23,694,005	23.69	0	0.00
May	232,200	0.23	25,949,999	25.95	0	0.00
Jun	139,000	0.14	25,199,003	25.20	0	0.00
Jul	138,800	0.14	22,591,988	22.59	0	0.00
Aug	170,800	0.17	25,573,001	25.57	0	0.00
Sep	136,200	0.14	22,135,001	22.14	0	0.00
Oct	138,400	0.14	21,343,996	21.34	0	0.00
Nov	117,700	0.12	12,878,995	12.88	0	0.00
Dec	107,800	0.11	15,654,999	15.65	0	0.00
Total	1,893,600	1.89	262,491,990	262.49	0	0.00

NOTES:

Sanitary wastewater measured at sanitary treatment plant.

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

The pond is for temporary storage and flow equalization. Process water sent to the pond is ultimately discharged to one of the fields but the amount discharged from the pond is not measured and the field receiving that process water is not recorded.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Abbreviation: MG = million gallons.

Table 2. Year-to-Date Total Flow by Field - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Field	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Field 1	974,533	0.97	0	0.00	974,533	0.97
Field 2	33,046,523	33.05	0	0.00	33,046,523	33.05
Field 3	32,248,962	32.25	0	0.00	32,248,962	32.25
Field 4	31,293,777	31.29	0	0.00	31,293,777	31.29
Field 5	29,260,887	29.26	0	0.00	29,260,887	29.26
Field 6	34,036,966	34.04	0	0.00	34,036,966	34.04
Field 7	26,836,554	26.84	0	0.00	26,836,554	26.84
Field 8	32,805,869	32.81	0	0.00	32,805,869	32.81
Field 9	30,245,386	30.25	0	0.00	30,245,386	30.25
Field 10	0	0.00	0	0.00	0	0.00
Field 11	974,533	0.97	0	0.00	974,533	0.97
Pond	10,768,000	10.77	0	0.00	10,768,000	10.77
Total	262,491,990	262.49	0	0.00	262,491,990	262.49
Average	719,156	0.72	0	0.00	719,156	0.72

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater. The pond is for temporary storage and flow equalization. Process water sent to the pond is ultimately discharged to one of the fields but the amount discharged from the pond is not measured and the field receiving that process water is not recorded.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average = flow per calendar day.

Abbreviation: MG = million gallons.

Table 3a. Year-to-Date Monthly Flow by Field - Field 1 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	974,533	0.97	0	0.00	974,533	0.97
Feb	0	0.00	0	0.00	0	0.00
Mar	0	0.00	0	0.00	0	0.00
Apr	0	0.00	0	0.00	0	0.00
May	0	0.00	0	0.00	0	0.00
Jun	0	0.00	0	0.00	0	0.00
Jul	0	0.00	0	0.00	0	0.00
Aug	0	0.00	0	0.00	0	0.00
Sep	0	0.00	0	0.00	0	0.00
Oct	0	0.00	0	0.00	0	0.00
Nov	0	0.00	0	0.00	0	0.00
Dec	0	0.00	0	0.00	0	0.00
Total	974,533	0.97	0	0.00	974,533	0.97
Average	108,281	0.11	0	0.00	108,281	0.11

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater. Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3b. Year-to-Date Monthly Flow by Field - Field 2 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,824,281	2.82	0	0.00	2,824,281	2.82
Feb	2,561,237	2.56	0	0.00	2,561,237	2.56
Mar	2,919,168	2.92	0	0.00	2,919,168	2.92
Apr	3,399,718	3.40	0	0.00	3,399,718	3.40
May	4,331,800	4.33	0	0.00	4,331,800	4.33
Jun	3,692,463	3.69	0	0.00	3,692,463	3.69
Jul	4,408,468	4.41	0	0.00	4,408,468	4.41
Aug	365,988	0.37	0	0.00	365,988	0.37
Sep	3,611,600	3.61	0	0.00	3,611,600	3.61
Oct	1,690,801	1.69	0	0.00	1,690,801	1.69
Nov	1,032,583	1.03	0	0.00	1,032,583	1.03
Dec	2,208,416	2.21	0	0.00	2,208,416	2.21
Total	33,046,523	33.05	0	0.00	33,046,523	33.05
Average	1,835,918	1.84	0	0.00	1,835,918	1.84

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater. Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3c. Year-to-Date Monthly Flow by Field - Field 3 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,654,587	2.65	0	0.00	2,654,587	2.65
Feb	2,203,125	2.20	0	0.00	2,203,125	2.20
Mar	2,159,251	2.16	0	0.00	2,159,251	2.16
Apr	2,510,823	2.51	0	0.00	2,510,823	2.51
May	4,725,250	4.73	0	0.00	4,725,250	4.73
Jun	3,016,002	3.02	0	0.00	3,016,002	3.02
Jul	4,493,885	4.49	0	0.00	4,493,885	4.49
Aug	2,138,622	2.14	0	0.00	2,138,622	2.14
Sep	5,277,234	5.28	0	0.00	5,277,234	5.28
Oct	0	0.00	0	0.00	0	0.00
Nov	723,850	0.72	0	0.00	723,850	0.72
Dec	2,346,333	2.35	0	0.00	2,346,333	2.35
Total	32,248,962	32.25	0	0.00	32,248,962	32.25
Average	1,791,609	1.79	0	0.00	1,791,609	1.79

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3d. Year-to-Date Monthly Flow by Field - Field 4 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,636,581	2.64	0	0.00	2,636,581	2.64
Feb	2,484,222	2.48	0	0.00	2,484,222	2.48
Mar	2,292,668	2.29	0	0.00	2,292,668	2.29
Apr	3,336,384	3.34	0	0.00	3,336,384	3.34
May	4,944,300	4.94	0	0.00	4,944,300	4.94
Jun	2,671,642	2.67	0	0.00	2,671,642	2.67
Jul	3,810,569	3.81	0	0.00	3,810,569	3.81
Aug	3,851,411	3.85	0	0.00	3,851,411	3.85
Sep	2,684,567	2.68	0	0.00	2,684,567	2.68
Oct	0	0.00	0	0.00	0	0.00
Nov	272,850	0.27	0	0.00	272,850	0.27
Dec	2,308,583	2.31	0	0.00	2,308,583	2.31
Total	31,293,777	31.29	0	0.00	31,293,777	31.29
Average	1,738,543	1.74	0	0.00	1,738,543	1.74

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3e. Year-to-Date Monthly Flow by Field - Field 5 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,519,430	2.52	0	0.00	2,519,430	2.52
Feb	2,323,489	2.32	0	0.00	2,323,489	2.32
Mar	2,265,917	2.27	0	0.00	2,265,917	2.27
Apr	2,264,156	2.26	0	0.00	2,264,156	2.26
May	3,687,883	3.69	0	0.00	3,687,883	3.69
Jun	2,106,328	2.11	0	0.00	2,106,328	2.11
Jul	1,833,468	1.83	0	0.00	1,833,468	1.83
Aug	4,598,268	4.60	0	0.00	4,598,268	4.60
Sep	1,649,400	1.65	0	0.00	1,649,400	1.65
Oct	2,888,782	2.89	0	0.00	2,888,782	2.89
Nov	2,350,099	2.35	0	0.00	2,350,099	2.35
Dec	773,667	0.77	0	0.00	773,667	0.77
Total	29,260,887	29.26	0	0.00	29,260,887	29.26
Average	1,625,605	1.63	0	0.00	1,625,605	1.63

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3f. Year-to-Date Monthly Flow by Field - Field 6 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	3,180,748	3.18	0	0.00	3,180,748	3.18
Feb	2,788,389	2.79	0	0.00	2,788,389	2.79
Mar	2,124,334	2.12	0	0.00	2,124,334	2.12
Apr	2,812,939	2.81	0	0.00	2,812,939	2.81
May	3,550,050	3.55	0	0.00	3,550,050	3.55
Jun	2,382,061	2.38	0	0.00	2,382,061	2.38
Jul	1,423,611	1.42	0	0.00	1,423,611	1.42
Aug	4,837,269	4.84	0	0.00	4,837,269	4.84
Sep	1,718,467	1.72	0	0.00	1,718,467	1.72
Oct	4,475,999	4.48	0	0.00	4,475,999	4.48
Nov	1,838,766	1.84	0	0.00	1,838,766	1.84
Dec	2,904,333	2.90	0	0.00	2,904,333	2.90
Total	34,036,966	34.04	0	0.00	34,036,966	34.04
Average	1,890,943	1.89	0	0.00	1,890,943	1.89

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3g. Year-to-Date Monthly Flow by Field - Field 7 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,908,494	2.91	0	0.00	2,908,494	2.91
Feb	2,215,154	2.22	0	0.00	2,215,154	2.22
Mar	2,274,250	2.27	0	0.00	2,274,250	2.27
Apr	2,355,023	2.36	0	0.00	2,355,023	2.36
May	3,687,883	3.69	0	0.00	3,687,883	3.69
Jun	2,431,172	2.43	0	0.00	2,431,172	2.43
Jul	1,179,828	1.18	0	0.00	1,179,828	1.18
Aug	4,452,269	4.45	0	0.00	4,452,269	4.45
Sep	365,533	0.37	0	0.00	365,533	0.37
Oct	2,685,032	2.69	0	0.00	2,685,032	2.69
Nov	1,622,999	1.62	0	0.00	1,622,999	1.62
Dec	658,917	0.66	0	0.00	658,917	0.66
Total	26,836,554	26.84	0	0.00	26,836,554	26.84
Average	1,490,920	1.49	0	0.00	1,490,920	1.49

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3h. Year-to-Date Monthly Flow by Field - Field 8 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,795,464	2.80	0	0.00	2,795,464	2.80
Feb	2,001,889	2.00	0	0.00	2,001,889	2.00
Mar	2,823,084	2.82	0	0.00	2,823,084	2.82
Apr	1,785,189	1.79	0	0.00	1,785,189	1.79
May	580,666	0.58	0	0.00	580,666	0.58
Jun	4,316,834	4.32	0	0.00	4,316,834	4.32
Jul	2,787,373	2.79	0	0.00	2,787,373	2.79
Aug	3,323,138	3.32	0	0.00	3,323,138	3.32
Sep	2,772,167	2.77	0	0.00	2,772,167	2.77
Oct	4,741,583	4.74	0	0.00	4,741,583	4.74
Nov	2,612,932	2.61	0	0.00	2,612,932	2.61
Dec	2,265,550	2.27	0	0.00	2,265,550	2.27
Total	32,805,869	32.81	0	0.00	32,805,869	32.81
Average	1,822,548	1.82	0	0.00	1,822,548	1.82

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3i. Year-to-Date Monthly Flow by Field - Field 9 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	2,678,354	2.68	0	0.00	2,678,354	2.68
Feb	2,343,487	2.34	0	0.00	2,343,487	2.34
Mar	3,061,334	3.06	0	0.00	3,061,334	3.06
Apr	2,024,773	2.02	0	0.00	2,024,773	2.02
May	442,167	0.44	0	0.00	442,167	0.44
Jun	4,582,501	4.58	0	0.00	4,582,501	4.58
Jul	2,654,786	2.65	0	0.00	2,654,786	2.65
Aug	1,357,036	1.36	0	0.00	1,357,036	1.36
Sep	2,721,033	2.72	0	0.00	2,721,033	2.72
Oct	4,861,799	4.86	0	0.00	4,861,799	4.86
Nov	1,328,916	1.33	0	0.00	1,328,916	1.33
Dec	2,189,200	2.19	0	0.00	2,189,200	2.19
Total	30,245,386	30.25	0	0.00	30,245,386	30.25
Average	1,680,299	1.68	0	0.00	1,680,299	1.68

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3j. Year-to-Date Monthly Flow by Field - Field 10 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	0	0.00	0	0.00	0	0.00
Feb	0	0.00	0	0.00	0	0.00
Mar	0	0.00	0	0.00	0	0.00
Apr	0	0.00	0	0.00	0	0.00
May	0	0.00	0	0.00	0	0.00
Jun	0	0.00	0	0.00	0	0.00
Jul	0	0.00	0	0.00	0	0.00
Aug	0	0.00	0	0.00	0	0.00
Sep	0	0.00	0	0.00	0	0.00
Oct	0	0.00	0	0.00	0	0.00
Nov	0	0.00	0	0.00	0	0.00
Dec	0	0.00	0	0.00	0	0.00
Total	0	0.00	0	0.00	0	0.00
Average	0	0.00	0	0.00	0	0.00

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3k. Year-to-Date Monthly Flow by Field - Field 11 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	974,533	0.97	0	0.00	974,533	0.97
Feb	0	0.00	0	0.00	0	0.00
Mar	0	0.00	0	0.00	0	0.00
Apr	0	0.00	0	0.00	0	0.00
May	0	0.00	0	0.00	0	0.00
Jun	0	0.00	0	0.00	0	0.00
Jul	0	0.00	0	0.00	0	0.00
Aug	0	0.00	0	0.00	0	0.00
Sep	0	0.00	0	0.00	0	0.00
Oct	0	0.00	0	0.00	0	0.00
Nov	0	0.00	0	0.00	0	0.00
Dec	0	0.00	0	0.00	0	0.00
Total	974,533	0.97	0	0.00	974,533	0.97
Average	162,422	0.16	0	0.00	162,422	0.16

NOTES:

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Average is the total flow per acre.

Abbreviation: MG = million gallons.

Table 3l. Year-to-Date Monthly Flow by Field - Pond - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Combined Process Water		Supplemental Water		Total	
	gallons	MG	gallons	MG	gallons	MG
Jan	0	0.00	0	0.00	0	0.00
Feb	1,463,000	1.46	0	0.00	1,463,000	1.46
Mar	3,020,000	3.02	0	0.00	3,020,000	3.02
Apr	3,205,000	3.21	0	0.00	3,205,000	3.21
May	0	0.00	0	0.00	0	0.00
Jun	0	0.00	0	0.00	0	0.00
Jul	0	0.00	0	0.00	0	0.00
Aug	649,000	0.65	0	0.00	649,000	0.65
Sep	1,335,000	1.34	0	0.00	1,335,000	1.34
Oct	0	0.00	0	0.00	0	0.00
Nov	1,096,000	1.10	0	0.00	1,096,000	1.10
Dec	0	0.00	0	0.00	0	0.00
Total	10,768,000	10.77	0	0.00	10,768,000	10.77

NOTES:

The pond is for temporary storage and flow equalization. Process water sent to the pond is ultimately discharged to one of the fields but the amount discharged from the pond is not measured and the field receiving that process water is not recorded.

Combined process water measured at the discharge from transfer pump. Combined process water does not contain sanitary wastewater.

Supplemental water to augment wastewater supply for crop production is not available at this site.

Abbreviation: MG = million gallons.

Table 4a. Monthly Water Balance by Field - Field 1 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	974,533	3.99	7.69	2.91	4.78
Feb	2.42	0	0.00	2.42	2.82	-0.40
Mar	0.31	0	0.00	0.31	4.32	-4.01
Apr	2.61	0	0.00	2.61	5.56	-2.95
May	12.62	0	0.00	12.62	5.77	6.85
Jun	6.27	0	0.00	6.27	6.65	-0.38
Jul	1.17	0	0.00	1.17	7.81	-6.64
Aug	1.82	0	0.00	1.82	7.39	-5.57
Sep	9.73	0	0.00	9.73	6.18	3.55
Oct	1.46	0	0.00	1.46	4.73	-3.27
Nov	1.61	0	0.00	1.61	2.98	-1.37
Dec	0.73	0	0.00	0.73	2.96	-2.23
Total	44.45	--	3.99	48.44	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4b. Monthly Water Balance by Field - Field 2 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,824,281	5.78	9.48	2.91	6.57
Feb	2.42	2,561,237	5.24	7.66	2.82	4.84
Mar	0.31	2,919,168	5.97	6.28	4.32	1.96
Apr	2.61	3,399,718	6.96	9.57	5.56	4.01
May	12.62	4,331,800	8.86	21.48	5.77	15.71
Jun	6.27	3,692,463	7.56	13.83	6.65	7.18
Jul	1.17	4,408,468	9.02	10.19	7.81	2.38
Aug	1.82	365,988	0.75	2.57	7.39	-4.82
Sep	9.73	3,611,600	7.39	17.12	6.18	10.94
Oct	1.46	1,690,801	3.46	4.92	4.73	0.19
Nov	1.61	1,032,583	2.11	3.72	2.98	0.74
Dec	0.73	2,208,416	4.52	5.25	2.96	2.29
Total	44.45	--	67.62	112.07	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4c. Monthly Water Balance by Field - Field 3 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,654,587	5.43	9.13	2.91	6.22
Feb	2.42	2,203,125	4.51	6.93	2.82	4.11
Mar	0.31	2,159,251	4.42	4.73	4.32	0.41
Apr	2.61	2,510,823	5.14	7.75	5.56	2.19
May	12.62	4,725,250	9.67	22.29	5.77	16.52
Jun	6.27	3,016,002	6.17	12.44	6.65	5.79
Jul	1.17	4,493,885	9.19	10.36	7.81	2.55
Aug	1.82	2,138,622	4.38	6.20	7.39	-1.19
Sep	9.73	5,277,234	10.80	20.53	6.18	14.35
Oct	1.46	0	0.00	1.46	4.73	-3.27
Nov	1.61	723,850	1.48	3.09	2.98	0.11
Dec	0.73	2,346,333	4.80	5.53	2.96	2.57
Total	44.45	--	65.98	110.43	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4d. Monthly Water Balance by Field - Field 4 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,636,581	5.39	9.09	2.91	6.18
Feb	2.42	2,484,222	5.08	7.50	2.82	4.68
Mar	0.31	2,292,668	4.69	5.00	4.32	0.68
Apr	2.61	3,336,384	6.83	9.44	5.56	3.88
May	12.62	4,944,300	10.12	22.74	5.77	16.97
Jun	6.27	2,671,642	5.47	11.74	6.65	5.09
Jul	1.17	3,810,569	7.80	8.97	7.81	1.16
Aug	1.82	3,851,411	7.88	9.70	7.39	2.31
Sep	9.73	2,684,567	5.49	15.22	6.18	9.04
Oct	1.46	0	0.00	1.46	4.73	-3.27
Nov	1.61	272,850	0.56	2.17	2.98	-0.81
Dec	0.73	2,308,583	4.72	5.45	2.96	2.49
Total	44.45	--	64.03	108.48	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4e. Monthly Water Balance by Field - Field 5 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,519,430	5.15	8.85	2.91	5.94
Feb	2.42	2,323,489	4.75	7.17	2.82	4.35
Mar	0.31	2,265,917	4.64	4.95	4.32	0.63
Apr	2.61	2,264,156	4.63	7.24	5.56	1.68
May	12.62	3,687,883	7.55	20.17	5.77	14.40
Jun	6.27	2,106,328	4.31	10.58	6.65	3.93
Jul	1.17	1,833,468	3.75	4.92	7.81	-2.89
Aug	1.82	4,598,268	9.41	11.23	7.39	3.84
Sep	9.73	1,649,400	3.37	13.10	6.18	6.92
Oct	1.46	2,888,782	5.91	7.37	4.73	2.64
Nov	1.61	2,350,099	4.81	6.42	2.98	3.44
Dec	0.73	773,667	1.58	2.31	2.96	-0.65
Total	44.45	--	59.87	104.32	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4f. Monthly Water Balance by Field - Field 6 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	3,180,748	6.51	10.21	2.91	7.30
Feb	2.42	2,788,389	5.71	8.13	2.82	5.31
Mar	0.31	2,124,334	4.35	4.66	4.32	0.34
Apr	2.61	2,812,939	5.76	8.37	5.56	2.81
May	12.62	3,550,050	7.26	19.88	5.77	14.11
Jun	6.27	2,382,061	4.87	11.14	6.65	4.49
Jul	1.17	1,423,611	2.91	4.08	7.81	-3.73
Aug	1.82	4,837,269	9.90	11.72	7.39	4.33
Sep	9.73	1,718,467	3.52	13.25	6.18	7.07
Oct	1.46	4,475,999	9.16	10.62	4.73	5.89
Nov	1.61	1,838,766	3.76	5.37	2.98	2.39
Dec	0.73	2,904,333	5.94	6.67	2.96	3.71
Total	44.45	--	69.64	114.09	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4g. Monthly Water Balance by Field - Field 7 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,908,494	5.95	9.65	2.91	6.74
Feb	2.42	2,215,154	4.53	6.95	2.82	4.13
Mar	0.31	2,274,250	4.65	4.96	4.32	0.64
Apr	2.61	2,355,023	4.82	7.43	5.56	1.87
May	12.62	3,687,883	7.55	20.17	5.77	14.40
Jun	6.27	2,431,172	4.97	11.24	6.65	4.59
Jul	1.17	1,179,828	2.41	3.58	7.81	-4.23
Aug	1.82	4,452,269	9.11	10.93	7.39	3.54
Sep	9.73	365,533	0.75	10.48	6.18	4.30
Oct	1.46	2,685,032	5.49	6.95	4.73	2.22
Nov	1.61	1,622,999	3.32	4.93	2.98	1.95
Dec	0.73	658,917	1.35	2.08	2.96	-0.88
Total	44.45	--	54.91	99.36	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4h. Monthly Water Balance by Field - Field 8 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,795,464	5.72	9.42	2.91	6.51
Feb	2.42	2,001,889	4.10	6.52	2.82	3.70
Mar	0.31	2,823,084	5.78	6.09	4.32	1.77
Apr	2.61	1,785,189	3.65	6.26	5.56	0.70
May	12.62	580,666	1.19	13.81	5.77	8.04
Jun	6.27	4,316,834	8.83	15.10	6.65	8.45
Jul	1.17	2,787,373	5.70	6.87	7.81	-0.94
Aug	1.82	3,323,138	6.80	8.62	7.39	1.23
Sep	9.73	2,772,167	5.67	15.40	6.18	9.22
Oct	1.46	4,741,583	9.70	11.16	4.73	6.43
Nov	1.61	2,612,932	5.35	6.96	2.98	3.98
Dec	0.73	2,265,550	4.64	5.37	2.96	2.41
Total	44.45	--	67.12	111.57	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4i. Monthly Water Balance by Field - Field 9 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	2,678,354	5.48	9.18	2.91	6.27
Feb	2.42	2,343,487	4.79	7.21	2.82	4.39
Mar	0.31	3,061,334	6.26	6.57	4.32	2.25
Apr	2.61	2,024,773	4.14	6.75	5.56	1.19
May	12.62	442,167	0.90	13.52	5.77	7.75
Jun	6.27	4,582,501	9.38	15.65	6.65	9.00
Jul	1.17	2,654,786	5.43	6.60	7.81	-1.21
Aug	1.82	1,357,036	2.78	4.60	7.39	-2.79
Sep	9.73	2,721,033	5.57	15.30	6.18	9.12
Oct	1.46	4,861,799	9.95	11.41	4.73	6.68
Nov	1.61	1,328,916	2.72	4.33	2.98	1.35
Dec	0.73	2,189,200	4.48	5.21	2.96	2.25
Total	44.45	--	61.88	106.33	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4j. Monthly Water Balance by Field - Field 10 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	0	0.00	3.70	2.91	0.79
Feb	2.42	0	0.00	2.42	2.82	-0.40
Mar	0.31	0	0.00	0.31	4.32	-4.01
Apr	2.61	0	0.00	2.61	5.56	-2.95
May	12.62	0	0.00	12.62	5.77	6.85
Jun	6.27	0	0.00	6.27	6.65	-0.38
Jul	1.17	0	0.00	1.17	7.81	-6.64
Aug	1.82	0	0.00	1.82	7.39	-5.57
Sep	9.73	0	0.00	9.73	6.18	3.55
Oct	1.46	0	0.00	1.46	4.73	-3.27
Nov	1.61	0	0.00	1.61	2.98	-1.37
Dec	0.73	0	0.00	0.73	2.96	-2.23
Total	44.45	--	0.00	44.45	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 4k. Monthly Water Balance by Field - Field 11 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Precip	Total Irrigation		Total input	ET	Balance
	inches	gal	inches			
Jan	3.70	974,533	5.98	9.68	2.91	6.77
Feb	2.42	0	0.00	2.42	2.82	-0.40
Mar	0.31	0	0.00	0.31	4.32	-4.01
Apr	2.61	0	0.00	2.61	5.56	-2.95
May	12.62	0	0.00	12.62	5.77	6.85
Jun	6.27	0	0.00	6.27	6.65	-0.38
Jul	1.17	0	0.00	1.17	7.81	-6.64
Aug	1.82	0	0.00	1.82	7.39	-5.57
Sep	9.73	0	0.00	9.73	6.18	3.55
Oct	1.46	0	0.00	1.46	4.73	-3.27
Nov	1.61	0	0.00	1.61	2.98	-1.37
Dec	0.73	0	0.00	0.73	2.96	-2.23
Total	44.45	--	5.98	50.43	60.08	--

NOTES:

This is a rough water balance for general perspective that uses potential ET, precipitation at 100% effective, and irrigation at 100% and does not consider changes in soil storage.

It is for general reference only.

Abbreviation: -- = not applicable, ET = evapotranspiration, gal = gallons.

Table 5. Monthly Water Quality Analytical Results - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	EC	TDS	Total Coliform	Fecal Coliform	Oil and Grease
	mmhos/cm	mg/L	CFU/100mL		mg/L
Jan	1,377	785	530,000	370,000	3
Feb	1,375	845	77,000	52,000	4
Mar	1,231	905	1,000,000	200,000	3
Apr		990	6,000,000	1,000,000	9
May	1,226	1,346		300,000	4
Jun	1,192	1,360	3,800,000	400,000	18
Jul	3,590	1,660	7,200,000	1,200,000	35
Aug	1,133	1,115	3,200,000	400,000	6
Sep	1,111	1,175	940,000	260,000	5
Oct	724	1,590	940,000	260,000	5
Nov	1,312	1,145	780,000	600,000	3
Dec	1,280	765	2,500,000	2,300,000	24
Average	1,307	1,158	2,316,934	569,551	10
Median	--	--	1,000,000	385,000	--
Maximum	3,590	1,660	7,200,000	2,300,000	35

NOTES:

Samples collected by Frito-Lay personnel at discharge from the field pump station.

Average is a flow weighted average calculated as the sum of (monthly analysis x monthly flow) / total flow for the year.

Abbreviation: -- = not required, CFU/100mL = colony forming units per 100 milliliters, EC = electrical conductivity,

mg/L = milligrams per liter, mmhos/cm = millimhos per centimeter, TDS = total dissolved solids,

TNTC = too numerous to count.

Table 6. Average Monthly Water Quality Analytical Results - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	pH	COD	BOD	TSS	TKN	NO ₃	Total P
	s.u.	mg/L					
Jan	7.5	1,494	142	372	17	0.0	3
Feb	7.5	1,193	182	456	33	0.0	3
Mar	7.7	608	64	143	6	0.1	3
Apr	7.7	1,212	332	565	22	0.1	3
May	6.0	1,388	633	229	29	0.1	4
Jun	6.6	1,556	539	253	22	0.1	2
Jul	5.6	1,742	1,005	257	16	0.1	3
Aug	6.7	868	212	163	10	0.1	3
Sep	6.8	1,156	530	263	12	0.1	4
Oct	6.6	1,516	607	303	1	0.1	7
Nov	7.6	944	404	234	3	0.1	5
Dec	7.5	728	239	289	23	0.1	6
Average	7.0	1,200	407	294	16	0.1	4

NOTES:

Averages derived from weekly analyses.

Abbreviations: BOD = biochemical oxygen demand, COD = chemical oxygen demand, mg/L = milligrams per liter,

NO₃ = nitrate, P = phosphorus, s.u. = standard units, TKN = total Kjeldahl nitrogen,

TSS = total suspended solids.

Table 7. Total Mass Load - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	BOD	TSS
	pounds			
Jan	3,426	550	28,597	74,916
Feb	5,578	516	30,855	77,521
Mar	1,138	499	12,244	27,359
Apr	4,268	629	65,606	111,649
May	6,222	867	136,888	49,561
Jun	4,550	484	113,171	53,170
Jul	3,052	640	189,265	48,329
Aug	2,197	534	45,215	34,658
Sep	2,261	701	97,841	48,551
Oct	258	1,299	108,051	53,937
Nov	349	534	43,394	25,080
Dec	3,009	836	31,139	37,667
Total	36,309	8,090	902,267	642,398
Average	216	48	5,371	3,824

NOTES:

Mass loading includes water applied directly from the pond.

The pond is for temporary storage and flow equalization. Process water sent to the pond is ultimately discharged to one of the fields but the amount discharged from the pond is not measured and the field receiving that process water is not recorded.

Average is the site-wide total pounds per acre.

Abbreviations: BOD = biochemical oxygen demand, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8a. Total Mass Load by Field - Field 1 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	15.4	2.5	336	4
Feb	0.0	0.0	0	0
Mar	0.0	0.0	0	0
Apr	0.0	0.0	0	0
May	0.0	0.0	0	0
Jun	0.0	0.0	0	0
Jul	0.0	0.0	0	0
Aug	0.0	0.0	0	0
Sep	0.0	0.0	0	0
Oct	0.0	0.0	0	0
Nov	0.0	0.0	0	0
Dec	0.0	0.0	0	0
Total	15.4	2.5	336	0

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8b. Total Mass Load by Field - Field 2 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	22.3	3.6	487	6
Feb	38.9	3.6	541	8
Mar	8.0	3.5	193	3
Apr	34.0	5.0	890	17
May	57.7	8.0	460	41
Jun	37.0	3.9	433	31
Jul	33.1	6.9	524	66
Aug	1.7	0.4	28	1
Sep	20.5	6.4	440	30
Oct	1.1	5.7	237	15
Nov	1.6	2.4	112	6
Dec	23.6	6.6	295	8
Total	279.6	56.1	4,640	19

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8c. Total Mass Load by Field - Field 3 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	20.9	3.4	458	6
Feb	33.5	3.1	465	7
Mar	6.0	2.6	143	2
Apr	25.1	3.7	657	13
May	62.9	8.8	501	45
Jun	30.3	3.2	354	25
Jul	33.7	7.1	534	67
Aug	10.2	2.5	161	7
Sep	30.0	9.3	643	43
Oct	0.0	0.0	0	0
Nov	1.1	1.7	78	5
Dec	25.1	7.0	314	8
Total	278.7	52.2	4,308	19

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8d. Total Mass Load by Field - Field 4 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	20.8	3.3	454	6
Feb	37.8	3.5	525	7
Mar	6.3	2.8	152	2
Apr	33.4	4.9	873	17
May	65.9	9.2	525	47
Jun	26.8	2.9	313	22
Jul	28.6	6.0	453	57
Aug	18.4	4.5	290	12
Sep	15.2	4.7	327	22
Oct	0.0	0.0	0	0
Nov	0.4	0.6	30	2
Dec	24.7	6.9	309	8
Total	278.2	49.2	4,250	17

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8e. Total Mass Load by Field - Field 5 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	19.9	3.2	434	5
Feb	35.3	3.3	491	7
Mar	6.2	2.7	150	2
Apr	22.7	3.3	593	12
May	49.1	6.8	391	35
Jun	21.1	2.2	247	18
Jul	13.8	2.9	218	28
Aug	21.9	5.3	346	15
Sep	9.4	2.9	201	14
Oct	1.9	9.8	406	26
Nov	3.5	5.4	254	15
Dec	8.3	2.3	103	3
Total	213.1	50.2	3,835	15

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8f. Total Mass Load by Field - Field 6 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	25.1	4.0	548	7
Feb	42.4	3.9	589	8
Mar	5.9	2.6	141	2
Apr	28.2	4.2	736	14
May	47.3	6.6	377	34
Jun	23.9	2.5	279	20
Jul	10.7	2.2	169	21
Aug	23.1	5.6	364	15
Sep	9.8	3.0	209	14
Oct	3.0	15.1	628	41
Nov	2.8	4.2	199	11
Dec	31.0	8.6	388	10
Total	253.0	62.7	4,629	17

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8g. Total Mass Load by Field - Field 7 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	22.9	3.7	501	6
Feb	33.7	3.1	468	7
Mar	6.3	2.8	151	2
Apr	23.6	3.5	617	12
May	49.1	6.8	391	35
Jun	24.4	2.6	285	20
Jul	8.9	1.9	140	18
Aug	21.2	5.2	335	14
Sep	2.1	0.6	45	3
Oct	1.8	9.1	377	24
Nov	2.4	3.7	176	10
Dec	7.0	2.0	88	2
Total	203.4	44.9	3,573	13

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8h. Total Mass Load by Field - Field 8 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	22.0	3.5	482	6
Feb	30.4	2.8	423	6
Mar	7.8	3.4	187	3
Apr	17.9	2.6	467	9
May	7.7	1.1	62	5
Jun	43.3	4.6	506	36
Jul	20.9	4.4	331	42
Aug	15.9	3.9	250	11
Sep	15.7	4.9	338	23
Oct	3.2	16.0	666	43
Nov	3.9	6.0	283	16
Dec	24.2	6.7	303	8
Total	213.0	60.0	4,297	17

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8i. Total Mass Load by Field - Field 9 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	21.1	3.4	462	6
Feb	35.6	3.3	495	7
Mar	8.4	3.7	203	3
Apr	20.3	3.0	530	10
May	5.9	0.8	47	4
Jun	46.0	4.9	537	38
Jul	19.9	4.2	316	40
Aug	6.5	1.6	102	4
Sep	15.4	4.8	332	22
Oct	3.3	16.4	683	44
Nov	2.0	3.1	144	8
Dec	23.4	6.5	293	8
Total	207.8	55.6	4,142	16

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8j. Total Mass Load by Field - Field 10 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	0.0	0.0	0	0
Feb	0.0	0.0	0	0
Mar	0.0	0.0	0	0
Apr	0.0	0.0	0	0
May	0.0	0.0	0	0
Jun	0.0	0.0	0	0
Jul	0.0	0.0	0	0
Aug	0.0	0.0	0	0
Sep	0.0	0.0	0	0
Oct	0.0	0.0	0	0
Nov	0.0	0.0	0	0
Dec	0.0	0.0	0	0
Total	0.0	0.0	0	0

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8k. Total Mass Load by Field - Field 11 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb/ac			lb/ac-d
Jan	23.0	3.7	504	6
Feb	0.0	0.0	0	0
Mar	0.0	0.0	0	0
Apr	0.0	0.0	0	0
May	0.0	0.0	0	0
Jun	0.0	0.0	0	0
Jul	0.0	0.0	0	0
Aug	0.0	0.0	0	0
Sep	0.0	0.0	0	0
Oct	0.0	0.0	0	0
Nov	0.0	0.0	0	0
Dec	0.0	0.0	0	0
Total	23.0	3.7	504	1

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 8l. Total Mass Load by Field - Pond - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Nitrogen	Phosphorus	TSS	BOD
	lb			lb/d
Jan	0.0	0.0	0	0
Feb	400.3	37.0	5,564	79
Mar	149.9	65.7	3,602	52
Apr	577.4	85.1	15,102	296
May	0.0	0.0	0	0
Jun	0.0	0.0	0	0
Jul	0.0	0.0	0	0
Aug	55.8	13.6	880	37
Sep	136.4	42.3	2,928	197
Oct	0.0	0.0	0	0
Nov	29.7	45.4	2,134	123
Dec	0.0	0.0	0	0
Total	1,349.4	289.1	30,210	64

NOTES:

When monthly quality data was not available for a month with flow, the annual average concentration was substituted to compute the monthly total.
 The pond is for temporary storage and flow equalization. Process water sent to the pond is ultimately discharged to one of the fields but the amount discharged from the pond is not measured and the field receiving that process water is not recorded.

Abbreviations: BOD = biochemical oxygen demand, lb/ac = pounds per acre, lb/ac-d = pounds per acre per day, Nitrogen = total Kjeldahl nitrogen + nitrate-nitrogen, TSS = total suspended solids.

Table 9a. Crop Harvest - Fields 1-4 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Date	Acres	Crop	Total Yield	
			tons	tons per acre
Field 1				
10/8/2019	9	Bermuda	24.4	2.7
Total	9	--	24.4	2.7
Field 2				
10/8/2019	18	Bermuda	100.8	5.6
Total	18	--	100.8	5.6
Field 3				
10/8/2019	18	Bermuda	63.6	3.5
Total	18	--	63.6	3.5
Field 4				
10/8/2019	18	Bermuda	97.8	5.4
Total	18	--	97.8	5.4

NOTES:

Abbreviations: -- = not applicable.

Total yield is as harvested without considering dry matter content.

Table 9b. Crop Harvest - Fields 5-8 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Date	Acres	Crop	Total Yield	
			tons	tons per acre
Field 5				
10/8/2019	18	Bermuda	58.2	3.2
Total	18	--	58.2	3.2
Field 6				
10/8/2019	18	Bermuda	72.0	4.0
Total	18	--	72.0	4.0
Field 7				
10/8/2019	18	Bermuda	76.8	4.3
Total	18	--	76.8	4.3
Field 8				
10/8/2019	18	Bermuda	38.4	2.1
Total	18	--	38.4	2.1

NOTES:

Abbreviations: -- = not applicable.

Total yield is as harvested without considering dry matter content.

Table 9c. Crop Harvest - Fields 9-11 - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Date	Acres	Crop	Total Yield	
			tons	tons per acre
Field 9				
10/8/2019	18	Bermuda	28.8	1.6
Total	18	--	28.8	1.6
Field 10				
10/8/2019	9	Bermuda	40.8	4.5
Total	9	--	40.8	4.5
Field 11				
10/8/2019	6	Bermuda	32.4	5.4
Total	6	--	32.4	5.4

NOTES:

Abbreviations: -- = not applicable.

Total yield is as harvested without considering dry matter content.

Table 10. Nitrogen and Phosphorus Uptake by Field - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Crop	Nitrogen Uptake	Phosphorus Uptake
	pounds per acre	
Field 1		
Bermuda	88	8
Total	88	8
Field 2		
Bermuda	181	17
Total	181	17
Field 3		
Bermuda	114	11
Total	114	11
Field 4		
Bermuda	176	17
Total	176	17
Field 5		
Bermuda	105	10
Total	105	10
Field 6		
Bermuda	130	12
Total	130	12
Field 7		
Bermuda	138	13
Total	138	13
Field 8		
Bermuda	69	7
Total	69	7
Field 9		
Bermuda	52	5
Total	52	5
Field 10		
Bermuda	147	14
Total	147	14
Field 11		
Bermuda	175	17
Total	175	17

NOTE:

Nitrogen includes both nitrate-nitrogen and total Kjeldahl nitrogen removal.

Table 11a. Nitrogen Balance by Field - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Field	Nitrogen Applied	Nitrogen Uptake	Nitrogen Loss	Balance
	pounds per acre			
Field 1	15	88	5	-77
Field 2	280	181	84	14
Field 3	279	114	84	81
Field 4	278	176	83	19
Field 5	213	105	64	44
Field 6	253	130	76	48
Field 7	203	138	61	4
Field 8	213	69	64	80
Field 9	208	52	62	94
Field 10	0	147	0	-147
Field 11	23	175	7	-159

NOTES:

Nitrogen Applied is the nitrate-nitrogen and total Kjeldahl nitrogen applied through irrigation.
 Nitrogen Uptake is the nitrate-nitrogen and total Kjeldahl nitrogen removed with crop harvest.
 Nitrogen loss accounts for 30% loss of applied nitrogen through denitrification.
 Balance = Nitrogen Applied - Nitrogen Uptake - Nitrogen Loss.

Table 11b. Phosphorus Balance by Field - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Field	Phosphorus Applied	Phosphorus Uptake	Balance
	pounds per acre		
Field 1	2	8	-6
Field 2	56	17	39
Field 3	52	11	41
Field 4	49	17	32
Field 5	50	10	40
Field 6	63	12	50
Field 7	45	13	32
Field 8	60	7	53
Field 9	56	5	51
Field 10	0	14	-14
Field 11	4	17	-13

NOTES:

Phosphorus Applied is the phosphorus applied through irrigation.
 Phosphorus Uptake is the phosphorus removed with crop harvest.
 Balance = Phosphorus Applied - Phosphorus Uptake.

Table 12a. Soil Monitoring - Semi-Annual By Field (Fields 1-4) - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Depth	Moisture	NO ₃ -N	pH	EC	CEC	Base Sat
	inches	%	mg/kg	s.u.	mmhos/cm		%
Field 1							
3/23/2019	0-15	12.2	1.8	8.00	0.43	26.0	65
3/24/2019	15-30	10.7	1.0	8.10	0.42	25.0	55
10/8/2019	0-15	18.7	6.8	8.00	0.55	30.0	72
10/9/2019	15-30	22.8	6.3	7.90	0.66	28.0	75
Average	--	16.1	4.0	8.00	0.52	27.3	67
Field 2							
3/23/2019	0-15	16.4	4.2	8.30	0.52	31.0	68
3/24/2019	15-30	17.6	2.5	8.20	0.53	28.0	67
10/8/2019	0-15	24.0	4.4	8.20	0.77	29.0	73
10/9/2019	15-30	23.1	4.2	7.90	0.99	29.0	75
Average	--	20.3	3.8	8.15	0.70	29.3	71
Field 3							
3/23/2019	0-15	15.9	4.5	8.00	0.55	26.0	64
3/24/2019	15-30	12.5	1.9	8.20	0.59	24.0	56
10/8/2019	0-15	22.2	7.5	8.00	0.55	26.0	64
10/9/2019	15-30	23.1	10.2	7.80	0.76	21.0	63
Average	--	18.4	6.0	8.00	0.61	24.3	62
Field 4							
3/23/2019	0-15	45.5	4.0	7.90	1.31	30.0	97
3/24/2019	15-30	19.6	3.5	8.00	0.77	25.0	61
10/8/2019	0-15	16.4	24.9	7.50	0.78	25.0	64
10/9/2019	15-30	19.2	12.4	8.10	0.79	34.0	76
Average	--	25.2	11.2	7.88	0.91	28.5	75

NOTE:

Abbreviations: -- = not applicable, % = percent, CEC = cation exchange capacity, EC = electrical conductivity, mg/kg = milligrams per kilogram, NO₃-N = nitrate-nitrogen, s.u. = standard units, Sat = saturation, mmhos/cm = millimhos per centimeter.

Table 12b. Soil Monitoring - Semi-Annual By Field (Fields 5-8) - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Depth	Moisture	NO ₃ -N	pH	EC	CEC	Base Sat
	inches	%	mg/kg	s.u.	mmhos/cm		%
Field 5							
3/23/2019	0-15	28.2	5.3	8.10	0.76	31.0	76
3/24/2019	15-30	27.8	3.9	8.10	0.95	33.0	79
10/8/2019	0-15	21.1	8.4	8.40	0.65	31.0	68
10/9/2019	15-30	18.4	6.1	8.20	0.69	27.0	63
Average	--	23.9	5.9	8.20	0.76	30.5	72
Field 6							
3/23/2019	0-15	24.9	1.1	8.20	0.64	30.0	67
3/24/2019	15-30	25.6	1.9	8.20	0.73	30.0	73
10/8/2019	0-15	20.1	7.5	8.20	0.79	29.0	81
10/9/2019	15-30	19.1	2.3	8.40	0.71	28.0	81
Average	--	22.4	3.2	8.25	0.72	29.3	76
Field 7							
3/23/2019	0-15	22.1	4.3	8.30	0.69	29.0	68
3/24/2019	15-30	24.5	1.9	8.20	0.87	25.0	62
10/8/2019	0-15	19.7	3.4	8.20	0.95	28.0	65
10/9/2019	15-30	19.1	3.2	8.20	0.81	23.0	63
Average	--	21.4	3.2	8.23	0.83	26.3	65
Field 8							
3/23/2019	0-15	22.4	2.7	8.20	0.96	26.0	63
3/24/2019	15-30	15.0	1.9	8.40	0.87	28.0	73
10/8/2019	0-15	21.6	4.8	8.20	1.38	26.0	66
10/9/2019	15-30	19.5	3.4	8.20	1.42	23.0	60
Average	--	19.6	3.2	8.25	1.16	25.8	66

NOTE:

Abbreviations: -- = not applicable, % = percent, CEC = cation exchange capacity, EC = electrical conductivity, mg/kg = milligrams per kilogram, NO₃-N = nitrate-nitrogen, s.u. = standard units, Sat = saturation, mmhos/cm = millimhos per centimeter.

Table 12c. Soil Monitoring - Semi-Annual By Field (Fields 9-11) - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Depth	Moisture	NO ₃ -N	pH	EC	CEC	Base Sat
	inches	%	mg/kg	s.u.	mmhos/cm		%
Field 9							
3/23/2019	0-15	22.4	1.4	8.30	0.73	29.0	63
3/24/2019	15-30	20.0	2.4	8.10	0.90	24.0	62
10/8/2019	0-15	18.9	6.8	7.10	0.65	25.0	63
10/9/2019	15-30	22.9	9.8	8.10	0.72	26.0	70
Average	--	21.1	5.1	7.90	0.75	26.0	65
Field 10							
3/23/2019	0-15	21.9	2.4	8.20	0.58	27.0	55
3/24/2019	15-30	18.3	3.3	8.10	0.76	23.0	58
10/8/2019	0-15	12.2	16.8	8.10	0.76	12.0	42
10/9/2019	15-30	12.6	6.0	8.00	0.69	10.0	40
Average	--	16.3	7.1	8.10	0.70	18.0	49
Field 11							
3/23/2019	0-15	15.9	2.7	8.40	0.66	25.0	54
3/24/2019	15-30	19.0	2.0	8.50	0.72	22.0	54
10/8/2019	0-15	14.5	4.6	8.00	0.38	29.0	57
10/9/2019	15-30	13.8	1.9	8.40	0.40	29.0	50
Average	--	15.8	2.8	8.33	0.54	26.3	54

NOTE:

Abbreviations: -- = not applicable, % = percent, CEC = cation exchange capacity, EC = electrical conductivity, mg/kg = milligrams per kilogram, NO₃-N = nitrate-nitrogen, s.u. = standard units, mmhos/cm = millimhos per centimeter.

