



Administrative Package Cover Page

This file contains the following documents:

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



Portada de Paquete Administrativo

Este archivo contiene los siguientes documentos:

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



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed 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 the applicant 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.

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.

Natgasoline LLC (CN604256412) operates their Natgasoline Beaumont Plant (RN 106586795), an organic chemical manufacturing facility. The facility is located at 2366 Sulphur Plant Road, in Beaumont, Jefferson County, Texas 77705. This application is for a renewal to discharge industrial wastewater, utility system wastewater, and process area and non-process area storm water. The utility wastewater category includes raw water treatment wastewater, cooling tower blowdown, boiler blowdown, and demineralizer wastewater and condensate. The storm water category includes precipitation and runoff from process and non-process areas of the facility. Outfalls authorized for discharge include Outfalls 001, 002, and 101.

Discharges from the facility are expected to contain pollutants associated with organic chemical manufacturing. Raw water treatment wastewater, non-process area stormwater, process wastewater, cooling tower and boiler blowdown, condensate water, process area storm water, post first-flush process area storm water and non-process area storm water are treated by a series of treatment methods onsite before being discharged. The Natgasoline

Facility utilizes both biological and physical treatment systems to treat wastewater and first-flush storm water before being released to the environment via Outfall 001. The following wastewater treatment equipment that are utilized include an Equalization Basin, Sludge Bioreactor, Dissolved Air Flotation, and a Liquid Sludge Holding Tank. Process wastewater flows by pumps from the Equalization Basin into the plant's Sludge Bioreactor, where coarse bubble aeration is used with an external blower to provide oxygenation. The discharge from the Sludge Bioreactor feeds by pumps into the Dissolved Air Flotation where water clarification occurs. The clarified effluent from the Dissolved Air Flotation then discharges to the outfall by pumps. The solids captured within the Dissolved Air Flotation are either waste return activated into the liquid sludge holding tank or the solids are returned as return activated sludge to the Sludge Bioreactor. The liquid waste activated sludge is hauled off site to a landfill for disposal. Process wastewater is discharged after treatment from Outfall 101 then to Outfall 001. Non-process stormwater is discharged from Outfall 002. Second-flush process area stormwater is routed through an oil/water separator system before being discharged from Outfall 002.

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

AGUAS RESIDUALES INDUSTRIALES /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.

Natgasoline LLC (CN604256412) opera la Planta Natgasoline Beaumont RN 106586795, una instalación de fabricación de productos químicos orgánicos. La instalación está ubicada en 2366 Sulphur Plant Road, en Beaumont, Condado de Jefferson, Texas 77705. Esta es una solicitud de renovación de permiso para descargar aguas residuales industriales, aguas residuales de sistemas de servicios públicos y aguas lluvias de zonas dentro y fuera del área de proceso. La categoría de aguas residuales de servicios públicos incluye aguas residuales resultantes del tratamiento de agua cruda, purga de torres de enfriamiento, purga de calderas y aguas residuales y condensados de desmineralizadores. La categoría de aguas lluvias incluye precipitación y escorrentía de zonas dentro y fuera del área de proceso de la instalación. Los puntos de descarga autorizados incluyen los puntos 001, 002 y 101.

Se espera que las descargas de la instalación contengan contaminantes asociados con la fabricación de productos químicos orgánicos. El agua residual de tratamiento de agua cruda, el agua lluvia de zonas fuera del área de proceso, el agua residual del proceso, el agua de purga de torres de enfriamiento y calderas, el agua de condensado, el agua lluvia del área de proceso, y el agua lluvia del área de proceso posterior al primer drenaje. está tratado por in-situ mediante una serie de métodos antes de ser descargada. La instalación de Natgasoline utiliza sistemas de tratamiento físico y biológico para tratar las aguas residuales y las aguas pluviales de primera descarga antes de ser liberadas al medio ambiente a través del punto 001. Los equipos de tratamiento de aguas residuales que se utilizan incluyen, un tanque de equalización, un biorreactor de lodos, sistema de flotación por aire disuelto, y un Tanque de Retención de Lodos Líquidos. El agua residual del proceso se bombea desde el tanque de equalización hacia el biorreactor de lodos de la planta, donde se utiliza aireación de burbujas gruesas con un soplador externo para proporcionar oxigenación. La descarga del biorreactor de lodos se bombea al sistema de flotación por aire disuelto donde ocurre la clarificación del agua. El efluente clarificado proveniente del sistema de flotación por aire disuelto se bombea al punto de descarga. Los sólidos capturados dentro del sistema de flotación por aire disuelto retornan al tanque de retención de lodos líquidos o al biorreactor de lodos. Los lodos líquidos activados residuales se transportan fuera del sitio a un relleno sanitario para su eliminación. Las aguas residuales de proceso se descargan después del tratamiento en el punto 101 y luego en el punto 001. Las aguas lluvias provenientes de zonas fuera del área de proceso se descargan en el punto 002. El agua lluvia de segunda descarga proveniente del área de proceso pasa a través de un separador de agua/aceite antes de ser descargada en el punto 002..

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).

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0005143000

APPLICATION. Natgasoline LLC, P.O. Box 20339, Beaumont, Texas 77720, which owns a facility that produces methanol from natural gas, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005143000 (EPA I.D. No. TX0135836) to authorize an increase to the discharge at internal Outfall 101 to a volume not to exceed a daily average flow of 450,000 gallons per day, changes to the BOD5-day requirement at internal Outfall 101 to 96.6 lbs/day, and changes to the frequency for chronic biomonitoring to be conducted semi-annually and the acute biomonitoring to be conducted annually. The facility is located at 2366 Sulphur Plant Road, near the city of Beaumont, in Jefferson County, Texas 77705. The discharge route is from the plant site via Outfalls 001 and 002 directly to Neches River Tidal. TCEQ received this application on July 19, 2024. The permit application will be available for viewing and copying at Beaumont Public Library, 801 Pearl Street, Beaumont, in Jefferson County, Texas, and at Bridge City Library, 101 Parkside Drive, Bridge City, in Orange County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/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=-94.046944,30.034722&level=18>

The application is subject to the goals and policies of the Texas Coastal Management Program and must be consistent with the applicable Coastal Management Program goals and policies.

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.**

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 Natgasoline LLC at the address stated above or by calling Mr. Larry Richard, Site Manager, at 409-543-9734.

Issuance Date: September 16, 2024

Comisión de Calidad Ambiental del Estado de Texas



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

PERMISO NO. WQ0005143000

SOLICITUD. Natgasoline LLC, P.O. Box 20339, Beaumont, Texas 77720, que posee una instalación que produce metanol a partir de gas natural, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para modificar el Permiso No. WQ0005143000 (EPA I.D. No. TX0135836) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar un aumento de la descarga en el emisario interno 101 a un volumen que no exceda un flujo promedio diario de 450,000 galones por día, cambios en el requisito de "BOD" de 5 días en el emisario interno 101 a 96.6 libras por día, y cambios en la frecuencia para el biomonitoreo crónico que se realizara semestralmente y el biomonitoreo agudo se realizara anualmente. La planta está ubicada en 2366 Sulphur Plant Road, cerca de la ciudad de Beaumont, en el Condado de Jefferson, Texas 77705. La ruta de descarga es del sitio de la planta directamente a Neches River Tidal. La TCEQ recibió esta solicitud el 19 de julio de 2024. La solicitud para el permiso estará disponible para leerla y copiarla en la Biblioteca pública de Beaumont, 801 Pearl Street, Beaumont, en el Condado de Jefferson, Texas, y en la Biblioteca pública de Bridge City, 101 Parkside Drive, Bridge City, en el Condado de Orange, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/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=-94.046944,30.034722&level=18>

El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

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

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

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

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

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

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

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

materiales de calidad del agua que se hayan presentado durante el período de comentarios.

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos del 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.

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

CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía <http://www14.tceq.texas.gov/epic/eComment/> o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. 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. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del Natgasoline LLC a la dirección indicada arriba o llamando a Sr. Larry Richard al 409-543-9734.

Fecha de emisión el 16 de septiembre de 2024

Leah Whallon

From: Scott Kolb <Scott.Kolb@natgasoline.com>
Sent: Thursday, September 12, 2024 11:27 AM
To: Leah Whallon
Cc: Gaurav Tripathi; Jim McDade
Subject: Public Notice and Public Viewing Area
Attachments: Public Library Gray Verification.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Whallon

Unfortunately, the Mary and John Gray Library does not have a public viewing area. I have attached the public viewing location certification with their statement.
Therefore, we have changed the public viewing area to the Beaumont Public Library.

The new library will be:
Beaumont Public Library
801 Pearl
Beaumont TX 77701

Please send us the updated NORI for publishing.
I apologize for the inconvenience. If you have any questions, please reach out to me or Gaurav Tripathi.
We appreciate your understanding,

Scott Kolb
Sr. Environmental Engineer



*PO Box 20339
Beaumont, TX 77720
2366 Sulphur Plant Road
Beaumont, TX 77705*

*Phone: 409-344-4932
Cell: 346-774-5446*

scott.kolb@natgasoline.com

Leah Whallon

From: Scott Kolb <Scott.Kolb@natgasoline.com>
Sent: Thursday, August 15, 2024 11:25 AM
To: Leah Whallon
Cc: Gaurav Tripathi; Jim McDade
Subject: RE: Application to Amend Permit No. WQ0005143000; Natgasoline LLC; Beaumont Gas to Gasoline Plant
Attachments: NOD Response Letter 08.2024.pdf; 10025 Affected Landowner Mailing Labels.docx
Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Whallon,

I have attached our response to the Notice of Deficiency. I have also attached a file for the mailing labels. I greatly apologize for the delay. We had some miscommunication between us. I hope it will not happen again.

I appreciate your patience and understanding.