Table 13. Soil Monitoring - Annual By Field - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Depth	OM	NH ₄ -N	Avail P	K	SO ₄ -S	Ca	Mg	Na	B	Zn	TKN	Cu	Mn	Fe
	inches	%	mg/kg				meq/100g			ppm		%	ppm		
Field 1															
3/23/2019	0-15	1.7	5.0	14	259	18	22.1	3.4	0.25	0.66	0.7	0.07	1.0	2	25
Average	--	1.7	5.0	14	259	18	22.1	3.4	0.25	0.66	0.7	0.07	1.0	2	25
Field 2															
3/23/2019	0-15	1.3	2.0	68	486	24	25.7	3.7	0.83	0.97	1.0	0.08	0.8	3	42
Average	--	1.3	2.0	68	486	24	25.7	3.7	0.83	0.97	1.0	0.08	0.8	3	42
Field 3															
3/23/2019	0-15	1.5	3.0	83	563	18	20.9	2.9	0.82	0.86	6.7	0.08	0.9	4	39
Average	--	1.5	3.0	83	563	18	20.9	2.9	0.82	0.86	6.7	0.08	0.9	4	39
Field 4															
3/23/2019	0-15	6.4	6.0	183	578	201	28.4	2.6	1.01	1.77	7.7	0.50	2.7	41	164
Average	--	6.4	6.0	183	578	201	28.4	2.6	1.01	1.77	7.7	0.50	2.7	41	164
Field 5															
3/23/2019	0-15	2.7	4.0	192	481	66	27.7	3.2	1.02	1.55	3.4	0.19	1.5	7	68
Average	--	2.7	4.0	192	481	66	27.7	3.2	1.02	1.55	3.4	0.19	1.5	7	68
Field 6															
3/23/2019	0-15	1.0	3.0	83	585	51	27.4	2.9	0.78	0.93	1.1	0.07	0.8	3	46
Average	--	1.0	3.0	83	585	51	27.4	2.9	0.78	0.93	1.1	0.07	0.8	3	46
Field 7															
3/23/2019	0-15	1.5	1.0	121	533	48	23.2	3.3	0.86	1.21	1.7	0.12	0.9	2	39
Average	--	1.5	1.0	121	533	48	23.2	3.3	0.86	1.21	1.7	0.12	0.9	2	39
Field 8															
3/23/2019	0-15	1.6	3.0	117	438	93	20.6	2.9	1.20	1.14	2.6	0.12	1.3	7	67
Average	--	1.6	3.0	117	438	93	20.6	2.9	1.20	1.14	2.6	0.12	1.3	7	67
Field 9															
3/23/2019	0-15	1.6	3.0	142	396	51	24.2	2.6	0.99	0.99	2.3	0.13	1.1	3	52
Average	--	1.6	3.0	142	396	51	24.2	2.6	0.99	0.99	2.3	0.13	1.1	3	52
Field 10															
3/23/2019	0-15	1.4	3.0	128	223	42	23.5	2.2	0.58	0.91	3.2	0.10	1.5	3	63
Average	--	1.4	3.0	128	223	42	23.5	2.2	0.58	0.91	3.2	0.10	1.5	3	63
Field 11															
3/23/2019	0-15	0.2	3.0	17	234	45	20.5	3.1	0.93	0.74	0.6	0.03	1.1	5	34
Average	--	0.2	3.0	17	234	45	20.5	3.1	0.93	0.74	0.6	0.03	1.1	5	34

NOTE:

Abbreviations: -- = not applicable, % = percent, Avail P = available phosphorus, B = boron, Ca = calcium, Cu = copper, Fe = iron, K = potassium, meq/100g = millequivalents per 100 grams of soil, Mg = magnesium, mg/kg = milligrams per kilogram, Mn = manganese, Na = sodium, NH₄-N = ammonium-nitrogen, OM = organic matter, ppm = parts per million, SO₄-S = sulfate-sulfur, TKN = total Kjeldahl nitrogen, Zn = zinc.

Table 14. Sanitary Wastewater Quality - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	BOD	TKN	NO ₃ -N	Chlorine Residual	Settlable Solids	Fecal Coliform	Total Coliform
	mg/L					MPN/100mL	
1/2/2019	2				8		
1/3/2019	5				2	<4	
1/9/2019	10				4		
1/10/2019	12				6		
1/16/2019	2				3		
1/17/2019	2				7		
1/23/2019	2				3		
1/24/2019	2				3		
1/30/2019	4				3		
1/31/2019	2				3		
2/6/2019	5				3		
2/7/2019	2				5	<4	
2/13/2019	3				3		
2/14/2019	2				3		
2/20/2019	5				3		
2/21/2019	4				3		
2/27/2019	2				3		
2/28/2019	5				3		
3/6/2019	7				3		
3/7/2019	2				5	<4	
3/13/2019	9				7		
3/14/2019	2				3		
3/20/2019	6				3		
3/21/2019	2				10		
3/27/2019	10				2		
3/28/2019	2				3		
4/3/2019	2				3		
4/4/2019	2				3	<4	
4/10/2019	7				5		
4/11/2019	2				5		
4/17/2019	2				5		
4/18/2019	2				5		
4/24/2019	2				3		
4/25/2019	2				4		
5/1/2019	6				5		
5/2/2019	2				3	4	
5/8/2019	2				3		
5/9/2019	2				3		
5/15/2019	2				3		

Table 14. Sanitary Wastewater Quality - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	BOD	TKN	NO ₃ -N	Chlorine Residual	Settlable Solids	Fecal Coliform	Total Coliform
	mg/L					MPN/100mL	
5/16/2019	2				7		
5/22/2019	6				3		
5/23/2019	2				3		
5/29/2019	9				7		
5/30/2019	7				6		
6/5/2019	2				3		
6/6/2019	2				3	<4	
6/12/2019	9				7		
6/13/2019	10				4		
6/19/2019	2				6		
6/20/2019	3				3		
6/26/2019	2				8		
6/27/2019	6				6		
7/2/2019	2				10		
7/3/2019	3				7	<4	
7/10/2019	8				7		
7/11/2019	2				6		
7/17/2019	9				5		
7/18/2019	2				5		
7/24/2019	2				3		
7/25/2019	2				3		
7/31/2019	2				3		
8/1/2019	2				10	4	
8/6/2019	2				5		
8/7/2019	2				3		
8/14/2019	3				3		
8/15/2019	2				7		
8/21/2019	2				4		
8/22/2019	3				3		
8/28/2019	8				4		
8/29/2019	2				3		
9/4/2019	6				3	16	
9/5/2019	6				3		
9/11/2019	4				3		
9/12/2019	3				3		
9/19/2019	5				13		
9/20/2019	6				3		
9/25/2019	4				11		
9/26/2019	3				3		

Table 14. Sanitary Wastewater Quality - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	BOD	TKN	NO ₃ -N	Chlorine Residual	Settlable Solids	Fecal Coliform	Total Coliform
	mg/L					MPN/100mL	
10/2/2019	7				4		
10/3/2019	6				8	40	
10/9/2019	3				7		
10/10/2019	4				10		
10/16/2019	11				4		
10/17/2019	4				3		
10/23/2019	7				7		
10/24/2019	18				24		
10/30/2019	16				9		
10/31/2019	11				9		
11/6/2019	6				6		
11/7/2019	5				7	<4	
11/13/2019	10				12		
11/14/2019	7				6		
11/20/2019	10				11		
11/21/2019	11				8		
11/26/2019	22				8		
11/27/2019	12				15		
12/4/2019	8				10		
12/5/2019	8				5	<4	
12/11/2019	17				10		
12/12/2019	17				9		
12/18/2019	12				10		
12/19/2019	8				11		
12/23/2019	9				11		
12/24/2019	9				10		
12/30/2019	9				3		
12/31/2019	4				5		
Average	5				5	8	
Median	--	--	--	--	--	4	
Maximum	22				24	40	

NOTES:

Samples collected by Frito-Lay personnel at discharge from chlorinator.

Abbreviations: -- = not required, CFU/100mL = colony forming units per 100 milliliters,

mg/L = milligrams per liter, NO₃-N = nitrate-nitrogen, TKN = total Kjeldahl nitrogen.

FIGURE

Figure 1. Land Application System Site Layout

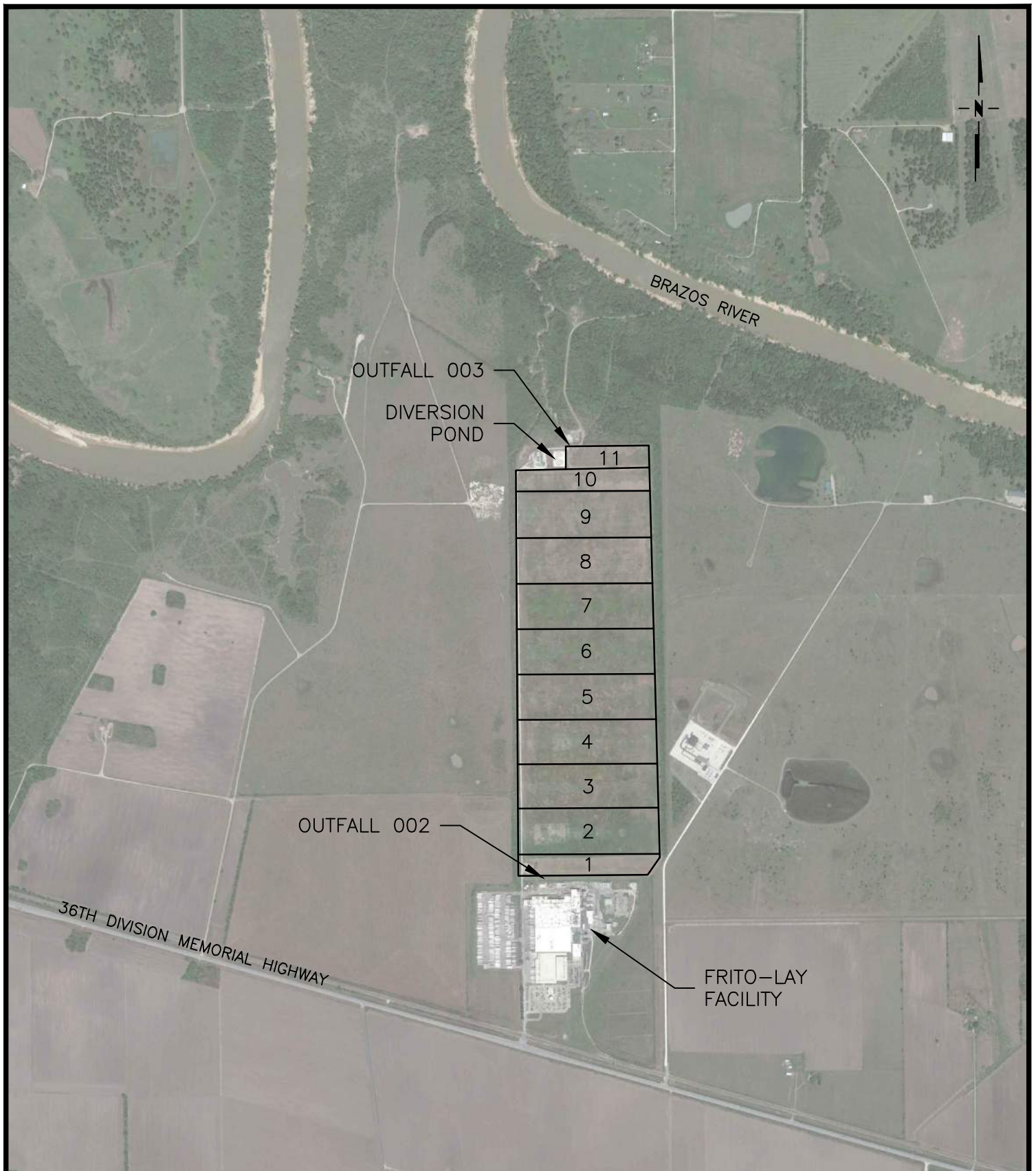
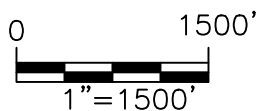


Figure 1. Land Application System Site Layout



PROJECT NUMBER:	2019210046
DATE:	1/6/2019
DWG NO:	2019210022 F1 2019.dwg
DWG BY:	PROJECT MANAGER:
6DJR	6SJR
REVISED:	

2019 Annual Land Application Report
Frito-Lay Environmental Audit Program

Frito-Lay, Inc.
Rosenberg, Texas



CASCADE EARTH SCIENCES

(SOURCE: Google Earth Pro Image April 2019, ©2019 Google)

CHARTS

Chart 1.	Field 1 – Soil Trend Charts
Chart 2.	Field 2 – Soil Trend Charts
Chart 3.	Field 3 – Soil Trend Charts
Chart 4.	Field 4 – Soil Trend Charts
Chart 5.	Field 5 – Soil Trend Charts
Chart 6.	Field 6 – Soil Trend Charts
Chart 7.	Field 7 – Soil Trend Charts
Chart 8.	Field 8 – Soil Trend Charts
Chart 9.	Field 9 – Soil Trend Charts
Chart 10.	Field 10 – Soil Trend Charts
Chart 11.	Field 11 – Soil Trend Charts

Chart 1. Field 1 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

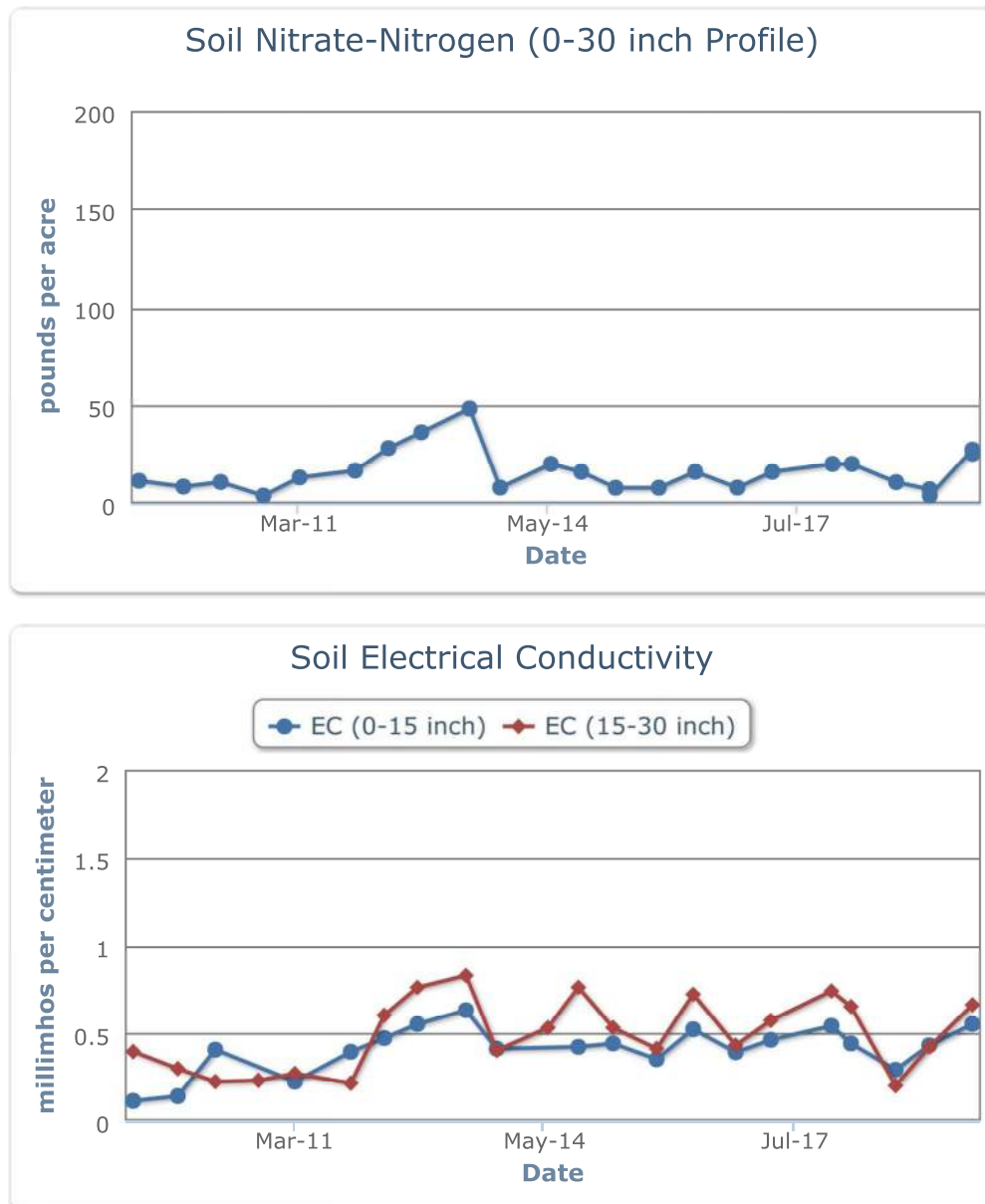


Chart 2. Field 2 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

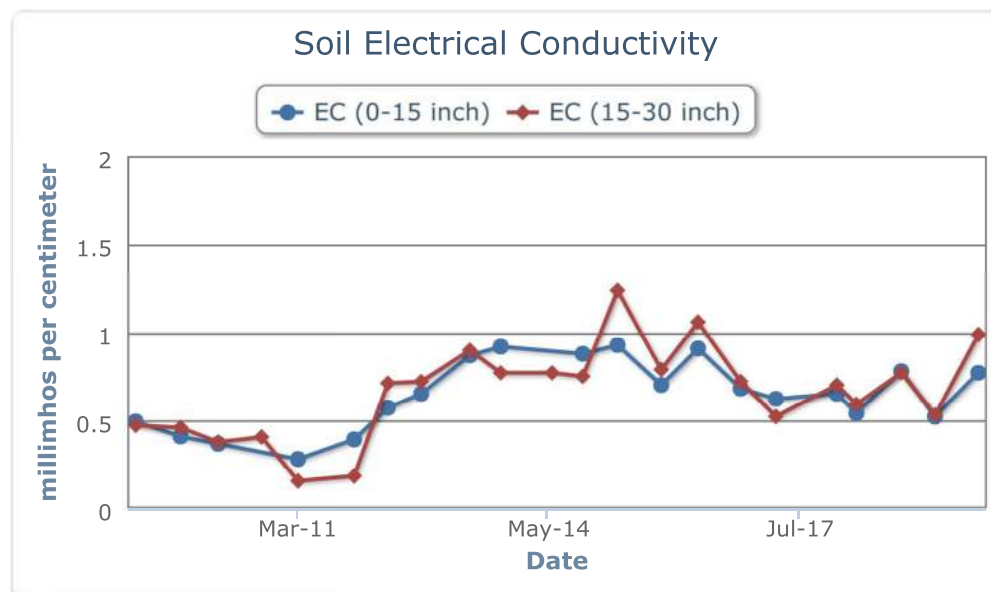
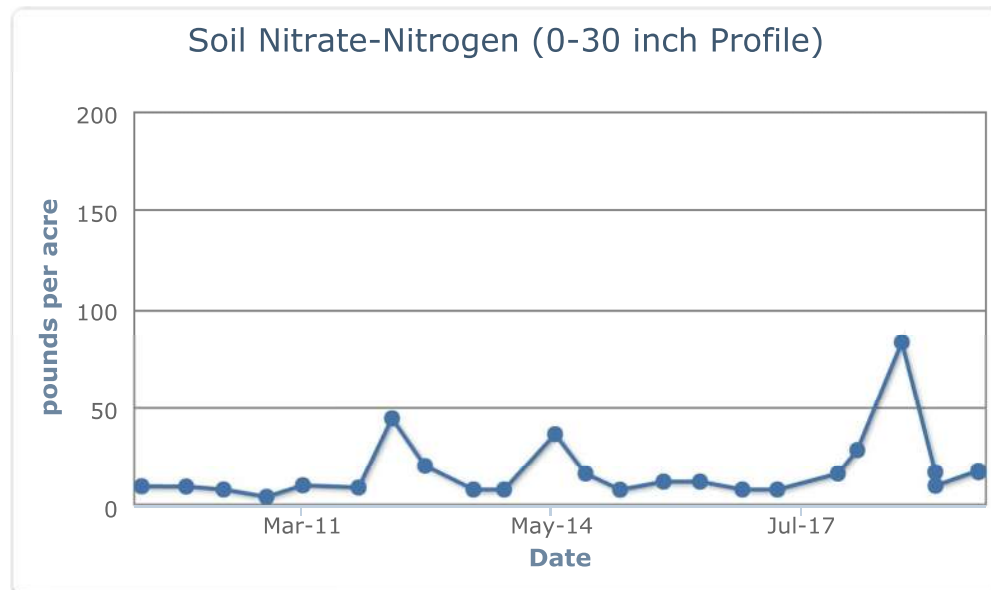


Chart 3. Field 3 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

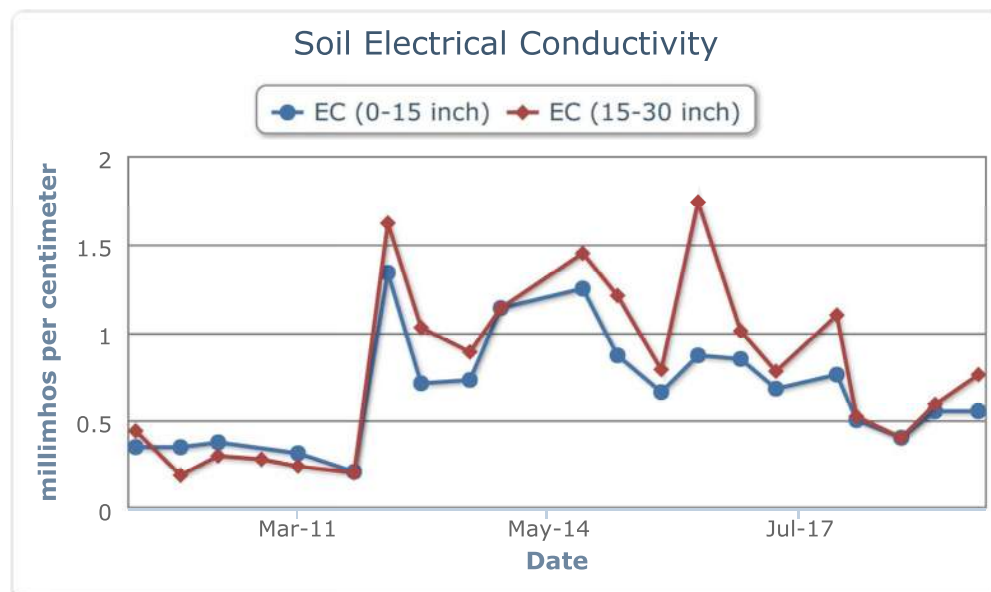
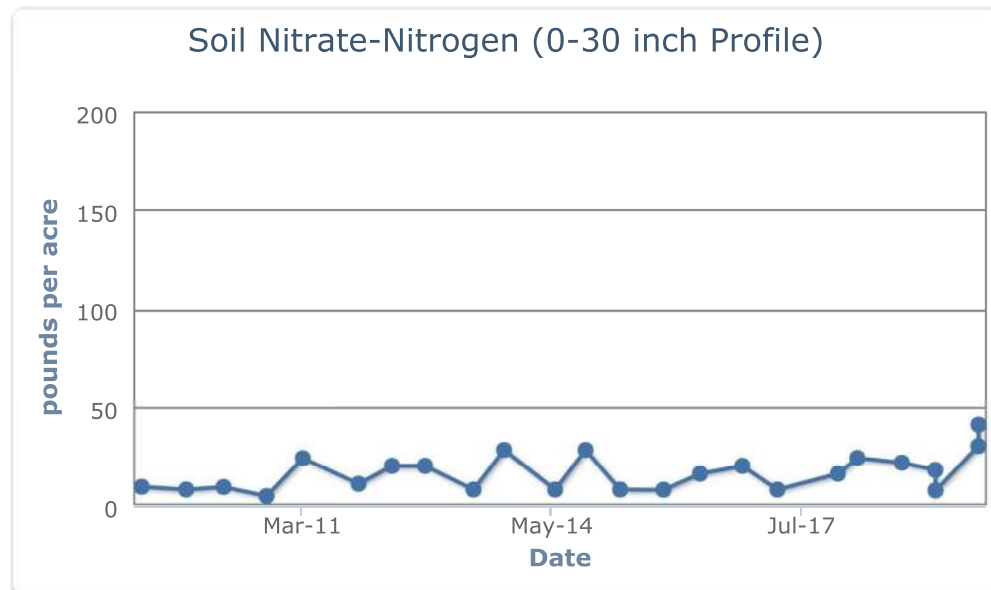


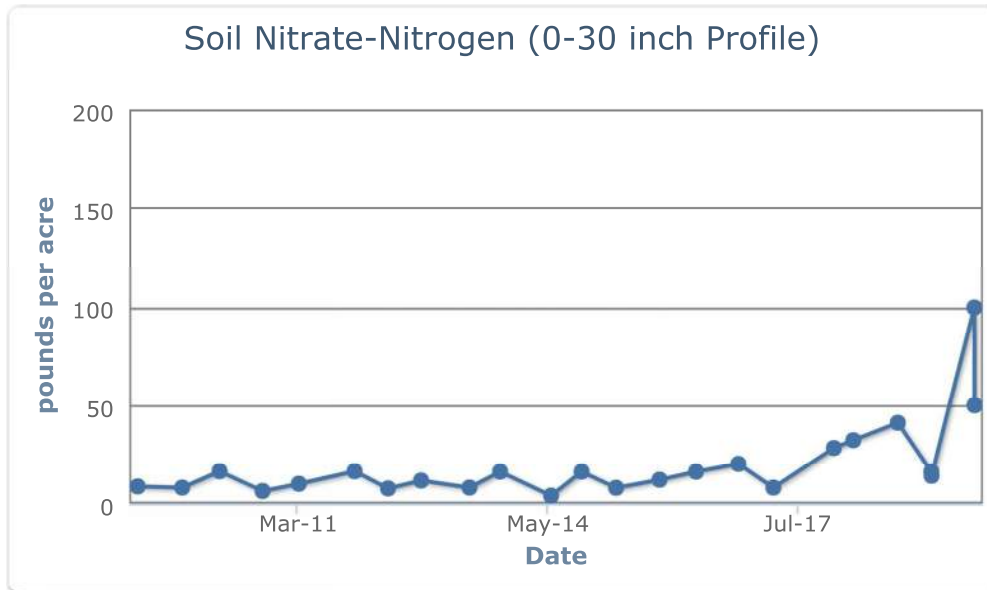
Chart 4. Field 4 - Soil Trend Charts**Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas**

Chart 5. Field 5 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

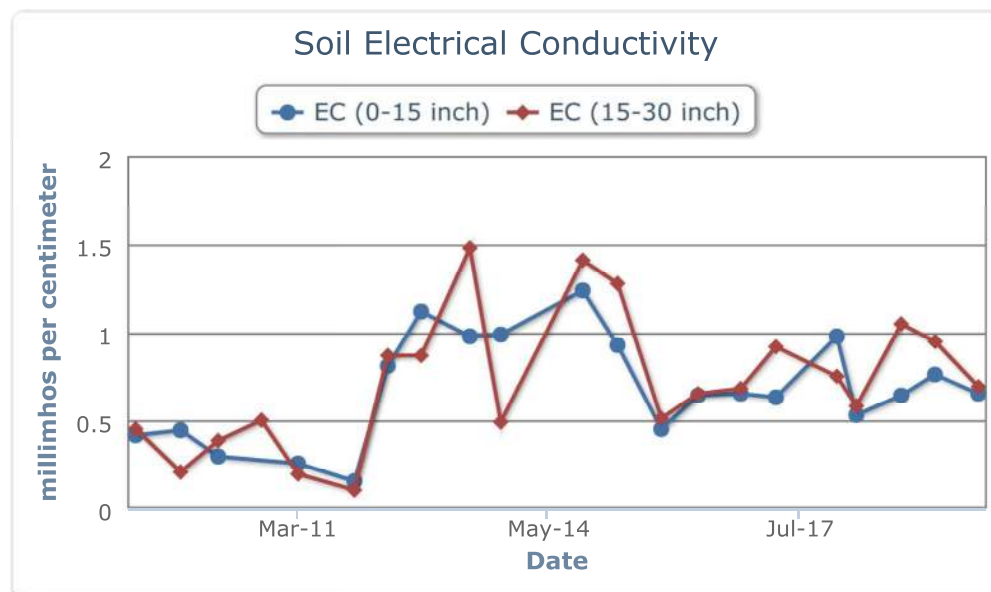
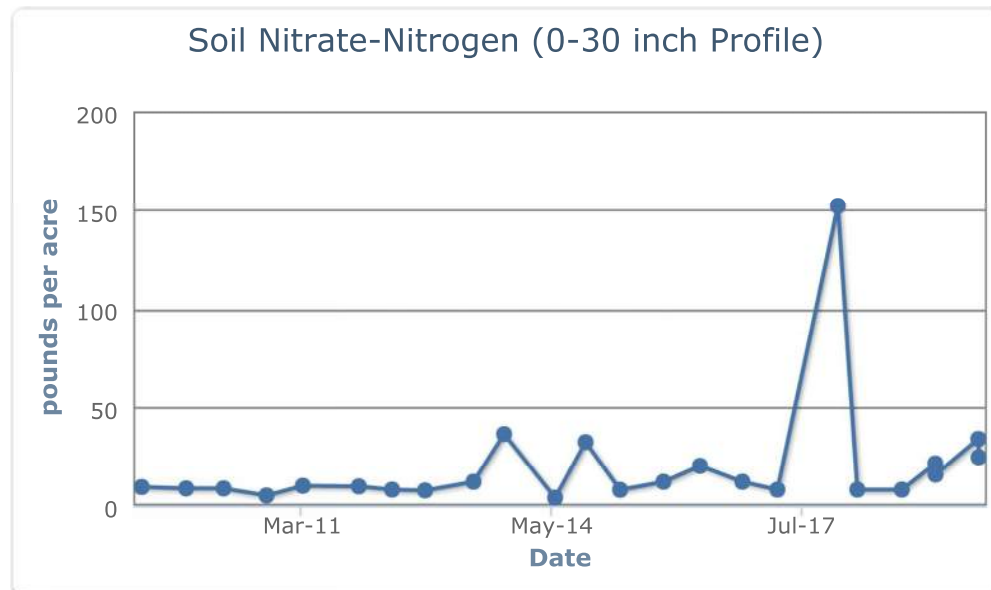


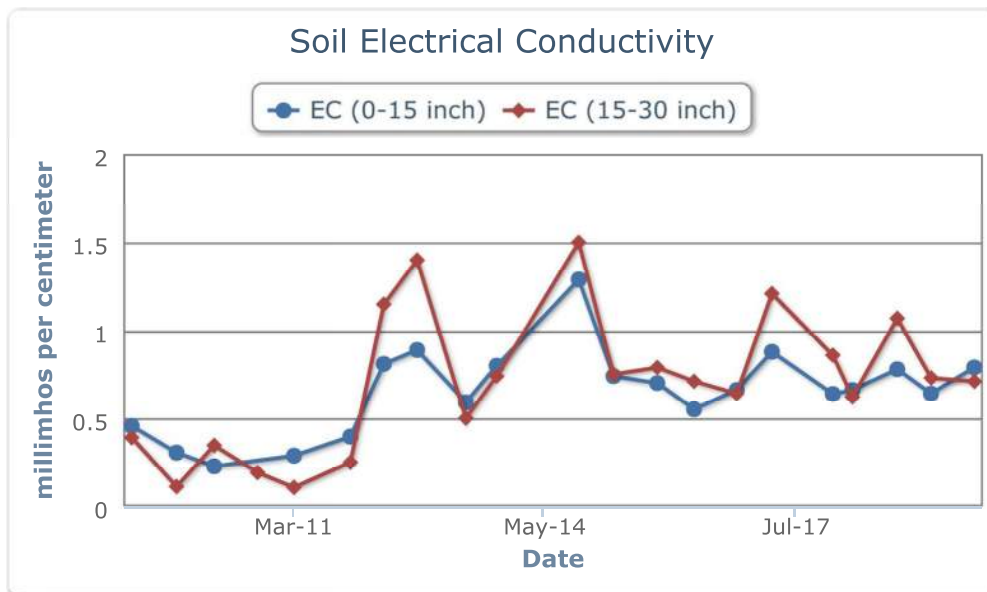
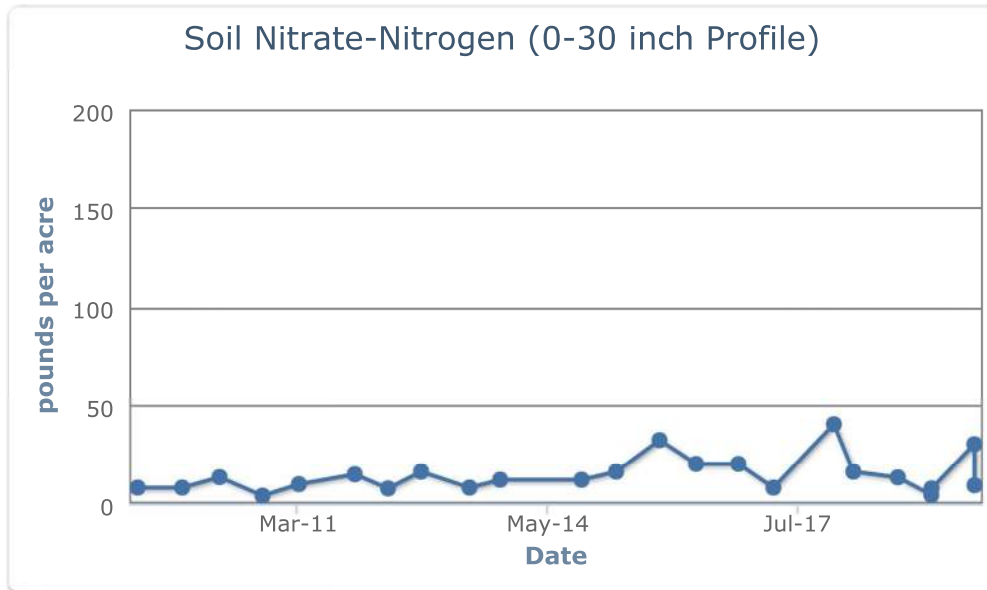
Chart 6. Field 6 - Soil Trend Charts**Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas**

Chart 7. Field 7 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

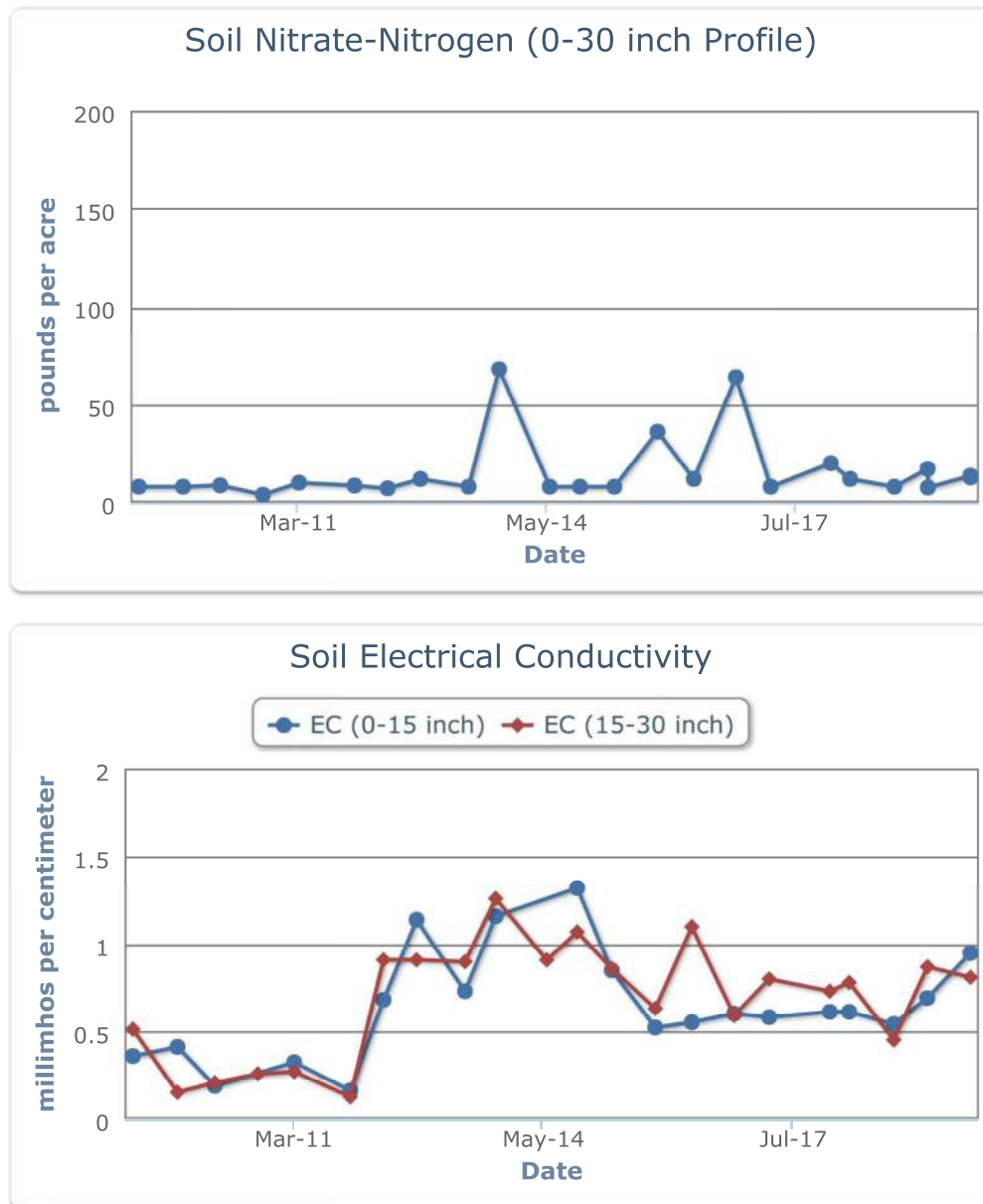


Chart 8. Field 8 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

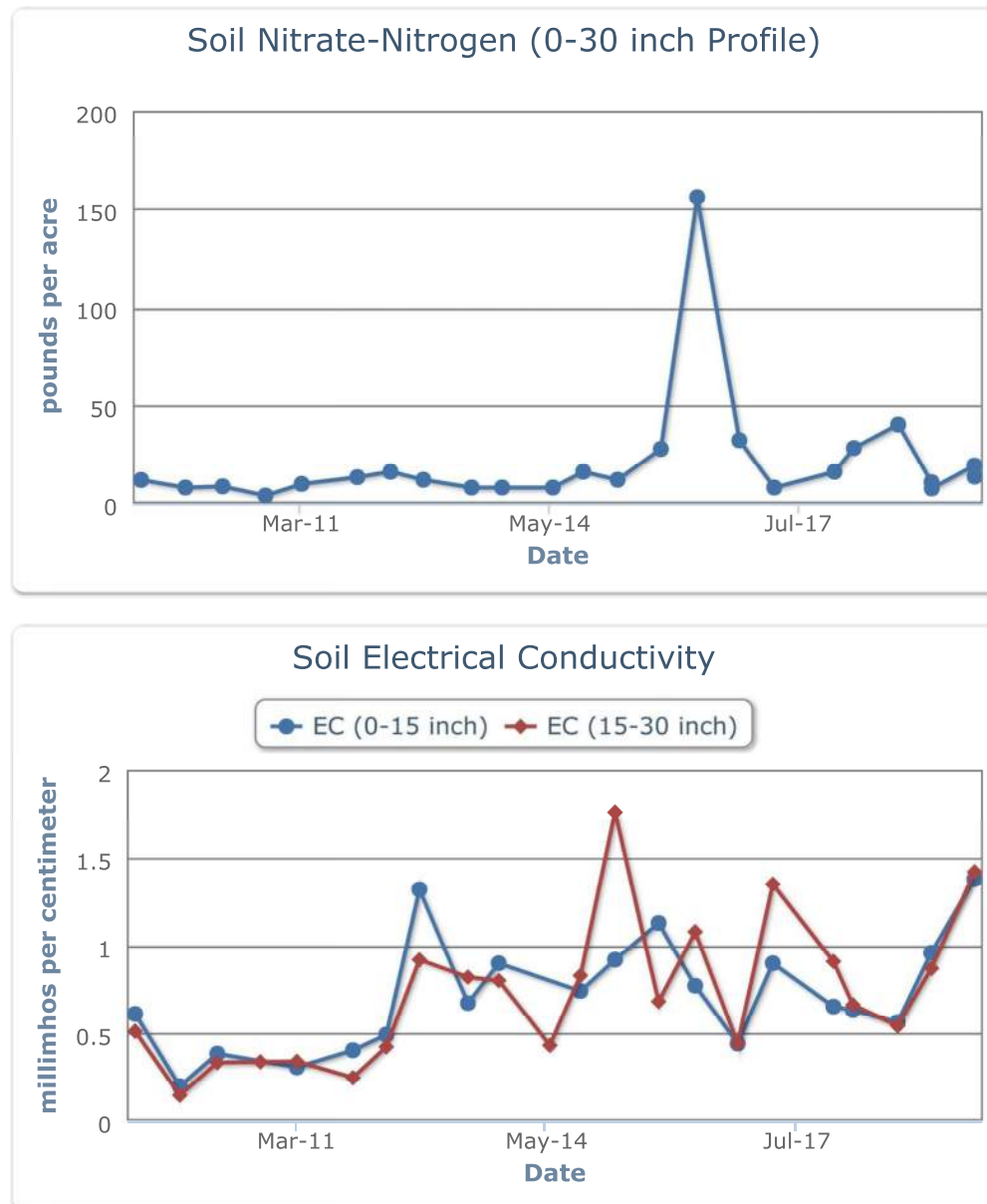


Chart 9. Field 9 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

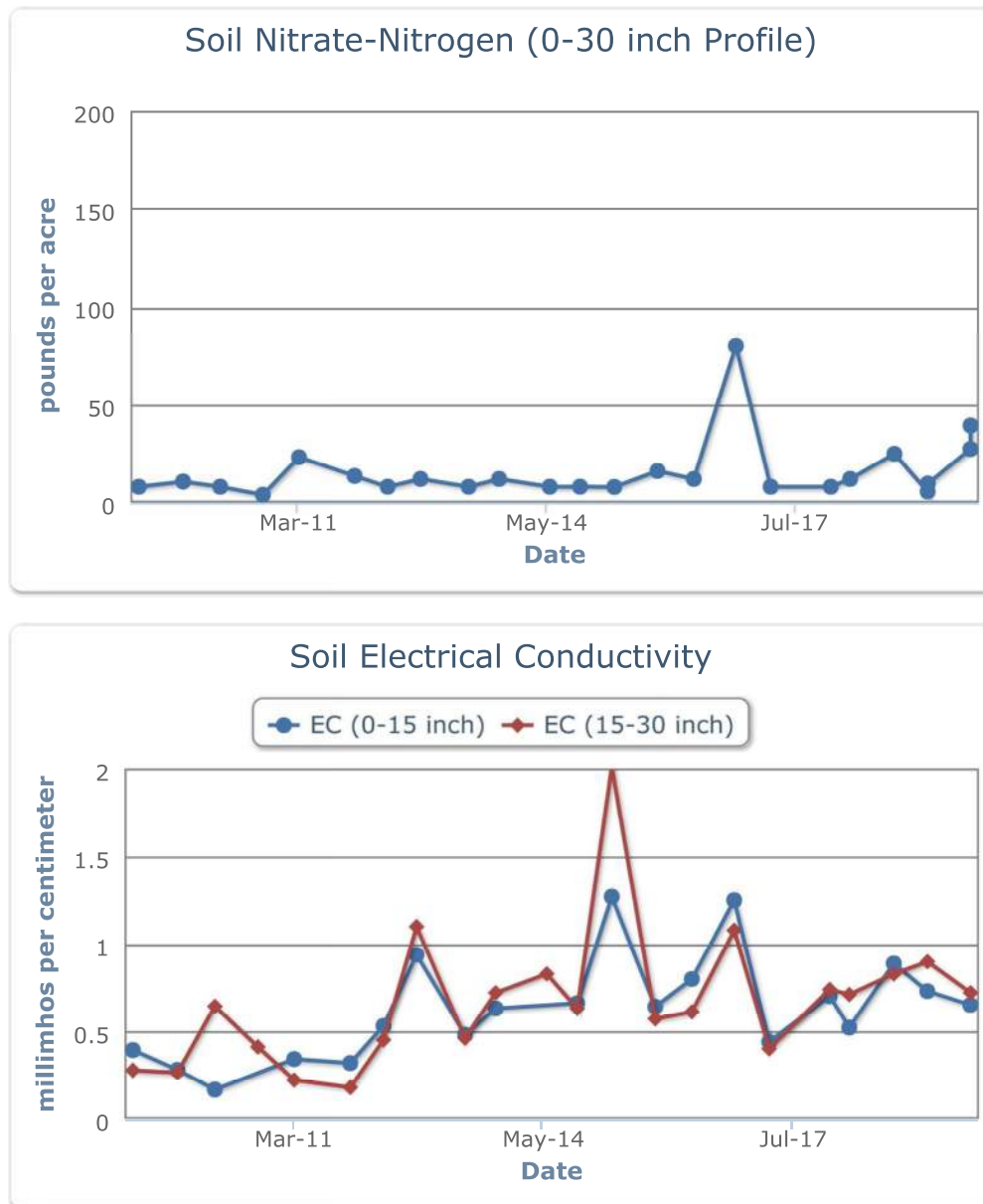


Chart 10. Field 10 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

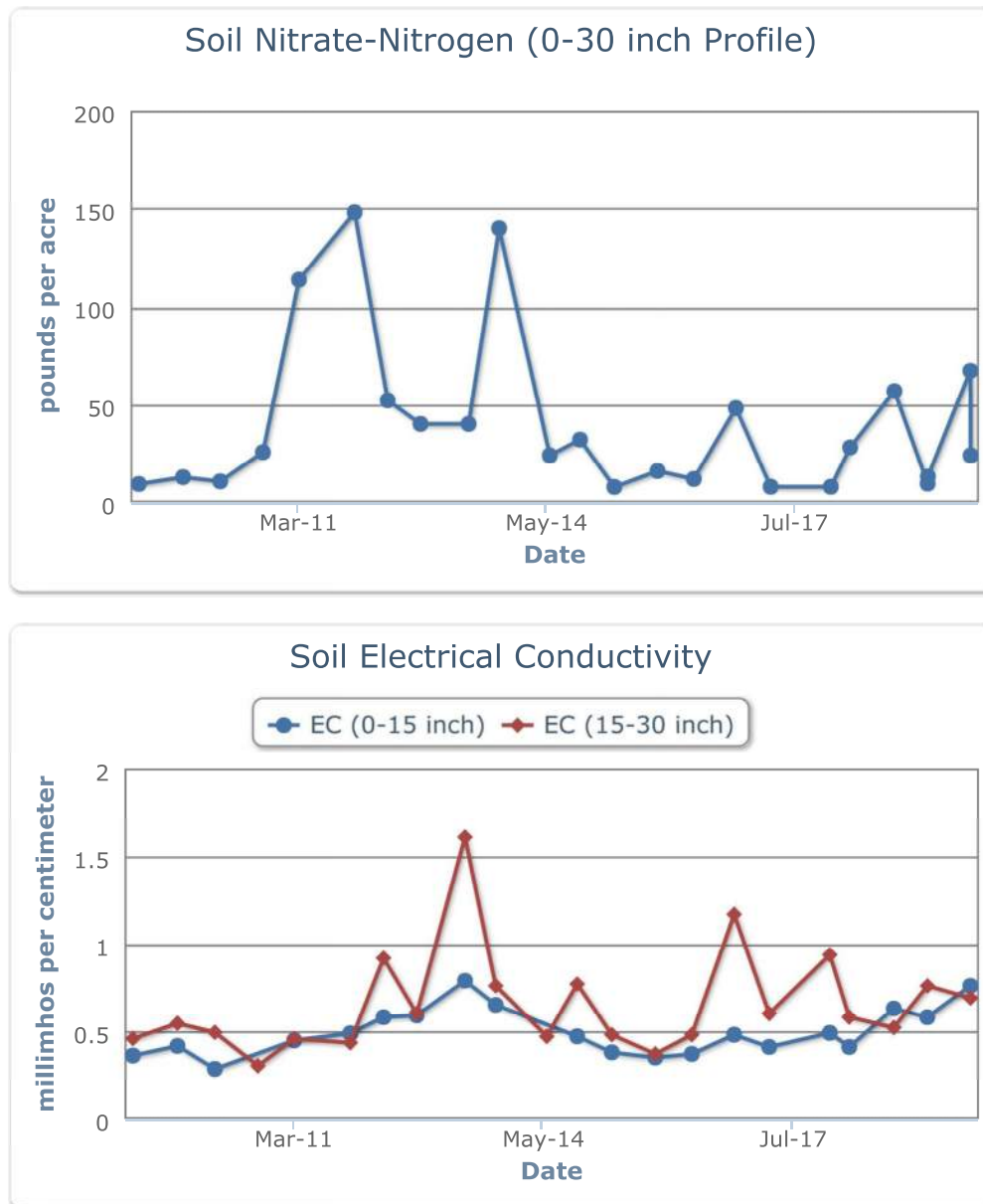
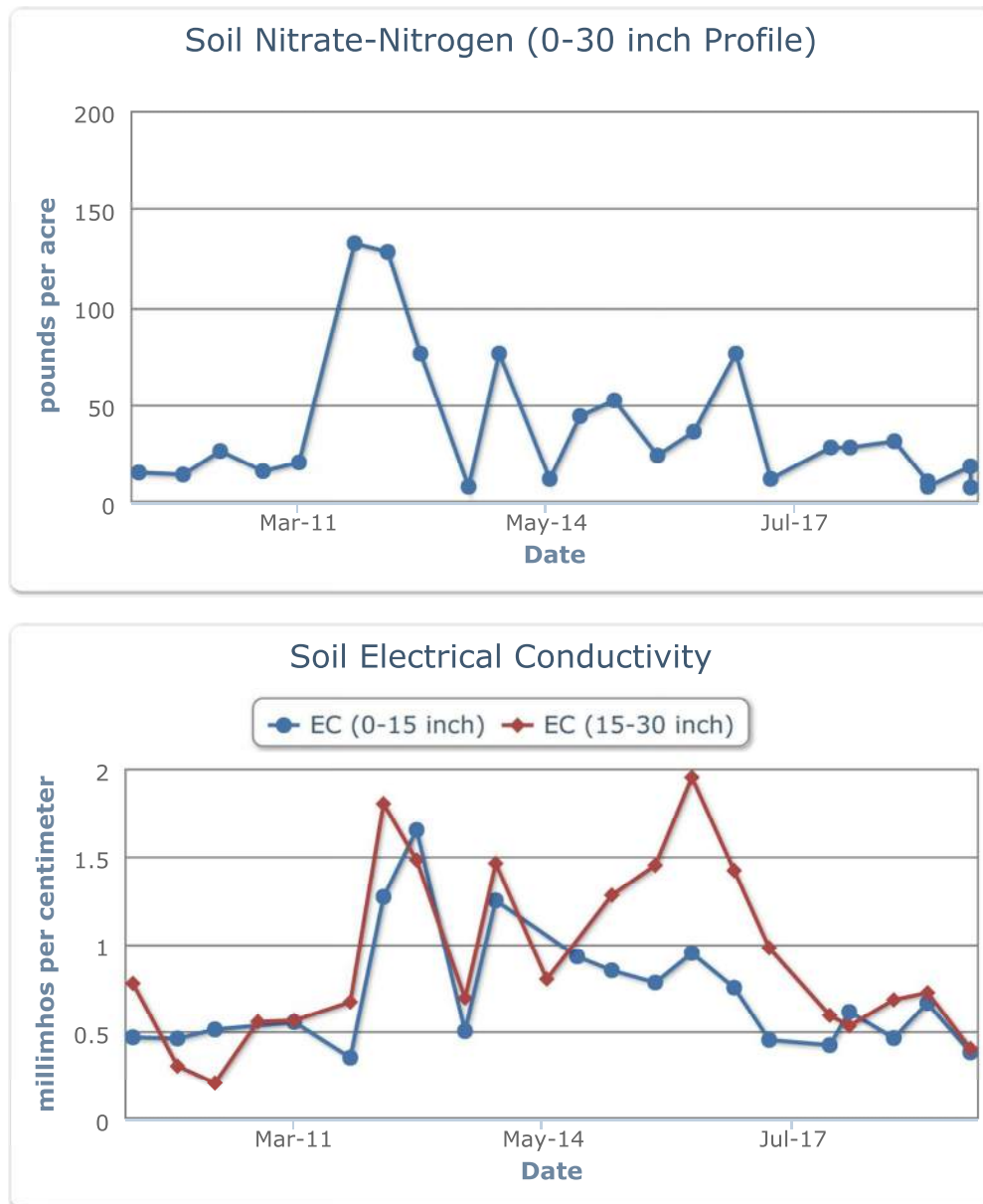