Scott Kolb
Sr. Environmental Engineer



*PO Box 20339
Beaumont, TX 77720
2366 Sulphur Plant Road
Beaumont, TX 77705*

*Phone: 409-344-4932
Cell: 346-774-5446*

scott.kolb@natgasoline.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Monday, July 29, 2024 4:44 PM
To: Scott Kolb <Scott.Kolb@natgasoline.com>
Cc: Gaurav Tripathi <gdtripathi@gsi-net.com>
Subject: Application to Amend Permit No. WQ0005143000; Natgasoline LLC; Beaumont Gas to Gasoline Plant

You don't often get email from leah.whallon@tceq.texas.gov. [Learn why this is important](#)

CAUTION: This is an external email. Please take care when clicking links or opening unexpected attachments. Contact IT at helpdesk@natgasoline.com if you require assistance.

Good Afternoon,

Please see the attached Notice of Deficiency letter dated July 29, 2024 requesting additional information needed to declare the application administratively complete. Please send the complete response by August 12, 2024.

Please let me know if you have any questions.

Thank you,



Leah Whallon

Texas Commission on Environmental Quality

Water Quality Division

512-239-0084

leah.whallon@tceq.texas.gov

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



15 August 2024

Texas Commission on Environmental Quality (TCEQ)
Applications Review & Processing Team, MC-148
Water Quality Division Support Section
Attention: Ms. Leah Whallon
12100 Park 35 Circle
Austin, Texas 78753

Certified Mail 7022 3330 0000 8381 7663

Subject: Response to NOD Letter – Major Amendment with Renewal
Application to Amend Permit No.: WQ0005143000 (EPA I.D. No. TX0135836)
Natgasoline LLC (CN604256412)
Beaumont Gas to Gasoline Plant (RN106586795)

Dear Ms. Whallon:

Natgasoline LLC (Natgasoline) is providing the information requested by TCEQ in a letter dated 29 July 2024, concerning the wastewater permit amendment with renewal application.

Natgasoline's response to the items requested in the Administrative Review are as follows:

1. Administrative Report 1.0, Item 9.d: The outfalls discharge to a water body that borders two counties, and a public viewing place is needed for both counties. Please provide an additional public viewing location in Orange County.

Natgasoline Response: Bridge City Public Library will be the public viewing location in Orange County. The public viewing location has been updated in the NORI form provided as a Microsoft Word document and attached to this letter.

2. Administrative Report 1.1, Item 1: Please provide an updated affected landowner map that shows the property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge (for a point of discharge affected by tides). Please include an updated cross reference list and the landowner list formatted for mailing labels (Avery 5160) in a Microsoft Word document.

Natgasoline Response: The updated affected landowner map and cross reference list is provided in Attachment A. Updated landowner list formatted for mailing labels (Avery 5160) is provided in a Microsoft Word document as an attachment to this letter.

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

APPLICATION: Natgasoline LLC, P.O. Box 20339, Beaumont, Texas 77720, which owns a facility that produces methanol from natural gas, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005143000 (EPA I.D. No. TX0135836) to authorize an increase to the discharge at internal Outfall 101 to a volume not to exceed a daily average flow of 450,000 gallons per day, changes to the BOD5-day requirement at internal Outfall 101 to 96.6 pounds per day, and changes to the frequency for chronic biomonitoring to

be conducted semi-annually and the acute biomonitoring to be conducted annually. The facility is located at 2366 Sulphur Plant Road, near the city of Beaumont, in Jefferson County, Texas 77705. The discharge route is from the plant site to directly to Neches River Tidal. TCEQ received this application on July 19, 2024. The permit application will be available for viewing and copying at Mary & John Gray Library, 4400 South Martin Luther King Jr. Parkway, Beaumont, in Jefferson County, Texas, and at **Bridge City Public Library** in Orange County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/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=-94.046944,30.034722&level=18>.

Further information may also be obtained from Natgasoline LLC at the address stated above or by calling Mr. Larry Richard, Site Manager, at 409-543-9734.

Natgasoline Response: The public viewing location in Orange County, Bridge City Public Library, has been updated in the section above in red font.

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

Natgasoline Response: Translated NORI in Spanish is provided as a Microsoft Word document and attached to this letter.

If you have any questions regarding this permit application, please contact me by phone at 409-344-4932 or via email at Scott.Kolb@natgasoline.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott Kolb".

Scott Kolb
Sr. Environmental Engineer
Natgasoline LLC

cc: Mr. Gaurav Tripathi, CESC, Senior Environmental Specialist, GSI Environmental Inc.

Attachments:

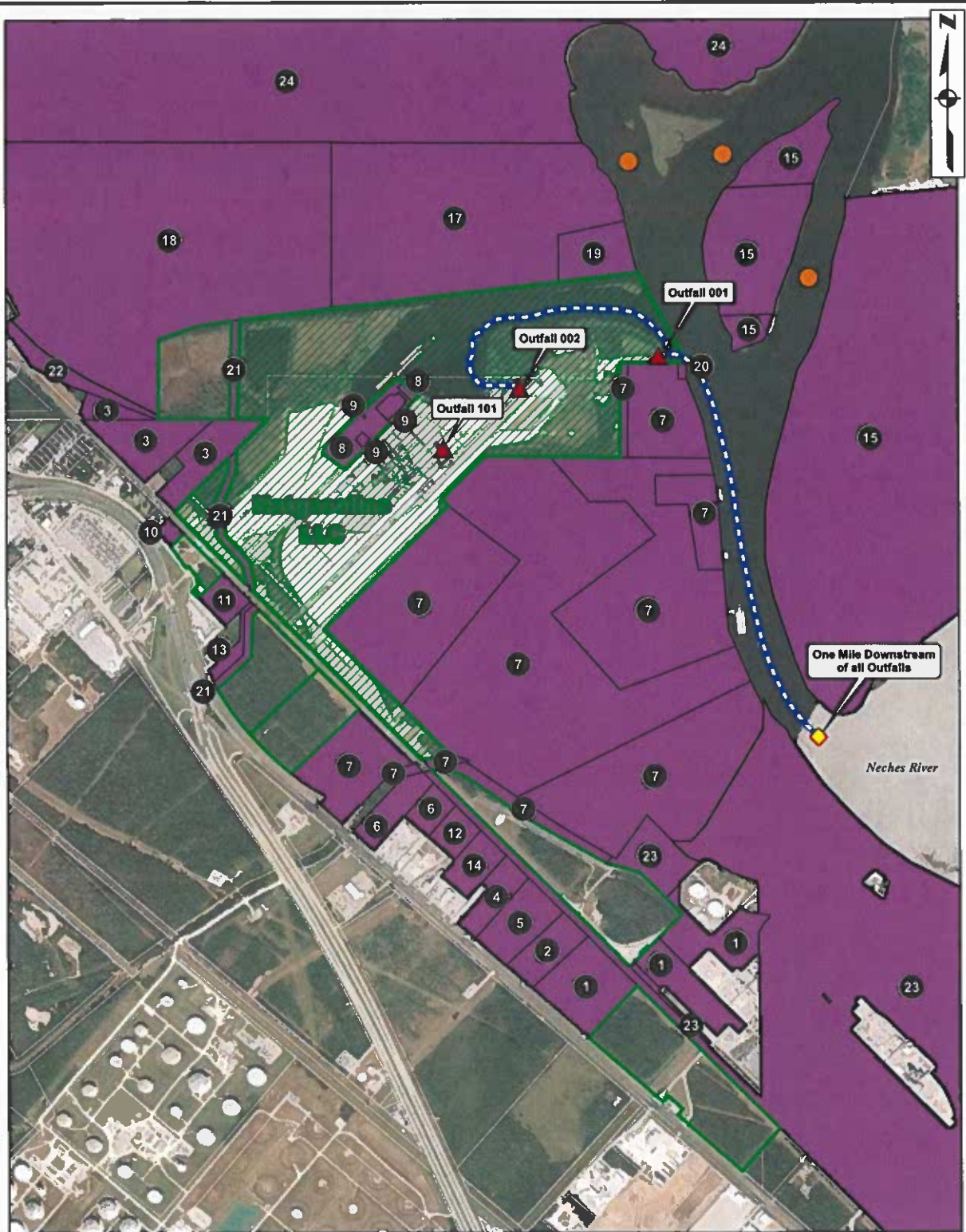
Attachment A – Updated Affected Landowner Map

2366 Sulphur Plant Rd.
Beaumont, TX 77705
P.O. Box 20339
Beaumont, TX 77720
T/ 409 344 4932

ATTACHMENT A

Adjacent Landowners

Spanish NORI



LEGEND

- | | | | |
|--|-----------------------------------|--|------------------------|
| | Outfall Locations | | Natgasoline Facility |
| | One Mile Downstream from Outfalls | | Natgasoline Properties |
| | 1/2 Mile Upstream of All Outfalls | | Adjacent Landowners |
| | Discharge Route | | |

Feet
0 600 1,200

Notes

1. The numbered adjacent properties correspond to the numbers on the Adjacent Landowners Table in Attachment E, where additional information on the adjacent property owners is provided.
2. Parcel data provided by ERSI Online: 2019 Texas Parcels StratMap (feature service by TPWD_LawEnforcement - 2/16/2022).
3. Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.
4. Projected Coordinate System: Dattum: NAD 1983, UTM: Zone 15N (meters).



ADJACENT LANDOWNERS MAP

Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No	10025	Drawn By	CDM
Issued	14-Aug-2024	Checked By	JSC
Map ID	001_02	App'd By	JMM

ATTACHMENT 8

Adjacent Landowners List

Map ID	Owner Name	Address	City	State	Zip
1	OCI BEAUMONT LLC	ATTN: PROPERTY TAX DEPARTMENT 5470 N TWIN CITY HIGHWAY	NEDERLAND	TX	77627- 3168
2	CHEMOURS COMPANY FC LLC	1007 MARKET ST	WILMINGTON	DE	19898- 1100
3	KANSAS CITY SOUTHERN RAILROAD	ATTN: PROPERTY TAX DEPT PO BOX 219335	KANSAS CITY	MO	64121- 9335
4	6405 HWY 346 LLC	2970 W LUCAS	BEAUMONT	TX	77706- 7817
5	B F I SYS OF N AMERICA INC	ATTN: REPUBLIC SERVICES PROP TAX PO BOX 29246	PHOENIX	AZ	85038- 9246
6	NMS PROPERTIES LLC	1440 SPINDLETOP RD	BEAUMONT	TX	77705- 6613
7	ENTERPRISE BEAUMONT MARINE WEST LP	ATTN: PROPERTY TAX DEPT PO BOX 4018	HOUSTON	TX	77210- 4018
8	MARTIN OPERATING PARTNERS - NGL	ATTN: CHRIS BOOTH PO BOX 191	KILGORE	TX	75663- 0191
9	CF MARTIN SULPHUR LP	ATTN: CONSOLIDATED TAX SERVICE LLP 4200 STONE RD	KILGORE	TX	75662
10	AIR LIQUIDE LARGE INDUSTRIES US LP	ATTN: PROPERTY TAX DEPT - DAVID NGO 9811 KATY FWY STE 100	HOUSTON	TX	77024- 1274
11	LANDRY CAMILLE J ET AL FBA	ATTN: DEEP SOUTH CRANE & RIGGING CO 15324 AIRLINE HWY	BATON ROUGE	LA	70817- 7311
12	HANSFORD ASSOCIATES LP	PO BOX 513	CHARLESTON	WV	25322- 0513
13	TRANSCANADA KEYSTONE PIPELINE	ATTN: LP PROPERTY TAX DEPT	HOUSTON	TX	77252- 2168
14	BNI LLC	95 TRANQUILITY DR	MANDEVILLE	LA	70471
15	ENTERPRISE REFINED PRODUCTS CO LLC	PO BOX 4018	HOUSTON	TX	77210- 4018
16	ABCR LLC	3082 25 TH ST	PORT ARTHUR	TX	77642- 5217
17	JEFFERSON COUNTY WATERWAY & NAVIGATION DISTRICT	PO BOX 778	NEDERLAND	TX	77627- 0778

Adjacent Landowners List

Map ID	Owner Name	Address	City	State	Zip
18	SABINE-NECHES NAVIGATION DISTRICT	PO BOX 778	NEDERLAND	TX	77627-0778
19	HOLLYFELD J S TRUSTEE	ATTN: A STEINFELD LEE NATL CO 645 5 TH AVE	NEW YORK	NY	10022-5910
20	TEXACO EXPL & PROD INC	ATTN: CHEVRON SERV CO PROP TX DEPT PO BOX 285	HOUSTON	TX	77001-0285
21	STATE OF TEXAS	ATTN: TEXDOT PO BOX 5075	AUSTIN	TX	78763-5075
22	USA RAIL TERMINALS BEAUMONT LLC	1255 BLACKSMITH RD	PORT ALLEN	LA	70767
23	JEFFERSON TERMINAL SOUTH LLC	1345 AVE OF THE AMERICAS	NEW YORK	NY	10105
24	EXXONMOBIL CORP	PROPERTY TAX DIVISION PO BOX 64106	SPRING	TX	77387-4106

OCI BEAUMONT LLC
ATTN: PROPERTY TAX DEPARTMENT
5470 N TWIN CITY HIGHWAY
NEDERLAND, TX 77627-3168

CHEMOURS COMPANY FC LLC
1007 MARKET ST
WILMINGTON, DE 19898-1100

KANSAS CITY SOUTHERN RAILROAD
ATTN: PROPERTY TAX DEPT
PO BOX 219335
KANSAS CITY, MO 64121-9335

6405 HWY 346 LLC
2970 W LUCAS
BEAUMONT, TX 77706-7817

B F I SYS OF N AMERICA INC
ATTN: REPUBLIC SERVICES PROP TAX
PO BOX 29246
PHOENIX, AZ 85038-9246

NMS PROPERTIES LLC
1440 SPINDLETOP RD
BEAUMONT, TX 77705-6613

ENTERPRISE BEAUMONT MARINE
WEST LP
ATTN: PROPERTY TAX DEPT
PO BOX 4018
HOUSTON, TX 77210-4018

MARTIN OPERATING PARTNERS -
NGL
ATTN: CHRIS BOOTH
PO BOX 191
KILGORE, TX 75663-0191

CF MARTIN SULPHUR LP
ATTN: CONSOLIDATED TAX SERVICE
LLP
4200 STONE RD
KILGORE, TX 75662

AIR LIQUIDE LARGE INDUSTRIES US
LP
PROPERTY TAX DEPT – DAVID NGO
9811 KATY FWY STE 100
HOUSTON, TX 77024-1274

LANDRY CAMILLE J ET AL FBA
ATTN: DEEP SOUTH CRANE &
RIGGING CO
15324 AIRLINE HWY
BATON ROUGE, LA 70817-7311

HANSFORD ASSOCIATES LP
PO BOX 513
CHARLESTON, WV 25322-0513

TRANSCANADA KEYSTONE PIPELINE
ATTN: LP PROPERTY TAX DEPT
HOUSTON, TX 77252-2168

ATTN: LP PROPERTY TAX DEPT
HOUSTON, TX 77252-2168BNI LLC
95 TRANQUILITY DR
MANDEVILLE, LA 70471

ENTERPRISE REFINED PRODUCTS CO
LLC
PO BOX 4018
HOUSTON, TX 77210-4018

ABCR LLC
3082 25TH ST
PORT ARTHUR, TX 77642-5217

JEFFERSON COUNTY WATERWAY &
NAVIGATION DISTRICT
PO BOX 778
NEDERLAND, TX 77627-0778

SABINE-NECHES NAVIGATION
DISTRICT
PO BOX 778
NEDERLAND, TX 77627-0778

HOLLYFELD J S TRUSTEE
ATTN: A STEINFELD LEE NATL CO
645 5TH AVE
NEW YORK, NY 10022-5910

TEXACO EXPL & PROD INC
ATTN: CHEVRON SERV CO PROP TX
DEPT
PO BOX 285
HOUSTON, TX 77001-0285

STATE OF TEXAS
ATTN: TEXDOT
PO BOX 5075
AUSTIN, TX 78763-5075

USA RAIL TERMINALS BEAUMONT
LLC
1255 BLACKSMITH RD
PORT ALLEN, LA 70767

JEFFERSON TERMINAL SOUTH LLC
1345 AVE OF THE AMERICAS
NEW YORK, NY 10105

EXXONMOBIL CORP
PROPERTY TAX DIVISION
PO BOX 64106
SPRING, TX 77387-4106

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 PERMISO MODIFICACION

PERMISO NO. WQ000_____

SOLICITUD. *Natgasoline LLC, P.O. Box 20339, Beaumont, Texas 77720, que posee una instalación que produce metanol a partir de gas natural, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para modificar el Permiso No. WQ0005143000 (EPA I.D. No. TX0135836) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar un aumento de la descarga en el emisario interno 101 a un volumen que no exceda un flujo promedio diario de 450,000 galones por día, cambios en el requisito de "BOD" de 5 días en el emisario interno 101 a 96.6 libras por día, y cambios en la frecuencia para el biomonitoreo crónico que se realizará semestralmente y el biomonitoreo agudo se realizará anualmente.].* La planta está ubicada en 2366 Sulphur Plant Road, cerca de la ciudad de Beaumont, en el Condado de *Jefferson* Texas *77705*. La ruta de descarga es del sitio de la planta *directamente a Neches River Tidal*. La TCEQ recibió esta solicitud el día *19 de julio de 2024*. La solicitud para el permiso estará disponible para leerla y copiarla en *la Biblioteca Mary & John Gray, 4400 South Martin Luther King Jr. Parkway, Beaumont, en el Condado de Jefferson, Texas, y en la Biblioteca pública de Bridge City, 101 Parkside Drive, Bridge City, en el Condado de Orange, Texas,* antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/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=-94.046944,30.034722&level=18>

Include the following non-italicized sentence if the facility is located in the Coastal Management Program boundary and is an application for a major amendment which will increase the pollutant loads to coastal waters or would result in relocation of an outfall to a critical area, or a renewal with such a major amendment. The Coastal Management Program boundary is the area along the Texas Coast of the Gulf of México as depicted on the map in 31 TAC §503.1 and includes part or all of the following counties: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Aransas, Refugio, Calhoun, Victoria, Jackson, Matagorda, Brazoria, Galveston, Harris, Chambers, Jefferson y Orange. If the application is for amendment that does not meet the above description or a renewal without such a major amendment, do not include the sentence:
El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de

acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

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

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

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

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

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

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos del 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 A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía <http://www14.tceq.texas.gov/epic/eComment/> o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. 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. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del *Natgasoline LLC* a la dirección indicada arriba o llamando a *Mr. Larry Richard, Site Manager*, al 409-543-9734

Fecha de emisión _____ *[Date notice issued]*



WASTEWATER PERMIT RENEWAL APPLICATION

Natgasoline LLC
Beaumont Operations
2366 Sulphur Plant Road
Beaumont, Texas 77720
CN604256412
RN106586795
TPDES Permit No. WQ0005143000

Prepared for:
Natgasoline LLC
2366 Sulphur Plant Road
Beaumont, Texas 77720

Submitted to:
Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team, MC-148
12100 Park 35 Circle
Austin, Texas 78753

Prepared by:
GSI ENVIRONMENTAL INC.
2211 Norfolk St., Suite 1000
Houston, Texas 77098
713.522.6300
www.gsienv.com

GSI Job No: 10025
Issued: 8 July 2024

GSI Job No. 10025



8 July 2024

Executive Director
Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team, MC-148
12100 Park 35 Circle
Austin, Texas 78753

Subject: Wastewater Permit Renewal Application for Natgasoline LLC
Beaumont Operations, Beaumont, Jefferson County, Texas
(RN106586795; CN604256412)

Dear Sir/Madam:

This application for authorizing wastewater discharges is submitted by GSI Environmental Inc. on behalf of Natgasoline LLC for the Natgasoline Beaumont Operations, located in Beaumont, Jefferson County, Texas. The Beaumont Operations facility is a gas to gasoline chemical manufacturing plant. This renewal application is being submitted to the TCEQ to renew the facility's wastewater permit.