Chart 11. Field 11 - Soil Trend Charts
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas



APPENDICES

- Appendix A. Weekly Water Quality Analytical Results – 2019**
- Appendix B1. Outfall 003 Monthly Discharge Flow, Load, Concentrations - 2019**
- Appendix B2a-l. Outfall 003 Daily Discharge Flow, Load, and Concentration**
- Appendix B3a-l. Daily Treatment and Discharge Performance**

Appendix A.

**Weekly Water Quality
Analytical Results – 2019**

Appendix A. Weekly Water Quality Analytical Results - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	pH	COD	BOD	TSS	TKN	NO ₃	Total P	EC	TDS	Oil and Grease
	s.u.	mg/L						mmhos/cm	mg/L	
1/9/2019	7.6	916	142	381	17	0.0	3	1,363	800	2.8
1/18/2019	7.3	2,072	142	363	17	0.0	3			
2/12/2019	7.3	1,135	195	364	30	0.0	2	1,394	910	5.0
2/13/2019	7.6	1,250	168	548	35	0.0	4	1,356	780	2.8
3/12/2019	7.7	624	63	143	8	0.1	3	1,235	930	2.8
3/13/2019	7.6	592	65	143	4	0.1	2	1,226	880	2.8
4/9/2019	7.7	1,312	338	578	20	0.1	3		970	14.4
4/10/2019	7.8	1,112	326	552	23	0.1	3		1,010	3.9
5/14/2019	6.5	1,208	428	225	26	0.1	4	1,231	1,248	2.8
5/15/2019	5.5	1,568	837	233	32	0.1	4	1,221	1,444	4.9
6/11/2019	6.9	1,592	426	242	17	0.1	2	1,126	1,300	2.8
6/12/2019	6.3	1,520	651	264	26	0.1	3	1,258	1,420	34.0
7/9/2019	5.7	1,496	729	300	14	0.1	3	3,580	1,432	48.0
7/10/2019	5.5	1,988	1,280	213	18	0.1	4	3,600	1,888	22.7
8/6/2019	6.7	824	205	185	13	0.1	3	1,084	1,100	2.8
8/7/2019	6.7	912	219	140	7	0.1	2	1,181	1,130	9.6
9/10/2019	6.8	1,176	706	271	14	0.1	4	911	1,090	4.4
9/11/2019	6.7	1,136	354	255	10	0.1	4	1,311	1,260	6.1
10/8/2019	6.7	1,464	567	364	1	0.1	7	137	1,570	4.4
10/9/2019	6.6	1,568	647	242	1	0.1	7	1,311	1,610	6.1
11/12/2019	7.5	1,084	382	233	3	0.1	5	1,296	1,170	2.9
11/13/2019	7.7	804	426	234	3	0.1	5	1,328	1,120	2.9
12/10/2019	7.5	776	267	286	26	0.1	6	1,287	820	30.1
12/11/2019	7.5	680	210	291	20	0.1	7	1,273	710	18.5

NOTES:

Abbreviations: BOD = biochemical oxygen demand, cod = chemical oxygen demand, EC = electrical conductivity, mg/L = milligrams per liter, mmhos/cm = millimhos per centimeter, NH₄ = ammonia, NO₃ = nitrate, P = phosphorus, s.u. = standard units, TDS = total dissolved solids
 TKN = total Kjeldahl nitrogen, TSS = total suspended solids.

Appendix B1.

**Outfall 003 Monthly Discharge
Flow, Load, Concentration - 2019**

Appendix B1. Outfall 003 Monthly Discharge Flow, Load, Concentration - 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Month	Average Flow	Average BOD	Average TSS	Maximum BOD	Maximum TSS	Average Oil and Grease	Maximum Oil and Grease
	MGD	lb/day		mg/L		mg/L	
Jan	0.733	100	234	91	187	3	3
Feb	0.643	73	188	63	165	3	3
Mar	0.472	135	174	149	147	3	3
Apr	0.548	183	296	119	182	3	3
May	0.671	113	172	102	137	3	3
Jun	0.707	165	152	91	67	3	3
Jul	0.255	112	47	122	52	3	3
Aug	0.470	54	83	20	33	3	3
Sep	0.668	65	67	30	42	3	3
Oct	0.491	200	121	189	108	3	3
Nov	0.628	384	340	241	280	5	4.6
Dec	0.498	99	80	195	73	3	3

NOTES:

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day,

MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B2a-I.

**Outfall 003 Daily Discharge
Flow, Load, and Concentration**

Appendix B2a. Outfall 003 Daily Discharge Flow, Load, and Concentration - Jan 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
1/1/2019	0.535	7.9	36	158	71	317		
1/2/2019	0.868	7.8	13	97	33	240	3	
1/3/2019	1.698	7.7						4,200
1/4/2019	1.467	7.8						
1/5/2019	0.732	7.9						
1/6/2019	0.720	7.9						
1/7/2019	0.540	7.8						
1/8/2019	0.244	7.8	31	62	57	116		
1/9/2019	0.360	7.7	40	119	122	366		
1/10/2019	0.516	7.6						
1/11/2019	0.936	7.7						
1/12/2019	1.383	7.6						
1/13/2019	0.535	7.8						
1/14/2019	0.555	7.8						
1/15/2019	0.204	7.8	20	34	76	129		
1/16/2019	0.327	7.8	34	94	94	256		
1/17/2019	1.356	7.7						
1/18/2019	0.774	7.7						
1/19/2019	1.735	7.6						
1/20/2019	0.591	8.4						
1/21/2019	0.601	8.0						
1/22/2019	0.166	7.9	91	126	187	259		
1/23/2019	0.896	7.7	21	158	57	424		
1/24/2019	1.147	7.9						
1/25/2019	0.590	7.6						
1/26/2019	0.599	7.8						
1/27/2019	0.758	7.8						
1/28/2019	0.570	7.6						
1/29/2019	0.194	7.5	32	52	54	88		
1/30/2019	0.202	7.8	59	100	82	139		
1/31/2019	0.935	7.7						
Average	0.733	--	--	100	--	234	3	--
Maximum	--	--	91	--	187	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2b. Outfall 003 Daily Discharge Flow, Load, and Concentration - Feb 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
2/1/2019	1.681	7.5						
2/2/2019	0.684	7.7						
2/3/2019	0.529	7.6						
2/4/2019	1.183	7.6						
2/5/2019	0.275	7.8	15	33	56	129		
2/6/2019	0.297	7.7	11	27	66	162	3	
2/7/2019	0.539	7.7						
2/8/2019	0.789	7.9						
2/9/2019	0.491	8.0						
2/10/2019	0.605	8.0						
2/11/2019	0.689	7.7						
2/12/2019	0.354	7.7	31	93	90	266		
2/13/2019	0.326	7.7	63	172	165	448		
2/14/2019	0.426	7.6						
2/15/2019	0.761	7.7						
2/16/2019	0.656	7.8						
2/17/2019	0.569	7.7						
2/18/2019	0.498	7.7						
2/19/2019	0.129	7.7	54	58	51	55		
2/20/2019	0.219	7.6	62	114	54	98		
2/21/2019	0.378	7.5						
2/22/2019	0.913	7.5						
2/23/2019	0.873	7.8						
2/24/2019	0.543	7.8						
2/25/2019	0.555	7.7						
2/26/2019	0.557	7.5	11	50	41	191		
2/27/2019	1.154	7.5	4	35	16	154		
2/28/2019	1.329	7.5						
Average	0.643	--	--	73	--	188	3	--
Maximum	--	--	63	--	165	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2c. Outfall 003 Daily Discharge Flow, Load, and Concentration - Mar 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
3/1/2019	0.973	7.7						
3/2/2019	0.722	7.6						
3/3/2019	0.363	7.7						
3/4/2019	0.311	7.9						
3/5/2019	0.121	7.7	27	27	35	35		
3/6/2019	0.083	7.7	40	28	34	24		
3/7/2019	0.441	7.6						
3/8/2019	0.618	7.7						
3/9/2019	0.639	7.8						
3/10/2019	0.504	7.8						
3/11/2019	0.451	7.6						
3/12/2019	0.324	7.7	23	61	41	110		
3/13/2019	0.363	7.6	27	80	56	170		
3/14/2019	0.712	7.6						
3/15/2019	0.699	7.7						
3/16/2019	0.562	7.7						
3/17/2019	0.526	7.8						
3/18/2019	0.409	7.7						
3/19/2019	0.031	7.7	40	10	26	7	3	
3/20/2019	0.270	7.6	149	336	112	252		
3/21/2019	0.422	7.6						
3/22/2019	0.569	7.7						
3/23/2019	0.503	7.7						
3/24/2019	0.385	7.8						
3/25/2019	0.622	7.7						
3/26/2019	0.400	7.7	114	380	147	490		
3/27/2019	0.336	7.8	56	156	109	305		
3/28/2019	0.434	7.8						
3/29/2019	0.632	7.7						
3/30/2019	0.656	7.8						
3/31/2019	0.544	7.9						
Average	0.472	--	--	135	--	174	3	--
Maximum	--	--	149	--	147	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2d. Outfall 003 Daily Discharge Flow, Load, and Concentration - Apr 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
4/1/2019	0.388	7.8						
4/2/2019	0.272	7.6	101	229	154	350		
4/3/2019	0.207	7.5	93	160	122	211	3	
4/4/2019	0.545	7.5						28,000
4/5/2019	0.567	7.5						
4/6/2019	0.549	7.7						
4/7/2019	1.252	7.6						
4/8/2019	1.072	7.6						
4/9/2019	0.441	7.6	119	438	182	668		
4/10/2019	0.350	7.7	102	298	162	472		
4/11/2019	0.468	7.7						
4/12/2019	0.455	7.7						
4/13/2019	0.591	7.7						
4/14/2019	0.472	7.7						
4/15/2019	0.223	7.8						
4/16/2019	0.289	7.7	49	118	134	324		
4/17/2019	0.262	7.7	35	76	84	184		
4/18/2019	2.000	7.6						
4/19/2019	1.369	7.7						
4/20/2019	0.381	7.8						
4/21/2019	0.445	7.8						
4/22/2019	0.392	7.7						
4/23/2019	0.266	7.6	40	88	84	187		
4/24/2019	0.269	7.7	48	107	55	124		
4/25/2019	0.462	7.7						
4/26/2019	0.552	7.7						
4/27/2019	0.658	7.8						
4/28/2019	0.585	7.7						
4/29/2019	0.395	7.8						
4/30/2019	0.250	7.9	65	134	70	145		
Average	0.548	--	--	183	--	296	3	--
Maximum	--	--	119	--	182	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2e. Outfall 003 Daily Discharge Flow, Load, and Concentration - May 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
5/1/2019	0.312	7.9	90	233	137	356	3	
5/2/2019	0.386	7.8						
5/3/2019	0.651	7.9						
5/4/2019	1.270	7.8						
5/5/2019	0.518	7.9						
5/6/2019	0.370	7.8						
5/7/2019	2.000	7.7						
5/8/2019	1.131	7.4	3	33	27	253		
5/9/2019	1.208	7.5	7	75	33	330		
5/10/2019	2.000	7.4						
5/11/2019	1.681	7.6						
5/12/2019	1.624	7.6						
5/13/2019	0.492	7.6						
5/14/2019	0.260	7.8	53	115	56	122		
5/15/2019	0.252	7.7	64	135	69	145		
5/16/2019	0.333	7.6						
5/17/2019	0.524	7.8						
5/18/2019	0.699	7.9						
5/19/2019	0.633	7.9						
5/20/2019	0.535	7.7						
5/21/2019	0.380	7.8	102	323	56	177		
5/22/2019	0.090	7.7	35	26	38	28		
5/23/2019	0.166	7.7						
5/24/2019	0.339	7.9						
5/25/2019	0.465	7.8						
5/26/2019	0.482	7.9						
5/27/2019	0.455	7.6						
5/28/2019	0.323	7.6	12	33	26	69		
5/29/2019	0.224	7.9	23	43	35	66		
5/30/2019	0.253	7.8						
5/31/2019	0.731	7.9						
Average	0.671	--	--	113	--	172	3	--
Maximum	--	--	102	--	137	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2f. Outfall 003 Daily Discharge Flow, Load, and Concentration - Jun 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
6/1/2019	0.554	7.9						
6/2/2019	0.407	7.9						
6/3/2019	0.240	7.7						
6/4/2019	0.117	8.0	18	18	45	44	3	
6/5/2019	2.000	7.7						
6/6/2019	1.339	7.9	10	110	23	259		
6/7/2019	1.270	7.7						
6/8/2019	0.713	8.0						
6/9/2019	0.550	7.5						
6/10/2019	0.535	7.7						
6/11/2019	0.226	7.7	34	63	36	68		
6/12/2019	0.199	7.6	77	127	67	112		
6/13/2019	0.289	7.6						
6/14/2019	0.386	7.7						
6/15/2019	0.318	7.9						
6/16/2019	0.646	8.0						
6/17/2019	2.000	7.3						
6/18/2019	0.756	7.6	91	576	35	219		
6/19/2019	0.309	7.6	86	222	34	87		
6/20/2019	0.287	7.7						
6/21/2019	0.505	7.6						
6/22/2019	0.451	7.7						
6/23/2019	0.562	7.7						
6/24/2019	2.000	7.2						
6/25/2019	1.434	7.4	8	97	20	234		
6/26/2019	0.712	7.6	18	107	32	190		
6/27/2019	0.165	7.5						
6/28/2019	0.639	7.6						
6/29/2019	0.703	7.3						
6/30/2019	0.888	7.7						
Average	0.707	--	--	165	--	152	3	--
Maximum	--	--	91	--	67	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2g. Outfall 003 Daily Discharge Flow, Load, and Concentration - Jul 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
7/1/2019	0.258	7.6	117	252	33	71	3	
7/2/2019	0.243	7.5	122	247	52	105		
7/3/2019	0.262	7.6						5,794
7/4/2019	0.371	7.6						
7/5/2019	0.367	7.5						
7/6/2019	0.367	7.6						
7/7/2019	0.389	7.8						
7/8/2019	0.306	7.3						
7/9/2019	0.172	7.5	119	171	46	66		
7/10/2019	0.180	7.6	116	174	36	54		
7/11/2019	0.150	7.5						
7/12/2019	0.131	7.5						
7/13/2019	0.135	7.5						
7/14/2019	0.113	7.6						
7/15/2019	0.117	7.6						
7/16/2019	0.207	7.6	24	42	22	39		
7/17/2019	0.186	7.7	23	36	26	40		
7/18/2019	0.210	7.7						
7/19/2019	0.142	7.8						
7/20/2019	0.384	8.1						
7/21/2019	0.394	7.9						
7/22/2019	0.440	7.7						
7/23/2019	0.241	7.7	40	81	13	26		
7/24/2019	0.197	7.7	21	35	20	34		
7/25/2019	0.256	7.7						
7/26/2019	0.534	7.7						
7/27/2019	0.380	7.6						
7/28/2019	0.235	7.6						
7/29/2019	0.253	7.5						
7/30/2019	0.136	7.9	31	35	15	17		
7/31/2019	0.144	7.7	38	46	16	20		
Average	0.255	--	--	112	--	47	3	--
Maximum	--	--	122	--	52	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2h. Outfall 003 Daily Discharge Flow, Load, and Concentration - Aug 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
8/1/2019	0.308	7.7						
8/2/2019	0.138	7.9						
8/3/2019	0.152	7.7						
8/4/2019	0.164	7.8						
8/5/2019	0.034	7.5						
8/6/2019	0.173	7.8	7	10	27	39		
8/7/2019	0.282	7.7	7	18	20	46	3	
8/8/2019	0.197	7.7						
8/9/2019	0.489	7.7						
8/10/2019	0.474	7.9						
8/11/2019	0.390	7.9						
8/12/2019	0.243	7.6						
8/13/2019	0.286	7.7	20	47	17	40		
8/14/2019	0.228	7.7	13	25	16	31		
8/15/2019	0.296	7.7						
8/16/2019	0.428	7.6						
8/17/2019	0.521	7.9						
8/18/2019	0.410	7.9						
8/19/2019	0.214	7.8						
8/20/2019	0.623	7.7	15	78	20	104		
8/21/2019	0.718	7.6	17	104	15	91		
8/22/2019	0.681	7.6						
8/23/2019	1.047	7.5						
8/24/2019	0.689	7.6						
8/25/2019	0.438	7.6						
8/26/2019	0.552	7.8						
8/27/2019	0.742	7.7	17	103	33	203		
8/28/2019	0.931	7.6	7	51	14	109		
8/29/2019	0.579	7.6						
8/30/2019	0.802	7.7						
8/31/2019	1.355	7.8						
Average	0.470	--	--	54	--	83	3	--
Maximum	--	--	20	--	33	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2i. Outfall 003 Daily Discharge Flow, Load, and Concentration - Sep 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
9/1/2019	1.132	7.8						
9/2/2019	0.648	7.7						
9/3/2019	0.269	8.0	30	68	18	41		
9/4/2019	0.222	7.7	26	48	42	77	3	
9/5/2019	0.313	7.8						
9/6/2019	0.414	7.7						
9/7/2019	0.344	8.1						
9/8/2019	0.010	8.0						
9/9/2019	0.221	7.9						
9/10/2019	0.934	7.8	8	60	10	78		
9/11/2019	0.867	7.8	8	56	10	72		
9/12/2019	0.443	7.7						
9/13/2019	0.660	7.8						
9/14/2019	0.486	7.8						
9/15/2019	0.328	7.9						
9/16/2019	0.093	7.5						
9/17/2019	0.515	7.6						
9/18/2019	1.197	7.7	19	194	9	90		
9/19/2019	2.000	7.8	4	74				
9/20/2019	1.410	7.5	7	83	14	169		
9/21/2019	0.969	7.7						
9/22/2019	1.305	7.8						
9/23/2019	0.843	7.8						
9/24/2019	0.086	8.0	4	3	7	5		
9/25/2019	0.010	7.9	4	0	10	1		
9/26/2019	0.435	7.8						
9/27/2019	1.585	7.8						
9/28/2019	1.199	7.9						
9/29/2019	0.602	7.9						
9/30/2019	0.496	7.7						
Average	0.668	--	--	65	--	67	3	--
Maximum	--	--	30	--	42	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2j. Outfall 003 Daily Discharge Flow, Load, and Concentration - Oct 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
10/1/2019	0.236	7.6	60	118	39	76		
10/2/2019	0.241	7.7	115	231	108	217	3	
10/3/2019	0.475	7.7						6,131
10/4/2019	0.700	7.7						
10/5/2019	0.558	7.8						
10/6/2019	0.472	7.7						
10/7/2019	0.159	7.8						
10/8/2019	0.190	7.8	69	109	46	72		
10/9/2019	0.267	7.9	40	89	39	86		
10/10/2019	0.527	7.9						
10/11/2019	0.892	7.7						
10/12/2019	0.404	7.8						
10/13/2019	0.309	7.7						
10/14/2019	0.494	8.0						
10/15/2019	0.379	7.8	56	177	21	67		
10/16/2019	0.649	7.7	14	73	12	63		
10/17/2019	0.536	7.7						
10/18/2019	0.802	7.7						
10/19/2019	0.760	7.7						
10/20/2019	0.584	7.7						
10/21/2019	1.545	7.6						
10/22/2019	0.496	7.7	189	782	27	111		
10/23/2019	0.287	7.6	88	211	27	64		
10/24/2019	0.024	7.5						
10/25/2019	0.288	8.0						
10/26/2019	0.019	8.1						
10/27/2019	0.006	7.9						
10/28/2019	0.055	7.8						
10/29/2019	0.845	7.9	17	118	35	248		
10/30/2019	0.529	7.9	22	96	46	203		
10/31/2019	1.492	7.8						
Average	0.491	--	--	200	--	121	3	--
Maximum	--	--	189	--	108	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2k. Outfall 003 Daily Discharge Flow, Load, and Concentration - Nov 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
11/1/2019	0.802	7.8						
11/2/2019	0.791	7.8						
11/3/2019	0.858	7.8						
11/4/2019	0.885	7.9						
11/5/2019	0.648	7.6	115	621	29	158	5	
11/6/2019	0.339	7.6	54	153	33	94		
11/7/2019	1.112	7.5						
11/8/2019	1.560	7.6						
11/9/2019	0.969	7.8						
11/10/2019	0.513	7.5						
11/11/2019	0.227	7.6						
11/12/2019	0.356	7.6	166	493	86	254		
11/13/2019	0.364	7.9	162	492	74	223		
11/14/2019	1.022	7.8						
11/15/2019	0.925	7.8						
11/16/2019	0.729	7.8						
11/17/2019	0.623	7.7						
11/18/2019	0.674	7.5						
11/19/2019	0.073	7.5	114	69	126	77		
11/20/2019	0.331	7.5	77	211	272	751		
11/21/2019	0.506	7.4						
11/22/2019	0.802	7.3						
11/23/2019	0.606	7.6						
11/24/2019	0.498	7.7						
11/25/2019	0.165	7.7	241	332	191	263		
11/26/2019	0.385	7.4	219	703	280	899		
11/27/2019	0.536	7.6						
11/28/2019	0.787	7.7						
11/29/2019	0.644	7.7						
11/30/2019	0.110	7.6						
Average	0.628	--	--	384	--	340	5	--
Maximum	--	--	241	--	280	--	5	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B2I. Outfall 003 Daily Discharge Flow, Load, and Concentration - Dec 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	pH	BOD		TSS		Oil and Grease	Fecal Coliform
	MGD	s.u.	mg/L	lb/day	mg/L	lb/day	mg/L	CFU/100mL
12/1/2019	0.029	7.7						
12/2/2019	0.011	7.7						
12/3/2019	0.121	7.5	169	171	4	4	3	
12/4/2019	0.154	7.4	195	250				
12/5/2019	0.599	7.6						
12/6/2019	0.785	7.5						
12/7/2019	0.741	7.6						
12/8/2019	0.657	7.8						
12/9/2019	0.813	7.7						
12/10/2019	0.879	7.6	9	69	15	113		
12/11/2019	0.162	7.7	57	77	7	9		
12/12/2019	0.610	7.8						
12/13/2019	0.732	7.7						
12/14/2019	0.709	7.8						
12/15/2019	0.916	7.8						
12/16/2019	0.833	7.7						
12/17/2019	0.126	7.6	30	32	14	14		
12/18/2019	0.017	7.5	25	3	17	2		
12/19/2019	0.440	7.8						
12/20/2019	0.724	7.8						
12/21/2019	0.871	7.9						
12/22/2019	0.604	7.9						
12/23/2019	0.074	7.7	31	19	17	10		
12/24/2019	0.275	7.6	25	58	19	44		
12/25/2019	0.405	7.8						
12/26/2019	0.209	7.6						
12/27/2019	0.186	7.6						
12/28/2019	0.118	7.6						
12/29/2019	0.934	7.7	25	195	29	229		
12/30/2019	0.483	7.8	29	118	73	293		
12/31/2019	1.226	7.7						
Average	0.498	--	--	99	--	80	3	--
Maximum	--	--	195	--	73	--	3	--

NOTES:

Abbreviations: BOD = biochemical oxygen demand, CFU/100ml = colony forming units per 100 milliliters,
 lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter,
 s.u. = standard units, TSS = total suspended solids.

Appendix B3a-I.

**Daily Treatment and
Discharge Performance**

Appendix B3a. Daily Treatment and Discharge Performance - Jan 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
1/1/2019	0.602	0.535		158		317
1/2/2019	0.890	0.868		97		240
1/3/2019	0.783	1.698				
1/4/2019	0.844	1.467				
1/5/2019	0.867	0.732				
1/6/2019	0.728	0.720				
1/7/2019	0.863	0.540				
1/8/2019	0.848	0.244		62		116
1/9/2019	0.955	0.360	1,131	119	3,035	366
1/10/2019	0.716	0.516				
1/11/2019	0.850	0.936				
1/12/2019	0.756	1.383				
1/13/2019	0.643	0.535				
1/14/2019	0.884	0.555				
1/15/2019	0.824	0.204		34		129
1/16/2019	0.815	0.327		94		256
1/17/2019	0.868	1.356				
1/18/2019	0.819	0.774	970		2,479	
1/19/2019	0.698	1.735				
1/20/2019	0.571	0.591				
1/21/2019	0.528	0.601				
1/22/2019	0.818	0.166		126		259
1/23/2019	0.876	0.896		158		424
1/24/2019	0.761	1.147				
1/25/2019	0.866	0.590				
1/26/2019	0.655	0.599				
1/27/2019	0.603	0.758				
1/28/2019	0.844	0.570				
1/29/2019	0.852	0.194		52		88
1/30/2019	0.785	0.202		100		139
1/31/2019	0.735	0.935				
Average	0.779	0.733	1,050	100	2,757	234
Treatment	1.062		11		12	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.

Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3b. Daily Treatment and Discharge Performance - Feb 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
2/1/2019	0.695	1.681				
2/2/2019	0.482	0.684				
2/3/2019	0.385	0.529				
2/4/2019	0.759	1.183				
2/5/2019	0.770	0.275		33		129
2/6/2019	0.866	0.297		27		162
2/7/2019	0.800	0.539				
2/8/2019	0.745	0.789				
2/9/2019	0.645	0.491				
2/10/2019	0.662	0.605				
2/11/2019	0.777	0.689				
2/12/2019	0.746	0.354	1,213	93	2,265	266
2/13/2019	0.827	0.326	1,159	172	3,780	448
2/14/2019	0.765	0.426				
2/15/2019	0.783	0.761				
2/16/2019	0.546	0.656				
2/17/2019	0.623	0.569				
2/18/2019	0.791	0.498				
2/19/2019	0.748	0.129		58		55
2/20/2019	0.818	0.219		114		98
2/21/2019	0.785	0.378				
2/22/2019	0.795	0.913				
2/23/2019	0.000	0.873				
2/24/2019	0.000	0.543				
2/25/2019	0.785	0.555				
2/26/2019	0.819	0.557		50		191
2/27/2019	0.770	1.154		35		154
2/28/2019	0.734	1.329				
Average	0.728	0.643	1,186	73	3,022	188
Treatment	1.051		16		16	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3c. Daily Treatment and Discharge Performance - Mar 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
3/1/2019	0.213	0.973				
3/2/2019	0.176	0.722				
3/3/2019	0.000	0.363				
3/4/2019	0.615	0.311				
3/5/2019	0.823	0.121		27		35
3/6/2019	0.886	0.083		28		24
3/7/2019	0.805	0.441				
3/8/2019	0.802	0.618				
3/9/2019	0.000	0.639				
3/10/2019	0.000	0.504				
3/11/2019	0.870	0.451				
3/12/2019	0.928	0.324	488	61	1,107	110
3/13/2019	0.819	0.363	444	80	977	170
3/14/2019	0.839	0.712				
3/15/2019	0.818	0.699				
3/16/2019	0.000	0.562				
3/17/2019	0.000	0.526				
3/18/2019	0.819	0.409				
3/19/2019	0.861	0.031		10		7
3/20/2019	0.872	0.270		336		252
3/21/2019	0.871	0.422				
3/22/2019	0.815	0.569				
3/23/2019	0.815	0.503				
3/24/2019	0.827	0.385				
3/25/2019	0.902	0.622				
3/26/2019	0.765	0.400		380		490
3/27/2019	0.879	0.336		156		305
3/28/2019	0.918	0.434				
3/29/2019	0.664	0.632				
3/30/2019	0.728	0.656				
3/31/2019	0.590	0.544				
Average	0.766	0.472	466	135	1,042	174
Treatment	1.362		3		6	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3d. Daily Treatment and Discharge Performance - Apr 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
4/1/2019	0.913	0.388				
4/2/2019	0.876	0.272		229		350
4/3/2019	0.811	0.207		160		211
4/4/2019	0.790	0.545				
4/5/2019	0.889	0.567				
4/6/2019	0.720	0.549				
4/7/2019	0.000	1.252				
4/8/2019	0.852	1.072				
4/9/2019	0.861	0.441	2,427	438	4,150	668
4/10/2019	0.899	0.350	2,444	298	4,139	472
4/11/2019	0.856	0.468				
4/12/2019	0.000	0.455				
4/13/2019	0.000	0.591				
4/14/2019	0.000	0.472				
4/15/2019	0.887	0.223				
4/16/2019	0.826	0.289		118		324
4/17/2019	0.836	0.262		76		184
4/18/2019	0.854	2.000				
4/19/2019	0.785	1.369				
4/20/2019	0.460	0.381				
4/21/2019	0.338	0.445				
4/22/2019	0.539	0.392				
4/23/2019	0.663	0.266		88		187
4/24/2019	0.867	0.269		107		124
4/25/2019	0.889	0.462				
4/26/2019	0.783	0.552				
4/27/2019	0.721	0.658				
4/28/2019	0.814	0.585				
4/29/2019	0.903	0.395				
4/30/2019	0.857	0.250		134		145
Average	0.788	0.548	2,436	183	4,145	296
Treatment	1.247		13		14	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.
Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3e. Daily Treatment and Discharge Performance - May 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
5/1/2019	0.928	0.312		233		356
5/2/2019	0.788	0.386				
5/3/2019	0.819	0.651				
5/4/2019	0.773	1.270				
5/5/2019	0.774	0.518				
5/6/2019	0.829	0.370				
5/7/2019	0.945	2.000				
5/8/2019	0.936	1.131		33		253
5/9/2019	0.927	1.208		75		330
5/10/2019	0.893	2.000				
5/11/2019	0.791	1.681				
5/12/2019	0.699	1.624				
5/13/2019	0.945	0.492				
5/14/2019	1.293	0.260	4,615	115	2,426	122
5/15/2019	0.519	0.252	3,623	135	1,009	145
5/16/2019	0.837	0.333				
5/17/2019	0.899	0.524				
5/18/2019	0.898	0.699				
5/19/2019	0.827	0.633				
5/20/2019	1.025	0.535				
5/21/2019	0.799	0.380		323		177
5/22/2019	0.933	0.090		26		28
5/23/2019	0.929	0.166				
5/24/2019	0.866	0.339				
5/25/2019	0.767	0.465				
5/26/2019	0.512	0.482				
5/27/2019	0.380	0.455				
5/28/2019	0.798	0.323		33		69
5/29/2019	0.879	0.224		43		66
5/30/2019	0.847	0.253				
5/31/2019	0.895	0.731				
Average	0.837	0.671	4,119	113	1,717	172
Treatment	1.248		36		10	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3f. Daily Treatment and Discharge Performance - Jun 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
6/1/2019	0.796	0.554				
6/2/2019	0.903	0.407				
6/3/2019	0.852	0.240				
6/4/2019	0.964	0.117		18		44
6/5/2019	1.020	2.000				
6/6/2019	0.847	1.339		110		259
6/7/2019	0.832	1.270				
6/8/2019	0.802	0.713				
6/9/2019	0.724	0.550				
6/10/2019	0.808	0.535				
6/11/2019	0.860	0.226	3,055	63	1,736	68
6/12/2019	0.965	0.199	5,239	127	2,125	112
6/13/2019	0.817	0.289				
6/14/2019	0.810	0.386				
6/15/2019	0.772	0.318				
6/16/2019	0.894	0.646				
6/17/2019	0.892	2.000				
6/18/2019	0.888	0.756		576		219
6/19/2019	0.866	0.309		222		87
6/20/2019	0.798	0.287				
6/21/2019	0.899	0.505				
6/22/2019	0.801	0.451				
6/23/2019	0.753	0.562				
6/24/2019	0.912	2.000				
6/25/2019	0.831	1.434		97		234
6/26/2019	0.827	0.712		107		190
6/27/2019	0.778	0.165				
6/28/2019	0.793	0.639				
6/29/2019	0.764	0.703				
6/30/2019	0.731	0.888				
Average	0.840	0.707	4,147	165	1,930	152
Treatment	1.189		25		13	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.
Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3g. Daily Treatment and Discharge Performance - Jul 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
7/1/2019	0.857	0.258		252		71
7/2/2019	0.737	0.243		247		105
7/3/2019	0.499	0.262				
7/4/2019	0.195	0.371				
7/5/2019	0.806	0.367				
7/6/2019	0.825	0.367				
7/7/2019	0.587	0.389				
7/8/2019	0.782	0.306				
7/9/2019	0.778	0.172	4,730	171	1,947	66
7/10/2019	0.754	0.180	8,049	174	1,339	54
7/11/2019	0.706	0.150				
7/12/2019	0.807	0.131				
7/13/2019	0.781	0.135				
7/14/2019	0.727	0.113				
7/15/2019	0.697	0.117				
7/16/2019	0.758	0.207		42		39
7/17/2019	0.717	0.186		36		40
7/18/2019	0.694	0.210				
7/19/2019	0.852	0.142				
7/20/2019	0.806	0.384				
7/21/2019	0.826	0.394				
7/22/2019	0.984	0.440				
7/23/2019	0.719	0.241		81		26
7/24/2019	0.757	0.197		35		34
7/25/2019	0.692	0.256				
7/26/2019	0.785	0.534				
7/27/2019	0.690	0.380				
7/28/2019	0.632	0.235				
7/29/2019	0.664	0.253				
7/30/2019	0.759	0.136		35		17
7/31/2019	0.719	0.144		46		20
Average	0.729	0.255	6,390	112	1,643	47
Treatment	2.860		57		35	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3h. Daily Treatment and Discharge Performance - Aug 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
8/1/2019	0.718	0.308				
8/2/2019	0.746	0.138				
8/3/2019	0.559	0.152				
8/4/2019	0.000	0.164				
8/5/2019	0.735	0.034				
8/6/2019	0.880	0.173	1,505	10	1,358	39
8/7/2019	0.868	0.282	1,585	18	1,013	46
8/8/2019	0.867	0.197				
8/9/2019	0.845	0.489				
8/10/2019	0.866	0.474				
8/11/2019	0.726	0.390				
8/12/2019	0.845	0.243				
8/13/2019	0.834	0.286		47		40
8/14/2019	0.837	0.228		25		31
8/15/2019	0.909	0.296				
8/16/2019	0.815	0.428				
8/17/2019	0.910	0.521				
8/18/2019	0.730	0.410				
8/19/2019	0.834	0.214				
8/20/2019	0.978	0.623		78		104
8/21/2019	0.926	0.718		104		91
8/22/2019	0.785	0.681				
8/23/2019	0.851	1.047				
8/24/2019	0.645	0.689				
8/25/2019	1.061	0.438				
8/26/2019	0.831	0.552				
8/27/2019	0.923	0.742		103		203
8/28/2019	0.838	0.931		51		109
8/29/2019	0.853	0.579				
8/30/2019	0.898	0.802				
8/31/2019	0.811	1.355				
Average	0.831	0.470	1,545	54	1,186	83
Treatment	1.709		28		14	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3i. Daily Treatment and Discharge Performance - Sep 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
9/1/2019	0.614	1.132				
9/2/2019	0.440	0.648				
9/3/2019	0.847	0.269		68		41
9/4/2019	0.904	0.222		48		77
9/5/2019	0.797	0.313				
9/6/2019	0.754	0.414				
9/7/2019	0.619	0.344				
9/8/2019	0.000	0.010				
9/9/2019	0.798	0.221				
9/10/2019	0.000	0.934	0	60	0	78
9/11/2019	0.793	0.867	2,341	56	1,686	72
9/12/2019	0.746	0.443				
9/13/2019	0.784	0.660				
9/14/2019	0.536	0.486				
9/15/2019	0.548	0.328				
9/16/2019	0.842	0.093				
9/17/2019	0.859	0.515				
9/18/2019	0.855	1.197		194		90
9/19/2019	0.921	2.000		74		
9/20/2019	0.808	1.410		83		169
9/21/2019	1.135	0.969				
9/22/2019	0.000	1.305				
9/23/2019	0.888	0.843				
9/24/2019	0.688	0.086		3		5
9/25/2019	0.803	0.010		0		1
9/26/2019	0.798	0.435				
9/27/2019	0.780	1.585				
9/28/2019	0.629	1.199				
9/29/2019	0.698	0.602				
9/30/2019	0.916	0.496				
Average	0.770	0.668	2,341	65	1,686	67
Treatment	1.038		18		13	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.
Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3j. Daily Treatment and Discharge Performance - Oct 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
10/1/2019	0.849	0.236		118		76
10/2/2019	0.935	0.241		231		217
10/3/2019	0.796	0.475				
10/4/2019	0.785	0.700				
10/5/2019	0.843	0.558				
10/6/2019	0.619	0.472				
10/7/2019	0.915	0.159				
10/8/2019	0.872	0.190	4,123	109	2,647	72
10/9/2019	0.857	0.267	4,624	89	1,730	86
10/10/2019	0.804	0.527				
10/11/2019	0.745	0.892				
10/12/2019	0.693	0.404				
10/13/2019	0.717	0.309				
10/14/2019	0.910	0.494				
10/15/2019	0.901	0.379		177		67
10/16/2019	0.900	0.649		73		63
10/17/2019	0.934	0.536				
10/18/2019	0.866	0.802				
10/19/2019	0.637	0.760				
10/20/2019	0.711	0.584				
10/21/2019	0.795	1.545				
10/22/2019	0.786	0.496		782		111
10/23/2019	0.473	0.287		211		64
10/24/2019	0.364	0.024				
10/25/2019	0.265	0.288				
10/26/2019	0.221	0.019				
10/27/2019	0.312	0.006				
10/28/2019	0.375	0.055				
10/29/2019	0.503	0.845		118		248
10/30/2019	0.475	0.529		96		203
10/31/2019	0.486	1.492				
Average	0.689	0.491	4,374	200	2,188	121
Treatment	1.402		22		18	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3k. Daily Treatment and Discharge Performance - Nov 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
11/1/2019	0.332	0.802				
11/2/2019	0.240	0.791				
11/3/2019	0.589	0.858				
11/4/2019	0.571	0.885				
11/5/2019	0.126	0.648		621		158
11/6/2019	0.150	0.339		153		94
11/7/2019	0.192	1.112				
11/8/2019	0.360	1.560				
11/9/2019	0.433	0.969				
11/10/2019	0.528	0.513				
11/11/2019	0.281	0.227				
11/12/2019	0.404	0.356	1,287	493	785	254
11/13/2019	0.252	0.364	895	492	492	223
11/14/2019	0.464	1.022				
11/15/2019	0.516	0.925				
11/16/2019	0.449	0.729				
11/17/2019	0.636	0.623				
11/18/2019	0.000	0.674				
11/19/2019	0.000	0.073		69		77
11/20/2019	0.552	0.331		211		751
11/21/2019	0.545	0.506				
11/22/2019	0.504	0.802				
11/23/2019	0.574	0.606				
11/24/2019	0.562	0.498				
11/25/2019	0.513	0.165		332		263
11/26/2019	0.516	0.385		703		899
11/27/2019	0.337	0.536				
11/28/2019	0.229	0.787				
11/29/2019	0.451	0.644				
11/30/2019	0.477	0.110				
Average	0.421	0.628	1,091	384	638	340
Treatment	0.625		3		2	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.
Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

Appendix B3I. Daily Treatment and Discharge Performance - Dec 2019
Frito-Lay, Inc. - Rosenberg Facility, Rosenberg, Texas

Sample Date	Daily Flow	Discharge Flow	BOD Load	BOD Discharge	TSS Load	TSS Discharge
	MGD		lb/day			
12/1/2019	0.455	0.029				
12/2/2019	0.537	0.011				
12/3/2019	0.471	0.121		171		4
12/4/2019	0.429	0.154		250		
12/5/2019	0.451	0.599				
12/6/2019	0.265	0.785				
12/7/2019	0.346	0.741				
12/8/2019	0.455	0.657				
12/9/2019	0.388	0.813				
12/10/2019	0.459	0.879	1,022	69	1,095	113
12/11/2019	0.472	0.162	827	77	1,146	9
12/12/2019	0.454	0.610				
12/13/2019	0.503	0.732				
12/14/2019	0.407	0.709				
12/15/2019	0.526	0.916				
12/16/2019	0.571	0.833				
12/17/2019	0.594	0.126		32		14
12/18/2019	0.721	0.017		3		2
12/19/2019	0.692	0.440				
12/20/2019	0.723	0.724				
12/21/2019	0.720	0.871				
12/22/2019	0.659	0.604				
12/23/2019	0.668	0.074		19		10
12/24/2019	0.377	0.275		58		44
12/25/2019	0.218	0.405				
12/26/2019	0.400	0.209				
12/27/2019	0.532	0.186				
12/28/2019	0.577	0.118				
12/29/2019	0.695	0.934		195		229
12/30/2019	0.570	0.483		118		293
12/31/2019	0.320	1.226				
Average	0.505	0.498	924	99	1,120	80
Treatment	1.014		9		14	

NOTES:

Daily Flow is the flow to the land application fields. Discharge Flow is the discharge from Outfall 003.
 Treatment is the ratio of flow/loading to discharge. Flow to fields divided by Outfall 003 discharge, BOD loading divided by Outfall 003 BOD discharge, and TSS loading divided by Outfall 003 TSS discharge.