If you have any questions regarding this permit application, please contact me at 713-522-6300 or jmmcdade@gsienv.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. McDade', written over a light blue horizontal line.

James M. McDade, P.E.
Vice President and Principal Engineer

Wastewater Permit Renewal Application, Natgasoline LLC
TPDES Permit No. WQ0005143000
Beaumont, Texas

TABLE OF CONTENTS

ADMINISTRATIVE REPORT

TECHNICAL REPORT

ATTACHMENTS

Attachment 1	Permit Application TCEQ ePAY Voucher Copy
Attachment 2	Supplemental Permit Information Form (SPIF)
Attachment 3	Plain Language Summary
Attachment 4	Public Involvement Plan (PIP) Form
Attachment 5	Core Data Form
Attachment 6	Water Well and Downstream Map
Attachment 7	Facility Site Map
Attachment 8	Affected Landowners Map & Landowner List
Attachment 9	Photo Locations Map & Photolog
Attachment 10	Wastewater Flow Schematic with Water Balance
Attachment 11	Description of Outdoor Activities Exposed to Stormwater
Attachment 12	Stormwater Site Map
Attachment 13	Pollutant Analyses for Additional Outfalls
Attachment 14	Toxicity Testing Summary and Lab Reports
Attachment 15	Safety Data Sheets
Attachment 16	Analytical Lab Reports

ADMINISTRATIVE REPORT



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

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

APPLICANT NAME: Natgasoline LLC

PERMIT NUMBER (If new, leave blank): WQ00 0005143000

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: Natgasoline LLC

Permit No.: WQ0005143000

EPA ID No.: TX0110064577006

Expiration Date: January 7, 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: Natgasoline proposes to increase daily average flow at internal Outfall 101 from 0.33 MGD to 0.45 MGD and BOD 5-day at internal Outfall 101 from 82.6 lbs/day to 96.6 lbs/day. Natgasoline proposes that the chronic biomonitoring be conducted semi-annually and the acute biomonitoring be conducted annually. Per the permit, biomonitoring is currently conducted quarterly and

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

acute biomonitoring is conducted semi-annually. The biomonitoring for the past 3 years have not indicated any toxicity. Toxicity testing reports are provided in Attachment 14.

For TCEQ Use Only

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

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: 712512

Copy of voucher attachment: Attachment 1

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN604256412

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: Natgasoline LLC

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): Larry Richard

Title: Site Manager

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: [Attachment 4](#)

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): Scott Kolb

Title: Env. Engineer

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

Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road

City/State/Zip: Beaumont TX 77705

Phone No: 409-344-4932

Email: scott.kolb@natgasoline.com

b. ☐ Administrative Contact ☒ Technical Contact

Prefix: Mr. Full Name (Last/First Name): Gaurav Tripathi

Title: Sr. Env. Specialist

Credential: CESCP

Organization Name: GSI Environmental Inc.

Mailing Address: 2211 Norfolk St., Suite 1000 City/State/Zip: Houston, TX 77098

Phone No: 832-604-4122 Email: gdtripathi@gsi-net.com

Attachment: Click to enter text.

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): Miguel Martinez

Title: Env. Manager Credential: Click to enter text.

Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

Phone No: 713-419-8935 Email: miguel.martinez@natgasoline.com

b. Prefix: Mr. Full Name (Last/First Name): Scott Kolb

Title: Env. Engineer Credential: Click to enter text.

Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

Phone No: 409-344-4932 Email: scott.kolb@natgasoline.com

Attachment: Click to enter text.

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): Miguel Martinez

Title: Env. Manager Credential: Click to enter text.

Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

Phone No: 713-419-8935 Email: miguel.martinez@natgasoline.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): Miguel Martinez

Title: Env. Manager Credential: Click to enter text.

Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

Item 9. Notice Information (Instructions, Pages 28)**a. Individual Publishing the Notices**Prefix: Mr. Full Name (Last/First Name): Scott KolbTitle: Env. EngineerCredential: Click to enter text.Organization Name: Natgasoline LLCMailing Address: 2366 Sulphur Plant RoadCity/State/Zip: Beaumont TX 77705Phone No: 409-344-4932Email: scott.kolb@natgasoline.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: scott.kolb@natgasoline.com☐ Fax: Click to enter text.☒ Regular Mail (USPS)Mailing Address: 2366 Sulphur Plant RoadCity/State/Zip Code: Beaumont TX 77705**c. Contact in the Notice**Prefix: Mr. Full Name (Last/First Name): Larry RichardTitle: Site ManagerCredential: Click to enter text.Organization Name: Natgasoline LLCPhone No: 409-543-9734Email: larry.richard@natgasoline.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: Mary & John Gray LibraryLocation within the building: Public Viewing AreaPhysical Address of Building: 4400 S. Marting Luther King PkwyCity: Beaumont County: Jefferson**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: Attachment 3
- 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: Attachment 4

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

- a. TCEQ issued Regulated Entity Number (RN), if available: RN106586795

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): Natgasoline

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

or Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

Phone No: 409-543-9734 Email: larry.richard@natgasoline.com

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

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

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

or Organization Name: Natgasoline LLC

Mailing Address: 2366 Sulphur Plant Road City/State/Zip: Beaumont TX 77705

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 (In some cases, a lease may not suffice - see instructions). Attachment: Click to enter text.

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: Click to enter text.

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 6

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: [Click to enter text.](#)

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

- 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): Beaumont

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

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

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 ☐ [Click to enter text.](#)

If no, or a new application, provide an accurate location description: [Click to enter text.](#)

- j. City nearest the disposal site: [Click to enter text.](#)

- k. County in which the disposal site is located: [Click to enter text.](#)

- l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: [Click to enter text.](#)

- m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: [Click to enter text.](#)

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: [Click to enter text.](#)

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

☐ Yes ☒ No

If yes, provide the following information:

Account no.: [Click to enter text.](#)

Total amount due: [Click to enter text.](#)

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

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: [Click to enter text.](#)

Amount due: [Click to enter text.](#)

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ0005143000

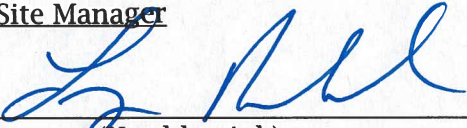
Applicant Name: Natgasoline LLC

Certification: I, Larry Richard, 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): Larry Richard

Signatory title: Site Manager

Signature: 
(Use blue ink)

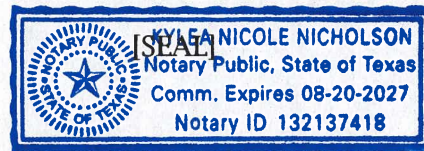
Date: 7/8/24

Subscribed and Sworn to before me by the said Larry Richard
on this 8th day of July, 2024.

My commission expires on the 20th day of August, 2027.

Kylea Nicholson
Notary Public

Jefferson County
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: Attachment 8

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

☐ Readable/Writeable CD ☒ Four sets of labels

Attachment: Attachment 8

- d. Provide the source of the landowners' names and mailing addresses: Jefferson County Property Appraiser
- 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): [Click to enter text.](#)

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: [Attachment 9](#)

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: Attachment 2

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if mailing the payment. (Instructions, Page 36-37)

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

Mail this form and the check or money order to:

BY REGULAR U.S. MAIL

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

BY OVERNIGHT/EXPRESS MAIL

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

Fee Code: WQP **Permit No: WQ0005143000**

1. Check or Money Order Number: Click to enter text.
2. Check or Money Order Amount: Click to enter text.
3. Date of Check or Money Order: Click to enter text.
4. Name on Check or Money Order: Click to enter text.
5. APPLICATION INFORMATION

Name of Project or Site: Natgasoline LLC Beaumont

Physical Address of Project or Site: 2366 Sulphur Plant Road, Beaumont, TX 77705

If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.

Attachment: See Voucher # in Attachment 1

Staple Check or Money Order in This Space

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): N/A

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

TECHNICAL REPORT



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](#)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).

Natgasoline uses sulfur free natural gas from a pipeline to produce methanol (SIC 2869) using nickel and copper catalyst.

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

The majority of the wastewater generated is utility wastewater which includes boiler blowdown, regeneration water and backwash water. A relatively small volume of process wastewater is generated from the saturator. All this water is treated in the on-site wastewater treatment unit. Stormwater from the process areas are collected and treated through oil/water separators. First flush stormwater from the process areas and stormwater from the methanol tank storage area are collected in sumps and pumped to the stormwater Basin F-15001 where it can be discharged either to the wastewater treatment unit Outfall 101 and then to Neches River via Outfall 001 or Outfall 002. Post first flush stormwater from the process areas are discharged to Outfall 002 directly after the O/W separators.

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
Natural Gas (CAS 8006-14-2)		Methanol (CAS 67-56-1)

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

- 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 7](#)

- 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: [485457001D](#), [4854570005D](#), [4803850170C](#)

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: [Click to enter text.](#)

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

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

If **no**, provide an approximate date of application submittal to the USACE: [Click to enter text.](#)

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.

The Natgasoline Facility utilizes both biological and physical treatment systems to treat wastewater and first-flush storm water before being released to the environment via Outfall 001. The following wastewater treatment equipment that are utilized include an Equalization Basin, Integrated Fixed Film Activated Sludge Bioreactor (IFAS), Dissolved Air Flotation (DAF) and a Liquid Sludge Holding Tank. Process wastewater flows by pumps from the Equalization Basin into the plant's Integrated Fixed Film Activated Sludge Bioreactor (IFAS), where coarse bubble aeration is used with an external blower to provide the required oxygenation. The discharge from the Integrated Fixed Film Activated Sludge Bioreactor (IFAS) feeds by pumps into the Dissolved Air Flotation (DAF) where water clarification occurs. The clarified effluent from the Dissolved Air Flotation (DAF) then discharges to the outfall by pumps. The solids captured within the Dissolved Air Flotation (DAF) are either waste return activated (WAS) into the liquid sludge holding tank or the solids are returned as return activated sludge (RAS) to the Integrated Fixed Film Activated Sludge Bioreactor (IFAS). The liquid waste activated sludge (WAS) sludge is hauled off site to a landfill for disposal.

- 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 10](#)

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 #1	Pond #2	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	C	C		
Associated Outfall Number	001 or 002	001 and 101		
Liner Type (C) (I) (S) or (A)	S	S		
Alt. Liner Attachment Reference				
Leak Detection System, Y/N	N	N		
Groundwater Monitoring Wells, Y/N	N	N		
Groundwater Monitoring Data Attachment	NA	NA		
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y	Y		
Length (ft)	82	102.5		
Width (ft)	36	55		
Max Depth From Water Surface (ft), Not Including Freeboard	16.5	6.58		
Freeboard (ft)	2	2		
Surface Area (acres)	0.068	0.13		
Storage Capacity (gallons)	365,000	540,000		
40 CFR Part 257, Subpart D, Y/N	N	N		

Parameter	Pond #1	Pond #2	Pond #	Pond #
Date of Construction	2018	2018		

Attachment: Pond # 1 is Concrete SW Basin F-15001 Pond 2 is Concrete SW Basing F-9008

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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

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

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)
Outfall 001	30.03846	-94.03637
Outfall 002	30.03721	-94.04206
Outfall 101	30.03503	-94.04527

Outfall Location Description

Outfall No.	Location Description
Outfall 001	At the easternmost portion of the property along the Neches River
Outfall 002	Fence line on property east of process area containing stormwater drainage
Outfall 101	Valve at which Outfall 101 waters enters piping for Outfall 001 water. Located adjacent to the wastewater treatment area of the facility.

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

Outfall No.	Description of sampling point
Outfall 001	Sampling valve on wastewater pipeline near wastewater equalization basin F-9008 (30.03507, -94.04522)
Outfall 002	Concrete pad downstream of stormwater culvert near expansion joint of flare pipeline (30.03679, -94.04246)
Outfall 101	Sampling valve at end of wastewater treatment unit (30.03538, -94.04507)

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)
Outfall 001	3.5	7.0	3.5	7.0	
Outfall 002	Report	Report	Report	Report	
Outfall 101	0.33	3.41	0.45	3.41	

Outfall Discharge – Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
Outfall 001	Y	N	Rosemont Magnetic Flow Meter
Outfall 002	N	Y	Water Rain Gauge
Outfall 101	Y	N	Rosemont Magnetic Flow 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)
Outfall 001	N	Y	N	24	31	12
Outfall 002	N	Y	N	24	31	12
Outfall 101	N	Y	N	24	31	12

Outfall Wastestream Contributions**Outfall No. Outfall 001**

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process Wastewater	Sent to WWTP – Outfall 101	
Utility Wastewater	0.0069	0.7%
Cooling Tower Blowdown	0.688	71%
Internal Outfall 101	0.269	27.9%
Process Area Stormwater	Intermittent	

Outfall No. Outfall 002

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Fire Fighting Activities (fire hydrant flush water)	0 – Water is recycled back to fire water tank	0%
Landscaping Watering / Irrigation Drainage	0	0%
Hydrostatic Test Water	Not Regularly Conducted	0%
Steam Condensate	0.83	65%
Process Area Second Flush Stormwater	0.12775	10%
Non-process Area Stormwater	0.3136	25%

Outfall No. Outfall 101

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
F-15001	0.079	29%
Waste Heat Boilers & Steam Drum	0.032	12%
Aux Boiler Blowdown	0.007	3%
Saturator Blowdown	0.022	8%
Demin Regenerate	0.12	45%
Media & ACF Filter Backwashes	0.01	4%
Stormwater First Flush	Intermittent	2%

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

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 15 – Outfalls 101 & 001 Affected

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	1	688,339	2,129,000
Boilers	1		

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: Besides first flush stormwater, stormwater at the facility is discharged from Outfall 002. The facility is designed to reduce the contact of stormwater with raw materials, intermediates and products. Materials are contained within tanks, piping and process equipment. Outfall 001 discharges process area stormwater after a first flush. The first flush is retained in Basin F-15001 which is then routed to Basin F-9008 for treatment. The second flush stormwater is discharged through Outfall 002. All the stormwater that does not contact any process areas are discharged directly to Outfall 002.

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.
City of Beaumont	WQ0010501020

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: The permit identifies that biomonitoring shall be conducted at Outfall 001. Chronic biomonitoring is conducted quarterly and acute biomonitoring is conducted semi-annually. The biomonitoring is conducted to test the effluent for toxicity and determine if an appropriately dilute effluent sample adversely affects the survival of the test organisms. The biomonitoring for the past 3 years have not indicated any toxicity. Natgasoline proposes that the chronic biomonitoring be conducted semi-annually and the acute biomonitoring be conducted annually.

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** Biomonitoring results are submitted to the TCEQ on the frequency identified in the permit. A summary of the biomonitoring is included in Attachment 14 – Toxicity Testing

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: [Click to enter text.](#)

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

- 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)

- 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)

Radioactive Material Name	Concentration (pCi/L)

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	LNVA			
Operator	LNVA			

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. 0360112

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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*: LNVA canals are not considered waters of the United States

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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.

Natgasoline proposes to increase the average flow at internal Outfall 101 from 0.3312 to 0.45 MGD and the BOD load from 82.6 lbs/day to 96.6 lbs/day. Outfall 101 is an internal outfall and discharges to Outfall 001. Natgasoline does not want to increase the maximum flow at Outfall 101 or any permit conditions at Outfall 001. Natgasoline also requests that the chronic biomonitoring be conducted semi-annually and the acute biomonitoring be conducted annually. Per the permit, biomonitoring is currently conducted quarterly and acute biomonitoring is conducted semi-annually. The biomonitoring for the past 3 years have not indicated any toxicity. Toxicity testing reports are provided in Attachment 14.

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

☐ Yes ☒ No

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

Click to enter text.

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

☐ Yes ☒ No

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

Click to enter text.

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: [Click to enter text.](#)

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

Signature: _____

Date: _____

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
Organic Chemical, Plastics and Synthetic Fibers	414

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
N/A			

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
F, J	100	Copper, nickel, zinc	

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.

Click to enter text.

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
Natural Gas to Methanol	414	F,J	2014

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): 4/22/2024-6/30/2024
- ☒ 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: Scott Boudreaux - Senior Project Manager - Earth Analytical Sciences, Inc., - 409-842-0658

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:** See Attachment 13 for a summary of all analytical results

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.: See Attachment 13 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)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total residual chlorine				
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (°F)				
pH (standard units)				

Table 2 for Outfall No.: **See Attachment 13** 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

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.: **See Attachment 13** 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
Benzidine					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.: N/A

Samples are (check one): ☐ Composite ☐ Grab

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

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.: **See Attachment 13** 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	☐	☐					400
Color (PCU)	☐	☐					—
Nitrate-Nitrite (as N)	☐	☐					—
Sulfide (as S)	☐	☐					—
Sulfite (as SO ₃)	☐	☐					—
Surfactants	☐	☐					—
Boron, total	☐	☐					20
Cobalt, total	☐	☐					0.3
Iron, total	☐	☐					7
Magnesium, total	☐	☐					20
Manganese, total	☐	☐					0.5
Molybdenum, total	☐	☐					1
Tin, total	☐	☐					5
Titanium, total	☐	☐					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.: **See Attachment 13** 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.: **See Attachment 13** 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.: **See Attachment 13** 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.: **See Attachment 13** 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: [See Attachment 13](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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 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: Click to enter text. |

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)

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:

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: [Click to enter text.](#)

- 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

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

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

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

Attachment:

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

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

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

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.: Samples are (check one): ☐ Composite ☐ Grab

[illegible]

Item 7. Pollutant Analysis (Instructions, Page 72)

- 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.](#)
- ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Complete Tables 15 and 16.

Table 15 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)
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease				
Total residual chlorine				
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO ₃)				
Temperature (°F)				
pH (standard units)				

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

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
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): [Click to enter text.](#)

Design application rate (acre-ft/acre/yr): [Click to enter text.](#)

Design application frequency (hours/day): [Click to enter text.](#)

Design application frequency (days/week): [Click to enter text.](#)

Design total nitrogen loading rate (lbs nitrogen/acre/year): [Click to enter text.](#)

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

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

Irrigation efficiency (percent): [Click to enter text.](#)

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

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

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

Describe the application method and equipment: [Click to enter text.](#)

- b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** [Click to enter text.](#)

Item 3. Evaporation Ponds (Instructions, Page 74)

- a. Daily average effluent flow into ponds: [Click to enter text.](#) gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** [Click to enter text.](#)

Item 4. Evapotranspiration Beds (Instructions, Page 74)

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

Item 5. Overland Flow (Instructions, Page 74)

- a. Provide the following information on the overland flow:
- Area used for application (acres): [Click to enter text.](#)
- Slopes for application area (percent): [Click to enter text.](#)
- Design application rate (gpm/foot of slope width): [Click to enter text.](#)
- Slope length (feet): [Click to enter text.](#)
- Design BOD5 loading rate (lbs BOD5/acre/day): [Click to enter text.](#)
- Design application frequency (hours/day): [Click to enter text.](#)
- Design application frequency (days/week): [Click to enter text.](#)
- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212. **Attachment:** [Click to enter text.](#)

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.](#)

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: 930 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

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)

- a. Name of the immediate receiving waters: [Click to enter text.](#)
- 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:

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

- f. General observations of the water body during normal dry weather conditions: [Click to enter text.](#)

Date and time of observation: [Click to enter text.](#)

- 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: Click to enter text.