Abbreviations: BOD = biochemical oxygen demand, lb/day = pounds per day, MGD = million gallons per day, mg/L = milligrams per liter, TSS = total suspended solids.

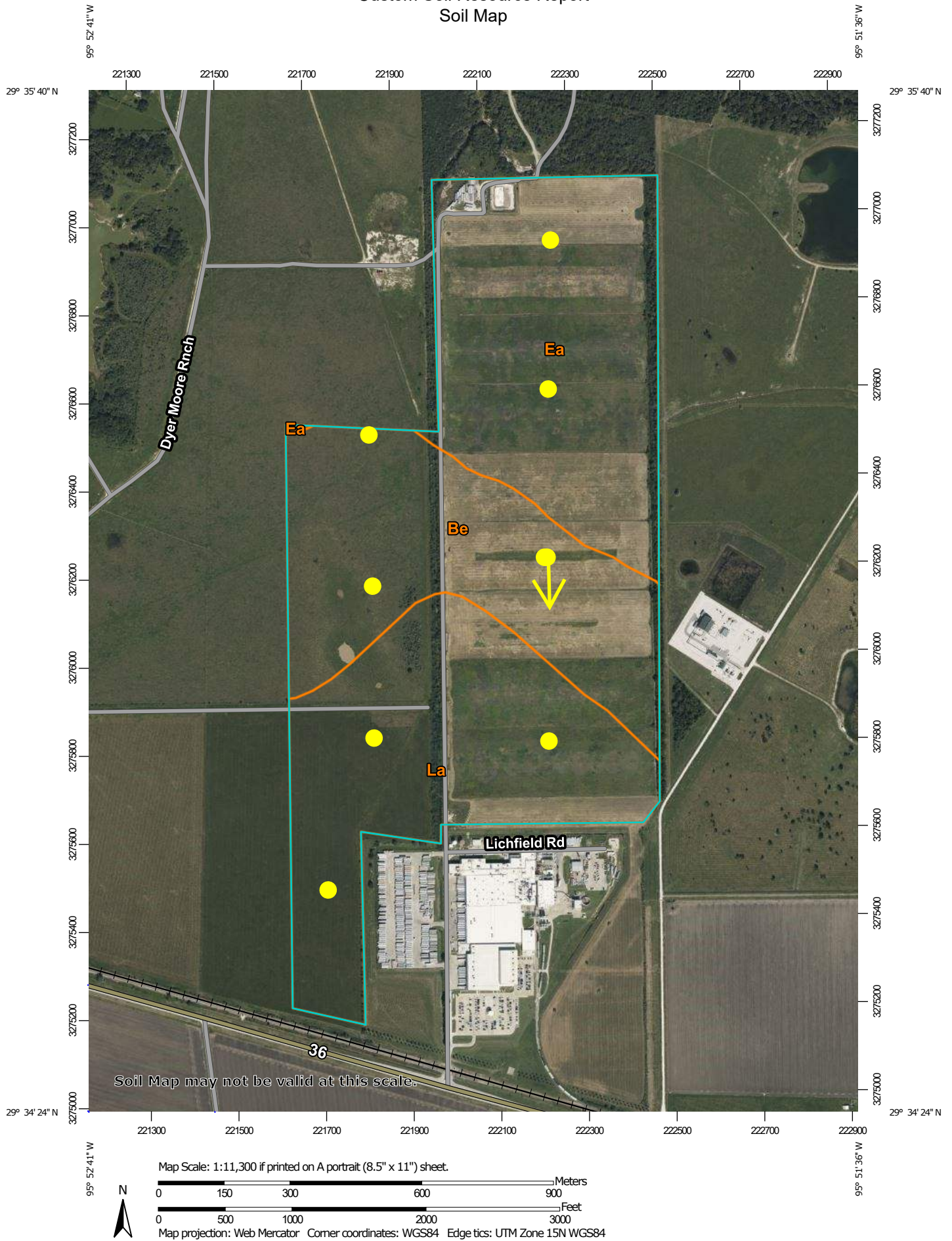
Technical Report Attachment F

Soil Map
November 2024

Frito-Lay Inc. Rosenberg Facility
TPDES Renewal

Permit Number: WQ0002443000

Custom Soil Resource Report Soil Map





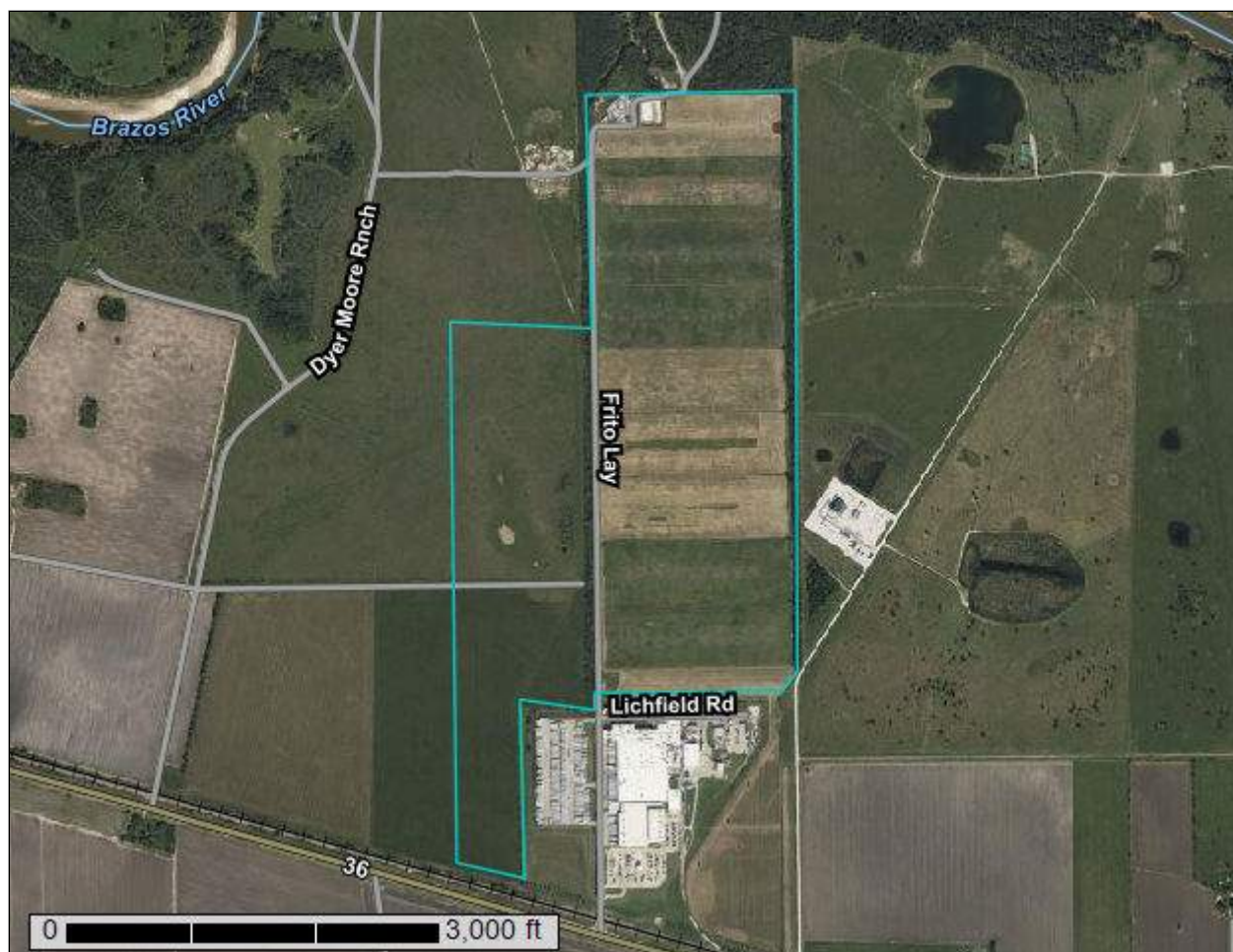
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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

Custom Soil Resource Report for **Fort Bend County, Texas**



Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

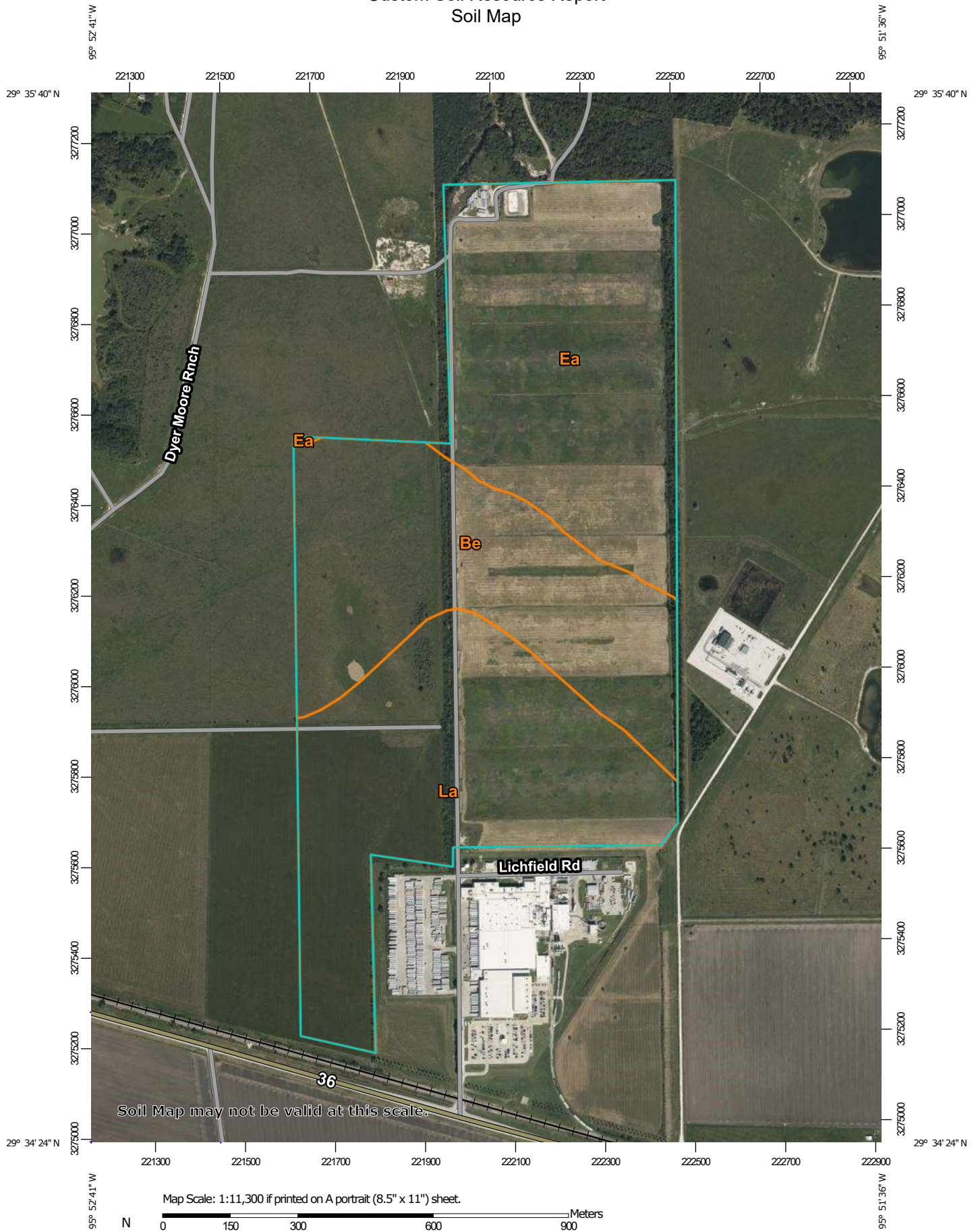
Custom Soil Resource Report

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

Soil Map

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

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Fort Bend County, Texas

Survey Area Data: Version 17, Jun 11, 2020

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

Date(s) aerial images were photographed: Oct 22, 2019—Oct 23, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Be	Bernard-Edna complex, 0 to 1 percent slopes	84.6	30.3%
Ea	Edna loam, 0 to 1 percent slopes	97.2	34.8%
La	Lake Charles clay, 0 to 1 percent slopes	97.2	34.8%
Totals for Area of Interest		279.0	100.0%

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Fort Bend County, Texas

Be—Bernard-Edna complex, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v3cg
Elevation: 10 to 100 feet
Mean annual precipitation: 43 to 49 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 270 to 300 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Bernard and similar soils: 60 percent
Edna and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bernard

Setting

Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 6 inches: clay loam
Bt - 6 to 31 inches: clay
Btk1 - 31 to 50 inches: clay
Btk2 - 50 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.9 to 2.4 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water capacity: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R150AY740TX - Northern Blackland
Hydric soil rating: No

Description of Edna

Setting

Landform: Flats

Landform position (three-dimensional): Talf

Microfeatures of landform position: Pimple mounds

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 9 inches: loam

Bt1 - 9 to 38 inches: clay

Bt2 - 38 to 50 inches: clay

Btk - 50 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 4 to 10 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Maximum salinity: Nonsaline to slightly saline (1.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 16.0

Available water capacity: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: D

Ecological site: R150AY528TX - Claypan Prairie

Hydric soil rating: No

Minor Components

Verland

Percent of map unit: 10 percent

Landform: Meander scrolls

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R150AY740TX - Northern Blackland

Hydric soil rating: No

Lake charles

Percent of map unit: 5 percent

Landform: Flats

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: R150AY740TX - Northern Blackland

Hydric soil rating: No

Telferner

Percent of map unit: 3 percent

Landform: Meander scars

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: R150AY535TX - Southern Loamy Prairie

Hydric soil rating: No

Leton

Percent of map unit: 2 percent

Landform: Meandering channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: R150AY537TX - Lowland

Hydric soil rating: Yes

Ea—Edna loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v3cc

Elevation: 10 to 100 feet

Mean annual precipitation: 43 to 49 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 270 to 300 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Edna and similar soils: 87 percent

Minor components: 13 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edna

Setting

Landform: Flats

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 9 inches: loam

Bt1 - 9 to 38 inches: clay

Bt2 - 38 to 50 inches: clay

Btk - 50 to 80 inches: sandy clay loam

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 2 to 7 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (1.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 16.0
Available water capacity: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: R150AY528TX - Claypan Prairie
Hydric soil rating: No

Minor Components

Cieno

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R150AY537TX - Lowland
Hydric soil rating: Yes

Bernard

Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R150AY740TX - Northern Blackland
Hydric soil rating: No

Telferner

Percent of map unit: 3 percent
Landform: Meander scars
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R150AY535TX - Southern Loamy Prairie
Hydric soil rating: No

La—Lake Charles clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v3c4
Elevation: 20 to 100 feet
Mean annual precipitation: 43 to 49 inches
Mean annual air temperature: 67 to 71 degrees F
Frost-free period: 270 to 300 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Lake Charles

Setting

Landform: Backswamps
Landform position (three-dimensional): Talf
Microfeatures of landform position: Gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 11 inches: clay
Bss - 11 to 53 inches: clay
Bkss1 - 53 to 69 inches: clay
Bkss2 - 69 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline (0.5 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s

Custom Soil Resource Report

Hydrologic Soil Group: D
Ecological site: R150AY740TX - Northern Blackland
Hydric soil rating: No

Minor Components

Bernard

Percent of map unit: 6 percent
Landform: Meander scars
Landform position (three-dimensional): Talf, rise
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R150AY740TX - Northern Blackland
Hydric soil rating: No

Edna

Percent of map unit: 3 percent
Landform: Meander scars
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R150AY528TX - Claypan Prairie
Hydric soil rating: No

Cieno, hydric

Percent of map unit: 1 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

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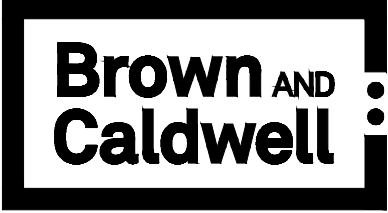
Custom Soil Resource Report

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REVISIONS		
REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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DESIGNED:
DRAWN:
CHECKED:
CHECKED:
APPROVED:

FILENAME
BC PROJECT NUMBER
CLIENT PROJECT NUMBER

SOIL BORING
LOCATION MAP

DRAWING NUMBER
B-1
SHEET NUMBER
OF

Table B-1. Soil Sampling Results																						
Sample ID	Sample Date	Parameter	Nitrogen, Nitrate (As N)	Nitrogen, Nitrite (As N)	Calcium	Magnesium	Potassium	Sodium	Sodium Adsorption Ratio	Calcium	Magnesium	Sodium	Electrical Conductivity @ saturation	Electrical Conductivity, 1:1 aqueous	Saturation % as decimal	Percent Moisture	Nitrogen, Total	Phosphorus, Total (As P)	pH	Temp Deg C @pH	Subcontract Analysis	Nitrogen, Total Kjeldahl
		Units	mg/Kg-dry	mg/Kg-dry	mg/Kg-dry	mg/Kg-dry	mg/Kg-dry	mg/Kg-dry	meq/meq	mg/L	mg/L	mg/L	mmhos/cm @25°C	mmhos/cm @25°C	mmhos/cm @25°C	wt%	mg/Kg-dry	mg/Kg-dry	pH Units	°C	NA-dry	mg/Kg-dry
SB-1 (0-6")	3/15/2021		1.47	<0.415 U	3190	2570	1340	208	1.78 n	16.5 n	7.67 n	35.0 n	<0.0100 nU	0.380 n	0 n	29.0	1000	11.0	5.27 H	20.8 H	<0	1000 n
SB-1 (18-30")	3/15/2021		2.40	<0.436 U	3900	3160	1630	456	0.895 n	304 n	119 n	72.7 n	<0.0100 nU	0.212 n	0 n	32.1	709	1.50 J	5.54 H	20.8 H	<0	710 n
SB-1 (42-54")	3/15/2021		<0.393 U	<0.393 U	4500	3600	1630	785	5.37 n	19.5 n	8.51 n	113 n	<0.0100 nU	0.655 n	0 n	24.8	186	13.4	6.35 H	20.8 H	<0	190 n
SB-2 (0-6")	3/15/2021		<0.406 U	<0.406 U	3420	2990	1610	162	1.01 n	24.4 n	10.7 n	23.8 n	<0.0100 nU	0.345 n	0 n	27.3	963	5.15	5.30 H	20.8 H	<0	960 n
SB-2 (18-30")	3/15/2021		<0.388 U	<0.388 U	3190	2510	1230	219	1.92 n	19.6 n	9.19 n	41.0 n	<0.0100 nU	0.341 n	0 n	24.0	395	3.46	5.41 H	20.8 H	<0	400 n
SB-2 (42-54")	3/15/2021		<0.364 U	<0.364 U	3400	2540	1020	262	0.841 n	75.3 n	33.6 n	34.9 n	<0.0100 nU	0.186 n	0 n	19.2	149	1.81 J	6.01 H	20.9 H	<0	140 n
SB-3 (0-6")	3/15/2021		1.55	<0.383 U	3780	2740	1320	211	1.71 n	43.2 n	18.2 n	53.2 n	<0.0100 nU	0.618 n	0 n	21.9	283	6.66	5.55 H	20.8 H	<0	280 n
SB-3 (18-30")	3/15/2021		<0.373 U	<0.373 U	4010	3430	1240	637	1.38 n	131 n	57.4 n	75.3 n	<0.0100 nU	0.279 n	0 n	20.9	139	5.87	6.71 H	20.8 H	<0	140 n
SB-3 (42-54")	3/15/2021		<0.392 U	<0.392 U	24200	6610	3110	995	6.54 n	10.2 n	5.68 n	105 n	<0.0100 nU	0.722 n	0 n	23.6	144	8.30	6.72 H	20.9 H	<0	150 n
SB-5 (5-5.5")	3/16/2021		<0.347 U	<0.347 U	6800	2330	1090	786	3.57 n	97.0 n	21.1 n	149 n	<0.0100 nU	0.650 n	0 n	14.1	61.7	8.97	8.65 H	21.4 H	<0	62 n
SB-5 (6.5-7.5")	3/16/2021		<0.347 U	<0.347 U	4370	2830	1330	862	4.05 n	88.4 n	19.9 n	162 n	<0.0100 nU	0.424 n	0 n	13.7	61.4	6.62	8.30 H	21.5 H	<0	62 n
SB-5 (8.5-9.5")	3/16/2021		2.25	<0.373 U	5850	4630	2580	942	5.40 n	33.5 n	12.8 n	145 n	<0.0100 nU	0.837 n	0 n	19.8	127	93.8	8.50 H	21.5 H	<0	130 n
SB-6 (5-5.5")	3/16/2021		1.31	<0.356 U	86600	5830	2690	445	4.97 n	26.6 n	8.07 n	114 n	<0.0100 nU	0.773 n	0 n	16.3	240	8.52	8.23 H	21.3 H	<0	240 n
SB-6 (6.5-7.5")	3/16/2021		1.43	<0.365 U	262000	5420	2800	352	4.57 n	36.5 n	11.2 n	123 n	<0.0100 nU	0.895 n	0 n	18.3	258	36.9	8.16 H	21.1 H	<0	260 n
SB-6 (8.5-9.5")	3/16/2021		0.521 J	<0.370 U	95200	8700	4830	574	4.59 n	29.6 n	8.95 n	111 n	<0.0100 nU	0.808 n	0 n	19.1	120	80.6	8.19 H	21.1 H	<0	120 n
SB-7 (5-5.5")	3/16/2021		0.412 J	<0.351 U	6840	3020	1330	746	6.19 n	12.0 n	5.45 n	103 n	<0.0100 nU	0.731 n	0 n	15.1	154	13.6	7.10 H	21.0 H	<0	150 n
SB-7 (6.5-7.5")	3/16/2021		0.458 J	<0.367 U	79600	8390	3870	729	6.35 n	15.5 n	7.04 n	120 n	<0.0100 nU	0.690 n	0 n	18.8	185	117	8.57 H	21.4 H	<0	190 n
SB-7 (8.5-9.5")	3/16/2021		0.407 J	<0.367 U	86500	11400	5220	797	5.98 n	24.6 n	13.3 n	148 n	<0.0100 nU	0.739 n	0 n	19.0	198	27.9	8.44 H	21.4 H	<0	190 n
SB-8 (5-5.5")	3/16/2021		1.00 J	<0.371 U	10100	3060	1300	513	4.52 n	25.9 n	12.0 n	111 n	<0.0100 nU	0.749 n	0 n	19.9	500	15.7	6.26 H	20.9 H	<0	500 n
SB-8 (6.5-7.5")	3/16/2021		<0.367 U	<0.367 U	6450	4470	1960	727	5.87 n	13.1 n	7.91 n	109 n	<0.0100 nU	0.601 n	0 n	18.8	160	15.7	6.90 H	20.9 H	<0	160 n
SB-8 (8.5-9.5")	3/16/2021		<0.371 U	<0.371 U	156000	7080	2870	604	6.27 n	10.3 n	6.17 n	103 n	<0.0100 nU	0.638 n	0 n	19.4	149	18.2	7.07 H	20.9 H	<0	150 n
Qualifier	Description																					
H	Analyzed outside of Holding Time																					
J	Analyte detected below quantitation limit																					
n	Not offered for accreditation																					
U	Analyzed but not detected above the MDL/SDL																					
Acronym	Description																					
MDL	Method Detection Limit																					
SDL	Sample Detection Limit																					

Table B-2. Soil Sampling Results - Existing Field Organics					
	Sample ID	SB-5 (Organic)	SB-6 (Organic)	SB-7 (Organic)	SB-8 (Organic)
	Sample Date	3/16/2021	3/16/2021	3/16/2021	3/16/2021
Parameter	Units				
Percent Moisture	wt%	19.7	18.0	23.6	22.9
Flash Point	°F	<50.0 n	<50.0 n	<50.0 n	<50.0 n
Total Volatile Solids	wt%	3.75 n	3.09 n	4.09 n	4.00 n
Total Solids	wt%	80.7 n	82.0 n	75.1 n	77.5 n
Arsenic	mg/L	<0.00400 U	0.0112 J	<0.00400 U	0.00485 J
Barium	mg/L	0.386	0.953	0.579	0.696
Cadmium	mg/L	<0.00200 U	<0.00200 U	<0.00200 U	<0.00200 U
Chromium	mg/L	<0.00400 U	0.132	<0.00400 U	<0.00400 U
Lead	mg/L	0.00759 J	0.0440 J	<0.00600 U	<0.00600 U
Selenium	mg/L	<0.0110 U	<0.0110 U	<0.0110 U	<0.0110 U
Silver	mg/L	<0.00200 U	<0.00200 U	<0.00200 U	<0.00200 U
2,4,5-Trichlorophenol	ug/L	<0.90 U	<0.90 U	<0.90 U	<0.90 U
2,4,6-Trichlorophenol	ug/L	<1.4 U	<1.4 U	<1.4 U	<1.4 U
2,4-Dinitrotoluene	ug/L	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cresols, Total	ug/L	<2.0 U	<2.0 U	<2.0 U	<2.0 U
Hexachlorobenzene	ug/L	<1.1 U	<1.1 U	<1.1 U	<1.1 U
Hexachlorobutadiene	ug/L	<1.1 U	<1.1 U	<1.1 U	<1.1 U
Hexachloroethane	ug/L	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Nitrobenzene	ug/L	<0.80 U	<0.80 U	<0.80 U	<0.80 U
Pentachlorophenol	ug/L	<1.6 U	<1.6 U	<1.6 U	<1.6 U
Pyridine	ug/L	<2.0 U	<2.0 U	<2.0 U	<2.0 U
Reactive Cyanide	mg/Kg	<100 nU	<100 nU	<100 nU	<100 nU
Reactive Sulfide	mg/Kg	<100 nU	<100 nU	<100 nU	<100 nU
1,1-Dichloroethene	ug/L	<10 U	<10 U	<10 U	<10 U
1,2-Dichloroethane	ug/L	<10 U	<10 U	<10 U	<10 U
1,4-Dichlorobenzene	ug/L	<12 U	<12 U	<12 U	<12 U
2-Butanone	ug/L	<20 U	<20 U	<20 U	<20 U
Benzene	ug/L	<12 U	<12 U	<12 U	<12 U
Carbon tetrachloride	ug/L	<12 U	<12 U	<12 U	<12 U
Chlorobenzene	ug/L	<8.0 U	<8.0 U	<8.0 U	<8.0 U
Chloroform	ug/L	<12 U	<12 U	<12 U	<12 U
Tetrachloroethene	ug/L	<12 U	<12 U	<12 U	<12 U
Trichloroethene	ug/L	<10 U	<10 U	<10 U	<10 U
Vinyl chloride	ug/L	<8.0 U	<8.0 U	<8.0 U	<8.0 U
pH	pH Units	8.16 H	8.03 H	6.65 H	6.69 H
Temp Deg C @pH	°C	21.1 H	21.3 H	21.1 H	20.9 H
nC6 to nC12	mg/Kg-dry	<11 U	<9.1 U	<10 U	<9.9 U
>nC12 to nC28	mg/Kg-dry	<15 U	<12 U	<13 U	<13 U
>nC28 to nC35	mg/Kg-dry	<15 U	<12 U	<13 U	<13 U
Total Petroleum Hydrocarbon	mg/Kg-dry	<11 U	<9.1 U	<10 U	<9.9 U

Qualifier	Description
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
MDL	Method Detection Limit
SDL	Sample Detection Limit



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April 01, 2021

Cesar Sique
Tolunay-Wong Engineers, Inc.
10710 S. Sam Houston Pkwy W.
Suite 100
Houston, TX 77031

Work Order: **HS21030940**

Laboratory Results for: **B & C Frito Lay Rosenberg**

Dear Cesar Sique,

ALS Environmental received 28 sample(s) on Mar 18, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL

RJ Modashia
Project Manager

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

**TRRP Laboratory Data
Package Cover Page**

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items consistent with NELAC Chapter 5,
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits.
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) the amount of analyte measured in the duplicate,
 - b) the calculated RPD, and
 - c) the laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client: Tolunay-Wong Engineers, Inc.**Project:** B & C Frito Lay Rosenberg**WorkOrder:** HS21030940**TRRP Laboratory Data
Package Cover Page**

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [] TCEQ or [] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.



RJ Modashia
Project Manager

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group				LRC Date: 04/01/2021			
Project Name: B & C Frito Lay Rosenberg				Laboratory Job Number: HS21030940			
Reviewer Name: RJ Modashia				Prep Batch Number(s): 163657,163837,163849,163919,163951,163952,163953,163955,163968,164000,164027,164055,164062,164106,R380020,R380095,R380417,R380667,R380668,R380670,R380671,R380709,R380742,R380760,R380763,R380766,R380767,R380768,R380769			
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?		X			1
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?	X				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
		Were MS/MSD RPDs within laboratory QC limits?		X			3
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				4
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				5

Laboratory Review Checklist: Supporting Data							
Laboratory Name: ALS Laboratory Group				LRC Date: 04/01/2021			
Project Name: B & C Frito Lay Rosenberg				Laboratory Job Number: HS21030940			
Reviewer Name: RJ Modashia				Prep Batch Number(s): 163657,163837,163849,163919,163951,163952,163953,163955,163968,164000,164027,164055,164062,164106,R380020,R380095,R380417,R380667,R380668,R380670,R380671,R380709,R380742,R380760,R380763,R380766,R380767,R380768,R380769			
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			6
S3	O	Mass spectral tuning:					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	Internal standards (IS):					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	Raw data (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs):					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results:					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports:					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs):					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.

O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable); NA = Not Applicable; NR = Not Reviewed; R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 04/01/2021
Project Name: B & C Frito Lay Rosenberg	Laboratory Job Number: HS21030940
Reviewer Name: RJ Modashia	Prep Batch Number(s): 163657,163837,163849,163919,163951,163952,163953,163955,163968,164000,164027,164055,164062,164106,R380020,R380095,R380417,R380667,R380668,R380670,R380671,R380709,R380742,R380760,R380763,R380766,R380767,R380768,R380769
ER# ⁵	Description
1	Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 degrees C.
2	Batch 163919, Texas TPH by TX1005, sample HS21031128-04, MS and MSD were performed on unrelated sample Batch 163951, Metals Method SW6020, sample HS21030552-06, MS and MSD were performed on unrelated sample Batch 163952, Metals Method SW6020, sample SB-2 (18-30"), MSD recovered outside the control limit for Calcium, Magnesium, Potassium and Sodium Batch 163837, TCLP Volatile Organics Method SW8260, sample HS21031204-40, MS was performed on unrelated sample Batch 164000, Phosphorus, Total (As P) Method E365.3, sample SB-1 (0-6"), MS and MSD recovered outside the control limit due to suspect matrix effect,
3	Batch 163951, Metals Method SW6020, sample HS21030552-06, MS/MSD RPD was performed on unrelated sample Batch 163952, Metals Method SW6020, sample SB-2 (18-30"), MS/MSD RPD recovered above the RPD limit for Calcium, Magnesium, Potassium and Sodium
4	Analysis of Sulfur was performed by ALS Fort Collins in CO. Report and Laboratory Review Checklist are attached to the Report
5	TCEQ does not offer accreditation for Sodium Adsorption Ratio, LA 29B - 1:1, Soluble Cations for SAR, LA 29B Electrical Conductivity, LA29B, Saturation Point (As Fraction); the results are flagged with n. Nitrogen, Total Kjeldahl Method SM4500 NH3D; TCEQ does not offer accreditation for Nitrogen, Total Kjeldahl the results are flagged with n
6	See Run Log and CCB Exceptions Report.
Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable); NA = Not Applicable; NR = Not Reviewed; R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).	

FORM 13 - ANALYSIS RUN LOG

Client: Tolunay-Wong Engineers, Inc.

Run ID:ICPMS04_380598

Project: B & C Frito Lay Rosenberg

Instrument:ICPMS04

WorkOrder: HS21030940

Method:SW6020

Start Date: 30-Mar-2021

End Date: 31-Mar-2021

Sample No.	D/F	Time	FileID	Analytes
ICV	1	30-Mar-2021 11:38	023_ICV.d	CA K MG NA
LLICV2	1	30-Mar-2021 11:40	024LCV2.d	CA K MG NA
LLICV5	1	30-Mar-2021 11:42	025LCV5.d	CA K MG NA
ICB	1	30-Mar-2021 11:44	026_ICB.d	CA K MG NA
ICSA	1	30-Mar-2021 11:52	028ICSA.d	CA K MG NA
ICSAB	1	30-Mar-2021 11:54	029ICSB.d	CA K MG NA
CCV 1	1	30-Mar-2021 12:27	040_CCV.d	CA K MG NA
CCB 1	1	30-Mar-2021 12:29	041_CCB.d	CA K MG NA
CCV 2	1	30-Mar-2021 13:00	052_CCV.d	CA K MG NA
CCB 2	1	30-Mar-2021 13:02	053_CCB.d	CA K MG NA
CCV 3	1	30-Mar-2021 13:21	062_CCV.d	CA K MG NA
CCB 3	1	30-Mar-2021 13:23	063_CCB.d	CA K MG NA
ICCV 4	1	30-Mar-2021 14:04	083_ICV.d	CA K MG NA
LLCCV2	1	30-Mar-2021 14:06	084LCV2.d	CA K MG NA
LLCCV5	1	30-Mar-2021 14:09	085LCV5.d	CA K MG NA
ICCB 4	1	30-Mar-2021 14:11	086_ICB.d	CA K MG NA
CCV 5	1	30-Mar-2021 14:25	092_CCV.d	CA K MG NA
CCB 5	1	30-Mar-2021 14:27	093_CCB.d	CA K MG NA
CCV 6	1	30-Mar-2021 15:20	104_CCV.d	CA K MG NA
CCB 6	1	30-Mar-2021 15:22	105_CCB.d	CA K MG NA
CCV 7	1	30-Mar-2021 15:52	116_CCV.d	CA K MG NA
CCB 7	1	30-Mar-2021 15:54	117_CCB.d	CA K MG NA
CCV 8	1	30-Mar-2021 16:39	128_CCV.d	CA K MG NA
CCB 8	1	30-Mar-2021 16:41	129_CCB.d	CA K MG NA
MBLK-163951	1	30-Mar-2021 17:27	131SMPL.d	CA K MG NA
LCS-163951	1	30-Mar-2021 17:29	132SMPL.d	CA K MG NA
ZZZZZZSD	5	30-Mar-2021 17:33	134SMPL.d	K MG NA
ZZZZZZMS	1	30-Mar-2021 17:35	135SMPL.d	CA K MG NA
ZZZZZZMSD	1	30-Mar-2021 17:37	136SMPL.d	CA K MG NA
ZZZZZZPDS	1	30-Mar-2021 17:39	137SMPL.d	K MG NA
CCV 9	1	30-Mar-2021 17:47	140_CCV.d	CA K MG NA
CCB 9	1	30-Mar-2021 17:49	141_CCB.d	CA K MG NA
SB-1 (0-6")	1	30-Mar-2021 18:09	150SMPL.d	CA K MG NA
CCV 10	1	30-Mar-2021 18:13	152_CCV.d	CA K MG NA
CCB 10	1	30-Mar-2021 18:15	153_CCB.d	CA K MG NA
SB-1 (18-30")	1	30-Mar-2021 18:22	155SMPL.d	CA K MG NA
SB-1 (42-54")	1	30-Mar-2021 18:24	156SMPL.d	CA K MG NA
SB-2 (0-6")	1	30-Mar-2021 18:26	157SMPL.d	CA K MG NA
CCV 11	1	30-Mar-2021 18:30	159_CCV.d	CA K MG NA
CCB 11	1	30-Mar-2021 18:32	160_CCB.d	CA K MG NA
CCV 12	1	30-Mar-2021 21:40	166_CCV.d	CA K MG NA
CCB 12	1	30-Mar-2021 21:42	167_CCB.d	CA K MG NA
CCV 13	1	30-Mar-2021 21:58	175_CCV.d	CA K MG NA
CCB 13	1	30-Mar-2021 22:00	176_CCB.d	CA K MG NA
CCV 14	1	30-Mar-2021 22:22	187_CCV.d	CA K MG NA
CCB 14	1	30-Mar-2021 22:24	188_CCB.d	CA K MG NA
CCV 15	1	30-Mar-2021 22:42	197_CCV.d	CA K MG NA
CCB 15	1	30-Mar-2021 22:44	198_CCB.d	CA K MG NA
CCV 16	1	30-Mar-2021 22:54	203_CCV.d	CA K MG NA
CCB 16	1	30-Mar-2021 22:56	204_CCB.d	CA K MG NA
ICCV 17	1	30-Mar-2021 23:21	216_ICV.d	CA K MG NA

FORM 13 - ANALYSIS RUN LOG

Client: Tolunay-Wong Engineers, Inc.

Run ID:ICPMS04_380598

Project: B & C Frito Lay Rosenberg

Instrument:ICPMS04

WorkOrder: HS21030940

Method:SW6020

Start Date: 30-Mar-2021

End Date: 31-Mar-2021

Sample No.	D/F	Time	FileID	Analytes
LLCCV2	1	30-Mar-2021 23:23	217LCV2.d	CA K MG NA
LLCCV5	1	30-Mar-2021 23:25	218LCV5.d	CA K MG NA
ICCB 17	1	30-Mar-2021 23:27	219_ICB.d	CA K MG NA
MBLK-163952	1	30-Mar-2021 23:31	221SMPL.d	CA K MG NA
LCS-163952	1	30-Mar-2021 23:33	222SMPL.d	CA K MG NA
SB-2 (18-30")	1	30-Mar-2021 23:35	223SMPL.d	CA K MG NA
SB-2 (18-30")SD	5	30-Mar-2021 23:37	224SMPL.d	CA K MG NA
SB-2 (18-30")MS	1	30-Mar-2021 23:39	225SMPL.d	CA K MG NA
SB-2 (18-30")MSD	1	30-Mar-2021 23:41	226SMPL.d	CA K MG NA
SB-2 (18-30")PDS	1	30-Mar-2021 23:43	227SMPL.d	CA K MG NA
CCV 18	1	30-Mar-2021 23:45	228_CC.V.d	CA K MG NA
CCB 18	1	30-Mar-2021 23:47	229_CCB.d	CA K MG NA
SB-2 (42-54")	1	30-Mar-2021 23:49	230SMPL.d	CA K MG NA
SB-3 (0-6")	1	30-Mar-2021 23:51	231SMPL.d	CA K MG NA
SB-3 (18-30")	1	30-Mar-2021 23:53	232SMPL.d	CA K MG NA
SB-3 (42-54")	1	30-Mar-2021 23:55	233SMPL.d	K MG NA
SB-8 (5-5.5')	1	30-Mar-2021 23:57	234SMPL.d	CA K MG NA
SB-8 (6.5-7.5')	1	30-Mar-2021 23:59	235SMPL.d	CA K MG NA
SB-8 (8.5-9.5')	1	31-Mar-2021 00:01	236SMPL.d	K MG NA
SB-7 (5-5.5')	1	31-Mar-2021 00:02	237SMPL.d	CA K MG NA
SB-7 (6.5-7.5')	1	31-Mar-2021 00:04	238SMPL.d	K MG NA
SB-7 (8.5-9.5')	1	31-Mar-2021 00:06	239SMPL.d	K MG NA
CCV 19	1	31-Mar-2021 00:08	240_CC.V.d	CA K MG NA
CCB 19	1	31-Mar-2021 00:10	241_CCB.d	CA K MG NA
SB-6 (5-5.5')	1	31-Mar-2021 00:12	242SMPL.d	K MG NA
SB-6 (6.5-7.5')	1	31-Mar-2021 00:14	243SMPL.d	K MG NA
SB-6 (8.5-9.5')	1	31-Mar-2021 00:16	244SMPL.d	K MG NA
SB-5 (5-5.5')	1	31-Mar-2021 00:18	245SMPL.d	CA K MG NA
SB-5 (6.5-7.5')	1	31-Mar-2021 00:20	246SMPL.d	CA K MG NA
SB-5 (8.5-9.5')	1	31-Mar-2021 00:22	247SMPL.d	CA K MG NA
CCV 20	1	31-Mar-2021 00:32	252_CC.V.d	CA K MG NA
CCB 20	1	31-Mar-2021 00:34	253_CCB.d	CA K MG NA
CCV 21	1	31-Mar-2021 00:39	255_CC.V.d	CA K MG NA
CCB 21	1	31-Mar-2021 00:41	256_CCB.d	CA K MG NA
LLICV2	1	31-Mar-2021 00:43	257LCV2.d	CA K MG NA
LLICV5	1	31-Mar-2021 00:45	258LCV5.d	CA K MG NA
ICSA	1	31-Mar-2021 00:47	259ICSA.d	CA K MG NA
ICSAB	1	31-Mar-2021 00:49	260ICSB.d	CA K MG NA

FORM 13 - ANALYSIS RUN LOG

Client: Tolunay-Wong Engineers, Inc.

Run ID:ICPMS06_380735

Project: B & C Frito Lay Rosenberg

Instrument:ICPMS06

WorkOrder: HS21030940

Method:SW6020

Start Date: 01-Apr-2021

End Date: 01-Apr-2021

Sample No.	D/F	Time	FileID	Analytes
ICV	1	01-Apr-2021 11:04	018_ICV.d	CA MG NA
LLICV2	1	01-Apr-2021 11:08	020LCV2.d	CA MG NA
ICB	1	01-Apr-2021 11:12	022_ICB.d	CA MG NA
LLICV5	1	01-Apr-2021 11:16	023LCV5.d	CA MG NA
ICSA	1	01-Apr-2021 11:18	024ICSA.d	CA MG NA
ICSAB	1	01-Apr-2021 11:20	025ICSB.d	CA MG NA
CCV 1	1	01-Apr-2021 11:33	027_CCV.d	CA MG NA
CCB 1	1	01-Apr-2021 11:35	028_CCB.d	CA MG NA
CCB 2	1	01-Apr-2021 12:01	040_CCB.d	CA MG NA
CCV 2	1	01-Apr-2021 12:03	041_CCV.d	CA MG NA
CCV 3	1	01-Apr-2021 12:25	052_CCV.d	CA MG NA
CCB 3	1	01-Apr-2021 12:27	053_CCB.d	CA MG NA
CCV 4	1	01-Apr-2021 12:58	058_CCV.d	CA MG NA
CCB 4	1	01-Apr-2021 13:00	059_CCB.d	CA MG NA
MBLK-164062	1	01-Apr-2021 14:08	061SMPL.d	CA MG NA
SB-1 (0-6")	10	01-Apr-2021 14:10	062SMPL.d	CA MG NA
SB-1 (18-30")	10	01-Apr-2021 14:12	063SMPL.d	CA MG NA
SB-1 (42-54")	10	01-Apr-2021 14:14	064SMPL.d	CA MG NA
SB-2 (0-6")	10	01-Apr-2021 14:16	065SMPL.d	CA MG NA
SB-2 (18-30")	10	01-Apr-2021 14:18	066SMPL.d	CA MG NA
SB-2 (42-54")	10	01-Apr-2021 14:20	067SMPL.d	CA MG NA
SB-3 (0-6")	10	01-Apr-2021 14:22	068SMPL.d	CA MG NA
SB-3 (18-30")	10	01-Apr-2021 14:24	069SMPL.d	CA MG NA
CCV 5	1	01-Apr-2021 14:26	070_CCV.d	CA MG NA
CCB 5	1	01-Apr-2021 14:27	071_CCB.d	CA MG NA
SB-3 (42-54")	10	01-Apr-2021 14:34	072SMPL.d	CA MG NA
SB-8 (5-5.5')	10	01-Apr-2021 14:36	073SMPL.d	CA MG NA
SB-8 (6.5-7.5')	10	01-Apr-2021 14:38	074SMPL.d	CA MG NA
SB-8 (8.5-9.5')	10	01-Apr-2021 14:40	075SMPL.d	CA MG NA
SB-7 (5-5.5')	10	01-Apr-2021 14:42	076SMPL.d	CA MG NA
SB-7 (6.5-7.5')	10	01-Apr-2021 14:44	077SMPL.d	CA MG NA
SB-7 (8.5-9.5')	10	01-Apr-2021 14:46	078SMPL.d	CA MG NA
SB-6 (5-5.5)	10	01-Apr-2021 14:48	079SMPL.d	CA MG NA
SB-6 (6.5-7.5)	10	01-Apr-2021 14:50	080SMPL.d	CA MG NA
CCV 6	1	01-Apr-2021 14:54	082_CCV.d	CA MG NA
CCB 6	1	01-Apr-2021 14:56	083_CCB.d	CA MG NA
SB-6 (8.5-9.5)	10	01-Apr-2021 14:58	084SMPL.d	CA MG NA
SB-6 (8.5-9.5)DUP	10	01-Apr-2021 15:00	085SMPL.d	CA MG NA
MBLK-164106	1	01-Apr-2021 15:04	087SMPL.d	CA MG NA
SB-5 (5-5.5')	10	01-Apr-2021 15:06	088SMPL.d	CA MG NA
SB-5 (5-5.5')DUP	10	01-Apr-2021 15:08	089SMPL.d	CA MG NA
SB-5 (6.5-7.5')	10	01-Apr-2021 15:10	090SMPL.d	CA MG NA
SB-5 (8.5-9.5')	10	01-Apr-2021 15:11	091SMPL.d	CA MG NA
CCV 7	1	01-Apr-2021 15:16	093_CCV.d	CA MG NA
CCB 7	1	01-Apr-2021 15:18	094_CCB.d	CA MG NA

CCB EXCEPTIONS REPORT

Client: Tolunay-Wong Engineers, Inc.