- 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: Click to enter text.

- 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

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

b. Provide the following information for each disposal site:

Disposal site name: [Click to enter text.](#)

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

County where disposal site is located: [Click to enter text.](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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.

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
002	☐	☒
001	☐	☒
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

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: Attachment 12

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)
002	20% Concrete - 80% Gravel	460,000 square feet

- b. Provide the following local area rainfall information and the source of the information.
- Wettest month: June
- Average rainfall for wettest month (total inches): 7.57 in.
- 25-year, 24-hour rainfall (inches): 12.2 in.
- Source: (1) NOAA U.S. Climate Normals, 2021. (2) NOAA Atlas 14, Volume 11, Version 2
- c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** See Attachment 112
- 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:** Attachment 11
- e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: Attachment 11

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): Natgasoline to provide results when data are received.
- 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.: Natgasoline to provide results when data are received.

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

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: [Click to enter text.](#)

Duration of storm event (minutes): [Click to enter text.](#)

Total rainfall during storm event (inches): [Click to enter text.](#)

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): [Click to enter text.](#)

Maximum flow rate during rain event (gallons/minute): [Click to enter text.](#)

Total stormwater flow from rain event (gallons): [Click to enter text.](#)

Provide a description of the method of flow measurement or estimate:

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.](#)

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 WTPP 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)

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.](#)

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.](#)

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.](#)

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.

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)

- Attach an entrainment characterization study, as described at 40 CFR § 122.21(r)(9): [Click to enter text.](#)
- Attach a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10): [Click to enter text.](#)
- Attach a benefits valuation study, as described as 40 CFR § 122.21(r)(11): [Click to enter text.](#)
- Attach a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12): [Click to enter text.](#)
- Attach a peer review analysis, as described as 40 CFR § 122.21(r)(13): [Click to enter text.](#)

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.

ATTACHMENT 1

Attachment 1. Permit Application TCEQ ePAY Voucher Copy

Your transaction is complete. Thank you for using TCEQ ePay.

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt and the vouchers for your records. An email receipt has also been sent.

Transaction Information

Trace Number: 582EA000617023

Date: 07/10/2024 12:15 PM

Payment Method: CC - Authorization 000006345I

ePay Actor: GAURAV TRIPATHI

Actor Email: gdt@gsienv.com

IP: 106.219.120.116

TCEQ Amount: \$1,250.00

Texas.gov Price: \$1,278.38*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Payment Contact Information

Name: GAURAV TRIPATHI

Company: GSI ENVIRONMENAL INC

Address: 2211 NORFOLK ST SUITE 1000, HOUSTON, TX 77098

Phone: 832-604-4122

Cart Items

Click on the voucher number to see the voucher details.

Voucher	Fee Description	AR Number	Amount
712512	WW PERMIT - MINOR FACILITY SUBJECT TO 40 CFR 400-471 - MAJOR AMENDMENT		\$1,200.00
712513	30 TAC 305.53B WQ NOTIFICATION FEE		\$50.00
TCEQ Amount:			\$1,250.00

ePay AgainExit ePay

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt for your records.

ATTACHMENT 2

Attachment 2. Supplemental Permit Information Form (SPIF)

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: Natgasolline LLC

Permit No. WQ00 0005143000EPA ID No. TX 110064577006

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

2366 Sulphur Plant Road, Beaumont, Jefferson County TX 77705

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: Scott Kolb

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

Title: Sr. Environmental Engineer

Mailing Address: P.O. Box 20339

City, State, Zip Code: Beaumont TX 77720

Phone No.: 409-344-4900 Ext.: 3458 Fax No.: 409-232-0555

E-mail Address: scott.kolb@natgasoline.com

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

The property is privately held and is not a publicly traded company.

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.

The discharge is directly to Segment 0601, Neches River Tidal.

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):

No new construction activities are proposed.

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

The site is an industrial facility covered with concrete, gravel and some dirt. The facility has access roads, gravel areas, laydown yards and some vegetative areas near the Neches River. See Attachment 6 for USGS map.

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:

The first buildings began being constructed circa 2014 at the property. The majority of process units were built from 2015-2017.

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

The property was developed over the period 2014-2018 as an industrial plant to convert natural gas to methanol.

ATTACHMENT 3

Attachment 3. Plain Language Summary



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed 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 the applicant 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.

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.

Natgasoline LLC (CN604256412) operates their Natgasoline Beaumont Plant (RN 106586795), an organic chemical manufacturing facility. The facility is located at 2366 Sulphur Plant Road, in Beaumont, Jefferson County, Texas 77705. This application is for a renewal to discharge industrial wastewater, utility system wastewater, and process area and non-process area storm water. The utility wastewater category includes raw water treatment wastewater, cooling tower blowdown, boiler blowdown, and demineralizer wastewater and condensate. The storm water category includes precipitation and runoff from process and non-process areas of the facility. Outfalls authorized for discharge include Outfalls 001, 002, and 101.

Discharges from the facility are expected to contain pollutants associated with organic chemical manufacturing. Raw water treatment wastewater, non-process area stormwater, process wastewater, cooling tower and boiler blowdown, condensate water, process area storm water, post first-flush process area storm water and non-process area storm water are treated by a series of treatment methods onsite before being discharged. The Natgasoline

Facility utilizes both biological and physical treatment systems to treat wastewater and first-flush storm water before being released to the environment via Outfall 001. The following wastewater treatment equipment that are utilized include an Equalization Basin, Sludge Bioreactor, Dissolved Air Flotation, and a Liquid Sludge Holding Tank. Process wastewater flows by pumps from the Equalization Basin into the plant's Sludge Bioreactor, where coarse bubble aeration is used with an external blower to provide oxygenation. The discharge from the Sludge Bioreactor feeds by pumps into the Dissolved Air Flotation where water clarification occurs. The clarified effluent from the Dissolved Air Flotation then discharges to the outfall by pumps. The solids captured within the Dissolved Air Flotation are either waste return activated into the liquid sludge holding tank or the solids are returned as return activated sludge to the Sludge Bioreactor. The liquid waste activated sludge is hauled off site to a landfill for disposal. Process wastewater is discharged after treatment from Outfall 101 then to Outfall 001. Non-process stormwater is discharged from Outfall 002. Second-flush process area stormwater is routed through an oil/water separator system before being discharged from Outfall 002.

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

AGUAS RESIDUALES INDUSTRIALES /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.

Natgasoline LLC (CN604256412) opera la Planta Natgasoline Beaumont RN 106586795, una instalación de fabricación de productos químicos orgánicos. La instalación está ubicada en 2366 Sulphur Plant Road, en Beaumont, Condado de Jefferson, Texas 77705. Esta es una solicitud de renovación de permiso para descargar aguas residuales industriales, aguas residuales de sistemas de servicios públicos y aguas lluvias de zonas dentro y fuera del área de proceso. La categoría de aguas residuales de servicios públicos incluye aguas residuales resultantes del tratamiento de agua cruda, purga de torres de enfriamiento, purga de calderas y aguas residuales y condensados de desmineralizadores. La categoría de aguas lluvias incluye precipitación y escorrentía de zonas dentro y fuera del área de proceso de la instalación. Los puntos de descarga autorizados incluyen los puntos 001, 002 y 101.

Se espera que las descargas de la instalación contengan contaminantes asociados con la fabricación de productos químicos orgánicos. El agua residual de tratamiento de agua cruda, el agua lluvia de zonas fuera del área de proceso, el agua residual del proceso, el agua de purga de torres de enfriamiento y calderas, el agua de condensado, el agua lluvia del área de proceso, y el agua lluvia del área de proceso posterior al primer drenaje. está tratado por in-situ mediante una serie de métodos antes de ser descargada. La instalación de Natgasoline utiliza sistemas de tratamiento físico y biológico para tratar las aguas residuales y las aguas pluviales de primera descarga antes de ser liberadas al medio ambiente a través del punto 001. Los equipos de tratamiento de aguas residuales que se utilizan incluyen, un tanque de equalización, un biorreactor de lodos, sistema de flotación por aire disuelto, y un Tanque de Retención de Lodos Líquidos. El agua residual del proceso se bombea desde el tanque de equalización hacia el biorreactor de lodos de la planta, donde se utiliza aireación de burbujas gruesas con un soplador externo para proporcionar oxigenación. La descarga del biorreactor de lodos se bombea al sistema de flotación por aire disuelto donde ocurre la clarificación del agua. El efluente clarificado proveniente del sistema de flotación por aire disuelto se bombea al punto de descarga. Los sólidos capturados dentro del sistema de flotación por aire disuelto retornan al tanque de retención de lodos líquidos o al biorreactor de lodos. Los lodos líquidos activados residuales se transportan fuera del sitio a un relleno sanitario para su eliminación. Las aguas residuales de proceso se descargan después del tratamiento en el punto 101 y luego en el punto 001. Las aguas lluvias provenientes de zonas fuera del área de proceso se descargan en el punto 002. El agua lluvia de segunda descarga proveniente del área de proceso pasa a través de un separador de agua/aceite antes de ser descargada en el punto 002..

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

Individual Industrial Wastewater 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 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.