Run ID:ICPMS04_380598

Project: B & C Frito Lay Rosenberg

Instrument:ICPMS04

WorkOrder: HS21030940

Method:SW6020

CCB 9	Date: 30-Mar-2021 17:49	Seq: 6017501	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	10.18	10	200	
CCB 10	Date: 30-Mar-2021 18:15	Seq: 6017544	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Potassium	37.86	18	200	
CCB 11	Date: 30-Mar-2021 18:32	Seq: 6017570	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	11.41	10	200	
Potassium	39.22	18	200	
CCB 12	Date: 30-Mar-2021 21:42	Seq: 6017574	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Potassium	34.12	18	200	
CCB 13	Date: 30-Mar-2021 22:00	Seq: 6017545	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	13.69	10	200	
Potassium	39.55	18	200	
Sodium	17.95	14	200	
CCB 14	Date: 30-Mar-2021 22:24	Seq: 6017557	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	16.75	10	200	
Potassium	42.92	18	200	
CCB 15	Date: 30-Mar-2021 22:44	Seq: 6017586	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	16.49	10	200	
Potassium	48.62	18	200	
CCB 16	Date: 30-Mar-2021 22:56	Seq: 6017592	D/F: 1	Units: ug/L
Analyte	Result	MDL	Report Limit	
Magnesium	16.56	10	200	
Potassium	51.67	18	200	

CCB EXCEPTIONS REPORT

Client: Tolunay-Wong Engineers, Inc.

Run ID:ICPMS06_380735

Project: B & C Frito Lay Rosenberg

Instrument:ICPMS06

WorkOrder: HS21030940

Method:SW6020

CCB 2	Date: 01-Apr-2021 12:01	Seq: 6020170	D/F: 1	Units: ug/L
	Analyte	Result	MDL	Report Limit
	Sodium	121.5	14	200

CCB 3	Date: 01-Apr-2021 12:27	Seq: 6020786	D/F: 1	Units: ug/L
	Analyte	Result	MDL	Report Limit
	Sodium	140.9	14	200

CCB 4	Date: 01-Apr-2021 13:00	Seq: 6020778	D/F: 1	Units: ug/L
	Analyte	Result	MDL	Report Limit
	Sodium	93.04	14	200

CCB 5	Date: 01-Apr-2021 14:27	Seq: 6020803	D/F: 1	Units: ug/L
	Analyte	Result	MDL	Report Limit
	Sodium	14.08	14	200

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
Work Order: HS21030940

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21030940-01	SB-1 (0-6")	Solid		15-Mar-2021 11:15	18-Mar-2021 15:35	☐
HS21030940-02	SB-1 (18-30")	Solid		15-Mar-2021 11:15	18-Mar-2021 15:35	☐
HS21030940-03	SB-1 (42-54")	Solid		15-Mar-2021 11:15	18-Mar-2021 15:35	☐
HS21030940-04	SB-2 (0-6")	Solid		15-Mar-2021 12:30	18-Mar-2021 15:35	☐
HS21030940-05	SB-2 (18-30")	Solid		15-Mar-2021 12:30	18-Mar-2021 15:35	☐
HS21030940-06	SB-2 (42-54")	Solid		15-Mar-2021 12:30	18-Mar-2021 15:35	☐
HS21030940-07	SB-3 (0-6")	Solid		15-Mar-2021 14:45	18-Mar-2021 15:35	☐
HS21030940-08	SB-3 (18-30")	Solid		15-Mar-2021 14:45	18-Mar-2021 15:35	☐
HS21030940-09	SB-3 (42-54")	Solid		15-Mar-2021 14:45	18-Mar-2021 15:35	☐
HS21030940-10	SB-8 (5-5.5')	Solid		16-Mar-2021 10:34	18-Mar-2021 15:35	☐
HS21030940-11	SB-8 (6.5-7.5')	Solid		16-Mar-2021 10:34	18-Mar-2021 15:35	☐
HS21030940-12	SB-8 (8.5-9.5')	Solid		16-Mar-2021 10:34	18-Mar-2021 15:35	☐
HS21030940-13	SB-8 (Organic)	Solid		16-Mar-2021 10:29	18-Mar-2021 15:35	☐
HS21030940-14	SB-7 (5-5.5')	Solid		16-Mar-2021 11:00	18-Mar-2021 15:35	☐
HS21030940-15	SB-7 (6.5-7.5')	Solid		16-Mar-2021 11:00	18-Mar-2021 15:35	☐
HS21030940-16	SB-7 (8.5-9.5')	Solid		16-Mar-2021 11:00	18-Mar-2021 15:35	☐
HS21030940-17	SB-7 (Organic)	Solid		16-Mar-2021 10:55	18-Mar-2021 15:35	☐
HS21030940-18	SB-6 (5-5.5)	Solid		16-Mar-2021 11:35	18-Mar-2021 15:35	☐
HS21030940-19	SB-6 (6.5-7.5)	Solid		16-Mar-2021 11:35	18-Mar-2021 15:35	☐
HS21030940-20	SB-6 (8.5-9.5)	Solid		16-Mar-2021 11:35	18-Mar-2021 15:35	☐
HS21030940-21	SB-6 (Organic)	Solid		16-Mar-2021 11:30	18-Mar-2021 15:35	☐
HS21030940-22	SB-5 (5-5.5')	Solid		16-Mar-2021 13:47	18-Mar-2021 15:35	☐
HS21030940-23	SB-5 (6.5-7.5')	Solid		16-Mar-2021 13:47	18-Mar-2021 15:35	☐
HS21030940-24	SB-5 (8.5-9.5')	Solid		16-Mar-2021 13:47	18-Mar-2021 15:35	☐
HS21030940-25	SB-5 (Organic)	Solid		16-Mar-2021 13:42	18-Mar-2021 15:35	☐
HS21030940-26	CG-121520-820	Water	CG-121520-820	16-Mar-2021 00:00	18-Mar-2021 15:35	☐

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
Work Order: HS21030940

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21030940-27	CG-121520-824	Water	CG-121520 -824	16-Mar-2021 00:00	18-Mar-2021 15:35	☐
HS21030940-28	CG-121520-819	Water	CG-121520 -819	16-Mar-2021 00:00	18-Mar-2021 15:35	☐

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-1 (0-6")
 Collection Date: 15-Mar-2021 11:15

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-01
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	1.78	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	16.5	n	5.00	5.00	mg/L	10	01-Apr-2021 14:10
Magnesium	7.67	n	5.00	5.00	mg/L	10	01-Apr-2021 14:10
Sodium	35.0	n	5.00	5.00	mg/L	10	01-Apr-2021 14:10
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 30-Mar-2021		Analyst: JC	
Calcium	3,190		6.55	66.1	mg/Kg-dry	1	30-Mar-2021 18:09
Magnesium	2,570		3.32	66.1	mg/Kg-dry	1	30-Mar-2021 18:09
Potassium	1,340		8.88	66.1	mg/Kg-dry	1	30-Mar-2021 18:09
Sodium	208		5.51	66.1	mg/Kg-dry	1	30-Mar-2021 18:09
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	29.0		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	1,000		14.1	28.2	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 30-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	11.0		1.42	2.85	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.380	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	1,000	n	14	28	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	5.27	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 19-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	1.47		0.415	1.38	mg/Kg-dry	1	23-Mar-2021 14:56
Nitrogen, Nitrite (As N)	U		0.415	1.38	mg/Kg-dry	1	23-Mar-2021 14:56
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-1 (18-30")
 Collection Date: 15-Mar-2021 11:15

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-02
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	0.895	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	304	n	5.00	5.00	mg/L	10	01-Apr-2021 14:12
Magnesium	119	n	5.00	5.00	mg/L	10	01-Apr-2021 14:12
Sodium	72.7	n	5.00	5.00	mg/L	10	01-Apr-2021 14:12
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 30-Mar-2021	Analyst: JC
Calcium	3,900		7.04	70.9	mg/Kg-dry	1	30-Mar-2021 18:22
Magnesium	3,160		3.56	70.9	mg/Kg-dry	1	30-Mar-2021 18:22
Potassium	1,630		9.53	70.9	mg/Kg-dry	1	30-Mar-2021 18:22
Sodium	456		5.92	70.9	mg/Kg-dry	1	30-Mar-2021 18:22
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	32.1		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	709		14.7	29.5	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	1.50	J	1.31	2.61	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.212	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	710	n	14	28	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	5.54	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	2.40		0.436	1.45	mg/Kg-dry	1	23-Mar-2021 15:13
Nitrogen, Nitrite (As N)	U		0.436	1.45	mg/Kg-dry	1	23-Mar-2021 15:13
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-1 (42-54")
 Collection Date: 15-Mar-2021 11:15

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-03
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	5.37	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	19.5	n	5.00	5.00	mg/L	10	01-Apr-2021 14:14
Magnesium	8.51	n	5.00	5.00	mg/L	10	01-Apr-2021 14:14
Sodium	113	n	5.00	5.00	mg/L	10	01-Apr-2021 14:14
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 30-Mar-2021	Analyst: JC
Calcium	4,500		6.14	61.9	mg/Kg-dry	1	30-Mar-2021 18:24
Magnesium	3,600		3.11	61.9	mg/Kg-dry	1	30-Mar-2021 18:24
Potassium	1,630		8.31	61.9	mg/Kg-dry	1	30-Mar-2021 18:24
Sodium	785		5.16	61.9	mg/Kg-dry	1	30-Mar-2021 18:24
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	24.8		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	186		13.3	26.6	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	13.4		1.32	2.65	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.655	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	190	n	13	26	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.35	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.393	1.31	mg/Kg-dry	1	23-Mar-2021 15:30
Nitrogen, Nitrite (As N)	U		0.393	1.31	mg/Kg-dry	1	23-Mar-2021 15:30
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-2 (0-6")
 Collection Date: 15-Mar-2021 12:30

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-04
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	1.01	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	24.4	n	5.00	5.00	mg/L	10	01-Apr-2021 14:16
Magnesium	10.7	n	5.00	5.00	mg/L	10	01-Apr-2021 14:16
Sodium	23.8	n	5.00	5.00	mg/L	10	01-Apr-2021 14:16
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 30-Mar-2021	Analyst: JC
Calcium	3,420		6.42	64.7	mg/Kg-dry	1	30-Mar-2021 18:26
Magnesium	2,990		3.25	64.7	mg/Kg-dry	1	30-Mar-2021 18:26
Potassium	1,610		8.70	64.7	mg/Kg-dry	1	30-Mar-2021 18:26
Sodium	162		5.40	64.7	mg/Kg-dry	1	30-Mar-2021 18:26
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	27.3		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	963		13.8	27.5	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	5.15		1.10	2.19	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.345	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	960	n	13	27	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	5.30	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.406	1.35	mg/Kg-dry	1	23-Mar-2021 15:47
Nitrogen, Nitrite (As N)	U		0.406	1.35	mg/Kg-dry	1	23-Mar-2021 15:47
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-2 (18-30")
 Collection Date: 15-Mar-2021 12:30

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-05
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	1.92	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	19.6	n	5.00	5.00	mg/L	10	01-Apr-2021 14:18
Magnesium	9.19	n	5.00	5.00	mg/L	10	01-Apr-2021 14:18
Sodium	41.0	n	5.00	5.00	mg/L	10	01-Apr-2021 14:18
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021		Analyst: JC	
Calcium	3,190		6.32	63.7	mg/Kg-dry	1	30-Mar-2021 23:35
Magnesium	2,510		3.20	63.7	mg/Kg-dry	1	30-Mar-2021 23:35
Potassium	1,230		8.56	63.7	mg/Kg-dry	1	30-Mar-2021 23:35
Sodium	219		5.31	63.7	mg/Kg-dry	1	30-Mar-2021 23:35
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	24.0		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	395		13.2	26.3	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 31-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	3.46		1.28	2.56	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.341	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	400	n	13	26	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	5.41	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 19-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	U		0.388	1.29	mg/Kg-dry	1	23-Mar-2021 16:04
Nitrogen, Nitrite (As N)	U		0.388	1.29	mg/Kg-dry	1	23-Mar-2021 16:04
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-2 (42-54")
 Collection Date: 15-Mar-2021 12:30

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-06
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	0.841	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	75.3	n	5.00	5.00	mg/L	10	01-Apr-2021 14:20
Magnesium	33.6	n	5.00	5.00	mg/L	10	01-Apr-2021 14:20
Sodium	34.9	n	5.00	5.00	mg/L	10	01-Apr-2021 14:20
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 30-Mar-2021	Analyst: JC
Calcium	3,400		5.64	56.8	mg/Kg-dry	1	30-Mar-2021 23:49
Magnesium	2,540		2.85	56.8	mg/Kg-dry	1	30-Mar-2021 23:49
Potassium	1,020		7.64	56.8	mg/Kg-dry	1	30-Mar-2021 23:49
Sodium	262		4.74	56.8	mg/Kg-dry	1	30-Mar-2021 23:49
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	19.2		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	149		12.4	24.8	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	1.81	J	1.21	2.42	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.186	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	140	n	11	23	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.01	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.364	1.21	mg/Kg-dry	1	23-Mar-2021 16:22
Nitrogen, Nitrite (As N)	U		0.364	1.21	mg/Kg-dry	1	23-Mar-2021 16:22
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-3 (0-6")
 Collection Date: 15-Mar-2021 14:45

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-07
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	1.71	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	43.2	n	5.00	5.00	mg/L	10	01-Apr-2021 14:22
Magnesium	18.2	n	5.00	5.00	mg/L	10	01-Apr-2021 14:22
Sodium	53.2	n	5.00	5.00	mg/L	10	01-Apr-2021 14:22
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	3,780		5.97	60.2	mg/Kg-dry	1	30-Mar-2021 23:51
Magnesium	2,740		3.02	60.2	mg/Kg-dry	1	30-Mar-2021 23:51
Potassium	1,320		8.09	60.2	mg/Kg-dry	1	30-Mar-2021 23:51
Sodium	211		5.02	60.2	mg/Kg-dry	1	30-Mar-2021 23:51
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	21.9		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	283		12.8	25.6	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	6.66		1.27	2.54	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.618	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	280	n	12	25	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	5.55	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	1.55		0.383	1.28	mg/Kg-dry	1	23-Mar-2021 16:40
Nitrogen, Nitrite (As N)	U		0.383	1.28	mg/Kg-dry	1	23-Mar-2021 16:40
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-3 (18-30")
 Collection Date: 15-Mar-2021 14:45

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-08
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	1.38	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	131	n	5.00	5.00	mg/L	10	01-Apr-2021 14:24
Magnesium	57.4	n	5.00	5.00	mg/L	10	01-Apr-2021 14:24
Sodium	75.3	n	5.00	5.00	mg/L	10	01-Apr-2021 14:24
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	4,010		5.80	58.4	mg/Kg-dry	1	30-Mar-2021 23:53
Magnesium	3,430		2.93	58.4	mg/Kg-dry	1	30-Mar-2021 23:53
Potassium	1,240		7.85	58.4	mg/Kg-dry	1	30-Mar-2021 23:53
Sodium	637		4.87	58.4	mg/Kg-dry	1	30-Mar-2021 23:53
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	20.9		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	139		12.6	25.3	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	5.87		1.24	2.47	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.279	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	140	n	12	25	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.71	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.8	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 19-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.373	1.24	mg/Kg-dry	1	23-Mar-2021 16:59
Nitrogen, Nitrite (As N)	U		0.373	1.24	mg/Kg-dry	1	23-Mar-2021 16:59
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-3 (42-54")
 Collection Date: 15-Mar-2021 14:45

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-09
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	6.54	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	10.2	n	5.00	5.00	mg/L	10	01-Apr-2021 14:34
Magnesium	5.68	n	5.00	5.00	mg/L	10	01-Apr-2021 14:34
Sodium	105	n	5.00	5.00	mg/L	10	01-Apr-2021 14:34
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	24,200		59.5	600	mg/Kg-dry	10	31-Mar-2021 12:58
Magnesium	6,610		3.01	60.0	mg/Kg-dry	1	30-Mar-2021 23:55
Potassium	3,110		8.06	60.0	mg/Kg-dry	1	30-Mar-2021 23:55
Sodium	995		5.00	60.0	mg/Kg-dry	1	30-Mar-2021 23:55
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	23.6		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	144		13.1	26.2	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	8.30		1.28	2.55	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.722	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	150	n	13	25	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.72	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.392	1.31	mg/Kg-dry	1	30-Mar-2021 10:24
Nitrogen, Nitrite (As N)	U		0.392	1.31	mg/Kg-dry	1	30-Mar-2021 10:24
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-8 (5-5.5')
 Collection Date: 16-Mar-2021 10:34

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-10
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	4.52	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	25.9	n	5.00	5.00	mg/L	10	01-Apr-2021 14:36
Magnesium	12.0	n	5.00	5.00	mg/L	10	01-Apr-2021 14:36
Sodium	111	n	5.00	5.00	mg/L	10	01-Apr-2021 14:36
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	10,100		5.94	59.9	mg/Kg-dry	1	30-Mar-2021 23:57
Magnesium	3,060		3.01	59.9	mg/Kg-dry	1	30-Mar-2021 23:57
Potassium	1,300		8.05	59.9	mg/Kg-dry	1	30-Mar-2021 23:57
Sodium	513		4.99	59.9	mg/Kg-dry	1	30-Mar-2021 23:57
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	19.9		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	500		12.5	25.0	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	15.7		1.22	2.45	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.749	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	500	n	12	25	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.26	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	1.00	J	0.371	1.24	mg/Kg-dry	1	30-Mar-2021 10:43
Nitrogen, Nitrite (As N)	U		0.371	1.24	mg/Kg-dry	1	30-Mar-2021 10:43
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-8 (6.5-7.5')
 Collection Date: 16-Mar-2021 10:34

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-11
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	5.87	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	13.1	n	5.00	5.00	mg/L	10	01-Apr-2021 14:38
Magnesium	7.91	n	5.00	5.00	mg/L	10	01-Apr-2021 14:38
Sodium	109	n	5.00	5.00	mg/L	10	01-Apr-2021 14:38
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	6,450		5.69	57.4	mg/Kg-dry	1	30-Mar-2021 23:59
Magnesium	4,470		2.88	57.4	mg/Kg-dry	1	30-Mar-2021 23:59
Potassium	1,960		7.71	57.4	mg/Kg-dry	1	30-Mar-2021 23:59
Sodium	727		4.79	57.4	mg/Kg-dry	1	30-Mar-2021 23:59
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	18.8		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	160		12.3	24.6	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	15.7		1.23	2.46	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.601	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	160	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	6.90	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.367	1.22	mg/Kg-dry	1	30-Mar-2021 11:01
Nitrogen, Nitrite (As N)	U		0.367	1.22	mg/Kg-dry	1	30-Mar-2021 11:01
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-8 (8.5-9.5')
 Collection Date: 16-Mar-2021 10:34

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-12
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	6.27	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	10.3	n	5.00	5.00	mg/L	10	01-Apr-2021 14:40
Magnesium	6.17	n	5.00	5.00	mg/L	10	01-Apr-2021 14:40
Sodium	103	n	5.00	5.00	mg/L	10	01-Apr-2021 14:40
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021		Analyst: JC	
Calcium	156,000		295	2970	mg/Kg-dry	50	31-Mar-2021 13:00
Magnesium	7,080		2.98	59.5	mg/Kg-dry	1	31-Mar-2021 00:01
Potassium	2,870		7.99	59.5	mg/Kg-dry	1	31-Mar-2021 00:01
Sodium	604		4.96	59.5	mg/Kg-dry	1	31-Mar-2021 00:01
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	19.4		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	149		12.4	24.8	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 30-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	18.2		1.18	2.35	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.638	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	150	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	7.07	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 29-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	U		0.371	1.24	mg/Kg-dry	1	30-Mar-2021 11:20
Nitrogen, Nitrite (As N)	U		0.371	1.24	mg/Kg-dry	1	30-Mar-2021 11:20
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-8 (Organic)
 Collection Date: 16-Mar-2021 10:29

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-13
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES		Method:SW8260		Leache:SW1311 / 25-Mar-2021	Prep:SW1311 / 25-Mar-2021	Analyst: PC	
1,1-Dichloroethene	U		10	100	ug/L	20	25-Mar-2021 19:37
1,2-Dichloroethane	U		10	100	ug/L	20	25-Mar-2021 19:37
1,4-Dichlorobenzene	U		12	100	ug/L	20	25-Mar-2021 19:37
2-Butanone	U		20	200	ug/L	20	25-Mar-2021 19:37
Benzene	U		12	100	ug/L	20	25-Mar-2021 19:37
Carbon tetrachloride	U		12	100	ug/L	20	25-Mar-2021 19:37
Chlorobenzene	U		8.0	100	ug/L	20	25-Mar-2021 19:37
Chloroform	U		12	100	ug/L	20	25-Mar-2021 19:37
Tetrachloroethene	U		12	100	ug/L	20	25-Mar-2021 19:37
Trichloroethene	U		10	100	ug/L	20	25-Mar-2021 19:37
Vinyl chloride	U		8.0	40	ug/L	20	25-Mar-2021 19:37
Surr: 1,2-Dichloroethane-d4	114			70-126	%REC	20	25-Mar-2021 19:37
Surr: 4-Bromofluorobenzene	102			82-124	%REC	20	25-Mar-2021 19:37
Surr: Dibromofluoromethane	107			77-123	%REC	20	25-Mar-2021 19:37
Surr: Toluene-d8	102			82-127	%REC	20	25-Mar-2021 19:37
TCLP SEMIVOLATILES		Method:SW1311/8270		Leache:SW1311 / 25-Mar-2021	Prep:SW3510 / 25-Mar-2021	Analyst: GEY	
2,4,5-Trichlorophenol	U		0.90	5.0	ug/L	1	26-Mar-2021 15:07
2,4,6-Trichlorophenol	U		1.4	5.0	ug/L	1	26-Mar-2021 15:07
2,4-Dinitrotoluene	U		1.0	5.0	ug/L	1	26-Mar-2021 15:07
Cresols, Total	U		2.0	15	ug/L	1	26-Mar-2021 15:07
Hexachlorobenzene	U		1.1	5.0	ug/L	1	26-Mar-2021 15:07
Hexachlorobutadiene	U		1.1	5.0	ug/L	1	26-Mar-2021 15:07
Hexachloroethane	U		1.0	5.0	ug/L	1	26-Mar-2021 15:07
Nitrobenzene	U		0.80	5.0	ug/L	1	26-Mar-2021 15:07
Pentachlorophenol	U		1.6	5.0	ug/L	1	26-Mar-2021 15:07
Pyridine	U		2.0	5.0	ug/L	1	26-Mar-2021 15:07
Surr: 2,4,6-Tribromophenol	86.5			39-153	%REC	1	26-Mar-2021 15:07
Surr: 2-Fluorobiphenyl	65.8			40-147	%REC	1	26-Mar-2021 15:07
Surr: 2-Fluorophenol	52.2			21-110	%REC	1	26-Mar-2021 15:07
Surr: 4-Terphenyl-d14	116			39-141	%REC	1	26-Mar-2021 15:07
Surr: Nitrobenzene-d5	69.7			37-140	%REC	1	26-Mar-2021 15:07
Surr: Phenol-d6	64.0			11-110	%REC	1	26-Mar-2021 15:07
TEXAS TPH BY TX1005		Method:TX1005			Prep:TX1005PR / 26-Mar-2021	Analyst: SAM	
nC6 to nC12	U		9.9	67	mg/Kg-dry	1	26-Mar-2021 18:13
>nC12 to nC28	U		13	67	mg/Kg-dry	1	26-Mar-2021 18:13
>nC28 to nC35	U		13	67	mg/Kg-dry	1	26-Mar-2021 18:13
Total Petroleum Hydrocarbon	U		9.9	67	mg/Kg-dry	1	26-Mar-2021 18:13
Surr: 2-Fluorobiphenyl	110			70-130	%REC	1	26-Mar-2021 18:13
Surr: Trifluoromethyl benzene	113			70-130	%REC	1	26-Mar-2021 18:13

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-8 (Organic)
 Collection Date: 16-Mar-2021 10:29

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-13
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A Method:SW1311/6020 Leache:SW1311 / 25-Mar-2021 Prep:SW3010A / 30-Mar-2021 Analyst: JHD							
Arsenic	0.00485	J	0.00400	0.0500	mg/L	1	30-Mar-2021 23:59
Barium	0.696		0.0190	0.200	mg/L	1	30-Mar-2021 23:59
Cadmium	U		0.00200	0.0500	mg/L	1	30-Mar-2021 23:59
Chromium	U		0.00400	0.0500	mg/L	1	30-Mar-2021 23:59
Lead	U		0.00600	0.0500	mg/L	1	30-Mar-2021 23:59
Selenium	U		0.0110	0.0500	mg/L	1	30-Mar-2021 23:59
Silver	U		0.00200	0.0500	mg/L	1	30-Mar-2021 23:59
MOISTURE - ASTM D2216 Method:ASTM D2216 Analyst: JAC							
Percent Moisture	22.9		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B Method:ASTM D92-12b Analyst: TH							
Flash Point	> 212	n	50.0	50.0	°F	1	20-Mar-2021 10:00
TOTAL VOLATILE SOLIDS BY E160.4 Method:E160.4 Analyst: KAH							
Total Volatile Solids	4.00	n	0.0100	0.0100	wt%	1	31-Mar-2021 09:00
TOTAL SOLIDS BY SM2540G Method:M2540G Analyst: KAH							
Total Solids	77.5	n	0.0100	0.0100	wt%	1	26-Mar-2021 08:45
REACTIVE CYANIDE Method:SW7.3.3.2 Analyst: KVL							
Reactive Cyanide	U	n	100	100	mg/Kg	1	31-Mar-2021 17:00
REACTIVE SULFIDE Method:SW7.3.4.2 Analyst: KVL							
Reactive Sulfide	U	n	100	100	mg/Kg	1	31-Mar-2021 16:00
PH SOIL BY SW9045D Method:SW9045D Analyst: JAC							
pH	6.69	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	20.9	H	0	0	°C	1	22-Mar-2021 17:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-7 (5-5.5')
 Collection Date: 16-Mar-2021 11:00

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-14
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	6.19	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	12.0	n	5.00	5.00	mg/L	10	01-Apr-2021 14:42
Magnesium	5.45	n	5.00	5.00	mg/L	10	01-Apr-2021 14:42
Sodium	103	n	5.00	5.00	mg/L	10	01-Apr-2021 14:42
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	6,840		5.36	54.1	mg/Kg-dry	1	31-Mar-2021 00:02
Magnesium	3,020		2.71	54.1	mg/Kg-dry	1	31-Mar-2021 00:02
Potassium	1,330		7.27	54.1	mg/Kg-dry	1	31-Mar-2021 00:02
Sodium	746		4.51	54.1	mg/Kg-dry	1	31-Mar-2021 00:02
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	15.1		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	154		11.8	23.6	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	13.6		1.15	2.31	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.731	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	150	n	12	23	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	7.10	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	21.0	H	0	0	°C	1	22-Mar-2021 17:21
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	0.412	J	0.351	1.17	mg/Kg-dry	1	30-Mar-2021 11:38
Nitrogen, Nitrite (As N)	U		0.351	1.17	mg/Kg-dry	1	30-Mar-2021 11:38
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-7 (6.5-7.5')
 Collection Date: 16-Mar-2021 11:00

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-15
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	6.35	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021 Analyst: JHD			
Calcium	15.5	n	5.00	5.00	mg/L	10	01-Apr-2021 14:44
Magnesium	7.04	n	5.00	5.00	mg/L	10	01-Apr-2021 14:44
Sodium	120	n	5.00	5.00	mg/L	10	01-Apr-2021 14:44
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021 Analyst: JC			
Calcium	79,600		113	1140	mg/Kg-dry	20	31-Mar-2021 13:02
Magnesium	8,390		2.85	56.8	mg/Kg-dry	1	31-Mar-2021 00:04
Potassium	3,870		7.63	56.8	mg/Kg-dry	1	31-Mar-2021 00:04
Sodium	729		4.73	56.8	mg/Kg-dry	1	31-Mar-2021 00:04
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	18.8		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	185		12.3	24.6	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 30-Mar-2021 Analyst: MZD			
Phosphorus, Total (As P)	117		11.6	23.2	mg/Kg-dry	10	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.690	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021 Analyst: YP			
Nitrogen, Total Kjeldahl	190	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	8.57	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.4	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 29-Mar-2021 Analyst: YP			
Nitrogen, Nitrate (As N)	0.458	J	0.367	1.22	mg/Kg-dry	1	30-Mar-2021 11:56
Nitrogen, Nitrite (As N)	U		0.367	1.22	mg/Kg-dry	1	30-Mar-2021 11:56
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-7 (8.5-9.5')
 Collection Date: 16-Mar-2021 11:00

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-16
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	5.98	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	24.6	n	5.00	5.00	mg/L	10	01-Apr-2021 14:46
Magnesium	13.3	n	5.00	5.00	mg/L	10	01-Apr-2021 14:46
Sodium	148	n	5.00	5.00	mg/L	10	01-Apr-2021 14:46
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	86,500		115	1160	mg/Kg-dry	20	31-Mar-2021 13:04
Magnesium	11,400		2.91	57.9	mg/Kg-dry	1	31-Mar-2021 00:06
Potassium	5,220		7.79	57.9	mg/Kg-dry	1	31-Mar-2021 00:06
Sodium	797		4.83	57.9	mg/Kg-dry	1	31-Mar-2021 00:06
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	19.0		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	198		12.3	24.7	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 30-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	27.9		1.08	2.16	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.739	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	190	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	8.44	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.4	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	0.407	J	0.367	1.22	mg/Kg-dry	1	30-Mar-2021 12:15
Nitrogen, Nitrite (As N)	U		0.367	1.22	mg/Kg-dry	1	30-Mar-2021 12:15
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-7 (Organic)
 Collection Date: 16-Mar-2021 10:55

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-17
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES							
	Method:SW8260		Leache:SW1311 / 25-Mar-2021		Prep:SW1311 / 25-Mar-2021		Analyst: PC
1,1-Dichloroethene	U		10	100	ug/L	20	25-Mar-2021 19:58
1,2-Dichloroethane	U		10	100	ug/L	20	25-Mar-2021 19:58
1,4-Dichlorobenzene	U		12	100	ug/L	20	25-Mar-2021 19:58
2-Butanone	U		20	200	ug/L	20	25-Mar-2021 19:58
Benzene	U		12	100	ug/L	20	25-Mar-2021 19:58
Carbon tetrachloride	U		12	100	ug/L	20	25-Mar-2021 19:58
Chlorobenzene	U		8.0	100	ug/L	20	25-Mar-2021 19:58
Chloroform	U		12	100	ug/L	20	25-Mar-2021 19:58
Tetrachloroethene	U		12	100	ug/L	20	25-Mar-2021 19:58
Trichloroethene	U		10	100	ug/L	20	25-Mar-2021 19:58
Vinyl chloride	U		8.0	40	ug/L	20	25-Mar-2021 19:58
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>113</i>			<i>70-126</i>	<i>%REC</i>	<i>20</i>	<i>25-Mar-2021 19:58</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>102</i>			<i>82-124</i>	<i>%REC</i>	<i>20</i>	<i>25-Mar-2021 19:58</i>
<i>Surr: Dibromofluoromethane</i>	<i>103</i>			<i>77-123</i>	<i>%REC</i>	<i>20</i>	<i>25-Mar-2021 19:58</i>
<i>Surr: Toluene-d8</i>	<i>103</i>			<i>82-127</i>	<i>%REC</i>	<i>20</i>	<i>25-Mar-2021 19:58</i>
TCLP SEMIVOLATILES							
	Method:SW1311/8270		Leache:SW1311 / 25-Mar-2021		Prep:SW3510 / 25-Mar-2021		Analyst: GEY
2,4,5-Trichlorophenol	U		0.90	5.0	ug/L	1	26-Mar-2021 15:49
2,4,6-Trichlorophenol	U		1.4	5.0	ug/L	1	26-Mar-2021 15:49
2,4-Dinitrotoluene	U		1.0	5.0	ug/L	1	26-Mar-2021 15:49
Cresols, Total	U		2.0	15	ug/L	1	26-Mar-2021 15:49
Hexachlorobenzene	U		1.1	5.0	ug/L	1	26-Mar-2021 15:49
Hexachlorobutadiene	U		1.1	5.0	ug/L	1	26-Mar-2021 15:49
Hexachloroethane	U		1.0	5.0	ug/L	1	26-Mar-2021 15:49
Nitrobenzene	U		0.80	5.0	ug/L	1	26-Mar-2021 15:49
Pentachlorophenol	U		1.6	5.0	ug/L	1	26-Mar-2021 15:49
Pyridine	U		2.0	5.0	ug/L	1	26-Mar-2021 15:49
<i>Surr: 2,4,6-Tribromophenol</i>	<i>89.1</i>			<i>39-153</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>64.2</i>			<i>40-147</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
<i>Surr: 2-Fluorophenol</i>	<i>52.6</i>			<i>21-110</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>94.8</i>			<i>39-141</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
<i>Surr: Nitrobenzene-d5</i>	<i>69.5</i>			<i>37-140</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
<i>Surr: Phenol-d6</i>	<i>66.6</i>			<i>11-110</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 15:49</i>
TEXAS TPH BY TX1005							
	Method:TX1005				Prep:TX1005PR / 26-Mar-2021		Analyst: SAM
nC6 to nC12	U		10	68	mg/Kg-dry	1	26-Mar-2021 18:43
>nC12 to nC28	U		13	68	mg/Kg-dry	1	26-Mar-2021 18:43
>nC28 to nC35	U		13	68	mg/Kg-dry	1	26-Mar-2021 18:43
Total Petroleum Hydrocarbon	U		10	68	mg/Kg-dry	1	26-Mar-2021 18:43
<i>Surr: 2-Fluorobiphenyl</i>	<i>100</i>			<i>70-130</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 18:43</i>
<i>Surr: Trifluoromethyl benzene</i>	<i>99.8</i>			<i>70-130</i>	<i>%REC</i>	<i>1</i>	<i>26-Mar-2021 18:43</i>

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-7 (Organic)
 Collection Date: 16-Mar-2021 10:55

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-17
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A Method:SW1311/6020 Leache:SW1311 / 25-Mar-2021 Prep:SW3010A / 30-Mar-2021 Analyst: JHD							
Arsenic	U		0.00400	0.0500	mg/L	1	31-Mar-2021 00:01
Barium	0.579		0.0190	0.200	mg/L	1	31-Mar-2021 00:01
Cadmium	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:01
Chromium	U		0.00400	0.0500	mg/L	1	31-Mar-2021 00:01
Lead	U		0.00600	0.0500	mg/L	1	31-Mar-2021 00:01
Selenium	U		0.0110	0.0500	mg/L	1	31-Mar-2021 00:01
Silver	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:01
MOISTURE - ASTM D2216 Method:ASTM D2216 Analyst: JAC							
Percent Moisture	23.6		0.0100	0.0100	wt%	1	30-Mar-2021 11:32
FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B Method:ASTM D92-12b Analyst: TH							
Flash Point	> 212	n	50.0	50.0	°F	1	20-Mar-2021 10:00
TOTAL VOLATILE SOLIDS BY E160.4 Method:E160.4 Analyst: KAH							
Total Volatile Solids	4.09	n	0.0100	0.0100	wt%	1	31-Mar-2021 09:00
TOTAL SOLIDS BY SM2540G Method:M2540G Analyst: KAH							
Total Solids	75.1	n	0.0100	0.0100	wt%	1	26-Mar-2021 08:45
REACTIVE CYANIDE Method:SW7.3.3.2 Analyst: KVL							
Reactive Cyanide	U	n	100	100	mg/Kg	1	31-Mar-2021 17:00
REACTIVE SULFIDE Method:SW7.3.4.2 Analyst: KVL							
Reactive Sulfide	U	n	100	100	mg/Kg	1	31-Mar-2021 16:00
PH SOIL BY SW9045D Method:SW9045D Analyst: JAC							
pH	6.65	H	0.100	0.100	pH Units	1	22-Mar-2021 17:21
Temp Deg C @pH	21.1	H	0	0	°C	1	22-Mar-2021 17:21

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-6 (5-5.5)
 Collection Date: 16-Mar-2021 11:35

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-18
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	4.97	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	26.6	n	5.00	5.00	mg/L	10	01-Apr-2021 14:48
Magnesium	8.07	n	5.00	5.00	mg/L	10	01-Apr-2021 14:48
Sodium	114	n	5.00	5.00	mg/L	10	01-Apr-2021 14:48
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	86,600		110	1110	mg/Kg-dry	20	31-Mar-2021 13:12
Magnesium	5,830		2.78	55.4	mg/Kg-dry	1	31-Mar-2021 00:12
Potassium	2,690		7.45	55.4	mg/Kg-dry	1	31-Mar-2021 00:12
Sodium	445		4.62	55.4	mg/Kg-dry	1	31-Mar-2021 00:12
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	16.3		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	240		11.9	23.9	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	8.52		1.17	2.33	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.773	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	240	n	11	23	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	8.23	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.3	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	1.31		0.356	1.19	mg/Kg-dry	1	30-Mar-2021 12:33
Nitrogen, Nitrite (As N)	U		0.356	1.19	mg/Kg-dry	1	30-Mar-2021 12:33
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-6 (6.5-7.5)
 Collection Date: 16-Mar-2021 11:35

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-19
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	4.57	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	36.5	n	5.00	5.00	mg/L	10	01-Apr-2021 14:50
Magnesium	11.2	n	5.00	5.00	mg/L	10	01-Apr-2021 14:50
Sodium	123	n	5.00	5.00	mg/L	10	01-Apr-2021 14:50
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021		Analyst: JC	
Calcium	262,000		580	5840	mg/Kg-dry	100	31-Mar-2021 13:14
Magnesium	5,420		2.93	58.4	mg/Kg-dry	1	31-Mar-2021 00:14
Potassium	2,800		7.85	58.4	mg/Kg-dry	1	31-Mar-2021 00:14
Sodium	352		4.87	58.4	mg/Kg-dry	1	31-Mar-2021 00:14
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	18.3		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	258		12.2	24.5	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 30-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	36.9		1.05	2.09	mg/Kg-dry	1	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.895	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	260	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	8.16	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.1	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 29-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	1.43		0.365	1.22	mg/Kg-dry	1	30-Mar-2021 13:28
Nitrogen, Nitrite (As N)	U		0.365	1.22	mg/Kg-dry	1	30-Mar-2021 13:28
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-6 (8.5-9.5)
 Collection Date: 16-Mar-2021 11:35

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-20
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	4.59	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	29.6	n	5.00	5.00	mg/L	10	01-Apr-2021 14:58
Magnesium	8.95	n	5.00	5.00	mg/L	10	01-Apr-2021 14:58
Sodium	111	n	5.00	5.00	mg/L	10	01-Apr-2021 14:58
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021		Analyst: JC	
Calcium	95,200		114	1150	mg/Kg-dry	20	31-Mar-2021 13:16
Magnesium	8,700		2.90	57.7	mg/Kg-dry	1	31-Mar-2021 00:16
Potassium	4,830		7.75	57.7	mg/Kg-dry	1	31-Mar-2021 00:16
Sodium	574		4.81	57.7	mg/Kg-dry	1	31-Mar-2021 00:16
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	19.1		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	120		12.4	24.7	mg/Kg-dry	1	01-Apr-2021 15:15
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 30-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	80.6		9.54	19.1	mg/Kg-dry	10	30-Mar-2021 16:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.808	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	120	n	12	24	mg/Kg-dry	1	31-Mar-2021 13:58
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	8.19	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.1	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 29-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	0.521	J	0.370	1.23	mg/Kg-dry	1	30-Mar-2021 13:47
Nitrogen, Nitrite (As N)	U		0.370	1.23	mg/Kg-dry	1	30-Mar-2021 13:47
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-6 (Organic)
 Collection Date: 16-Mar-2021 11:30

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-21
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES		Method:SW8260		Leache:SW1311 / 25-Mar-2021	Prep:SW1311 / 25-Mar-2021	Analyst: PC	
1,1-Dichloroethene	U		10	100	ug/L	20	25-Mar-2021 20:19
1,2-Dichloroethane	U		10	100	ug/L	20	25-Mar-2021 20:19
1,4-Dichlorobenzene	U		12	100	ug/L	20	25-Mar-2021 20:19
2-Butanone	U		20	200	ug/L	20	25-Mar-2021 20:19
Benzene	U		12	100	ug/L	20	25-Mar-2021 20:19
Carbon tetrachloride	U		12	100	ug/L	20	25-Mar-2021 20:19
Chlorobenzene	U		8.0	100	ug/L	20	25-Mar-2021 20:19
Chloroform	U		12	100	ug/L	20	25-Mar-2021 20:19
Tetrachloroethene	U		12	100	ug/L	20	25-Mar-2021 20:19
Trichloroethene	U		10	100	ug/L	20	25-Mar-2021 20:19
Vinyl chloride	U		8.0	40	ug/L	20	25-Mar-2021 20:19
Surr: 1,2-Dichloroethane-d4	114			70-126	%REC	20	25-Mar-2021 20:19
Surr: 4-Bromofluorobenzene	99.7			82-124	%REC	20	25-Mar-2021 20:19
Surr: Dibromofluoromethane	105			77-123	%REC	20	25-Mar-2021 20:19
Surr: Toluene-d8	101			82-127	%REC	20	25-Mar-2021 20:19
TCLP SEMIVOLATILES		Method:SW1311/8270		Leache:SW1311 / 25-Mar-2021	Prep:SW3510 / 25-Mar-2021	Analyst: GEY	
2,4,5-Trichlorophenol	U		0.90	5.0	ug/L	1	26-Mar-2021 16:10
2,4,6-Trichlorophenol	U		1.4	5.0	ug/L	1	26-Mar-2021 16:10
2,4-Dinitrotoluene	U		1.0	5.0	ug/L	1	26-Mar-2021 16:10
Cresols, Total	U		2.0	15	ug/L	1	26-Mar-2021 16:10
Hexachlorobenzene	U		1.1	5.0	ug/L	1	26-Mar-2021 16:10
Hexachlorobutadiene	U		1.1	5.0	ug/L	1	26-Mar-2021 16:10
Hexachloroethane	U		1.0	5.0	ug/L	1	26-Mar-2021 16:10
Nitrobenzene	U		0.80	5.0	ug/L	1	26-Mar-2021 16:10
Pentachlorophenol	U		1.6	5.0	ug/L	1	26-Mar-2021 16:10
Pyridine	U		2.0	5.0	ug/L	1	26-Mar-2021 16:10
Surr: 2,4,6-Tribromophenol	76.3			39-153	%REC	1	26-Mar-2021 16:10
Surr: 2-Fluorobiphenyl	81.0			40-147	%REC	1	26-Mar-2021 16:10
Surr: 2-Fluorophenol	61.5			21-110	%REC	1	26-Mar-2021 16:10
Surr: 4-Terphenyl-d14	97.1			39-141	%REC	1	26-Mar-2021 16:10
Surr: Nitrobenzene-d5	80.7			37-140	%REC	1	26-Mar-2021 16:10
Surr: Phenol-d6	68.3			11-110	%REC	1	26-Mar-2021 16:10
TEXAS TPH BY TX1005		Method:TX1005			Prep:TX1005PR / 26-Mar-2021	Analyst: SAM	
nC6 to nC12	U		9.1	61	mg/Kg-dry	1	26-Mar-2021 19:12
>nC12 to nC28	U		12	61	mg/Kg-dry	1	26-Mar-2021 19:12
>nC28 to nC35	U		12	61	mg/Kg-dry	1	26-Mar-2021 19:12
Total Petroleum Hydrocarbon	U		9.1	61	mg/Kg-dry	1	26-Mar-2021 19:12
Surr: 2-Fluorobiphenyl	99.8			70-130	%REC	1	26-Mar-2021 19:12
Surr: Trifluoromethyl benzene	98.7			70-130	%REC	1	26-Mar-2021 19:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-6 (Organic)
 Collection Date: 16-Mar-2021 11:30

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-21
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A							
	Method:SW1311/6020		Leache:SW1311 / 25-Mar-2021		Prep:SW3010A / 30-Mar-2021		Analyst: JHD
Arsenic	0.0112	J	0.00400	0.0500	mg/L	1	31-Mar-2021 00:03
Barium	0.953		0.0190	0.200	mg/L	1	31-Mar-2021 00:03
Cadmium	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:03
Chromium	0.132		0.00400	0.0500	mg/L	1	31-Mar-2021 00:03
Lead	0.0440	J	0.00600	0.0500	mg/L	1	31-Mar-2021 00:03
Selenium	U		0.0110	0.0500	mg/L	1	31-Mar-2021 00:03
Silver	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:03
MOISTURE - ASTM D2216							
	Method:ASTM D2216		Analyst: JAC				
Percent Moisture	18.0		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B							
	Method:ASTM D92-12b		Analyst: TH				
Flash Point	> 212	n	50.0	50.0	°F	1	20-Mar-2021 10:00
TOTAL VOLATILE SOLIDS BY E160.4							
	Method:E160.4		Analyst: KAH				
Total Volatile Solids	3.09	n	0.0100	0.0100	wt%	1	31-Mar-2021 09:00
TOTAL SOLIDS BY SM2540G							
	Method:M2540G		Analyst: KAH				
Total Solids	82.0	n	0.0100	0.0100	wt%	1	26-Mar-2021 08:45
REACTIVE CYANIDE							
	Method:SW7.3.3.2		Analyst: KVL				
Reactive Cyanide	U	n	100	100	mg/Kg	1	31-Mar-2021 17:00
REACTIVE SULFIDE							
	Method:SW7.3.4.2		Analyst: KVL				
Reactive Sulfide	U	n	100	100	mg/Kg	1	31-Mar-2021 16:00
PH SOIL BY SW9045D							
	Method:SW9045D		Analyst: JAC				
pH	8.03	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.3	H	0	0	°C	1	31-Mar-2021 13:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-5 (5-5.5')
 Collection Date: 16-Mar-2021 13:47

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-22
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	3.57	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	97.0	n	5.00	5.00	mg/L	10	01-Apr-2021 15:06
Magnesium	21.1	n	5.00	5.00	mg/L	10	01-Apr-2021 15:06
Sodium	149	n	5.00	5.00	mg/L	10	01-Apr-2021 15:06
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	6,800		5.46	55.1	mg/Kg-dry	1	31-Mar-2021 00:18
Magnesium	2,330		2.76	55.1	mg/Kg-dry	1	31-Mar-2021 00:18
Potassium	1,090		7.40	55.1	mg/Kg-dry	1	31-Mar-2021 00:18
Sodium	786		4.59	55.1	mg/Kg-dry	1	31-Mar-2021 00:18
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	14.1		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	61.7		11.6	23.3	mg/Kg-dry	1	01-Apr-2021 16:09
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	8.97		1.14	2.27	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Electrical Conductivity, 1:1 aqueous	0.650	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 15:30
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 15:30
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	62	n	11	23	mg/Kg-dry	1	01-Apr-2021 13:01
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	8.65	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.4	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.347	1.16	mg/Kg-dry	1	30-Mar-2021 14:05
Nitrogen, Nitrite (As N)	U		0.347	1.16	mg/Kg-dry	1	30-Mar-2021 14:05
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-5 (6.5-7.5')
 Collection Date: 16-Mar-2021 13:47

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-23
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR					Analyst: JHD
Sodium Adsorption Ratio	4.05	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020				Prep:La29B-6020 / 31-Mar-2021	Analyst: JHD
Calcium	88.4	n	5.00	5.00	mg/L	10	01-Apr-2021 15:10
Magnesium	19.9	n	5.00	5.00	mg/L	10	01-Apr-2021 15:10
Sodium	162	n	5.00	5.00	mg/L	10	01-Apr-2021 15:10
METALS BY SW6020A		Method:SW6020				Prep:SW3050B / 29-Mar-2021	Analyst: JC
Calcium	4,370		5.33	53.7	mg/Kg-dry	1	31-Mar-2021 00:20
Magnesium	2,830		2.70	53.7	mg/Kg-dry	1	31-Mar-2021 00:20
Potassium	1,330		7.22	53.7	mg/Kg-dry	1	31-Mar-2021 00:20
Sodium	862		4.48	53.7	mg/Kg-dry	1	31-Mar-2021 00:20
MOISTURE - ASTM D2216		Method:ASTM D2216					Analyst: JAC
Percent Moisture	13.7		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation					Analyst: YP
Nitrogen, Total	61.4		11.6	23.2	mg/Kg-dry	1	01-Apr-2021 16:09
PHOSPHORUS BY E365.3		Method:E365.3				Prep:E365.3 / 31-Mar-2021	Analyst: MZD
Phosphorus, Total (As P)	6.62		0.888	1.78	mg/Kg-dry	1	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC					Analyst: MZD
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 16:06
Electrical Conductivity, 1:1 aqueous	0.424	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 16:06
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 16:06
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D				Prep:M4500-NH3 B / 29-Mar-2021	Analyst: YP
Nitrogen, Total Kjeldahl	62	n	11	22	mg/Kg-dry	1	01-Apr-2021 13:01
PH SOIL BY SW9045D		Method:SW9045D					Analyst: JAC
pH	8.30	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.5	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056				Prep:SW9056 / 29-Mar-2021	Analyst: YP
Nitrogen, Nitrate (As N)	U		0.347	1.16	mg/Kg-dry	1	30-Mar-2021 14:24
Nitrogen, Nitrite (As N)	U		0.347	1.16	mg/Kg-dry	1	30-Mar-2021 14:24
SUBCONTRACT ANALYSIS - SULFUR		Method:NA					Analyst: SUBFC
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-5 (8.5-9.5')
 Collection Date: 16-Mar-2021 13:47

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-24
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
LA29B SODIUM ADSORPTION RATIO		Method:La29B SAR		Analyst: JHD			
Sodium Adsorption Ratio	5.40	n	0.0100	0.0100	meq/meq	1	01-Apr-2021 15:58
LA 29B - 1:1 SOLUBLE CATIONS FOR SAR		Method:La29B-6020		Prep:La29B-6020 / 31-Mar-2021		Analyst: JHD	
Calcium	33.5	n	5.00	5.00	mg/L	10	01-Apr-2021 15:11
Magnesium	12.8	n	5.00	5.00	mg/L	10	01-Apr-2021 15:11
Sodium	145	n	5.00	5.00	mg/L	10	01-Apr-2021 15:11
METALS BY SW6020A		Method:SW6020		Prep:SW3050B / 29-Mar-2021		Analyst: JC	
Calcium	5,850		5.68	57.3	mg/Kg-dry	1	31-Mar-2021 00:22
Magnesium	4,630		2.88	57.3	mg/Kg-dry	1	31-Mar-2021 00:22
Potassium	2,580		7.70	57.3	mg/Kg-dry	1	31-Mar-2021 00:22
Sodium	942		4.78	57.3	mg/Kg-dry	1	31-Mar-2021 00:22
MOISTURE - ASTM D2216		Method:ASTM D2216		Analyst: JAC			
Percent Moisture	19.8		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
TOTAL NITROGEN		Method:Calculation		Analyst: YP			
Nitrogen, Total	127		12.5	24.9	mg/Kg-dry	1	01-Apr-2021 16:09
PHOSPHORUS BY E365.3		Method:E365.3		Prep:E365.3 / 31-Mar-2021		Analyst: MZD	
Phosphorus, Total (As P)	93.8		9.87	19.7	mg/Kg-dry	10	31-Mar-2021 12:50
LA29B ELECTRICAL CONDUCTIVITY		Method:LaDNR-29B EC		Analyst: MZD			
Electrical Conductivity @ saturation	U	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 16:06
Electrical Conductivity, 1:1 aqueous	0.837	n	0.0100	0.0100	mmhos/cm @25°C	1	01-Apr-2021 16:06
Saturation % as decimal	0	n	0	0	mmhos/cm @25°C	1	01-Apr-2021 16:06
TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D		Method:M4500 NH3 D		Prep:M4500-NH3 B / 29-Mar-2021		Analyst: YP	
Nitrogen, Total Kjeldahl	130	n	12	24	mg/Kg-dry	1	01-Apr-2021 13:01
PH SOIL BY SW9045D		Method:SW9045D		Analyst: JAC			
pH	8.50	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.5	H	0	0	°C	1	31-Mar-2021 13:25
ANIONS BY SW9056A		Method:SW9056		Prep:SW9056 / 29-Mar-2021		Analyst: YP	
Nitrogen, Nitrate (As N)	2.25		0.373	1.24	mg/Kg-dry	1	30-Mar-2021 14:42
Nitrogen, Nitrite (As N)	U		0.373	1.24	mg/Kg-dry	1	30-Mar-2021 14:42
SUBCONTRACT ANALYSIS - SULFUR		Method:NA		Analyst: SUBFC			
Subcontract Analysis	See Attached		0		NA-dry	1	31-Mar-2021 13:23

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-5 (Organic)
 Collection Date: 16-Mar-2021 13:42

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-25
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP VOLATILES		Method:SW8260		Leache:SW1311 / 25-Mar-2021	Prep:SW1311 / 25-Mar-2021	Analyst: PC	
1,1-Dichloroethene	U		10	100	ug/L	20	25-Mar-2021 20:40
1,2-Dichloroethane	U		10	100	ug/L	20	25-Mar-2021 20:40
1,4-Dichlorobenzene	U		12	100	ug/L	20	25-Mar-2021 20:40
2-Butanone	U		20	200	ug/L	20	25-Mar-2021 20:40
Benzene	U		12	100	ug/L	20	25-Mar-2021 20:40
Carbon tetrachloride	U		12	100	ug/L	20	25-Mar-2021 20:40
Chlorobenzene	U		8.0	100	ug/L	20	25-Mar-2021 20:40
Chloroform	U		12	100	ug/L	20	25-Mar-2021 20:40
Tetrachloroethene	U		12	100	ug/L	20	25-Mar-2021 20:40
Trichloroethene	U		10	100	ug/L	20	25-Mar-2021 20:40
Vinyl chloride	U		8.0	40	ug/L	20	25-Mar-2021 20:40
Surr: 1,2-Dichloroethane-d4	116			70-126	%REC	20	25-Mar-2021 20:40
Surr: 4-Bromofluorobenzene	102			82-124	%REC	20	25-Mar-2021 20:40
Surr: Dibromofluoromethane	107			77-123	%REC	20	25-Mar-2021 20:40
Surr: Toluene-d8	103			82-127	%REC	20	25-Mar-2021 20:40
TCLP SEMIVOLATILES		Method:SW1311/8270		Leache:SW1311 / 25-Mar-2021	Prep:SW3510 / 25-Mar-2021	Analyst: GEY	
2,4,5-Trichlorophenol	U		0.90	5.0	ug/L	1	26-Mar-2021 16:32
2,4,6-Trichlorophenol	U		1.4	5.0	ug/L	1	26-Mar-2021 16:32
2,4-Dinitrotoluene	U		1.0	5.0	ug/L	1	26-Mar-2021 16:32
Cresols, Total	U		2.0	15	ug/L	1	26-Mar-2021 16:32
Hexachlorobenzene	U		1.1	5.0	ug/L	1	26-Mar-2021 16:32
Hexachlorobutadiene	U		1.1	5.0	ug/L	1	26-Mar-2021 16:32
Hexachloroethane	U		1.0	5.0	ug/L	1	26-Mar-2021 16:32
Nitrobenzene	U		0.80	5.0	ug/L	1	26-Mar-2021 16:32
Pentachlorophenol	U		1.6	5.0	ug/L	1	26-Mar-2021 16:32
Pyridine	U		2.0	5.0	ug/L	1	26-Mar-2021 16:32
Surr: 2,4,6-Tribromophenol	94.1			39-153	%REC	1	26-Mar-2021 16:32
Surr: 2-Fluorobiphenyl	74.2			40-147	%REC	1	26-Mar-2021 16:32
Surr: 2-Fluorophenol	60.1			21-110	%REC	1	26-Mar-2021 16:32
Surr: 4-Terphenyl-d14	104			39-141	%REC	1	26-Mar-2021 16:32
Surr: Nitrobenzene-d5	81.5			37-140	%REC	1	26-Mar-2021 16:32
Surr: Phenol-d6	72.4			11-110	%REC	1	26-Mar-2021 16:32
TEXAS TPH BY TX1005		Method:TX1005			Prep:TX1005PR / 26-Mar-2021	Analyst: SAM	
nC6 to nC12	U		11	76	mg/Kg-dry	1	26-Mar-2021 19:42
>nC12 to nC28	U		15	76	mg/Kg-dry	1	26-Mar-2021 19:42
>nC28 to nC35	U		15	76	mg/Kg-dry	1	26-Mar-2021 19:42
Total Petroleum Hydrocarbon	U		11	76	mg/Kg-dry	1	26-Mar-2021 19:42
Surr: 2-Fluorobiphenyl	113			70-130	%REC	1	26-Mar-2021 19:42
Surr: Trifluoromethyl benzene	115			70-130	%REC	1	26-Mar-2021 19:42

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tolunay-Wong Engineers, Inc.
 Project: B & C Frito Lay Rosenberg
 Sample ID: SB-5 (Organic)
 Collection Date: 16-Mar-2021 13:42

ANALYTICAL REPORT

WorkOrder:HS21030940
 Lab ID:HS21030940-25
 Matrix:Solid

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
TCLP METALS BY SW6020A							
	Method:SW1311/6020		Leache:SW1311 / 25-Mar-2021		Prep:SW3010A / 30-Mar-2021		Analyst: JHD
Arsenic	U		0.00400	0.0500	mg/L	1	31-Mar-2021 00:05
Barium	0.386		0.0190	0.200	mg/L	1	31-Mar-2021 00:05
Cadmium	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:05
Chromium	U		0.00400	0.0500	mg/L	1	31-Mar-2021 00:05
Lead	0.00759	J	0.00600	0.0500	mg/L	1	31-Mar-2021 00:05
Selenium	U		0.0110	0.0500	mg/L	1	31-Mar-2021 00:05
Silver	U		0.00200	0.0500	mg/L	1	31-Mar-2021 00:05
MOISTURE - ASTM D2216							
	Method:ASTM D2216		Analyst: JAC				
Percent Moisture	19.7		0.0100	0.0100	wt%	1	30-Mar-2021 11:34
FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B							
	Method:ASTM D92-12b		Analyst: TH				
Flash Point	> 212	n	50.0	50.0	°F	1	20-Mar-2021 10:00
TOTAL VOLATILE SOLIDS BY E160.4							
	Method:E160.4		Analyst: KAH				
Total Volatile Solids	3.75	n	0.0100	0.0100	wt%	1	31-Mar-2021 09:00
TOTAL SOLIDS BY SM2540G							
	Method:M2540G		Analyst: KAH				
Total Solids	80.7	n	0.0100	0.0100	wt%	1	26-Mar-2021 08:45
REACTIVE CYANIDE							
	Method:SW7.3.3.2		Analyst: KVL				
Reactive Cyanide	U	n	100	100	mg/Kg	1	31-Mar-2021 17:00
REACTIVE SULFIDE							
	Method:SW7.3.4.2		Analyst: KVL				
Reactive Sulfide	U	n	100	100	mg/Kg	1	31-Mar-2021 16:00
PH SOIL BY SW9045D							
	Method:SW9045D		Analyst: JAC				
pH	8.16	H	0.100	0.100	pH Units	1	31-Mar-2021 13:25
Temp Deg C @pH	21.1	H	0	0	°C	1	31-Mar-2021 13:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Tolunay-Wong Engineers, Inc.

Project: B & C Frito Lay Rosenberg

WorkOrder: HS21030940

Batch ID: 163657	Start Date: 19 Mar 2021 10:35	End Date: 19 Mar 2021 18:00
Method: 9056 ANIONS SOIL PREP	Prep Code: 9056_S_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-01		5.0931 (g)	50 (mL)	9.817	8-oz glass, Neat
HS21030940-02		5.0715 (g)	50 (mL)	9.859	8-oz glass, Neat
HS21030940-03		5.0818 (g)	50 (mL)	9.839	8-oz glass, Neat
HS21030940-04		5.0865 (g)	50 (mL)	9.83	8-oz glass, Neat
HS21030940-05		5.0917 (g)	50 (mL)	9.82	8-oz glass, Neat
HS21030940-06		5.0962 (g)	50 (mL)	9.811	8-oz glass, Neat
HS21030940-07		5.0092 (g)	50 (mL)	9.982	8-oz glass, Neat
HS21030940-08		5.0831 (g)	50 (mL)	9.837	8-oz glass, Neat

Batch ID: 163834	Start Date: 24 Mar 2021 17:00	End Date: 25 Mar 2021 10:00
Method: TCLP METALS EXTRACTION BY SW1311	Prep Code: 1311LM EXT	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13		150 (grams)	3000 (mL)	20	8-oz glass, Neat
HS21030940-17		100 (grams)	2000 (mL)	20	8-oz glass, Neat
HS21030940-21		100 (grams)	2000 (mL)	20	8-oz glass, Neat
HS21030940-25		100 (grams)	2000 (mL)	20	8-oz glass, Neat

Batch ID: 163837	Start Date: 24 Mar 2021 17:00	End Date: 25 Mar 2021 10:00
Method: TCLP ZHE (VOL EXTRACTION)	Prep Code: 1311ZHE	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13		25 (g)	500 (mL)	20	8-oz glass, Neat
HS21030940-17		25 (g)	500 (mL)	20	8-oz glass, Neat
HS21030940-21		25 (g)	500 (mL)	20	8-oz glass, Neat
HS21030940-25		25 (g)	500 (mL)	20	8-oz glass, Neat

Batch ID: 163838	Start Date: 24 Mar 2021 17:00	End Date: 25 Mar 2021 10:00
Method: TCLP SAMPLE EXTRACTION SEMI	Prep Code: 1311LO_SV	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13		150 (grams)	3000 (mL)	20	8-oz glass, Neat
HS21030940-17		100 (grams)	2000 (mL)	20	8-oz glass, Neat
HS21030940-21		100 (grams)	2000 (mL)	20	8-oz glass, Neat
HS21030940-25		100 (grams)	2000 (mL)	20	8-oz glass, Neat

Batch ID: 163849	Start Date: 25 Mar 2021 12:17	End Date: 25 Mar 2021 15:30
Method: SV AQ SEP FUNNEL EXTRACTION - SW3510C	Prep Code: 3510_B	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13	1	1000 (mL)	1 (mL)	0.001	8-oz glass, Neat
HS21030940-17	1	1000 (mL)	1 (mL)	0.001	8-oz glass, Neat
HS21030940-21	1	1000 (mL)	1 (mL)	0.001	8-oz glass, Neat
HS21030940-25	1	1000 (mL)	1 (mL)	0.001	8-oz glass, Neat

Weight / Prep Log

Client: Tolunay-Wong Engineers, Inc.

Project: B & C Frito Lay Rosenberg

WorkOrder: HS21030940

Batch ID: 163919	Start Date: 26 Mar 2021 13:06	End Date: 26 Mar 2021 14:18
Method: TX 1005 PREP		Prep Code: TX 1005_S PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13	1	12.48 (g)	10 (mL)	0.8013	2 Tared Vials+Plunger
HS21030940-17	1	12.73 (g)	10 (mL)	0.7855	2 Tared Vials+Plunger
HS21030940-21	1	12.11 (g)	10 (mL)	0.8258	2 Tared Vials+Plunger
HS21030940-25	1	10.11 (g)	10 (mL)	0.9891	2 Tared Vials+Plunger

Batch ID: 163951	Start Date: 30 Mar 2021 07:35	End Date: 30 Mar 2021 13:35
Method: METALS PREP - SOLIDS - SW3050B		Prep Code: 3050_I_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-01		0.533 (g)	50 (mL)	93.81	8-oz glass, Neat
HS21030940-02		0.5191 (g)	50 (mL)	96.32	8-oz glass, Neat
HS21030940-03		0.5374 (g)	50 (mL)	93.04	8-oz glass, Neat
HS21030940-04		0.5314 (g)	50 (mL)	94.09	8-oz glass, Neat

Batch ID: 163952	Start Date: 30 Mar 2021 07:35	End Date: 30 Mar 2021 13:35
Method: METALS PREP - SOLIDS - SW3050B		Prep Code: 3050_I_LOW

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-05		0.5166 (g)	50 (mL)	96.79	8-oz glass, Neat
HS21030940-06		0.5444 (g)	50 (mL)	91.84	8-oz glass, Neat
HS21030940-07		0.532 (g)	50 (mL)	93.98	8-oz glass, Neat
HS21030940-08		0.5408 (g)	50 (mL)	92.46	8-oz glass, Neat
HS21030940-09		0.5455 (g)	50 (mL)	91.66	8-oz glass, Neat
HS21030940-10		0.5212 (g)	50 (mL)	95.93	8-oz glass, Neat
HS21030940-11		0.5366 (g)	50 (mL)	93.18	8-oz glass, Neat
HS21030940-12		0.5217 (g)	50 (mL)	95.84	8-oz glass, Neat
HS21030940-14		0.5446 (g)	50 (mL)	91.81	8-oz glass, Neat
HS21030940-15		0.5424 (g)	50 (mL)	92.18	8-oz glass, Neat
HS21030940-16		0.5327 (g)	50 (mL)	93.86	8-oz glass, Neat
HS21030940-18		0.5391 (g)	50 (mL)	92.75	8-oz glass, Neat
HS21030940-19		0.5236 (g)	50 (mL)	95.49	8-oz glass, Neat
HS21030940-20		0.5357 (g)	50 (mL)	93.34	8-oz glass, Neat
HS21030940-22		0.5285 (g)	50 (mL)	94.61	8-oz glass, Neat
HS21030940-23		0.5393 (g)	50 (mL)	92.71	8-oz glass, Neat
HS21030940-24		0.5442 (g)	50 (mL)	91.88	8-oz glass, Neat

Weight / Prep Log

Client: Tolunay-Wong Engineers, Inc.

Project: B & C Frito Lay Rosenberg

WorkOrder: HS21030940

Batch ID: 163963	Start Date: 29 Mar 2021 12:22	End Date: 29 Mar 2021 15:00
Method: TKN SOIL - PREP	Prep Code: TKN_S_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-01		1.0104 (g)	50 (mL)	49.49	8-oz glass, Neat
HS21030940-02		1.0349 (g)	50 (mL)	48.31	8-oz glass, Neat
HS21030940-03		1.04 (g)	50 (mL)	48.08	8-oz glass, Neat
HS21030940-04		1.0267 (g)	50 (mL)	48.7	8-oz glass, Neat
HS21030940-05		1.0293 (g)	50 (mL)	48.58	8-oz glass, Neat
HS21030940-06		1.0793 (g)	50 (mL)	46.33	8-oz glass, Neat
HS21030940-07		1.0342 (g)	50 (mL)	48.35	8-oz glass, Neat
HS21030940-08		1.0202 (g)	50 (mL)	49.01	8-oz glass, Neat
HS21030940-09		1.037 (g)	50 (mL)	48.22	8-oz glass, Neat
HS21030940-10		1.0163 (g)	50 (mL)	49.2	8-oz glass, Neat
HS21030940-11		1.016 (g)	50 (mL)	49.21	8-oz glass, Neat
HS21030940-12		1.0445 (g)	50 (mL)	47.87	8-oz glass, Neat
HS21030940-14		1.0101 (g)	50 (mL)	49.5	8-oz glass, Neat
HS21030940-15		1.0362 (g)	50 (mL)	48.25	8-oz glass, Neat
HS21030940-16		1.0144 (g)	50 (mL)	49.29	8-oz glass, Neat
HS21030940-18		1.0425 (g)	50 (mL)	47.96	8-oz glass, Neat
HS21030940-19		1.0214 (g)	50 (mL)	48.95	8-oz glass, Neat
HS21030940-20		1.0137 (g)	50 (mL)	49.32	8-oz glass, Neat

Batch ID: 163965	Start Date: 29 Mar 2021 12:24	End Date: 29 Mar 2021 15:00
Method: TKN SOIL - PREP	Prep Code: TKN_S_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-22		1.0228 (g)	50 (mL)	48.89	8-oz glass, Neat
HS21030940-23		1.0457 (g)	50 (mL)	47.81	8-oz glass, Neat
HS21030940-24		1.0399 (g)	50 (mL)	48.08	8-oz glass, Neat

Batch ID: 163968	Start Date: 29 Mar 2021 12:29	End Date: 29 Mar 2021 15:00
Method: 9056 ANIONS SOIL PREP	Prep Code: 9056_S_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-09		5.0149 (g)	50 (mL)	9.97	8-oz glass, Neat
HS21030940-10		5.0436 (g)	50 (mL)	9.914	8-oz glass, Neat
HS21030940-11		5.035 (g)	50 (mL)	9.93	8-oz glass, Neat
HS21030940-12		5.0122 (g)	50 (mL)	9.976	8-oz glass, Neat
HS21030940-14		5.0308 (g)	50 (mL)	9.939	8-oz glass, Neat
HS21030940-15		5.0325 (g)	50 (mL)	9.935	8-oz glass, Neat
HS21030940-16		5.0407 (g)	50 (mL)	9.919	8-oz glass, Neat
HS21030940-18		5.033 (g)	50 (mL)	9.934	8-oz glass, Neat
HS21030940-19		5.0366 (g)	50 (mL)	9.927	8-oz glass, Neat
HS21030940-20		5.006 (g)	50 (mL)	9.988	8-oz glass, Neat
HS21030940-22		5.0307 (g)	50 (mL)	9.939	8-oz glass, Neat
HS21030940-23		5.0117 (g)	50 (mL)	9.977	8-oz glass, Neat
HS21030940-24		5.0122 (g)	50 (mL)	9.976	8-oz glass, Neat

Weight / Prep Log

Client: Tolunay-Wong Engineers, Inc.

Project: B & C Frito Lay Rosenberg

WorkOrder: HS21030940

Batch ID: 164000	Start Date: 30 Mar 2021 10:30	End Date: 30 Mar 2021 13:00
Method: PHOSPHOROUS	Prep Code: P_TS_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-01		0.9893 (g)	50 (mL)	50.54	8-oz glass, Neat
HS21030940-02		1.1282 (g)	50 (mL)	44.32	8-oz glass, Neat
HS21030940-04		1.2553 (g)	50 (mL)	39.83	8-oz glass, Neat
HS21030940-07		1.0093 (g)	50 (mL)	49.54	8-oz glass, Neat
HS21030940-10		1.0193 (g)	50 (mL)	49.05	8-oz glass, Neat
HS21030940-11		1.0014 (g)	50 (mL)	49.93	8-oz glass, Neat
HS21030940-12		1.0556 (g)	50 (mL)	47.37	8-oz glass, Neat
HS21030940-15		1.0612 (g)	50 (mL)	47.12	8-oz glass, Neat
HS21030940-16		1.1452 (g)	50 (mL)	43.66	8-oz glass, Neat
HS21030940-19		1.17 (g)	50 (mL)	42.74	8-oz glass, Neat
HS21030940-20		1.296 (g)	50 (mL)	38.58	8-oz glass, Neat

Batch ID: 164027	Start Date: 30 Mar 2021 14:00	End Date: 30 Mar 2021 18:00
Method: TCLP LEACHATE DIGESTION BY SW3010A	Prep Code: 3010A_TCLP	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-13		1 (mL)	10 (mL)	10	8-oz glass, Neat
HS21030940-17		1 (mL)	10 (mL)	10	8-oz glass, Neat
HS21030940-21		1 (mL)	10 (mL)	10	8-oz glass, Neat
HS21030940-25		1 (mL)	10 (mL)	10	8-oz glass, Neat

Batch ID: 164055	Start Date: 31 Mar 2021 09:06	End Date: 31 Mar 2021 12:00
Method: PHOSPHOROUS	Prep Code: P_TS_PR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-03		1.005 (g)	50 (mL)	49.75	8-oz glass, Neat
HS21030940-05		1.026 (g)	50 (mL)	48.73	8-oz glass, Neat
HS21030940-06		1.0245 (g)	50 (mL)	48.8	8-oz glass, Neat
HS21030940-08		1.0236 (g)	50 (mL)	48.85	8-oz glass, Neat
HS21030940-09		1.0255 (g)	50 (mL)	48.76	8-oz glass, Neat
HS21030940-14		1.0214 (g)	50 (mL)	48.95	8-oz glass, Neat
HS21030940-18		1.0236 (g)	50 (mL)	48.85	8-oz glass, Neat
HS21030940-22		1.0254 (g)	50 (mL)	48.76	8-oz glass, Neat
HS21030940-23		1.305 (g)	50 (mL)	38.31	8-oz glass, Neat
HS21030940-24		1.2629 (g)	50 (mL)	39.59	8-oz glass, Neat

Weight / Prep Log

Client: Tolunay-Wong Engineers, Inc.

Project: B & C Frito Lay Rosenberg

WorkOrder: HS21030940

Batch ID: 164062	Start Date: 31 Mar 2021 11:24	End Date: 01 Apr 2021 10:30
Method: LA29B SAR CATION PREP	Prep Code: LA29B SAR CATPR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-01		100.0823 (g)	100 (mL)	0.9992	8-oz glass, Neat
HS21030940-02		95.0313 (g)	95 (mL)	0.9997	8-oz glass, Neat
HS21030940-03		100.081 (g)	100 (mL)	0.9992	8-oz glass, Neat
HS21030940-04		100.0093 (g)	100 (mL)	0.9999	8-oz glass, Neat
HS21030940-05		100.0162 (g)	100 (mL)	0.9998	8-oz glass, Neat
HS21030940-06		100.0333 (g)	100 (mL)	0.9997	8-oz glass, Neat
HS21030940-07		100.025 (g)	100 (mL)	0.9998	8-oz glass, Neat
HS21030940-08		100.0067 (g)	100 (mL)	0.9999	8-oz glass, Neat
HS21030940-09		100.008 (g)	100 (mL)	0.9999	8-oz glass, Neat
HS21030940-10		100.031 (g)	100 (mL)	0.9997	8-oz glass, Neat
HS21030940-11		100.0688 (g)	100 (mL)	0.9993	8-oz glass, Neat
HS21030940-12		100.0873 (g)	100 (mL)	0.9991	8-oz glass, Neat
HS21030940-14		100.041 (g)	100 (mL)	0.9996	8-oz glass, Neat
HS21030940-15		100.0906 (g)	100 (mL)	0.9991	8-oz glass, Neat
HS21030940-16		100.0553 (g)	100 (mL)	0.9994	8-oz glass, Neat
HS21030940-18		100.0337 (g)	100 (mL)	0.9997	8-oz glass, Neat
HS21030940-19		100.0666 (g)	100 (mL)	0.9993	8-oz glass, Neat
HS21030940-20		100.0433 (g)	100 (mL)	0.9996	8-oz glass, Neat

Batch ID: 164106	Start Date: 31 Mar 2021 18:00	End Date: 01 Apr 2021 11:00
Method: LA29B SAR CATION PREP	Prep Code: LA29B SAR CATPR	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21030940-22		100.0752 (g)	100 (mL)	0.9992	8-oz glass, Neat
HS21030940-23		100.0182 (g)	100 (mL)	0.9998	8-oz glass, Neat
HS21030940-24		100.0366 (g)	100 (mL)	0.9996	8-oz glass, Neat

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 163657 (0)		Test Name : ANIONS BY SW9056A			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15		19 Mar 2021 10:35	23 Mar 2021 14:56	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15		19 Mar 2021 10:35	23 Mar 2021 15:13	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15		19 Mar 2021 10:35	23 Mar 2021 15:30	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30		19 Mar 2021 10:35	23 Mar 2021 15:47	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30		19 Mar 2021 10:35	23 Mar 2021 16:04	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30		19 Mar 2021 10:35	23 Mar 2021 16:22	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45		19 Mar 2021 10:35	23 Mar 2021 16:40	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45		19 Mar 2021 10:35	23 Mar 2021 16:59	1
Batch ID: 163837 (0)		Test Name : TCLP VOLATILES			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29	25 Mar 2021 13:05	25 Mar 2021 14:12	25 Mar 2021 19:37	20
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55	25 Mar 2021 13:05	25 Mar 2021 14:12	25 Mar 2021 19:58	20
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30	25 Mar 2021 13:05	25 Mar 2021 14:12	25 Mar 2021 20:19	20
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42	25 Mar 2021 13:05	25 Mar 2021 14:12	25 Mar 2021 20:40	20
Batch ID: 163849 (0)		Test Name : TCLP SEMIVOLATILES			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29	25 Mar 2021 10:00	25 Mar 2021 12:17	26 Mar 2021 15:07	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55	25 Mar 2021 10:00	25 Mar 2021 12:17	26 Mar 2021 15:49	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30	25 Mar 2021 10:00	25 Mar 2021 12:17	26 Mar 2021 16:10	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42	25 Mar 2021 10:00	25 Mar 2021 12:17	26 Mar 2021 16:32	1
Batch ID: 163919 (0)		Test Name : TEXAS TPH BY TX1005			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29		26 Mar 2021 13:06	26 Mar 2021 18:13	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55		26 Mar 2021 13:06	26 Mar 2021 18:43	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30		26 Mar 2021 13:06	26 Mar 2021 19:12	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42		26 Mar 2021 13:06	26 Mar 2021 19:42	1
Batch ID: 163951 (0)		Test Name : METALS BY SW6020A			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15		30 Mar 2021 13:35	30 Mar 2021 18:09	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15		30 Mar 2021 13:35	30 Mar 2021 18:22	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15		30 Mar 2021 13:35	30 Mar 2021 18:24	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30		30 Mar 2021 13:35	30 Mar 2021 18:26	1

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 163952 (0)		Test Name : METALS BY SW6020A			Matrix: Solid	
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30		29 Mar 2021 09:46	30 Mar 2021 23:35	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30		30 Mar 2021 13:35	30 Mar 2021 23:49	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45		29 Mar 2021 09:46	30 Mar 2021 23:51	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45		29 Mar 2021 09:46	30 Mar 2021 23:53	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		29 Mar 2021 09:46	31 Mar 2021 12:58	10
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		29 Mar 2021 09:46	30 Mar 2021 23:55	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34		29 Mar 2021 09:46	30 Mar 2021 23:57	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34		29 Mar 2021 09:46	30 Mar 2021 23:59	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		29 Mar 2021 09:46	31 Mar 2021 13:00	50
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		29 Mar 2021 09:46	31 Mar 2021 00:01	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00		29 Mar 2021 09:46	31 Mar 2021 00:02	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		29 Mar 2021 09:46	31 Mar 2021 13:02	20
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		29 Mar 2021 09:46	31 Mar 2021 00:04	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		29 Mar 2021 09:46	31 Mar 2021 13:04	20
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		29 Mar 2021 09:46	31 Mar 2021 00:06	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 13:12	20
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 00:12	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 13:14	100
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 00:14	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 13:16	20
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		29 Mar 2021 09:46	31 Mar 2021 00:16	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47		29 Mar 2021 09:46	31 Mar 2021 00:18	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47		29 Mar 2021 09:46	31 Mar 2021 00:20	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47		29 Mar 2021 09:46	31 Mar 2021 00:22	1

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 163963 (0)		Test Name : TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		29 Mar 2021 12:22	31 Mar 2021 13:58	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		29 Mar 2021 12:22	31 Mar 2021 13:58	1
Batch ID: 163965 (0)		Test Name : TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D			Matrix: Solid	
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47		29 Mar 2021 12:24	01 Apr 2021 13:01	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47		29 Mar 2021 12:24	01 Apr 2021 13:01	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47		29 Mar 2021 12:24	01 Apr 2021 13:01	1
Batch ID: 163968 (0)		Test Name : ANIONS BY SW9056A			Matrix: Solid	
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		29 Mar 2021 12:29	30 Mar 2021 10:24	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34		29 Mar 2021 12:29	30 Mar 2021 10:43	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34		29 Mar 2021 12:29	30 Mar 2021 11:01	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		29 Mar 2021 12:29	30 Mar 2021 11:20	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00		29 Mar 2021 12:29	30 Mar 2021 11:38	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		29 Mar 2021 12:29	30 Mar 2021 11:56	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		29 Mar 2021 12:29	30 Mar 2021 12:15	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		29 Mar 2021 12:29	30 Mar 2021 12:33	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		29 Mar 2021 12:29	30 Mar 2021 13:28	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		29 Mar 2021 12:29	30 Mar 2021 13:47	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47		29 Mar 2021 12:29	30 Mar 2021 14:05	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47		29 Mar 2021 12:29	30 Mar 2021 14:24	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47		29 Mar 2021 12:29	30 Mar 2021 14:42	1

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 164000 (0)		Test Name : PHOSPHORUS BY E365.3			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		30 Mar 2021 09:06	30 Mar 2021 16:50	10
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		30 Mar 2021 09:06	30 Mar 2021 16:50	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		30 Mar 2021 09:06	30 Mar 2021 16:50	10
Batch ID: 164027 (0)		Test Name : TCLP METALS BY SW6020A			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29	25 Mar 2021 10:00	30 Mar 2021 18:00	30 Mar 2021 23:59	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55	25 Mar 2021 10:00	30 Mar 2021 18:00	31 Mar 2021 00:01	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30	25 Mar 2021 10:00	30 Mar 2021 18:00	31 Mar 2021 00:03	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42	25 Mar 2021 10:00	30 Mar 2021 18:00	31 Mar 2021 00:05	1
Batch ID: 164055 (0)		Test Name : PHOSPHORUS BY E365.3			Matrix: Solid	
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47		31 Mar 2021 09:06	31 Mar 2021 12:50	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47		31 Mar 2021 09:06	31 Mar 2021 12:50	10

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 164062 (0)		Test Name : LA 29B - 1:1 SOLUBLE CATIONS FOR SAR			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15		31 Mar 2021 11:24	01 Apr 2021 14:10	10
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15		31 Mar 2021 11:24	01 Apr 2021 14:12	10
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15		31 Mar 2021 11:24	01 Apr 2021 14:14	10
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30		31 Mar 2021 11:24	01 Apr 2021 14:16	10
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30		31 Mar 2021 11:24	01 Apr 2021 14:18	10
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30		31 Mar 2021 11:24	01 Apr 2021 14:20	10
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45		31 Mar 2021 11:24	01 Apr 2021 14:22	10
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45		31 Mar 2021 11:24	01 Apr 2021 14:24	10
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45		31 Mar 2021 11:24	01 Apr 2021 14:34	10
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34		31 Mar 2021 11:24	01 Apr 2021 14:36	10
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34		31 Mar 2021 11:24	01 Apr 2021 14:38	10
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34		31 Mar 2021 11:24	01 Apr 2021 14:40	10
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00		31 Mar 2021 11:24	01 Apr 2021 14:42	10
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00		31 Mar 2021 11:24	01 Apr 2021 14:44	10
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00		31 Mar 2021 11:24	01 Apr 2021 14:46	10
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35		31 Mar 2021 11:24	01 Apr 2021 14:48	10
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35		31 Mar 2021 11:24	01 Apr 2021 14:50	10
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35		31 Mar 2021 11:24	01 Apr 2021 14:58	10
Batch ID: 164106 (0)		Test Name : LA 29B - 1:1 SOLUBLE CATIONS FOR SAR			Matrix: Solid	
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47		31 Mar 2021 18:00	01 Apr 2021 15:06	10
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47		31 Mar 2021 18:00	01 Apr 2021 15:10	10
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47		31 Mar 2021 18:00	01 Apr 2021 15:11	10
Batch ID: R380020 (0)		Test Name : FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			20 Mar 2021 10:00	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			20 Mar 2021 10:00	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			20 Mar 2021 10:00	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			20 Mar 2021 10:00	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R380095 (0)		Test Name : PH SOIL BY SW9045D			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			22 Mar 2021 17:21	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			22 Mar 2021 17:21	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			22 Mar 2021 17:21	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			22 Mar 2021 17:21	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			22 Mar 2021 17:21	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			22 Mar 2021 17:21	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			22 Mar 2021 17:21	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			22 Mar 2021 17:21	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			22 Mar 2021 17:21	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			22 Mar 2021 17:21	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			22 Mar 2021 17:21	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			22 Mar 2021 17:21	1
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			22 Mar 2021 17:21	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			22 Mar 2021 17:21	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			22 Mar 2021 17:21	1
Batch ID: R380417 (0)		Test Name : TOTAL SOLIDS BY SM2540G			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			26 Mar 2021 08:45	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			26 Mar 2021 08:45	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			26 Mar 2021 08:45	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			26 Mar 2021 08:45	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R380667 (0)		Test Name : SUBCONTRACT ANALYSIS - SULFUR			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			31 Mar 2021 13:23	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			31 Mar 2021 13:23	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			31 Mar 2021 13:23	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			31 Mar 2021 13:23	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			31 Mar 2021 13:23	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			31 Mar 2021 13:23	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			31 Mar 2021 13:23	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			31 Mar 2021 13:23	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			31 Mar 2021 13:23	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			31 Mar 2021 13:23	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			31 Mar 2021 13:23	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			31 Mar 2021 13:23	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			31 Mar 2021 13:23	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			31 Mar 2021 13:23	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			31 Mar 2021 13:23	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			31 Mar 2021 13:23	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			31 Mar 2021 13:23	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			31 Mar 2021 13:23	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			31 Mar 2021 13:23	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			31 Mar 2021 13:23	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			31 Mar 2021 13:23	1
Batch ID: R380668 (0)		Test Name : PH SOIL BY SW9045D			Matrix: Solid	
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			31 Mar 2021 13:25	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			31 Mar 2021 13:25	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			31 Mar 2021 13:25	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			31 Mar 2021 13:25	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			31 Mar 2021 13:25	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			31 Mar 2021 13:25	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			31 Mar 2021 13:25	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			31 Mar 2021 13:25	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			31 Mar 2021 13:25	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			31 Mar 2021 13:25	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R380670 (0)		Test Name : MOISTURE - ASTM D2216			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			30 Mar 2021 11:32	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			30 Mar 2021 11:32	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			30 Mar 2021 11:32	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			30 Mar 2021 11:32	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			30 Mar 2021 11:32	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			30 Mar 2021 11:32	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			30 Mar 2021 11:32	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			30 Mar 2021 11:32	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			30 Mar 2021 11:32	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			30 Mar 2021 11:32	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			30 Mar 2021 11:32	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			30 Mar 2021 11:32	1
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			30 Mar 2021 11:32	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			30 Mar 2021 11:32	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			30 Mar 2021 11:32	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			30 Mar 2021 11:32	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			30 Mar 2021 11:32	1
Batch ID: R380671 (0)		Test Name : MOISTURE - ASTM D2216			Matrix: Solid	
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			30 Mar 2021 11:34	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			30 Mar 2021 11:34	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			30 Mar 2021 11:34	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			30 Mar 2021 11:34	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			30 Mar 2021 11:34	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			30 Mar 2021 11:34	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			30 Mar 2021 11:34	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			30 Mar 2021 11:34	1
Batch ID: R380709 (0)		Test Name : TOTAL VOLATILE SOLIDS BY E160.4			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			31 Mar 2021 09:00	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			31 Mar 2021 09:00	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			31 Mar 2021 09:00	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			31 Mar 2021 09:00	1
Batch ID: R380742 (0)		Test Name : REACTIVE SULFIDE			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			31 Mar 2021 16:00	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			31 Mar 2021 16:00	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			31 Mar 2021 16:00	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			31 Mar 2021 16:00	1

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Batch ID: R380760 (0)		Test Name : REACTIVE CYANIDE			Matrix: Solid	
HS21030940-13	SB-8 (Organic)	16 Mar 2021 10:29			31 Mar 2021 17:00	1
HS21030940-17	SB-7 (Organic)	16 Mar 2021 10:55			31 Mar 2021 17:00	1
HS21030940-21	SB-6 (Organic)	16 Mar 2021 11:30			31 Mar 2021 17:00	1
HS21030940-25	SB-5 (Organic)	16 Mar 2021 13:42			31 Mar 2021 17:00	1
Batch ID: R380763 (0)		Test Name : TOTAL NITROGEN			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			01 Apr 2021 15:15	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			01 Apr 2021 15:15	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			01 Apr 2021 15:15	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			01 Apr 2021 15:15	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			01 Apr 2021 15:15	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			01 Apr 2021 15:15	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			01 Apr 2021 15:15	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			01 Apr 2021 15:15	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			01 Apr 2021 15:15	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			01 Apr 2021 15:15	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			01 Apr 2021 15:15	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			01 Apr 2021 15:15	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			01 Apr 2021 15:15	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			01 Apr 2021 15:15	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			01 Apr 2021 15:15	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			01 Apr 2021 15:15	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			01 Apr 2021 15:15	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			01 Apr 2021 15:15	1

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Batch ID: R380766 (0)		Test Name : LA29B ELECTRICAL CONDUCTIVITY			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			01 Apr 2021 15:30	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			01 Apr 2021 15:30	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			01 Apr 2021 15:30	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			01 Apr 2021 15:30	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			01 Apr 2021 15:30	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			01 Apr 2021 15:30	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			01 Apr 2021 15:30	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			01 Apr 2021 15:30	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			01 Apr 2021 15:30	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			01 Apr 2021 15:30	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			01 Apr 2021 15:30	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			01 Apr 2021 15:30	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			01 Apr 2021 15:30	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			01 Apr 2021 15:30	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			01 Apr 2021 15:30	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			01 Apr 2021 15:30	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			01 Apr 2021 15:30	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			01 Apr 2021 15:30	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			01 Apr 2021 15:30	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R380767 (0)		Test Name : LA29B SODIUM ADSORPTION RATIO			Matrix: Solid	
HS21030940-01	SB-1 (0-6")	15 Mar 2021 11:15			01 Apr 2021 15:58	1
HS21030940-02	SB-1 (18-30")	15 Mar 2021 11:15			01 Apr 2021 15:58	1
HS21030940-03	SB-1 (42-54")	15 Mar 2021 11:15			01 Apr 2021 15:58	1
HS21030940-04	SB-2 (0-6")	15 Mar 2021 12:30			01 Apr 2021 15:58	1
HS21030940-05	SB-2 (18-30")	15 Mar 2021 12:30			01 Apr 2021 15:58	1
HS21030940-06	SB-2 (42-54")	15 Mar 2021 12:30			01 Apr 2021 15:58	1
HS21030940-07	SB-3 (0-6")	15 Mar 2021 14:45			01 Apr 2021 15:58	1
HS21030940-08	SB-3 (18-30")	15 Mar 2021 14:45			01 Apr 2021 15:58	1
HS21030940-09	SB-3 (42-54")	15 Mar 2021 14:45			01 Apr 2021 15:58	1
HS21030940-10	SB-8 (5-5.5')	16 Mar 2021 10:34			01 Apr 2021 15:58	1
HS21030940-11	SB-8 (6.5-7.5')	16 Mar 2021 10:34			01 Apr 2021 15:58	1
HS21030940-12	SB-8 (8.5-9.5')	16 Mar 2021 10:34			01 Apr 2021 15:58	1
HS21030940-14	SB-7 (5-5.5')	16 Mar 2021 11:00			01 Apr 2021 15:58	1
HS21030940-15	SB-7 (6.5-7.5')	16 Mar 2021 11:00			01 Apr 2021 15:58	1
HS21030940-16	SB-7 (8.5-9.5')	16 Mar 2021 11:00			01 Apr 2021 15:58	1
HS21030940-18	SB-6 (5-5.5)	16 Mar 2021 11:35			01 Apr 2021 15:58	1
HS21030940-19	SB-6 (6.5-7.5)	16 Mar 2021 11:35			01 Apr 2021 15:58	1
HS21030940-20	SB-6 (8.5-9.5)	16 Mar 2021 11:35			01 Apr 2021 15:58	1
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			01 Apr 2021 15:58	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			01 Apr 2021 15:58	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			01 Apr 2021 15:58	1
Batch ID: R380768 (0)		Test Name : LA29B ELECTRICAL CONDUCTIVITY			Matrix: Solid	
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			01 Apr 2021 16:06	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			01 Apr 2021 16:06	1
Batch ID: R380769 (0)		Test Name : TOTAL NITROGEN			Matrix: Solid	
HS21030940-22	SB-5 (5-5.5')	16 Mar 2021 13:47			01 Apr 2021 16:09	1
HS21030940-23	SB-5 (6.5-7.5')	16 Mar 2021 13:47			01 Apr 2021 16:09	1
HS21030940-24	SB-5 (8.5-9.5')	16 Mar 2021 13:47			01 Apr 2021 16:09	1