ATTACHMENT 4

Attachment 4. Public Involvement Plan (PIP) Form



Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

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

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

Section 1. Preliminary Screening

- ☐ New Permit or Registration Application
☒ New Activity - modification, registration, amendment, facility, etc. (see instructions)

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

Section 2. Secondary Screening

- ☒ Requires public notice,
☐ Considered to have significant public interest, **and**
☐ Located within any of the following geographical locations:

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

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

- ☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V
Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

- ☒ Texas Pollutant Discharge Elimination System (TPDES)
☐ Texas Land Application Permit (TLAP)
☐ State Only Concentrated Animal Feeding Operation (CAFO)
☐ Water Treatment Plant Residuals Disposal Permit
☐ Class B Biosolids Land Application Permit
☐ Domestic Septage Land Application Registration

Water Rights New Permit

- ☐ New Appropriation of Water
☐ New or existing reservoir

Amendment to an Existing Water Right

- ☐ Add a New Appropriation of Water
☐ Add a New or Existing Reservoir
☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

Natgasoline operates a natural gas to methanol plant (SIC 2869) in Beaumont, Texas, adjacent to the Neches River. The facility has been in operation since 2017, and Natgasoline uses physical and biological treatment to remove industrial (chemical) contaminants prior to discharging to the Neches River. This application is for a permit renewal to the facility's Texas Pollutant Discharge Elimination System Permit (TPDES; Permit No. WQ0005143000).

Section 5. Community and Demographic Information

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

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

Beaumont

(City)

Jefferson County

(County)

None listed

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☒

City

☐

County

☐

Census Tract

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

88.1%

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

The per capital income in past 12 months is \$32,829.

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

Black - 44.0%

White - 27.8%

Asian - 2.5%

American Indian - 0.0%

Hispanic - 22.4%

Two or More Races - 3.2%

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

Speaks English less than "very well": 7.5%

Spanish (6.8%); Other (0.7%)

(e) Languages commonly spoken in area by percentage

English - 79.7%

Spanish - 16.6%

Other - 3.7%

(f) Community and/or Stakeholder Groups

None

(g) Historic public interest or involvement

None

Section 6. Planned Public Outreach Activities

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

☒ Yes ☐ No

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

☐ Yes ☒ No

If Yes, please describe.

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

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

☒ Yes ☐ No

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

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

- ☒ Publish in alternative language newspaper
☐ Posted on Commissioner's Integrated Database Website
☐ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

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

☐ Yes ☒ No

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

☐ Yes ☒ No

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

- ☒ TCEQ Regional Office ☐ TCEQ Central Office
☐ Public Place (specify)

Section 7. Voluntary Submittal

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

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

☒ Yes ☐ No

What types of notice will be provided?

- ☒ Publish in alternative language newspaper
☐ Posted on Commissioner's Integrated Database Website
☐ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

ATTACHMENT 5

Attachment 5. Core Data Form



TCEQ Core Data Form

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

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
☐ New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
☒ Renewal (Core Data Form should be submitted with the renewal form)		☐ Other
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 604256412		RN 106586795

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		6/20/2024	
☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership					
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<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>	
Natgasoline LLC					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0801689918		32049571162		680682889	
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:					
Natgasoline LLC					
P.O. Box 20339					
City		Beaumont		State	TX
ZIP		77720		ZIP + 4	
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.)

Natgasoline LLC

23. Street Address of the Regulated Entity:

2366 Sulphur Plant Road

(No PO Boxes)

City

Beaumont

State

TX

ZIP

77705

ZIP + 4

24. County

Jefferson

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:**28. Longitude (W) In Decimal:**

Degrees

Minutes

Seconds

Degrees

Minutes

Seconds

30

01

56

94

02

46

29. Primary SIC Code**30. Secondary SIC Code****31. Primary NAICS Code****32. Secondary NAICS Code**

(4 digits)

(4 digits)

(5 or 6 digits)

(5 or 6 digits)

2869

325199

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

Manufacturing of methanol from natural g

34. Mailing

PO Box 20339

Address:

City

Beaumont

State

TX

ZIP

77720

ZIP + 4

35. E-Mail Address:**36. Telephone Number****37. Extension or Code****38. Fax Number** (if applicable)

(409) 344-4900

(409) 232-0555

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
			JEA035H	96775
☐ Municipal Solid Waste	☒ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
	107764, PSDTX1340			
☐ Sludge	☐ Storm Water	☒ Title V Air	☐ Tires	☐ Used Oil
		03963		
☐ Voluntary Cleanup	☒ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0005143000			

SECTION IV: Preparer Information

40. Name:	Scott Kolb	41. Title:	Sr. Env. Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(409) 344-4932		(409) 232-0555	scott.kolb@natgasoline.com

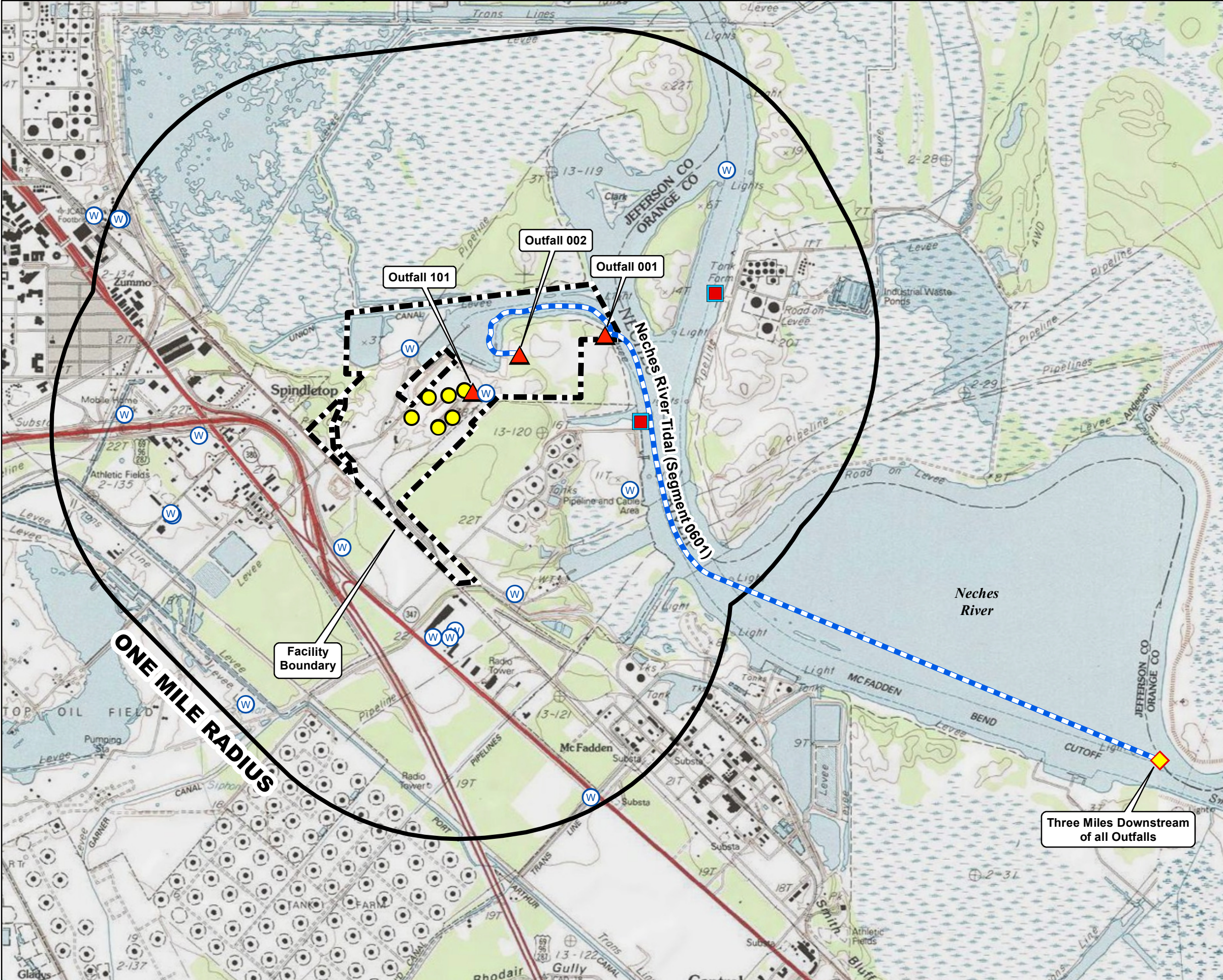
SECTION V: Authorized Signature

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:	Natgasoline LLC	Job Title:	Site Manager
Name (In Print):	Larry Richard	Phone:	(409) 344- 4900
Signature:		Date:	7/8/24

ATTACHMENT 6

Attachment 6. Water Well and Downstream Map

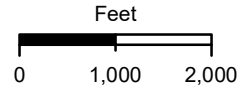


LEGEND

- Water Well Location
- Outfall Location
- Three Miles Downstream
- Sump/Wastewater Treatment System
- Surface Water Intake Location (Industrial Use)
- Discharge Route
- Natgasoline Facility

Notes

1. Surface Water Intake Locations from TCEQ Texas Water Rights Viewer, 2021. Version 2.0. Updated 2024.
2. Stream Segment from TCEQ Surface Water Quality Viewer, 2016. Version 4.0. Updated 2022.
3. Background Imagery: USA Topo Maps via ESRI Online - 1:24,000-scale maps, 4/18/2019.