WorkOrder: HS21030940
InstrumentID: FID-10
Test Code: TX1005_S_REV3
Test Number: TX1005
Test Name: Texas TPH by TX1005

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	nC6 to nC12	TPH-1005-1	25	25	7.4	50
A	>nC12 to nC28	TPH-1005-2	25	24	9.8	50
A	>nC28 to nC35	TPH-1005-4	25	24	9.8	50
A	Total Petroleum Hydrocarbon	TPH	25	24	7.4	50
S	2-Fluorobiphenyl	321-60-8	0	0	0	0
S	Trifluoromethyl benzene	98-08-8	0	0	0	0

WorkOrder: HS21030940

InstrumentID: ICPMS06

Test Code: 1311_METALS_HS

Test Number: SW1311/6020

Test Name: TCLP Metals by SW6020A

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Leachate**Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Arsenic	7440-38-2	0.00100	0.000980	0.000400	0.00500
A	Barium	7440-39-3	0.00250	0.00234	0.00190	0.0200
A	Cadmium	7440-43-9	0.000500	0.000454	0.000200	0.00500
A	Chromium	7440-47-3	0.00100	0.00153	0.000400	0.00500
A	Lead	7439-92-1	0.00100	0.000540	0.000600	0.00500
A	Selenium	7782-49-2	0.00250	0.00233	0.00110	0.00500
A	Silver	7440-22-4	0.000500	0.000515	0.000200	0.00500

WorkOrder: HS21030940

InstrumentID: ICPMS04

Test Code: ICP_S_Low

Test Number: SW6020

Test Name: Metals by SW6020A

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Calcium	7440-70-2	10.0	27.0	4.96	50.0
A	Magnesium	7439-95-4	10.0	11.5	2.51	50.0
A	Potassium	7440-09-7	10.0	10.2	6.72	50.0
A	Sodium	7440-23-5	10.0	11.3	4.17	50.0

WorkOrder: HS21030940

InstrumentID: MISC-Metals

Test Code: LA29B SAR

Test Number: La29B SAR

Test Name: La29B Sodium Adsorption Ratio

Matrix: Solid**METHOD DETECTION /
REPORTING LIMITS****Units:** meq/meq

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Sodium Adsorption Ratio	SAR	0	0	0.0100	0.0100

WorkOrder: HS21030940

InstrumentID: ICPMS06

Test Code: LA29B SAR_CAT

Test Number: La29B-6020

Test Name: La 29B - 1:1 Soluble Cations for

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Extract**Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Calcium	7440-70-2	0	0	0.500	0.500
A	Magnesium	7439-95-4	0	0	0.500	0.500
A	Sodium	7440-23-5	0	0	0.500	0.500

WorkOrder: HS21030940
 InstrumentID: SV-4
 Test Code: 1311_SV
 Test Number: SW1311/8270
 Test Name: TCLP Semivolatiles

**METHOD DETECTION /
REPORTING LIMITS**
Matrix: Leachate

Units: µg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	2,4,5-Trichlorophenol	95-95-4	1.0	1.2	0.90	5.0
A	2,4,6-Trichlorophenol	88-06-2	1.0	1.2	1.4	5.0
A	2,4-Dinitrotoluene	121-14-2	1.0	1.3	1.0	5.0
A	Cresols, Total	1319-77-3	1.0	1.2	2.0	15
A	Hexachlorobenzene	118-74-1	1.0	1.2	1.1	5.0
A	Hexachlorobutadiene	87-68-3	1.0	1.2	1.1	5.0
A	Hexachloroethane	67-72-1	2.0	2.2	1.0	5.0
A	Nitrobenzene	98-95-3	1.0	1.5	0.80	5.0
A	Pentachlorophenol	87-86-5	2.0	2.0	1.6	5.0
A	Pyridine	110-86-1	1.0	1.0	2.0	5.0
S	2,4,6-Tribromophenol	118-79-6	0	0	0	5.0
S	2-Fluorobiphenyl	321-60-8	0	0	0	5.0
S	2-Fluorophenol	367-12-4	0	0	0	5.0
S	4-Terphenyl-d14	1718-51-0	0	0	0	5.0
S	Nitrobenzene-d5	4165-60-0	0	0	0	5.0
S	Phenol-d6	13127-88-3	0	0	0	5.0

WorkOrder: HS21030940

InstrumentID: VOA9

Test Code: 1311_VOC

Test Number: SW8260

Test Name: TCLP Volatiles

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Leachate**Units:** µg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	1,1-Dichloroethene	75-35-4	1.0	0.91	0.50	5.0
A	1,2-Dichloroethane	107-06-2	1.0	1.0	0.50	5.0
A	1,4-Dichlorobenzene	106-46-7	1.0	1.0	0.60	5.0
A	2-Butanone	78-93-3	2.0	2.2	1.0	10
A	Benzene	71-43-2	1.0	1.0	0.60	5.0
A	Carbon tetrachloride	56-23-5	1.0	0.80	0.60	5.0
A	Chlorobenzene	108-90-7	1.0	1.0	0.40	5.0
A	Chloroform	67-66-3	1.0	1.0	0.60	5.0
A	Tetrachloroethene	127-18-4	1.0	0.93	0.60	5.0
A	Trichloroethene	79-01-6	1.0	0.89	0.50	5.0
A	Vinyl chloride	75-01-4	1.0	1.1	0.40	2.0
S	1,2-Dichloroethane-d4	17060-07-0	0	0	0	5.0
S	4-Bromofluorobenzene	460-00-4	0	0	0	5.0
S	Dibromofluoromethane	1868-53-7	0	0	0	5.0
S	Toluene-d8	2037-26-5	0	0	0	5.0

WorkOrder: HS21030940

InstrumentID: ICS2100

Test Code: 9056_S

Test Number: SW9056

Test Name: Anions by SW9056A

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Nitrogen, Nitrate (As N)	14797-55-8	1.00	0.888	0.300	1.00
A	Nitrogen, Nitrite (As N)	7632-00-0	1.00	0.732	0.300	1.00

WorkOrder: HS21030940

InstrumentID: ICS-Integrion

Test Code: 9056_S

Test Number: SW9056

Test Name: Anions by SW9056A

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Nitrogen, Nitrate (As N)	14797-55-8	1.00	0.912	0.300	1.00
A	Nitrogen, Nitrite (As N)	7632-00-0	1.00	0.651	0.300	1.00

WorkOrder:	HS21030940					
InstrumentID:	WetChem_HS					
Test Code:	LADNR-29B - EC					
Test Number:	LaDNR-29B EC					
Test Name:	La29B Electrical Conductivity					
			Matrix: Solid		Units: mmhos/cm @25°C	

**METHOD DETECTION /
REPORTING LIMITS**

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Electrical Conductivity @ saturation	ARC-Cond-Sat	0	0	0.0100	0.0100
A	Electrical Conductivity, 1:1 aqueous	ARC-Cond	0	0	0.0100	0.0100
A	Saturation % as decimal	ARC-PSATURATION	0	0	0	0

WorkOrder: HS21030940
InstrumentID: Balance1
Test Code: MOIST_ASTM
Test Number: ASTM D2216
Test Name: Moisture - ASTM D2216

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** wt%

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Percent Moisture	MOIST	0.0100	0.0100	0.0100	0.0100

WorkOrder: HS21030940
InstrumentID: WetChem_HS
Test Code: Nitrogen, Total_S
Test Number: Calculation
Test Name: Total Nitrogen

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Nitrogen, Total	7727-37-9	0	0	10.0	20.0

WorkOrder:	HS21030940	METHOD DETECTION / REPORTING LIMITS
InstrumentID:	WetChem_HS	
Test Code:	Open_Cup_FlashPoint	
Test Number:	ASTM D92-12b	
Test Name:	Flash Point by Cleveland Open	
	Matrix: Solid	Units: °F

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Flash Point	IGNITCC	0	0	50.0	50.0

WorkOrder: HS21030940

InstrumentID: UV-2450

Test Code: P_TS

Test Number: E365.3

Test Name: Phosphorus by E365.3

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Phosphorus, Total (As P)	7723-14-0	1.00	0.0130	1.00	2.00
A	Phosphorus, Total (As P)	7723-14-0	1.00	0	1.00	2.00

WorkOrder: HS21030940
InstrumentID: WetChem_HS
Test Code: PH_S
Test Number: SW9045D
Test Name: pH Soil by SW9045D

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** pH Units

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	pH	PH	0	0	0.100	0.100
A	Temp Deg C @pH	TEMP	0	0	0	0

WorkOrder: HS21030940

InstrumentID: UV-2450

Test Code: RCN_S

Test Number: SW7.3.3.2

Test Name: Reactive Cyanide

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Reactive Cyanide	RCN	0	0	100	100

WorkOrder:	HS21030940	METHOD DETECTION / REPORTING LIMITS	
InstrumentID:	WetChem_HS		
Test Code:	RS_S		
Test Number:	SW7.3.4.2		
Test Name:	Reactive Sulfide		
		Matrix: Solid	Units: mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Reactive Sulfide	RS	0	0	100	100

WorkOrder:	HS21030940	METHOD DETECTION / REPORTING LIMITS
InstrumentID:	WetChem_HS	
Test Code:	TKN_S 4500NH3 D	
Test Number:	M4500 NH3 D	
Test Name:	Total Kjeldahl Nitrogen by SM4500	
	Matrix: Solid	Units: mg/Kg

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Nitrogen, Total Kjeldahl	7727-37-9	20	21	10	20

WorkOrder: HS21030940

InstrumentID: Balance1

Test Code: TS_S 2540G

Test Number: M2540G

Test Name: Total Solids by SM2540G

**METHOD DETECTION /
REPORTING LIMITS****Matrix:** Solid**Units:** wt%

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Solids	TSO	0	0	0.0100	0.0100

WorkOrder: HS21030940

InstrumentID: Balance1

Test Code: TVS_S

Test Number: E160.4

Test Name: Total Volatile Solids by E160.4

Matrix: Solid**METHOD DETECTION /
REPORTING LIMITS****Units:** wt%

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Volatile Solids	TVS	0	0	0.0100	0.0100

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163919 (0)		Instrument: FID-10		Method: TEXAS TPH BY TX1005					
MBLK	Sample ID: MBLK-163919	Units: mg/Kg		Analysis Date: 26-Mar-2021 15:15					
Client ID:	Run ID: FID-10_380463	SeqNo: 6015040		PrepDate: 26-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
nC6 to nC12	U	50							
>nC12 to nC28	U	50							
>nC28 to nC35	U	50							
Total Petroleum Hydrocarbon	U	50							
Surr: 2-Fluorobiphenyl	29.6	0	25	0	118	70 - 130			
Surr: Trifluoromethyl benzene	30.46	0	25	0	122	70 - 130			
LCS	Sample ID: LCS-163919	Units: mg/Kg		Analysis Date: 26-Mar-2021 15:45					
Client ID:	Run ID: FID-10_380463	SeqNo: 6015041		PrepDate: 26-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
nC6 to nC12	243.9	50	250	0	97.5	75 - 125			
>nC12 to nC28	265.1	50	250	0	106	75 - 125			
Surr: 2-Fluorobiphenyl	27.64	0	25	0	111	70 - 130			
Surr: Trifluoromethyl benzene	28.09	0	25	0	112	70 - 130			
LCSD	Sample ID: LCSD-163919	Units: mg/Kg		Analysis Date: 26-Mar-2021 16:15					
Client ID:	Run ID: FID-10_380463	SeqNo: 6015042		PrepDate: 26-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
nC6 to nC12	222.4	50	250	0	89.0	75 - 125	243.9	9.21	20
>nC12 to nC28	241.2	50	250	0	96.5	75 - 125	265.1	9.46	20
Surr: 2-Fluorobiphenyl	25.31	0	25	0	101	70 - 130	27.64	8.77	20
Surr: Trifluoromethyl benzene	25.31	0	25	0	101	70 - 130	28.09	10.4	20
MS	Sample ID: HS21031128-04MS	Units: mg/Kg		Analysis Date: 26-Mar-2021 17:14					
Client ID:	Run ID: FID-10_380463	SeqNo: 6015044		PrepDate: 26-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
nC6 to nC12	372.6	48	239.2	231.9	58.8	75 - 125			S
>nC12 to nC28	489.1	48	239.2	330	66.5	75 - 125			S
Surr: 2-Fluorobiphenyl	23.03	0	23.92	0	96.2	70 - 130			
Surr: Trifluoromethyl benzene	23.33	0	23.92	0	97.5	70 - 130			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163919 (0)		Instrument: FID-10		Method: TEXAS TPH BY TX1005						
MSD		Sample ID: HS21031128-04MSD		Units: mg/Kg		Analysis Date: 26-Mar-2021 17:44				
Client ID:		Run ID: FID-10_380463		SeqNo: 6015045		PrepDate: 26-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
nC6 to nC12	384.4	48	238.6	231.9	63.9	75 - 125	372.6	3.11	20	S
>nC12 to nC28	515	48	238.6	330	77.6	75 - 125	489.1	5.17	20	
Surr: 2-Fluorobiphenyl	23.63	0	23.86	0	99.0	70 - 130	23.03	2.57	20	
Surr: Trifluoromethyl benzene	23.53	0	23.86	0	98.6	70 - 130	23.33	0.835	20	
The following samples were analyzed in this batch:										
HS21030940-13			HS21030940-17			HS21030940-21			HS21030940-25	

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163951 (0)		Instrument: ICPMS04		Method: METALS BY SW6020A					
MBLK	Sample ID: MBLK-163951	Units: mg/Kg		Analysis Date: 30-Mar-2021 17:27					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017491		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	U	49.3							
Magnesium	U	49.3							
Potassium	U	49.3							
Sodium	U	49.3							

LCS	Sample ID: LCS-163951	Units: mg/Kg		Analysis Date: 30-Mar-2021 17:29					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017492		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	936.4	48.3	965.1	0	97.0	80 - 120			
Magnesium	981.6	48.3	965.1	0	102	80 - 120			
Potassium	954.9	48.3	965.1	0	98.9	80 - 120			
Sodium	972.1	48.3	965.1	0	101	80 - 120			

MS	Sample ID: HS21030552-06MS	Units: mg/Kg		Analysis Date: 30-Mar-2021 17:35					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017495		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	36390	48.3	966.9	29250	738	75 - 125			SEO
Magnesium	9162	48.3	966.9	8297	89.4	75 - 125			O
Potassium	6451	48.3	966.9	5619	86.1	75 - 125			O
Sodium	2914	48.3	966.9	1937	101	75 - 125			

MSD	Sample ID: HS21030552-06MSD	Units: mg/Kg		Analysis Date: 30-Mar-2021 17:37					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017496		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	28820	48.7	973.7	29250	-44.5	75 - 125	36390	23.2	20 SREO
Magnesium	9365	48.7	973.7	8297	110	75 - 125	9162	2.19	20 O
Potassium	6735	48.7	973.7	5619	115	75 - 125	6451	4.31	20 O
Sodium	2890	48.7	973.7	1937	97.9	75 - 125	2914	0.813	20

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163951 (0)		Instrument: ICPMS04		Method: METALS BY SW6020A					
PDS		Sample ID: HS21030552-06PDS		Units: mg/Kg		Analysis Date: 30-Mar-2021 17:39			
Client ID:		Run ID: ICPMS04_380598		SeqNo: 6017497		PrepDate: 30-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Magnesium	9082	48.6	971.6	8297	80.8	75 - 125			O
Potassium	6590	48.6	971.6	5619	99.9	75 - 125			O
Sodium	2894	48.6	971.6	1937	98.5	75 - 125			

SD		Sample ID: HS21030552-06SD		Units: mg/Kg		Analysis Date: 30-Mar-2021 17:33			
Client ID:		Run ID: ICPMS04_380598		SeqNo: 6017494		PrepDate: 30-Mar-2021		DF: 5	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit Qual
Magnesium	8659	243					8297	4.37	10
Potassium	5895	243					5619	4.92	10
Sodium	2033	243					1937	4.99	10

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163952 (0)		Instrument: ICPMS04		Method: METALS BY SW6020A					
MBLK	Sample ID: MBLK-163952	Units: mg/Kg		Analysis Date: 30-Mar-2021 23:31					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017650		PrepDate: 29-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	U	49.8							
Magnesium	U	49.8							
Potassium	U	49.8							
Sodium	U	49.8							

LCS	Sample ID: LCS-163952	Units: mg/Kg		Analysis Date: 30-Mar-2021 23:33					
Client ID:	Run ID: ICPMS04_380598	SeqNo: 6017651		PrepDate: 29-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	963.2	50.0	999.8	0	96.3	80 - 120			
Magnesium	981	50.0	999.8	0	98.1	80 - 120			
Potassium	979	50.0	999.8	0	97.9	80 - 120			
Sodium	970.2	50.0	999.8	0	97.0	80 - 120			

MS	Sample ID: HS21030940-05MS	Units: mg/Kg		Analysis Date: 30-Mar-2021 23:39					
Client ID: SB-2 (18-30")	Run ID: ICPMS04_380598	SeqNo: 6017654		PrepDate: 29-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	3541	48.6	971.6	2421	115	75 - 125			
Magnesium	2936	48.6	971.6	1910	106	75 - 125			
Potassium	1897	48.6	971.6	933.7	99.1	75 - 125			
Sodium	1086	48.6	971.6	166.4	94.6	75 - 125			

MSD	Sample ID: HS21030940-05MSD	Units: mg/Kg		Analysis Date: 30-Mar-2021 23:41					
Client ID: SB-2 (18-30")	Run ID: ICPMS04_380598	SeqNo: 6017655		PrepDate: 29-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	2305	48.2	964.5	2421	-12.0	75 - 125	3541	42.3	20 SR
Magnesium	2117	48.2	964.5	1910	21.5	75 - 125	2936	32.4	20 SR
Potassium	1550	48.2	964.5	933.7	63.9	75 - 125	1897	20.1	20 SR
Sodium	1004	48.2	964.5	166.4	86.9	75 - 125	1086	7.79	20

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163952 (0)		Instrument: ICPMS04		Method: METALS BY SW6020A					
PDS		Sample ID: HS21030940-05PDS		Units: mg/Kg		Analysis Date: 30-Mar-2021 23:43			
Client ID: SB-2 (18-30")		Run ID: ICPMS04_380598		SeqNo: 6017656		PrepDate: 29-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	3489	48.4	967.9	2421	110	75 - 125			
Magnesium	2827	48.4	967.9	1910	94.8	75 - 125			
Potassium	1880	48.4	967.9	933.7	97.7	75 - 125			
Sodium	1109	48.4	967.9	166.4	97.4	75 - 125			

SD		Sample ID: HS21030940-05SD		Units: mg/Kg		Analysis Date: 30-Mar-2021 23:37			
Client ID: SB-2 (18-30")		Run ID: ICPMS04_380598		SeqNo: 6017653		PrepDate: 29-Mar-2021		DF: 5	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit Qual
Calcium	2569	242					2421	6.09	10
Magnesium	2058	242					1910	7.8	10
Potassium	1021	242					933.7	9.37	10
Sodium	170.8	242					166.4	0	10 J

The following samples were analyzed in this batch:

HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08
HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-14	HS21030940-15	HS21030940-16	HS21030940-18
HS21030940-19	HS21030940-20	HS21030940-22	HS21030940-23
HS21030940-24			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164027 (0)		Instrument: ICPMS06		Method: TCLP METALS BY SW6020A					
MBLK	Sample ID: MBLKT2-164027	Units: mg/L		Analysis Date: 30-Mar-2021 23:35					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017818		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	U	0.0500							
Barium	U	0.200							
Cadmium	U	0.0500							
Chromium	U	0.0500							
Lead	U	0.0500							
Selenium	U	0.0500							
Silver	U	0.0500							

MBLK	Sample ID: MBLKT3-164027	Units: mg/L		Analysis Date: 30-Mar-2021 23:37					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017819		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	U	0.0500							
Barium	U	0.200							
Cadmium	U	0.0500							
Chromium	U	0.0500							
Lead	U	0.0500							
Selenium	U	0.0500							
Silver	U	0.0500							

MBLK	Sample ID: MBLKT1-164027	Units: mg/L		Analysis Date: 30-Mar-2021 23:33					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017817		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	U	0.0500							
Barium	U	0.200							
Cadmium	U	0.0500							
Chromium	U	0.0500							
Lead	U	0.0500							
Selenium	U	0.0500							
Silver	U	0.0500							

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164027 (0)		Instrument: ICPMS06		Method: TCLP METALS BY SW6020A					
MBLK	Sample ID: MBLK-164027	Units: mg/L		Analysis Date: 30-Mar-2021 23:31					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017816		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Arsenic	U	0.00500							
Barium	U	0.0200							
Cadmium	U	0.00500							
Chromium	U	0.00500							
Lead	U	0.00500							
Selenium	U	0.00500							
Silver	U	0.00500							

LCS	Sample ID: LCS-164027	Units: mg/L		Analysis Date: 30-Mar-2021 23:39					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017820		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Arsenic	0.04819	0.00500	0.05	0	96.4	80 - 120			
Barium	0.04781	0.0200	0.05	0	95.6	80 - 120			
Cadmium	0.0504	0.00500	0.05	0	101	80 - 120			
Chromium	0.0479	0.00500	0.05	0	95.8	80 - 120			
Lead	0.0476	0.00500	0.05	0	95.2	80 - 120			
Selenium	0.0511	0.00500	0.05	0	102	80 - 120			
Silver	0.051	0.00500	0.05	0	102	80 - 120			

MS	Sample ID: HS21031405-01MS	Units: mg/L		Analysis Date: 30-Mar-2021 23:49					
Client ID:	Run ID: ICPMS06_380610	SeqNo: 6017825		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Arsenic	0.5013	0.0500	0.5	0.00051	100	80 - 120			
Barium	0.5596	0.200	0.5	0.05848	100	80 - 120			
Cadmium	0.5182	0.0500	0.5	0.0002	104	80 - 120			
Chromium	0.4974	0.0500	0.5	0.00109	99.3	80 - 120			
Lead	0.5011	0.0500	0.5	0.00023	100	80 - 120			
Selenium	0.5248	0.0500	0.5	-0.00366	106	80 - 120			
Silver	0.5229	0.0500	0.5	0.00015	105	80 - 120			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164027 (0)		Instrument: ICPMS06		Method: TCLP METALS BY SW6020A					
MSD		Sample ID: HS21031405-01MSD		Units: mg/L		Analysis Date: 30-Mar-2021 23:51			
Client ID:		Run ID: ICPMS06_380610		SeqNo: 6017826		PrepDate: 30-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	0.4854	0.0500	0.5	0.00051	97.0	80 - 120	0.5013	3.22	20
Barium	0.5507	0.200	0.5	0.05848	98.4	80 - 120	0.5596	1.61	20
Cadmium	0.509	0.0500	0.5	0.0002	102	80 - 120	0.5182	1.78	20
Chromium	0.4806	0.0500	0.5	0.00109	95.9	80 - 120	0.4974	3.44	20
Lead	0.4855	0.0500	0.5	0.00023	97.0	80 - 120	0.5011	3.16	20
Selenium	0.4918	0.0500	0.5	-0.00366	99.1	80 - 120	0.5248	6.48	20
Silver	0.5093	0.0500	0.5	0.00015	102	80 - 120	0.5229	2.62	20
PDS		Sample ID: HS21031405-01PDS		Units: mg/L		Analysis Date: 30-Mar-2021 23:53			
Client ID:		Run ID: ICPMS06_380610		SeqNo: 6017827		PrepDate: 30-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Arsenic	1.193	0.0500	1	0.00051	119	75 - 125			
Barium	1.245	0.200	1	0.05848	119	75 - 125			
Cadmium	1.227	0.0500	1	0.0002	123	75 - 125			
Chromium	1.19	0.0500	1	0.00109	119	75 - 125			
Lead	1.173	0.0500	1	0.00023	117	75 - 125			
Selenium	1.243	0.0500	1	-0.00366	125	75 - 125			
Silver	1.105	0.0500	1	0.00015	110	75 - 125			
SD		Sample ID: HS21031405-01SD		Units: mg/L		Analysis Date: 30-Mar-2021 23:47			
Client ID:		Run ID: ICPMS06_380610		SeqNo: 6017824		PrepDate: 30-Mar-2021		DF: 5	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit Qual
Arsenic	U	0.250					0.00051	0	10
Barium	U	1.00					0.05848	0	10
Cadmium	U	0.250					0.0002	0	10
Chromium	U	0.250					0.00109	0	10
Lead	U	0.250					0.00023	0	10
Selenium	U	0.250					-0.00366	0	10
Silver	U	0.250					0.00015	0	10
The following samples were analyzed in this batch:									
HS21030940-13 HS21030940-17 HS21030940-21 HS21030940-25									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164062 (0)		Instrument: ICPMS06		Method: LA 29B - 1:1 SOLUBLE CATIONS FOR SAR					
MBLK	Sample ID: MBLK-164062	Units: mg/L		Analysis Date: 01-Apr-2021 14:08					
Client ID:	Run ID: ICPMS06_380735		SeqNo: 6020793		PrepDate: 31-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual

Calcium	U	0.500							
Magnesium	U	0.500							
Sodium	U	0.500							

DUP	Sample ID: HS21030940-20DUP	Units: mg/L		Analysis Date: 01-Apr-2021 15:00					
Client ID: SB-6 (8.5-9.5)	Run ID: ICPMS06_380735		SeqNo: 6020817		PrepDate: 31-Mar-2021		DF: 10		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	28.4	5.00					29.64	4.29	30
Magnesium	9.017	5.00					8.946	0.792	30
Sodium	106.6	5.00					110.8	3.82	30

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04
HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08
HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-14	HS21030940-15	HS21030940-16	HS21030940-18
HS21030940-19	HS21030940-20		

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164106 (0)		Instrument: ICPMS06		Method: LA 29B - 1:1 SOLUBLE CATIONS FOR SAR					
MBLK	Sample ID: MBLK-164106	Units: mg/L		Analysis Date: 01-Apr-2021 15:04					
Client ID:	Run ID: ICPMS06_380735		SeqNo: 6020819		PrepDate: 31-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	U	0.500							
Magnesium	U	0.500							
Sodium	U	0.500							

DUP	Sample ID: HS21030940-22DUP	Units: mg/L		Analysis Date: 01-Apr-2021 15:08					
Client ID: SB-5 (5-5.5')	Run ID: ICPMS06_380735		SeqNo: 6020821		PrepDate: 31-Mar-2021		DF: 10		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Calcium	94.81	5.00					97.01	2.3	30
Magnesium	20.29	5.00					21.15	4.14	30
Sodium	146.4	5.00					149.1	1.82	30

The following samples were analyzed in this batch:

HS21030940-22	HS21030940-23	HS21030940-24

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163849 (0)		Instrument: SV-4		Method: TCLP SEMIVOLATILES					
MBLK	Sample ID: MBLK-163849	Units: ug/L		Analysis Date: 26-Mar-2021 10:51					
Client ID:	Run ID: SV-4_380474	SeqNo: 6014890		PrepDate: 25-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2,4,5-Trichlorophenol	U	5.0							
2,4,6-Trichlorophenol	U	5.0							
2,4-Dinitrotoluene	U	5.0							
Cresols, Total	U	15							
Hexachlorobenzene	U	5.0							
Hexachlorobutadiene	U	5.0							
Hexachloroethane	U	5.0							
Nitrobenzene	U	5.0							
Pentachlorophenol	U	5.0							
Pyridine	U	5.0							
Surr: 2,4,6-Tribromophenol	107.6	5.0	100	0	108	39 - 153			
Surr: 2-Fluorobiphenyl	95.61	5.0	100	0	95.6	40 - 147			
Surr: 2-Fluorophenol	109.2	5.0	100	0	109	21 - 110			
Surr: 4-Terphenyl-d14	113.6	5.0	100	0	114	39 - 141			
Surr: Nitrobenzene-d5	103.6	5.0	100	0	104	37 - 140			
Surr: Phenol-d6	107.4	5.0	100	0	107	11 - 110			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163849 (0)		Instrument: SV-4		Method: TCLP SEMIVOLATILES					
LCS		Sample ID: LCS-163849		Units: ug/L		Analysis Date: 26-Mar-2021 11:13			
Client ID:		Run ID: SV-4_380474		SeqNo: 6014891		PrepDate: 25-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2,4,5-Trichlorophenol	104.1	5.0	100	0	104	55 - 120			
2,4,6-Trichlorophenol	97.48	5.0	100	0	97.5	55 - 120			
2,4-Dinitrotoluene	50.71	5.0	50	0	101	55 - 125			
Cresols, Total	242.1	15	250	0	96.8	48 - 115			
Hexachlorobenzene	44.92	5.0	50	0	89.8	55 - 120			
Hexachlorobutadiene	39.38	5.0	50	0	78.8	55 - 120			
Hexachloroethane	43.24	5.0	50	0	86.5	55 - 120			
Nitrobenzene	46.04	5.0	50	0	92.1	55 - 120			
Pentachlorophenol	100.4	5.0	100	0	100	50 - 135			
Pyridine	32	5.0	50	0	64.0	30 - 120			
Surr: 2,4,6-Tribromophenol	93.47	5.0	100	0	93.5	39 - 153			
Surr: 2-Fluorobiphenyl	101.6	5.0	100	0	102	40 - 147			
Surr: 2-Fluorophenol	92.1	5.0	100	0	92.1	21 - 110			
Surr: 4-Terphenyl-d14	118	5.0	100	0	118	39 - 141			
Surr: Nitrobenzene-d5	99.39	5.0	100	0	99.4	37 - 140			
Surr: Phenol-d6	95.62	5.0	100	0	95.6	11 - 110			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163849 (0)		Instrument: SV-4		Method: TCLP SEMIVOLATILES						
LCSD		Sample ID: LCSD-163849		Units: ug/L		Analysis Date: 26-Mar-2021 11:34				
Client ID:		Run ID: SV-4_380474		SeqNo: 6014892		PrepDate: 25-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	101	5.0	100	0	101	55 - 120	104.1	3.07	20	
2,4,6-Trichlorophenol	98.29	5.0	100	0	98.3	55 - 120	97.48	0.829	20	
2,4-Dinitrotoluene	48.74	5.0	50	0	97.5	55 - 125	50.71	3.97	20	
Cresols, Total	240.8	15	250	0	96.3	48 - 115	242.1	0.524	20	
Hexachlorobenzene	45.77	5.0	50	0	91.5	55 - 120	44.92	1.88	20	
Hexachlorobutadiene	39.58	5.0	50	0	79.2	55 - 120	39.38	0.492	20	
Hexachloroethane	43.17	5.0	50	0	86.3	55 - 120	43.24	0.159	20	
Nitrobenzene	46.05	5.0	50	0	92.1	55 - 120	46.04	0.0292	20	
Pentachlorophenol	102.5	5.0	100	0	103	50 - 135	100.4	2.13	20	
Pyridine	33.13	5.0	50	0	66.3	30 - 120	32	3.49	20	
Surr: 2,4,6-Tribromophenol	91.75	5.0	100	0	91.8	39 - 153	93.47	1.86	20	
Surr: 2-Fluorobiphenyl	99.55	5.0	100	0	99.6	40 - 147	101.6	2.02	20	
Surr: 2-Fluorophenol	91.19	5.0	100	0	91.2	21 - 110	92.1	0.993	20	
Surr: 4-Terphenyl-d14	120.4	5.0	100	0	120	39 - 141	118	2	20	
Surr: Nitrobenzene-d5	99.35	5.0	100	0	99.4	37 - 140	99.39	0.0423	20	
Surr: Phenol-d6	93.94	5.0	100	0	93.9	11 - 110	95.62	1.78	20	

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163849 (0)		Instrument: SV-4		Method: TCLP SEMIVOLATILES					
MS		Sample ID: HS21030940-13MS		Units: ug/L		Analysis Date: 26-Mar-2021 15:28			
Client ID: SB-8 (Organic)		Run ID: SV-4_380474		SeqNo: 6014894		PrepDate: 25-Mar-2021		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
2,4,5-Trichlorophenol	110.9	5.0	100	0	111	55 - 120			
2,4,6-Trichlorophenol	102	5.0	100	0	102	55 - 120			
2,4-Dinitrotoluene	55.32	5.0	50	0	111	55 - 125			
Cresols, Total	229.5	15	250	0	91.8	48 - 115			
Hexachlorobenzene	50.87	5.0	50	0	102	55 - 120			
Hexachlorobutadiene	36.43	5.0	50	0	72.9	55 - 120			
Hexachloroethane	40.75	5.0	50	0	81.5	55 - 120			
Nitrobenzene	43.97	5.0	50	0	87.9	55 - 120			
Pentachlorophenol	109	5.0	100	0	109	50 - 135			
Pyridine	36.42	5.0	50	0	72.8	30 - 120			
Surr: 2,4,6-Tribromophenol	99.18	5.0	100	0	99.2	39 - 153			
Surr: 2-Fluorobiphenyl	96.42	5.0	100	0	96.4	40 - 147			
Surr: 2-Fluorophenol	83.37	5.0	100	0	83.4	21 - 110			
Surr: 4-Terphenyl-d14	135.7	5.0	100	0	136	39 - 141			
Surr: Nitrobenzene-d5	91.35	5.0	100	0	91.4	37 - 140			
Surr: Phenol-d6	92.09	5.0	100	0	92.1	11 - 110			
The following samples were analyzed in this batch:									
HS21030940-13		HS21030940-17		HS21030940-21		HS21030940-25			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163837 (0)		Instrument: VOA9		Method: TCLP VOLATILES					
MBLK	Sample ID: MBLK-163837	Units: ug/L		Analysis Date: 25-Mar-2021 18:33					
Client ID:	Run ID: VOA9_380378		SeqNo: 6011942		PrepDate: 25-Mar-2021		DF: 20		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
1,1-Dichloroethene	U	100							
1,2-Dichloroethane	U	100							
1,4-Dichlorobenzene	U	100							
2-Butanone	U	200							
Benzene	U	100							
Carbon tetrachloride	U	100							
Chlorobenzene	U	100							
Chloroform	U	100							
Tetrachloroethene	U	100							
Trichloroethene	U	100							
Vinyl chloride	U	40							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1163</i>	<i>100</i>	<i>1000</i>	<i>0</i>	<i>116</i>	<i>70 - 130</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1028</i>	<i>100</i>	<i>1000</i>	<i>0</i>	<i>103</i>	<i>82 - 115</i>			
<i>Surr: Dibromofluoromethane</i>	<i>1066</i>	<i>100</i>	<i>1000</i>	<i>0</i>	<i>107</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>1033</i>	<i>100</i>	<i>1000</i>	<i>0</i>	<i>103</i>	<i>81 - 120</i>			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163837 (0)		Instrument: VOA9		Method: TCLP VOLATILES					
LCS		Sample ID: VLCSW-163837		Units: ug/L		Analysis Date: 25-Mar-2021 12:06			
Client ID:		Run ID: VOA9_380378		SeqNo: 6011938		PrepDate:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
1,1-Dichloroethene	18.4	5.0	20	0	92.0	70 - 130			
1,2-Dichloroethane	19.55	5.0	20	0	97.8	70 - 124			
1,4-Dichlorobenzene	16.77	5.0	20	0	83.9	79 - 113			
2-Butanone	45.57	10	40	0	114	70 - 130			
Benzene	19.02	5.0	20	0	95.1	74 - 120			
Carbon tetrachloride	17.6	5.0	20	0	88.0	71 - 125			
Chlorobenzene	17.58	5.0	20	0	87.9	76 - 113			
Chloroform	20.62	5.0	20	0	103	71 - 121			
Tetrachloroethene	16.14	5.0	20	0	80.7	76 - 119			
Trichloroethene	18.01	5.0	20	0	90.0	77 - 121			
Vinyl chloride	19.71	2.0	20	0	98.5	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>56.92</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>114</i>	<i>70 - 130</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>51.17</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>82 - 115</i>			
<i>Surr: Dibromofluoromethane</i>	<i>53.98</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>51.4</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>81 - 120</i>			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163837 (0)		Instrument: VOA9		Method: TCLP VOLATILES					
LCS		Sample ID: VLCSW-163837		Units: ug/L		Analysis Date: 26-Mar-2021 11:15			
Client ID:		Run ID: VOA9_380455		SeqNo: 6013484		PrepDate:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
1,1-Dichloroethene	20.15	5.0	20	0	101	70 - 130			
1,2-Dichloroethane	19.05	5.0	20	0	95.2	70 - 124			
1,4-Dichlorobenzene	18.49	5.0	20	0	92.4	79 - 113			
2-Butanone	45.3	10	40	0	113	70 - 130			
Benzene	19.51	5.0	20	0	97.5	74 - 120			
Carbon tetrachloride	20.44	5.0	20	0	102	71 - 125			
Chlorobenzene	18.47	5.0	20	0	92.4	76 - 113			
Chloroform	20.14	5.0	20	0	101	71 - 121			
Tetrachloroethene	18.72	5.0	20	0	93.6	76 - 119			
Trichloroethene	18.6	5.0	20	0	93.0	77 - 121			
Vinyl chloride	20.29	2.0	20	0	101	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>54.67</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>70 - 130</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>51.72</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>82 - 115</i>			
<i>Surr: Dibromofluoromethane</i>	<i>52.93</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>106</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>51.61</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>81 - 120</i>			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163837 (0)		Instrument: VOA9		Method: TCLP VOLATILES					
MS		Sample ID: HS21031350-01MS		Units: ug/L		Analysis Date: 26-Mar-2021 13:22			
Client ID:		Run ID: VOA9_380455		SeqNo: 6013487		PrepDate:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
1,1-Dichloroethene	23.81	5.0	20	0	119	70 - 130			
1,2-Dichloroethane	21.38	5.0	20	0	107	70 - 127			
1,4-Dichlorobenzene	20.3	5.0	20	0	102	70 - 114			
2-Butanone	50.78	10	40	0	127	70 - 130			
Benzene	24.5	5.0	20	2.478	110	70 - 127			
Carbon tetrachloride	24.26	5.0	20	0	121	70 - 130			
Chlorobenzene	20.57	5.0	20	0	103	70 - 114			
Chloroform	23.25	5.0	20	0	116	70 - 125			
Tetrachloroethene	23.36	5.0	20	1.356	110	70 - 130			
Trichloroethene	22.47	5.0	20	0	112	70 - 129			
Vinyl chloride	22.76	2.0	20	0.94	109	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>54.43</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>70 - 126</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>51.81</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>82 - 124</i>			
<i>Surr: Dibromofluoromethane</i>	<i>53.49</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>107</i>	<i>77 - 123</i>			
<i>Surr: Toluene-d8</i>	<i>51.81</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>82 - 127</i>			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163837 (0)		Instrument: VOA9		Method: TCLP VOLATILES					
MS		Sample ID: HS21031204-40MS		Units: ug/L		Analysis Date: 25-Mar-2021 15:38			
Client ID:		Run ID: VOA9_380378		SeqNo: 6011941		PrepDate:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
1,1-Dichloroethene	24.29	5.0	20	0	121	70 - 130			
1,2-Dichloroethane	22.13	5.0	20	0	111	70 - 127			
1,4-Dichlorobenzene	20.48	5.0	20	0	102	70 - 114			
2-Butanone	55.98	10	40	0	140	70 - 130			S
Benzene	22.62	5.0	20	0	113	70 - 127			
Carbon tetrachloride	24.61	5.0	20	0	123	70 - 130			
Chlorobenzene	21.67	5.0	20	0	108	70 - 114			
Chloroform	23.92	5.0	20	0	120	70 - 125			
Tetrachloroethene	21.66	5.0	20	0	108	70 - 130			
Trichloroethene	22.43	5.0	20	0	112	70 - 129			
Vinyl chloride	23.23	2.0	20	0	116	70 - 130			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>56.3</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>113</i>	<i>70 - 126</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>52.25</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>105</i>	<i>82 - 124</i>			
<i>Surr: Dibromofluoromethane</i>	<i>54.5</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>109</i>	<i>77 - 123</i>			
<i>Surr: Toluene-d8</i>	<i>51.8</i>	<i>5.0</i>	<i>50</i>	<i>0</i>	<i>104</i>	<i>82 - 127</i>			
The following samples were analyzed in this batch:									
HS21030940-13		HS21030940-17		HS21030940-21		HS21030940-25			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163657 (0)		Instrument: ICS2100		Method: ANIONS BY SW9056A					
MBLK	Sample ID: MBLK-163657	Units: mg/Kg		Analysis Date: 22-Mar-2021 20:19					
Client ID:	Run ID: ICS2100_380224	SeqNo: 6008787		PrepDate: 19-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	U	1.00							
Nitrogen, Nitrite (As N)	U	1.00							

LCS	Sample ID: LCS-163657	Units: mg/Kg		Analysis Date: 22-Mar-2021 20:37					
Client ID:	Run ID: ICS2100_380224	SeqNo: 6008788		PrepDate: 19-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	37.48	1.00	40	0	93.7	80 - 120			
Nitrogen, Nitrite (As N)	40.85	1.00	40	0	102	80 - 120			

MS	Sample ID: HS21030842-02MS	Units: mg/Kg		Analysis Date: 23-Mar-2021 00:36					
Client ID:	Run ID: ICS2100_380224	SeqNo: 6008796		PrepDate: 19-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	19.07	0.996	19.92	0.9895	90.8	80 - 120			
Nitrogen, Nitrite (As N)	21.27	0.996	19.92	0	107	80 - 120			

MSD	Sample ID: HS21030842-02MSD	Units: mg/Kg		Analysis Date: 23-Mar-2021 00:55					
Client ID:	Run ID: ICS2100_380224	SeqNo: 6008797		PrepDate: 19-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	18.28	0.990	19.81	0.9895	87.3	80 - 120	19.07	4.21	20
Nitrogen, Nitrite (As N)	19.7	0.990	19.81	0	99.5	80 - 120	21.27	7.63	20

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04
HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163963 (0)		Instrument: WetChem_HS		Method: TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D					
MBLK	Sample ID: MBLK-163963	Units: mg/Kg		Analysis Date: 31-Mar-2021 13:58					
Client ID:	Run ID: WetChem_HS_380674		SeqNo: 6018751		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl	U	20							
LCS	Sample ID: LCS-163963	Units: mg/Kg		Analysis Date: 31-Mar-2021 13:58					
Client ID:	Run ID: WetChem_HS_380674		SeqNo: 6018749		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl	457.1	20	500	0	91.4	75 - 125			
LCSD	Sample ID: LCSD-163963	Units: mg/Kg		Analysis Date: 31-Mar-2021 13:58					
Client ID:	Run ID: WetChem_HS_380674		SeqNo: 6018750		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl	505.8	20	500	0	101	75 - 125	457.1	10.1	35
MS	Sample ID: HS21030940-05MS	Units: mg/Kg		Analysis Date: 31-Mar-2021 13:58					
Client ID: SB-2 (18-30")	Run ID: WetChem_HS_380674		SeqNo: 6018747		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl	834.3	19	485.9	304.6	109	75 - 125			
MSD	Sample ID: HS21030940-05MSD	Units: mg/Kg		Analysis Date: 31-Mar-2021 13:58					
Client ID: SB-2 (18-30")	Run ID: WetChem_HS_380674		SeqNo: 6018748		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl	826.7	20	496.4	304.6	105	75 - 125	834.3	0.916	35

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04
HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08
HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-14	HS21030940-15	HS21030940-16	HS21030940-18
HS21030940-19	HS21030940-20		

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163965 (0)		Instrument: WetChem_HS		Method: TOTAL KJELDAHL NITROGEN BY SM4500 NH3 D					
MBLK	Sample ID: MBLK-163965	Units: mg/Kg		Analysis Date: 01-Apr-2021 13:01					
Client ID:	Run ID: WetChem_HS_380748		SeqNo: 6020435		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl									
	U	20							
LCS	Sample ID: LCS-163965	Units: mg/Kg		Analysis Date: 01-Apr-2021 13:01					
Client ID:	Run ID: WetChem_HS_380748		SeqNo: 6020433		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl									
	506.8	20	500	0	101	75 - 125			
LCSD	Sample ID: LCSD-163965	Units: mg/Kg		Analysis Date: 01-Apr-2021 13:01					
Client ID:	Run ID: WetChem_HS_380748		SeqNo: 6020434		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl									
	521.8	20	500	0	104	75 - 125	506.8	2.9	35
MS	Sample ID: HS21030940-22MS	Units: mg/Kg		Analysis Date: 01-Apr-2021 13:01					
Client ID: SB-5 (5-5.5')	Run ID: WetChem_HS_380748		SeqNo: 6020431		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl									
	475.2	20	489	53.09	86.3	75 - 125			
MSD	Sample ID: HS21030940-22MSD	Units: mg/Kg		Analysis Date: 01-Apr-2021 13:01					
Client ID: SB-5 (5-5.5')	Run ID: WetChem_HS_380748		SeqNo: 6020432		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Total Kjeldahl									
	490.8	19	487.2	53.09	89.8	75 - 125	475.2	3.24	35
The following samples were analyzed in this batch:									
HS21030940-22 HS21030940-23 HS21030940-24									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 163968 (0)		Instrument: ICS-Integrion		Method: ANIONS BY SW9056A					
MBLK	Sample ID: MBLK-163968	Units: mg/Kg		Analysis Date: 30-Mar-2021 09:48					
Client ID:	Run ID: ICS-Integrion_380677		SeqNo: 6018783		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	U	1.00							
Nitrogen, Nitrite (As N)	U	1.00							

LCS	Sample ID: LCS-163968	Units: mg/Kg		Analysis Date: 30-Mar-2021 10:06					
Client ID:	Run ID: ICS-Integrion_380677		SeqNo: 6018784		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	37.19	1.00	40	0	93.0	80 - 120			
Nitrogen, Nitrite (As N)	43.49	1.00	40	0	109	80 - 120			

MS	Sample ID: HS21030870-23MS	Units: mg/Kg		Analysis Date: 30-Mar-2021 15:56					
Client ID:	Run ID: ICS-Integrion_380677		SeqNo: 6018802		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	43.05	0.992	19.84	23.57	98.2	80 - 120			
Nitrogen, Nitrite (As N)	23.29	0.992	19.84	0	117	80 - 120			

MSD	Sample ID: HS21030870-23MSD	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:51					
Client ID:	Run ID: ICS-Integrion_380677		SeqNo: 6018804		PrepDate: 29-Mar-2021		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Nitrogen, Nitrate (As N)	42.06	0.991	19.81	23.57	93.3	80 - 120	43.05	2.33	20
Nitrogen, Nitrite (As N)	22.63	0.991	19.81	0	114	80 - 120	23.29	2.88	20

The following samples were analyzed in this batch:

HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-14	HS21030940-15	HS21030940-16	HS21030940-18
HS21030940-19	HS21030940-20	HS21030940-22	HS21030940-23
HS21030940-24			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164000 (0)		Instrument: UV-2450		Method: PHOSPHORUS BY E365.3					
MBLK	Sample ID: MBLK-164000	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:50					
Client ID:	Run ID: UV-2450_380624	SeqNo: 6017438		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) U 2.00									
LCS	Sample ID: LCS-164000	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:50					
Client ID:	Run ID: UV-2450_380624	SeqNo: 6017436		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 12.2 2.00 12.5 0 97.6 80 - 120									
LCSD	Sample ID: LCSD-164000	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:50					
Client ID:	Run ID: UV-2450_380624	SeqNo: 6017437		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 12.3 2.00 12.5 0 98.4 80 - 120 12.2 0.816 20									
MS	Sample ID: HS21030940-01MS	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:50					
Client ID: SB-1 (0-6")	Run ID: UV-2450_380624	SeqNo: 6017434		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 11.08 1.87 11.69 7.834 27.8 80 - 120 S									
MSD	Sample ID: HS21030940-01MSD	Units: mg/Kg		Analysis Date: 30-Mar-2021 16:50					
Client ID: SB-1 (0-6")	Run ID: UV-2450_380624	SeqNo: 6017435		PrepDate: 30-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 11.63 1.97 12.32 7.834 30.8 80 - 120 11.08 4.83 20 S									
The following samples were analyzed in this batch:									
HS21030940-01		HS21030940-02		HS21030940-04		HS21030940-07			
HS21030940-10		HS21030940-11		HS21030940-12		HS21030940-15			
HS21030940-16		HS21030940-19		HS21030940-20					

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: 164055 (0)		Instrument: UV-2450		Method: PHOSPHORUS BY E365.3					
MBLK	Sample ID: MBLK-164055	Units: mg/Kg		Analysis Date: 31-Mar-2021 12:50					
Client ID:	Run ID: UV-2450_380678	SeqNo: 6018854		PrepDate: 31-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) U 2.00									
LCS	Sample ID: LCS-164055	Units: mg/Kg		Analysis Date: 31-Mar-2021 12:50					
Client ID:	Run ID: UV-2450_380678	SeqNo: 6018852		PrepDate: 31-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 13.95 2.00 12.5 0 112 80 - 120									
LCSD	Sample ID: LCSD-164055	Units: mg/Kg		Analysis Date: 31-Mar-2021 12:50					
Client ID:	Run ID: UV-2450_380678	SeqNo: 6018853		PrepDate: 31-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 13.8 2.00 12.5 0 110 80 - 120 13.95 1.08 20									
MS	Sample ID: HS21030940-06MS	Units: mg/Kg		Analysis Date: 31-Mar-2021 12:50					
Client ID: SB-2 (42-54")	Run ID: UV-2450_380678	SeqNo: 6018850		PrepDate: 31-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 11.37 1.95 12.2 1.464 81.2 80 - 120									
MSD	Sample ID: HS21030940-06MSD	Units: mg/Kg		Analysis Date: 31-Mar-2021 12:50					
Client ID: SB-2 (42-54")	Run ID: UV-2450_380678	SeqNo: 6018851		PrepDate: 31-Mar-2021		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Phosphorus, Total (As P) 11.48 1.95 12.21 1.464 82.0 80 - 120 11.37 0.991 20									
The following samples were analyzed in this batch:									
HS21030940-03 HS21030940-05 HS21030940-06 HS21030940-08 HS21030940-09 HS21030940-14 HS21030940-18 HS21030940-22 HS21030940-23 HS21030940-24									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380020 (0)		Instrument: WetChem_HS		Method: FLASH POINT BY CLEVELAND OPEN CUP ASTM D92-12B					
DUP	Sample ID: HS21030940-13DUP	Units: °F		Analysis Date: 20-Mar-2021 10:00					
Client ID: SB-8 (Organic)	Run ID: WetChem_HS_380020		SeqNo: 6003974		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Flash Point	> 212	50.0					0	0	30
The following samples were analyzed in this batch:									
HS21030940-13 HS21030940-17 HS21030940-21 HS21030940-25									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380095 (0)		Instrument: WetChem_HS		Method: PH SOIL BY SW9045D					
DUP	Sample ID: HS21030940-01DUP	Units: pH Units		Analysis Date: 22-Mar-2021 17:21					
Client ID: SB-1 (0-6")	Run ID: WetChem_HS_380095		SeqNo: 6005478		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
pH	5.22	0.100					5.27	0.953	10
Temp Deg C @pH	20.8	0					20.8	0	10

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04
HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08
HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-13	HS21030940-14	HS21030940-17	

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380417 (0)		Instrument: Balance1		Method: TOTAL SOLIDS BY SM2540G					
DUP	Sample ID: HS21030940-25DUP	Units: wt%		Analysis Date: 26-Mar-2021 08:45					
Client ID: SB-5 (Organic)	Run ID: Balance1_380417		SeqNo: 6012706		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Total Solids	80.3	0.0100					80.7	0.504	20
The following samples were analyzed in this batch:									
HS21030940-13 HS21030940-17 HS21030940-21 HS21030940-25									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380668 (0)		Instrument: WetChem_HS		Method: PH SOIL BY SW9045D					
DUP	Sample ID: HS21030940-15DUP	Units: pH Units		Analysis Date: 31-Mar-2021 13:25					
Client ID: SB-7 (6.5-7.5')	Run ID: WetChem_HS_380668		SeqNo: 6018603		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
pH	8.52	0.100					8.57	0.585	10
Temp Deg C @pH	21.3	0					21.4	0.468	10

The following samples were analyzed in this batch:

HS21030940-15	HS21030940-16	HS21030940-18	HS21030940-19
HS21030940-20	HS21030940-21	HS21030940-22	HS21030940-23
HS21030940-24	HS21030940-25		

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380670 (0)		Instrument: Balance1		Method: MOISTURE - ASTM D2216					
DUP	Sample ID: HS21030940-17DUP	Units: wt%		Analysis Date: 30-Mar-2021 11:32					
Client ID: SB-7 (Organic)	Run ID: Balance1_380670		SeqNo: 6018657		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Percent Moisture	23.8	0.0100					23.6	0.844	20

The following samples were analyzed in this batch:

HS21030940-01	HS21030940-02	HS21030940-03	HS21030940-04
HS21030940-05	HS21030940-06	HS21030940-07	HS21030940-08
HS21030940-09	HS21030940-10	HS21030940-11	HS21030940-12
HS21030940-13	HS21030940-14	HS21030940-15	HS21030940-16
HS21030940-17			

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380671 (0)		Instrument: Balance1		Method: MOISTURE - ASTM D2216					
DUP	Sample ID: HS21031249-20DUP	Units: wt%		Analysis Date: 30-Mar-2021 11:34					
Client ID:	Run ID: Balance1_380671		SeqNo: 6018688		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Percent Moisture	12.6	0.0100					12.8	1.57	20

The following samples were analyzed in this batch:

HS21030940-18	HS21030940-19	HS21030940-20	HS21030940-21
HS21030940-22	HS21030940-23	HS21030940-24	HS21030940-25

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380709 (0)		Instrument: Balance1		Method: TOTAL VOLATILE SOLIDS BY E160.4						
DUP	Sample ID: HS21030940-13DUP		Units: wt%		Analysis Date: 31-Mar-2021 09:00					
Client ID: SB-8 (Organic)	Run ID: Balance1_380709		SeqNo: 6019431		PrepDate:		DF: 1			
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Volatile Solids	4.104	0.0100					3.997	2.65	20	
The following samples were analyzed in this batch:										
HS21030940-13		HS21030940-17		HS21030940-21		HS21030940-25				

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380742 (0)		Instrument: WetChem_HS		Method: REACTIVE SULFIDE					
MBLK	Sample ID: MBLK-R380742	Units: mg/Kg		Analysis Date: 31-Mar-2021 16:00					
Client ID:	Run ID: WetChem_HS_380742		SeqNo: 6020401		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Sulfide	U	100							
LCS	Sample ID: LCS-R380742	Units: mg/Kg		Analysis Date: 31-Mar-2021 16:00					
Client ID:	Run ID: WetChem_HS_380742		SeqNo: 6020400		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Sulfide	64	100	100	0	64.0	20 - 120			J
MS	Sample ID: HS21031270-03MS	Units: mg/Kg		Analysis Date: 31-Mar-2021 16:00					
Client ID:	Run ID: WetChem_HS_380742		SeqNo: 6020416		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Sulfide	60	100	100	-4	64.0	20 - 120			J
The following samples were analyzed in this batch:									
HS21030940-13 HS21030940-17 HS21030940-21 HS21030940-25									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380760 (0)		Instrument: UV-2450		Method: REACTIVE CYANIDE					
MBLK	Sample ID: MBLK-R380760	Units: mg/Kg		Analysis Date: 31-Mar-2021 17:00					
Client ID:	Run ID: UV-2450_380760		SeqNo: 6020722		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Cyanide	U	100							
LCS	Sample ID: LCS-R380760	Units: mg/Kg		Analysis Date: 31-Mar-2021 17:00					
Client ID:	Run ID: UV-2450_380760		SeqNo: 6020721		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Cyanide	0.66	100	10	0	6.60	5 - 100			J
MS	Sample ID: HS21031270-03MS	Units: mg/Kg		Analysis Date: 31-Mar-2021 17:00					
Client ID:	Run ID: UV-2450_380760		SeqNo: 6020723		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
Reactive Cyanide	0.65	100	10	0	6.50	5 - 100			J
The following samples were analyzed in this batch:									
HS21030940-13 HS21030940-17 HS21030940-21 HS21030940-25									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380766 (0)		Instrument: WetChem_HS		Method: LA29B ELECTRICAL CONDUCTIVITY					
MBLK	Sample ID: MBLK-R380766	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 15:30					
Client ID:	Run ID: WetChem_HS_380766		SeqNo: 6020849		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity @ saturation	U	0.0100							
Electrical Conductivity, 1:1 aqueous	U	0.0100							
Saturation % as decimal		0							
LCS	Sample ID: LCS-R380766	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 15:30					
Client ID:	Run ID: WetChem_HS_380766		SeqNo: 6020848		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity, 1:1 aqueous	1.416	0.0100	1.412	0	100	85 - 115			
DUP	Sample ID: HS21030940-20DUP	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 15:30					
Client ID: SB-6 (8.5-9.5)	Run ID: WetChem_HS_380766		SeqNo: 6020850		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity @ saturation	U	0.0100					0	0	20
Electrical Conductivity, 1:1 aqueous	0.81	0.0100					0.808	0.247	20
Saturation % as decimal	0	0					0	0	20
The following samples were analyzed in this batch:									
HS21030940-01		HS21030940-02		HS21030940-03		HS21030940-04			
HS21030940-05		HS21030940-06		HS21030940-07		HS21030940-08			
HS21030940-09		HS21030940-10		HS21030940-11		HS21030940-12			
HS21030940-14		HS21030940-15		HS21030940-16		HS21030940-18			
HS21030940-19		HS21030940-20		HS21030940-22					

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

QC BATCH REPORT

Batch ID: R380768 (0)		Instrument: WetChem_HS		Method: LA29B ELECTRICAL CONDUCTIVITY					
MBLK	Sample ID: MBLK-380768	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 16:06					
Client ID:	Run ID: WetChem_HS_380768		SeqNo: 6020876		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity @ saturation	U	0.0100							
Electrical Conductivity, 1:1 aqueous	U	0.0100							
Saturation % as decimal	0	0							
LCS	Sample ID: LCS-380768	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 16:06					
Client ID:	Run ID: WetChem_HS_380768		SeqNo: 6020877		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity, 1:1 aqueous	1.416	0.0100	1.412	0	100	85 - 115			
DUP	Sample ID: HS21030940-24DUP	Units: mmhos/cm @25° C		Analysis Date: 01-Apr-2021 16:06					
Client ID: SB-5 (8.5-9.5')	Run ID: WetChem_HS_380768		SeqNo: 6020878		PrepDate:		DF: 1		
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Electrical Conductivity @ saturation	U	0.0100					0	0	20
Electrical Conductivity, 1:1 aqueous	0.835	0.0100					0.837	0.239	20
Saturation % as decimal	0	0					0	0	20
The following samples were analyzed in this batch:									
HS21030940-23 HS21030940-24									

Client: Tolunay-Wong Engineers, Inc.
Project: B & C Frito Lay Rosenberg
WorkOrder: HS21030940

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919, 2020-2021	30-Apr-2021
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322020-4	09-May-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2020-2021	30-Apr-2021
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2021	31-Dec-2021
North Dakota	R-193 2020-2021	30-Apr-2021
Oklahoma	2020-165	31-Aug-2021
Texas	T104704231-20-26	30-Apr-2021

Sample Receipt Checklist

Work Order ID: HS21030940

Date/Time Received: 18-Mar-2021 15:35

Client Name: TW-Hou

Received by: Pablo Martinez

Completed By: /S/ Pablo Martinez

18-Mar-2021 19:25

Reviewed by: /S/ RJ Modashia

19-Mar-2021 10:54

eSignature

Date/Time

eSignature

Date/Time

Matrices:

SOLID/WATER

Carrier name:

ALS.HS

Shipping container/cooler in good condition?

Yes ☒No ☐Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒No ☐Not Present ☐

Custody seals intact on sample bottles?

Yes ☐No ☐Not Present ☒

VOA/TX1005/TX1006 Solids in hermetically sealed vials?

Yes ☒No ☐Not Present ☐

Chain of custody present?

Yes ☒No ☐

3 Page(s)

Chain of custody signed when relinquished and received?

Yes ☒No ☐

COC

IDs:239599/239600/239601

Samplers name present on COC?

Yes ☐No ☒

Chain of custody agrees with sample labels?

Yes ☒No ☐

Samples in proper container/bottle?

Yes ☒No ☐

Sample containers intact?

Yes ☒No ☐

Sufficient sample volume for indicated test?

Yes ☒No ☐

All samples received within holding time?

Yes ☒No ☐

Container/Temp Blank temperature in compliance?

Yes ☒No ☐

Temperature(s)/Thermometer(s):

0.4C/1.5C/0.5C UC/C

IR 31

Cooler(s)/Kit(s):

45803/46722/47021

Date/Time sample(s) sent to storage:

3/18/21 19:35

Water - VOA vials have zero headspace?

Yes ☒No ☐No VOA vials submitted ☐

Water - pH acceptable upon receipt?

Yes ☐No ☐N/A ☒

pH adjusted?

Yes ☐No ☐N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

Corrective Action:



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Chain of Custody Form

Page 1 of 3

COC ID: 239599

HS21030940

Tolunay-Wong Engineers, Inc.
B & C Frito Lay Rosenberg



Customer Information				ALS Project Manager:			
Purchase Order		Project Name		Project Information			
Work Order		Project Number	B & C Frito Lay Rosenberg	A	LA29B SAR (SAR), 2:1 Ration EC, ICP- K, Ca, Mg, Na		
Company Name	Tolunay-Wong Engineers, Inc.	Bill To Company	Tolunay-Wong Engineers, Inc.	B	2:1 Ration pH, Total Nitrogen, Phosphorus, Moisture		
Send Report To	Cesar Sique	Invoice Attn	Joyce Leung (Invoice)	C	TCLP RCRA 8 Metals, TCLP SVOC, TCLP VOC		
Address	10710 S. Sam Houston Pkwy W. Suite 100	Address	10710 S. Sam Houston Pkwy W. Suite 100	D	TVS_S (Total Volatile Solids), TS, Moisture		
City/State/Zip	Houston, TX 77031	City/State/Zip	Houston TX 77031	E	RCI Profile (RCI)		
Phone	(713) 722-7064	Phone	(713) 722-7064	F	TX1005_S_REV3 (TPH TX1005)		
Fax	(713) 722-0319	Fax	(713) 722-0319	G	SUB_Sulfur (Sub Sulfur to ALS Fort Collins)		
e-Mail Address	csique@tweinc.com	e-Mail Address	jleung@tweinc.com	H			
				I			
				J			

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-1 (0-6")	3-15-21	11:15	S		3	X	X					X				
2	SB-1 (18-30")	3-15-21	11:15	S		3	X	X					X				
3	SB-1 (42-54")	3-15-21	11:15	S		3	X	X					X				
4	SB-2 (0-6")	3-15-21	12:30	S		3	X	X					X				
5	SB-2 (18-30")	3-15-21	12:30	S		3	X	X					X				
6	SB-2 (42-54")	3-15-21	12:30	S		3	X	X					X				
7	SB-3 (0-6")	3-15-21	14:45	S		3	X	X					X				
8	SB-3 (18-30")	3-15-21	14:45	S		3	X	X					X				
9	SB-3 (42-54")	3-15-21	14:45	S		3	X	X					X				
10	SB-8 (5-5.5")	3-16-21	10:34	S		3	X	X					X				

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:					
Relinquished by:	<i>Cesar Sique</i>	Date:	3/18/21	Time:	9:47	☒ STD 10 Wk Days	☐ 5 Wk Days	☐ Other	☐ 2 Wk Days	☐ 24 Hour	
Relinquished by:	<i>Pats M...</i>	Date:	3/18/21	Time:	14:00	Notes: Brown & Caldwell Frito Lay Rosenberg					
Logged by (Laboratory):		Date:		Time:		Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)			
Reservative Key:	1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035			Checked by (Laboratory):		45803	0.4C	☐ Level II Std QC	☒ TRRP Checklist		
						46722	1.5C	☐ Level III Std QC/Raw Date	☐ TRRP Level IV		
						47021	0.5C	☐ Level IV SW846/CLP	☐ Other		

1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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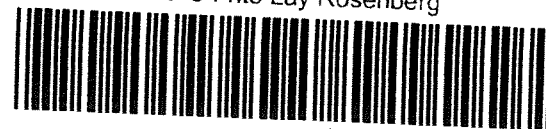
Chain of Custody Form

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COC ID: 239600

HS21030940

Tolunay-Wong Engineers, Inc.
B & C Frito Lay Rosenberg



Customer Information				ALS Project Manager:															
Project Information																			
Purchase Order	Project Name	Project Number																	
Work Order	Project Name	Project Number																	
Company Name	Project Name	Project Number																	
Send Report To	Project Name	Project Number																	
Address	Project Name	Project Number																	
City/State/Zip	Project Name	Project Number																	
Phone	Project Name	Project Number																	
Fax	Project Name	Project Number																	
e-Mail Address	Project Name	Project Number																	
B & C Frito Lay Rosenberg																			
Tolunay-Wong Engineers, Inc.																			
Cesar Sique																			
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Houston, TX 77031																			
(713) 722-7064																			
(713) 722-0319																			
csique@tweinc.com																			
jleung@tweinc.com																			

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-8(6.5-7.5')	3/16/21	10:34	S		3	X	X					X				
2	SB-8(8.5-9.5')	3/16/21	10:34	S		3	X	X					X				
3	SB-8(organic)	3/16/21	10:29	S		4			X	X	X	X					
4	SB-7(5-5.5')	3/16/21	11:00	S		3	X	X					X				
5	SB-7(6.5-7.5')	3/16/21	11:00	S		3	X	X					X				
6	SB-7(8.5-9.5')	3/16/21	11:00	S		3	X	X					X				
7	SB-7(organic)	3/16/21	10:55	S		4			X	X	X	X					
8	SB-6(5-5.5')	3/16/21	11:35	S		3	X	X					X				
9	SB-6(6.5-7.5')	3/16/21	11:35	S		3	X	X					X				
10	SB-6(8.5-9.5')	3/16/21	11:35	S		3	X	X					X				

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:			
Relinquished by: <u>Cesar Sique</u>	Date: <u>3/18/21</u>	Time: <u>9:47</u>	Received by: <u>Palb Main</u>	Date: <u>3/18/21</u>	Time: <u>14:00</u>	☒ STD 10 Wk Days	☐ 5 Wk Days	☐ 2 Wk Days	☐ 24 Hour
Relinquished by: <u>Palb Main</u>	Date: <u>3/18/21</u>	Time: <u>14:00</u>	Received by (Laboratory): <u>Palb Main</u>	Date: <u>3/18/21</u>	Time: <u>14:00</u>	Notes: Brown & Caldwell Frito Lay Rosenberg			
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	Date:	Time:	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)	
						45805		☐ Level II Std QC	☒ TRRP Checklist
						46722		☐ Level III Std QC/Raw Data	☐ TRRP Level IV
						47021		☐ Level IV SI/WS/CLP	
								☐ Other	

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

te: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 3 of 3

COC ID: 239601

HS21030940

Tolunay-Wong Engineers, Inc.
B & C Frito Lay Rosenberg



Customer Information		ALS Project Manager:	
		Project Information	
Purchase Order		Project Name	B & C Frito Lay Rosenberg
Work Order		Project Number	
Company Name	Tolunay-Wong Engineers, Inc.	Bill To Company	Tolunay-Wong Engineers, Inc.
Send Report To	Cesar Sique	Invoice Attn	Joyce Leung (Invoice)
Address	10710 S. Sam Houston Pkwy W. Suite 100	Address	10710 S. Sam Houston Pkwy W. Suite 100
City/State/Zip	Houston, TX 77031	City/State/Zip	Houston TX 77031
Phone	(713) 722-7064	Phone	(713) 722-7064
Fax	(713) 722-0319	Fax	(713) 722-0319
e-Mail Address	csique@tweinc.com	e-Mail Address	jleung@tweinc.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-6 (Organic)	3-16-21	11:30	S		4			X	X	X	X					
2	SB-5 (5-5.5')	3-16-21	13:47	S		3	X	X					X				
3	SB-5 (6.5-7.5')	3-16-21	13:47	S		3	X	X					X				
4	SB-5 (8.5-9.5')	3-16-21	13:47	S		3	X	X					X				
5	SB-5 (Organic)	3-16-21	13:42	S		4			X	X	X	X					
6	CG-121520-820			W		2											
7	CG-121520-824			W		2											
8	CG-121520-819			W		2											
9																	
10																	

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box)

☒ STD 10 Wk Days

☐ 5 Wk Days

☐ Other

☐ 2 Wk Days

☐ 24 Hour

Results Due Date:

Relinquished by: *Cesar Sique* Date: *3/18/21* Time: *9:47*
Relinquished by: *Pats Macaris* Date: *3/18/21* Time: *14:00*
Logged by (Laboratory): Date: Time:

Received by: *Pats Macaris*
Received by (Laboratory): *Pats Macaris*
Checked by (Laboratory):

Notes: Brown & Caldwell Frito Lay Rosenberg

Cooler ID

Cooler Temp.

QC Package: (Check One Box Below)

☐

Level II Std QC

☐

Level III Std QC/Raw Data

☐

Level IV SW846/CLP

☐

Other

☒

TRRP Checklist

☐

TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Notes: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CUSTODY SEAL		Seal Broken By:
	Date: <u>3/18/21</u>	Time: <u>7:00</u>	<u>PM</u>
	Name: <u>Will Sique</u>		Date: <u>3-18-21</u>
	Company: <u>TWE</u>		

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CUSTODY SEAL		Seal Broken By:
	Date: <u>3/18/21</u>	Time: <u>7:00</u>	<u>PM</u>
	Name: <u>Will Sique</u>		Date: <u>3-18-21</u>
	Company: <u>TWE</u>		

 ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887	CUSTODY SEAL		Seal Broken By:
	Date: <u>3/18/21</u>	Time: <u>7:00</u>	<u>PM</u>
	Name: <u>Will Sique</u>		Date: <u>3-18-21</u>
	Company: <u>TWE</u>		



Tuesday, March 30, 2021

RJ Modashia
ALS Environmental
10450 Stancliff Rd, Suite 210
Houston, TX 77099

Re: ALS Workorder: 2103444
Project Name:
Project Number: HS21030940

Dear Mr. Modashia:

Twenty one solid samples were received from ALS Environmental, on 3/23/2021. The samples were scheduled for the following analysis:

Metals

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Julie Ellingson
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Job No. 2103444 and laboratory batch no(s).
IP210325-1 and IP210325-2 and consists of:

☐ This signature page, the laboratory review checklist, and the following reportable data:

☐ R1 - Field chain-of-custody documentation;

☐ R2 - Sample identification cross-reference;

☐ R3 - Test reports (analytical data sheets) for each environmental sample that includes:

- a. Items consistent with NELAC Chapter 5,
- b. Dilution factors,
- c. Preparation methods,
- d. Cleanup methods, and
- e. if required for the project, tentatively identified compounds (TICs).

☐ R4 - Surrogate recovery data including:

- a. Calculated recovery (%R), and
- b. The laboratory's surrogate QC limits.

☐ R5 - Test reports/summary forms for blank samples;

☐ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:

- a. LCS spiking amounts,
- b. Calculated %R for each analyte, and
- c. The laboratory's LCS QC limits.

☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

- a. Samples associated with the MS/MSD clearly identified,
- b. MS/MSD spiking amounts,

- c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d. Calculated %Rs and relative percent differences (RPDs), and
- e. The laboratory's MS/MSD QC limits

☐ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:

- a. The amount of analyte measured in the duplicate,
- b. The calculated RPD, and
- c. The laboratory's QC limits for analytical duplicates.

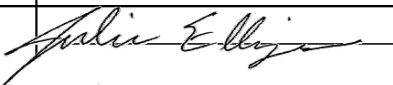
☐ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

☐ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: ☐ This laboratory meets an exception under 30 TAC §25.6 and was last inspection by ☐ TCEQ or ☐ _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name (Printed)	Signature	Official Title (printed)	Date
Julie Ellingson		CS Manager	3-30-2021

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name: ALS Laboratory Group		LRC Date: 3-30-2021					
Project Name:		Laboratory Job Number: 2103444					
Reviewer Name: Julie Ellingson		Prep Batch Number(s): IP210325-1, IP210325-2					
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?	X				
		Were % moisture (or solids) reported for all soil and sediment samples?	X				
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					

Laboratory Name: ALS Laboratory Group		LRC Date: 3-30-2021					
Project Name:		Laboratory Job Number: 2103444					
Reviewer Name: Julie Ellingson		Prep Batch Number(s): IP210325-1, 210325-2					
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				

Laboratory Name: ALS Laboratory Group			LRC Date: 3-30-2021				
Project Name:			Laboratory Job Number: 2103444				
Reviewer Name: Julie Ellingson			Prep Batch Number(s): IP210325-1, IP210325-2				
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?			X		
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period; 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							



2103444

Metals:

The samples were analyzed following SW-846, 3rd Edition procedures. Analysis by Trace ICP followed method 6010D and the current revision of SOP 834.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2103444

Client Name: ALS Environmental

Client Project Name:

Client Project Number: HS21030940

Client PO Number: 10-15801

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SB-1 (0-6")	2103444-1		SOLID	15-Mar-21	11:15
SB-1 (18-30")	2103444-2		SOLID	15-Mar-21	11:15
SB-1 (42-54")	2103444-3		SOLID	15-Mar-21	11:15
SB-2 (0-6")	2103444-4		SOLID	15-Mar-21	12:30
SB-2 (18-30")	2103444-5		SOLID	15-Mar-21	12:30
SB-2 (42-54")	2103444-6		SOLID	15-Mar-21	12:30
SB-3 (0-6")	2103444-7		SOLID	15-Mar-21	14:45
SB-3 (18-30")	2103444-8		SOLID	15-Mar-21	14:45
SB-3 (42-54")	2103444-9		SOLID	15-Mar-21	14:45
SB-8 (5-5.5')	2103444-10		SOLID	16-Mar-21	10:34
SB-8 (6.5-7.5')	2103444-11		SOLID	16-Mar-21	10:34
SB-8 (8.5-9.5')	2103444-12		SOLID	16-Mar-21	10:34
SB-7 (5-5.5')	2103444-13		SOLID	16-Mar-21	11:00
SB-7 (6.5-7.5')	2103444-14		SOLID	16-Mar-21	11:00
SB-7 (8.5-9.5')	2103444-15		SOLID	16-Mar-21	11:00
SB-6 (5-5.5')	2103444-16		SOLID	16-Mar-21	11:35
SB-6 (6.5-7.5')	2103444-17		SOLID	16-Mar-21	11:35
SB-6 (8.5-9.5')	2103444-18		SOLID	16-Mar-21	11:35
SB-5 (5-5.5')	2103444-19		SOLID	16-Mar-21	13:47
SB-5 (6.5-7.5')	2103444-20		SOLID	16-Mar-21	13:47
SB-5 (8.5-9.5')	2103444-21		SOLID	16-Mar-21	13:47



2103444

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 15801

SUBCONTRACT TO:

ALS Environmental, Fort Collins
225 Commerce Drive
Fort Collins, CO 80524

Phone: +1 970 490 1511

**CUSTOMER
INFORMATION:**

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
**Alternate
Contact:**
Email:

**INVOICE
INFORMATION:**

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS21030940
TSR: Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	HS21030940-01	SB-1 (0-6")	Solid	15 Mar 2021 11:15
	SUB_Sulfur			01 Apr 2021
2.	HS21030940-02	SB-1 (18-30")	Solid	15 Mar 2021 11:15
	SUB_Sulfur			01 Apr 2021
3.	HS21030940-03	SB-1 (42-S4")	Solid	15 Mar 2021 11:15
	SUB_Sulfur			01 Apr 2021
4.	HS21030940-04	SB-2 (0-6")	Solid	15 Mar 2021 12:30
	SUB_Sulfur			01 Apr 2021
5.	HS21030940-05	SB-2 (18-30")	Solid	15 Mar 2021 12:30
	SUB_Sulfur			01 Apr 2021
6.	HS21030940-06	SB-2 (42-S4")	Solid	15 Mar 2021 12:30
	SUB_Sulfur			01 Apr 2021
7.	HS21030940-07	SB-3 (0-6")	Solid	15 Mar 2021 14:45
	SUB_Sulfur			01 Apr 2021
8.	HS21030940-08	SB-3 (18-30")	Solid	15 Mar 2021 14:45
	SUB_Sulfur			01 Apr 2021
9.	HS21030940-09	SB-3 (42-S4")	Solid	15 Mar 2021 14:45

ELITE SOLUTIONS | RIGHT PARTNER

Page 2 of 3



Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 15801

LAB SAMPLE ID		CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED				DUE DATE
SUB_Sulfur				01 Apr 2021
10.	HS21030940-10	SB-8 (5-5.5')	Solid	16 Mar 2021 10:34
SUB_Sulfur				01 Apr 2021
11.	HS21030940-11	SB-8 (6.5-7.5')	Solid	16 Mar 2021 10:34
SUB_Sulfur				01 Apr 2021
12.	HS21030940-12	SB-8 (8.5-9.5')	Solid	16 Mar 2021 10:34
SUB_Sulfur				01 Apr 2021
13.	HS21030940-14	SB-7 (5-5.5')	Solid	16 Mar 2021 11:00
SUB_Sulfur				01 Apr 2021
14.	HS21030940-15	SB-7 (6.5-7.5')	Solid	16 Mar 2021 11:00
SUB_Sulfur				01 Apr 2021
15.	HS21030940-16	SB-7 (8.5-9.5')	Solid	16 Mar 2021 11:00
SUB_Sulfur				01 Apr 2021
16.	HS21030940-18	SB-6 (5-5.5)	Solid	16 Mar 2021 11:35
SUB_Sulfur				01 Apr 2021
17.	HS21030940-19	SB-6 (6.5-7.5)	Solid	16 Mar 2021 11:35
SUB_Sulfur				01 Apr 2021
18.	HS21030940-20	SB-6 (8.5-9.5)	Solid	16 Mar 2021 11:35
SUB_Sulfur				01 Apr 2021
19.	HS21030940-22	SB-5 (5-5.5')	Solid	16 Mar 2021 13:47
SUB_Sulfur				01 Apr 2021
20.	HS21030940-23	SB-5 (6.5-7.5')	Solid	16 Mar 2021 13:47
SUB_Sulfur				01 Apr 2021
21.	HS21030940-24	SB-5 (8.5-9.5')	Solid	16 Mar 2021 13:47
SUB_Sulfur				01 Apr 2021

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))



Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 15801

Relinquished By: _____

Date/Time: _____

3/22/2021 1800

Received By: _____

Date/Time: _____

3/23/21 030

Cooler ID(s): _____

Temperature(s): _____

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS Houston Workorder No: 2103444
 Project Manager: JME Initials: TEM Date: 3/23/21

					N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?					X	
	Tracking number: 9473 0841 5039						
2.	Are custody seals on shipping containers intact?					X	
3.	Are custody seals on sample containers intact?				X		
4.	Is there a COC (chain-of-custody) present?					X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)					X	
6.	Are short-hold samples present?						X
7.	Are all samples within holding times for the requested analyses?					X	
8.	Were all sample containers received intact? (not broken or leaking)					X	
9.	Is there sufficient sample for the requested analyses?					X	
10.	Are samples in proper containers for requested analyses? (form 250, <i>Sample Handling Guidelines</i>)					X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)				X		
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)				X		
13.	Were the samples shipped on ice?						X
14.	Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*:	#5			RAD ONLY	X
Cooler #: 1 _____ Temperature (°C): amb _____ # of custody seals on cooler: 2 _____ External µR/hr reading: 10 _____ Background µR/hr reading: 11 _____ Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? Yes							

*** Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

Were unpreserved bottles pH checked? N/A	All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? **NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date:  3/24/21

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-1 (0-6")
Legal Location:
Collection Date: 3/15/2021 11:15

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-1
Matrix: SOLID
Percent Moisture: 29.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	130		28	MG/KG	1	3.7	3/26/2021 15:08

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-1 (18-30")
Legal Location:
Collection Date: 3/15/2021 11:15

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-2
Matrix: SOLID
Percent Moisture: 32.5

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	36		28	MG/KG	1	3.8	3/26/2021 15:12

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-1 (42-54")

Lab ID: 2103444-3

Legal Location:

Matrix: SOLID

Collection Date: 3/15/2021 11:15

Percent Moisture: 31.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	100		28	MG/KG	1	3.7	3/26/2021 15:16

Prep Date: 3/25/2021 PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-2 (0-6")

Lab ID: 2103444-4

Legal Location:

Matrix: SOLID

Collection Date: 3/15/2021 12:30

Percent Moisture: 28.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed

ICP METALS

SW6010

Prep Date: 3/25/2021

PrepBy: TXS

SULFUR

110

26 MG/KG

1

3.5 3/26/2021 15:17

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-2 (18-30")

Lab ID: 2103444-5

Legal Location:

Matrix: SOLID

Collection Date: 3/15/2021 12:30

Percent Moisture: 28.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	110		26	MG/KG	1	3.5	3/26/2021 15:18

Prep Date: 3/25/2021

PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-2 (42-54")
Legal Location:
Collection Date: 3/15/2021 12:30

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-6
Matrix: SOLID
Percent Moisture: 24.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	17	J	24	MG/KG	1	3.3	3/26/2021 15:19

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-3 (0-6")
Legal Location:
Collection Date: 3/15/2021 14:45

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-7
Matrix: SOLID
Percent Moisture: 20.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	51		24	MG/KG	1	3.2	3/26/2021 15:20

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-3 (18-30")
Legal Location:
Collection Date: 3/15/2021 14:45

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-8
Matrix: SOLID
Percent Moisture: 22.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	56		23	MG/KG	1	3.2	3/26/2021 15:21

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-3 (42-54")

Lab ID: 2103444-9

Legal Location:

Matrix: SOLID

Collection Date: 3/15/2021 14:45

Percent Moisture: 21.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	120		24	MG/KG	1	3.3	3/26/2021 15:24

Prep Date: 3/25/2021 PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-8 (5-5.5')

Lab ID: 2103444-10

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 10:34

Percent Moisture: 22.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	230		24	MG/KG	1	3.3	3/26/2021 15:26

Prep Date: 3/25/2021

PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-8 (6.5-7.5')
Legal Location:
Collection Date: 3/16/2021 10:34

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-11
Matrix: SOLID
Percent Moisture: 22.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	18	J	24	MG/KG	1	3.2	3/26/2021 15:27

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-8 (8.5-9.5')
Legal Location:
Collection Date: 3/16/2021 10:34

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-12
Matrix: SOLID
Percent Moisture: 19.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	160		24	MG/KG	1	3.2	3/26/2021 14:49

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-7 (5-5.5')
Legal Location:
Collection Date: 3/16/2021 11:00

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-13
Matrix: SOLID
Percent Moisture: 18.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	63		23	MG/KG	1	3.1	3/26/2021 14:53

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-7 (6.5-7.5')

Lab ID: 2103444-14

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 11:00

Percent Moisture: 17.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	110		24	MG/KG	1	3.2	3/25/2021 14:54

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-7 (8.5-9.5')
Legal Location:
Collection Date: 3/16/2021 11:00

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-15
Matrix: SOLID
Percent Moisture: 19.7

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	110		24	MG/KG	1	3.2	3/26/2021 14:58

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-6 (5-5.5')

Lab ID: 2103444-16

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 11:35

Percent Moisture: 23.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	190		24	MG/KG	1	3.2	3/26/2021 14:59

Prep Date: 3/25/2021 PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-6 (6.5-7.5')

Lab ID: 2103444-17

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 11:35

Percent Moisture: 18.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	700		23	MG/KG	1	3.1	3/26/2021 15:00

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-6 (8.5-9.5')
Legal Location:
Collection Date: 3/16/2021 11:35

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-18
Matrix: SOLID
Percent Moisture: 18.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	100		23	MG/KG	1	3.1	3/26/2021 15:01

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-5 (5-5.5')

Lab ID: 2103444-19

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 13:47

Percent Moisture: 14.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	26		22	MG/KG	1	3	3/25/2021 15:02

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental

Date: 30-Mar-21

Project: HS21030940

Work Order: 2103444

Sample ID: SB-5 (6.5-7.5')

Lab ID: 2103444-20

Legal Location:

Matrix: SOLID

Collection Date: 3/16/2021 13:47

Percent Moisture: 14.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	50		22	MG/KG	1	3	3/26/2021 15:03

Prep Date: 3/25/2021 PrepBy: TXS

ALS -- Fort Collins

SAMPLE SUMMARY REPORT

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-5 (8.5-9.5')
Legal Location:
Collection Date: 3/16/2021 13:47

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-21
Matrix: SOLID
Percent Moisture: 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
ICP METALS			SW6010				
SULFUR	27		22	MG/KG	1	3	3/26/2021 15:04

Client: ALS Environmental
Project: HS21030940
Sample ID: SB-5 (8.5-9.5')
Legal Location:
Collection Date: 3/16/2021 13:47

Date: 30-Mar-21
Work Order: 2103444
Lab ID: 2103444-21
Matrix: SOLID
Percent Moisture: 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC
 U or ND - Result is less than the sample specific MDC.
 Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
 Y2 - Chemical Yield outside default limits.
 W - DER is greater than Warning Limit of 1.42
 * - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
 # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
 G - Sample density differs by more than 15% of LCS density.
 D - DER is greater than Control Limit
 M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
 L - LCS Recovery below lower control limit.
 H - LCS Recovery above upper control limit.
 P - LCS, Matrix Spike Recovery within control limits.
 N - Matrix Spike Recovery outside control limits
 NC - Not Calculated for duplicate results less than 5 times MDC
 B - Analyte concentration greater than MDC.
 B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
 U or ND - Indicates that the compound was analyzed for but not detected.
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 M - Duplicate injection precision was not met.
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 * - Duplicate analysis (relative percent difference) not within control limits.
 S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
 E - Analyte concentration exceeds the upper level of the calibration range.
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
 A - A tentatively identified compound is a suspected aldol-condensation product.
 X - The analyte was diluted below an accurate quantitation level.
 * - The spike recovery is equal to or outside the control criteria used.
 + - The relative percent difference (RPD) equals or exceeds the control criteria.
 G - A pattern resembling gasoline was detected in this sample.
 D - A pattern resembling diesel was detected in this sample.
 M - A pattern resembling motor oil was detected in this sample.
 C - A pattern resembling crude oil was detected in this sample.
 4 - A pattern resembling JP-4 was detected in this sample.
 5 - A pattern resembling JP-5 was detected in this sample.
 H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
 L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
 Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
 - gasoline
 - JP-8
 - diesel
 - mineral spirits
 - motor oil
 - Stoddard solvent
 - bunker C

ALS -- Fort Collins

Date: 3/30/2021 12:21

Client: ALS Environmental

QC BATCH REPORT

Work Order: 2103444

Project: HS21030940

Batch ID: IP210325-1-1

Instrument ID ICPTTrace2

Method: SW6010

LCS	Sample ID: IP210325-1				Units: MG/KG			Analysis Date: 3/26/2021 15:07			
Client ID:	Run ID: IT210326-1A4				Prep Date: 3/25/2021			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	917	20	1000		92	80-120				20	

MB	Sample ID: IP210325-1				Units: MG/KG		Analysis Date: 3/26/2021 15:06	
Client ID:	Run ID: IT210326-1A4				Prep Date: 3/25/2021		DF: 1	
Analyte	Result	ReportLimit	MDL	Qual				
SULFUR	ND	20	2.7					

MS	Sample ID: 2103444-2			Units: MG/KG			Analysis Date: 3/26/2021 15:14				
Client ID: SB-1 (18-30")			Run ID: IT210326-1A4			Prep Date: 3/25/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	1360	28.4	1420	36	93	80-120				20	

MSD	Sample ID: 2103444-2				Units: MG/KG			Analysis Date: 3/26/2021 15:15			
Client ID: SB-1 (18-30")			Run ID: IT210326-1A4			Prep Date: 3/25/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	1370	28.3	1420	36	94	80-120		1360	1	20	

The following samples were analyzed in this batch:

2103444-1	2103444-2	2103444-3
2103444-4	2103444-5	2103444-6
2103444-7	2103444-8	2103444-9
2103444-10	2103444-11	

Client: ALS Environmental
Work Order: 2103444
Project: HS21030940

QC BATCH REPORT

Batch ID: **IP210325-2-1** Instrument ID **ICPTrace2** Method: **SW6010**

LCS	Sample ID: IP210325-2			Units: MG/KG			Analysis Date: 3/26/2021 14:48				
Client ID:	Run ID: IT210326-1A4			Prep Date: 3/25/2021			DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	956	20	1000		96	80-120				20	

MB	Sample ID: IP210325-2				Units: MG/KG	Analysis Date: 3/26/2021 14:46	
Client ID:	Run ID: IT210326-1A4				Prep Date: 3/25/2021	DF: 1	
Analyte	Result	ReportLimit	MDL	Qual			
SULFUR	ND	20	2.7				

MS		Sample ID: 2103444-12				Units: MG/KG		Analysis Date: 3/26/2021 14:51			
Client ID: SB-8 (8.5-9.5')		Run ID: IT210326-1A4				Prep Date: 3/25/2021		DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	1220	23.6	1180	160	90	80-120				20	

MSD		Sample ID: 2103444-12				Units: MG/KG		Analysis Date: 3/26/2021 14:52			
Client ID: SB-8 (8.5-9.5')		Run ID: IT210326-1A4				Prep Date: 3/25/2021			DF: 1		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
SULFUR	1240	23.7	1190	160	91	80-120		1220	1	20	

The following samples were analyzed in this batch:

2103444-12	2103444-13	2103444-14
2103444-15	2103444-16	2103444-17
2103444-18	2103444-19	2103444-20
2103444-21		



Frito-Lay, Inc.

December 23, 2024

Executive Director
Applications Review and Processing Team (MC148)
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

RE: Permit Renewal Application—TPDES Permit No. WQ0002443000
Permit Renewal Addendum – *E. coli* Resample Results
Frito-Lay, Inc.

Dear Director:

The Frito-Lay Inc. (Frito-Lay) Rosenberg facility's TPDES permit for the discharge of wastewater, permit number WQ0002443000, expires May 29, 2025. Frito-Lay submitted a permit renewal application on November 27, 2024; the application fee of \$1,215 was paid with the renewal submittal. During the preparation of the permit renewal application, Frito-Lay became aware that the contract laboratory was not NELAC-accredited for analysis of *E. coli* after completing the four (4) weeks of sampling. Consequently, four (4) weekly replacement samples were collected, and the required *E. coli* sample results are being submitted as an addendum to the originally submitted application package. Enclosed please find replacement pages 24 and 25 of the Technical Report, Worksheet 2.0, Table 4, for Outfalls 002 and 003.

Three hard copies of this addendum to the TPDES permit application have also been submitted to the Applications Review and Processing Team. An electronic copy was emailed to the Water Quality Division at WQDeCopy@tceq.texas.gov. We appreciate the opportunity to submit this renewal application addendum and hope that it meets with your approval. If you have any questions or need any additional information, please contact Jeff Macek, Environmental Coordinator, at (281) 232-1523 or Jeff.C.Macek@pepsico.com.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my enquiry 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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Ben David
Ben David, Director of Maintenance and Engineering
Frito-Lay, Inc.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☒ Yes ☐ No

Domestic wastewater is/will be discharged.

☒ Yes ☐ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: 002

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	N/A	N/A	N/A	N/A	0.010
Enterococci (cfu or MPN/100 mL)	N/A	N/A	N/A	N/A	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	<4	<4	<4	4	N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 is required for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: N/A

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters and *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☒ Yes ☐ No

Domestic wastewater is/will be discharged.

☒ Yes ☐ No

If yes to either question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: 003

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	N/A	N/A	N/A	N/A	0.010
Enterococci (cfu or MPN/100 mL)	N/A	N/A	N/A	N/A	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	<4	<4	<4	96	N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 is required for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090