Projected Coordinate System
Datum: NAD 1983
UTM: Zone 15N (meters)



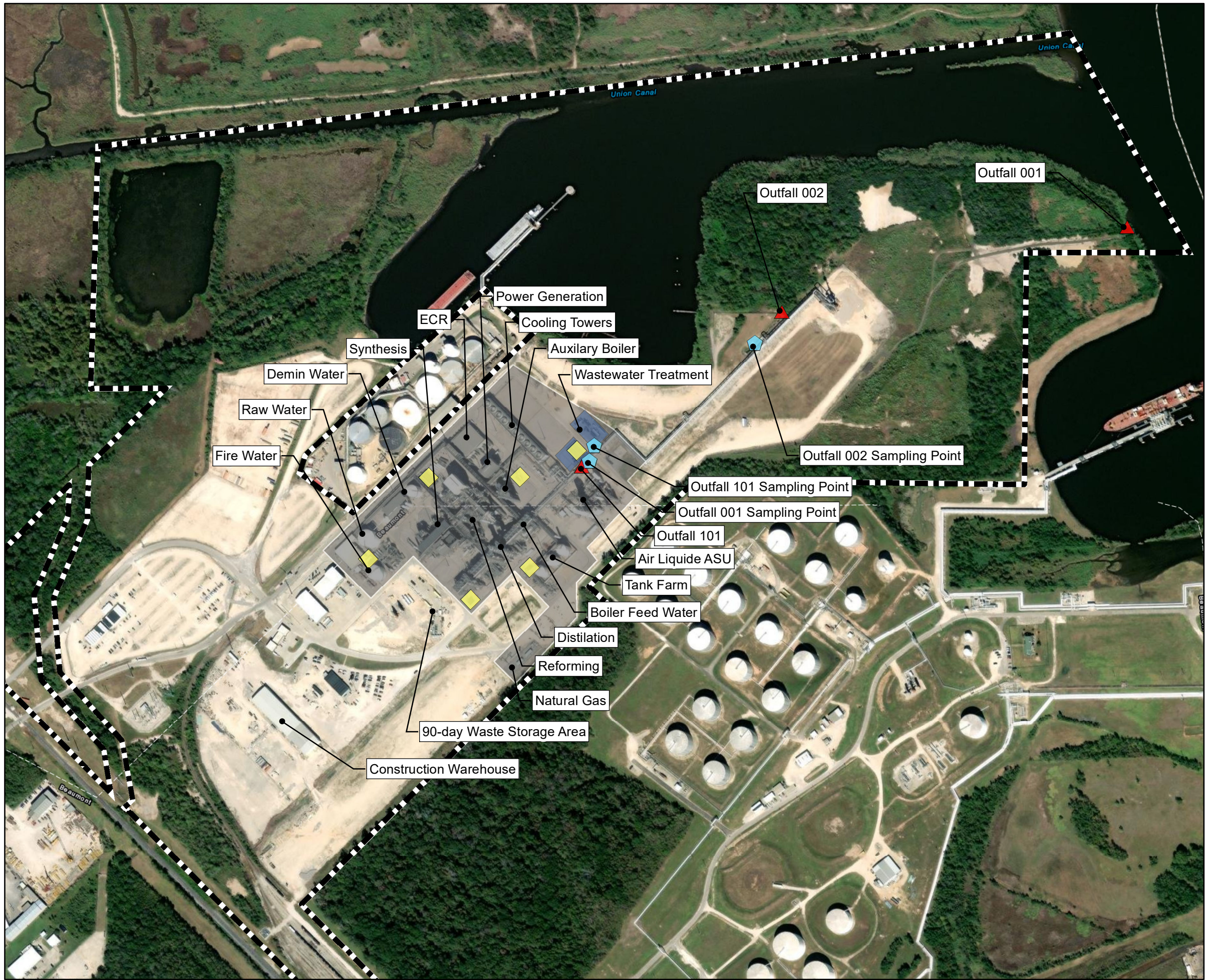
WATER WELLS AND
DOWNSTREAM MAP

Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No.	10025	Drawn By:	CDM
Issued:	10-July-2024	Chk'd By:	WMC
Map ID:	001_01	App'd By:	JMM

ATTACHMENT 7

Attachment 7. Facility Site Map

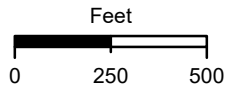


LEGEND

-  Natgasoline Property Boundary
-  Outfall
-  Sump/ Impoundment
-  Outfall Sampling Point
-  Plant Process Area
-  Wastewater Treatment Area

Notes

Background Imagery: ESRI, Maxar, Earthstar Geographics



Projected Coordinate System
Datum: NAD 1983
STP: Texas IV; FIPS 4204 (ft)



FACILITY SITE MAP

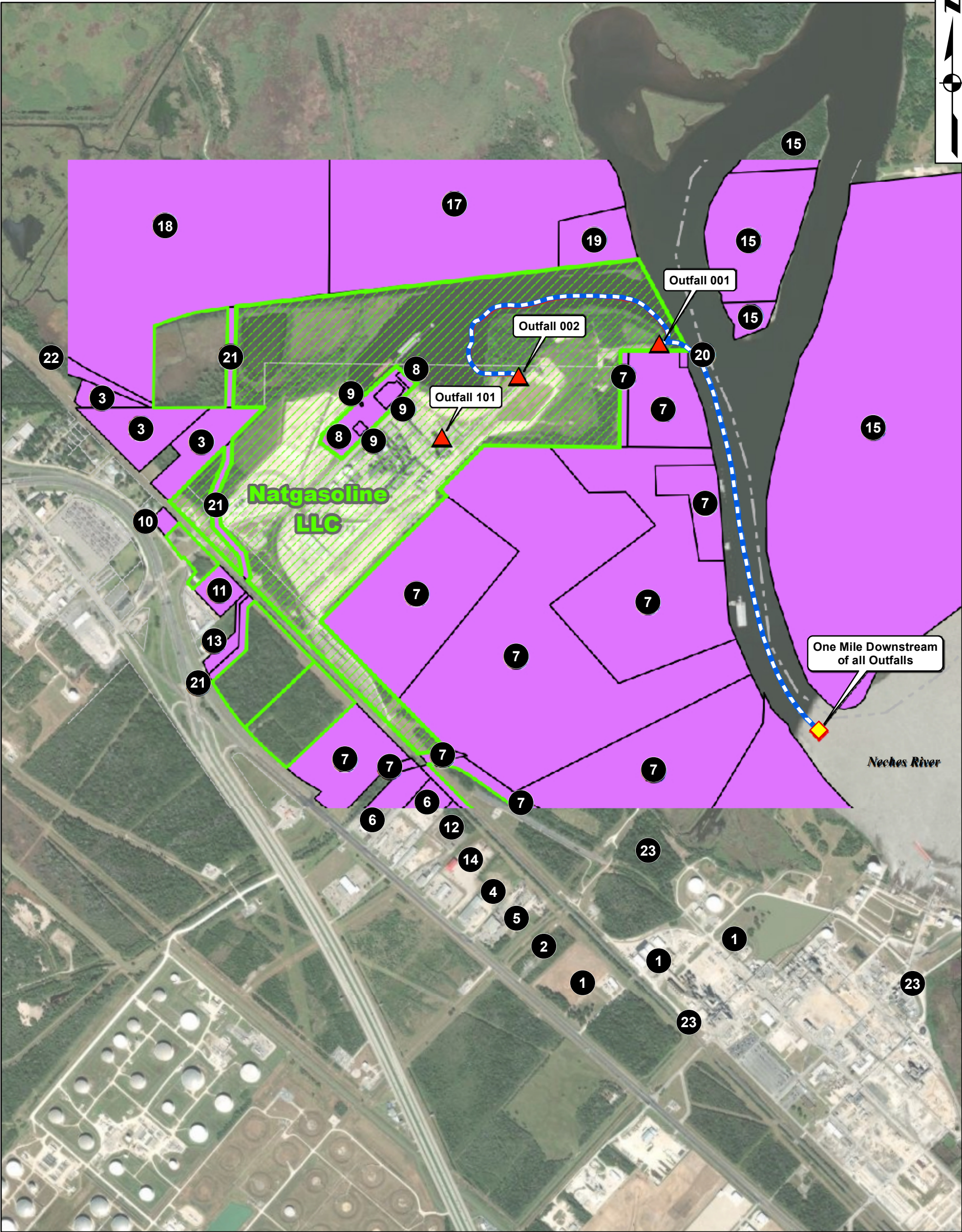
Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No.	10025	Drawn By:	WMC
Issued:	10-July-2024	Chk'd By:	GDT
Map ID:	001_01	App'd By:	JMM

ATTACHMENT 7

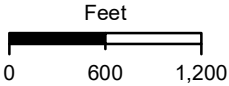
ATTACHMENT 8

Attachment 8. Affected Landowners Map & Landowner List



LEGEND

-  Outfall Locations
-  One Mile Downstream from Outfalls
-  Discharge Route



Notes

- The numbered adjacent properties correspond to the numbers on the Adjacent Landowners Table in Attachment E, where additional information on the adjacent property owners is provided.
- Parcel data provided by ERSI Online: 2019 Texas Parcels StratMap (feature service by TPWD_LawEnforcement - 2/16/2022).
- Background Imagery: ESRI World Imagery - 1m Color InfraRed NAIP imagery last modified 8/16/2023. Source: Esri, DigitalGlobe, USGS, and the GIS User Community, et al.
- Projected Coordinate System: Datum: NAD 1983, UTM: Zone 15N (meters).



ADJACENT LANDOWNERS MAP

Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No.	10025	Drawn By:	CDM
Issued:	10-July-2024	Chk'd By:	JSC
Map ID:	001_02	Appv'd By:	JMM

ATTACHMENT 8

Adjacent Landowners List

Map ID	Owner Name	Address	City	State	Zip
1	OCI BEAUMONT LLC	ATTN: PROPERTY TAX DEPARTMENT 5470 N TWIN CITY HIGHWAY	NEDERLAND	TX	77627-3168
2	CHEMOURS COMPANY FC LLC	1007 MARKET ST	WILMINGTON	DE	19898-1100
3	KANSAS CITY SOUTHERN RAILROAD	ATTN: PROPERTY TAX DEPT PO BOX 219335	KANSAS CITY	MO	64121-9335
4	6405 HWY 346 LLC	2970 W LUCAS	BEAUMONT	TX	77706-7817
5	B F I SYS OF N AMERICA INC	ATTN: REPUBLIC SERVICES PROP TAX PO BOX 29246	PHOENIX	AZ	85038-9246
6	NMS PROPERTIES LLC	1440 SPINDLETOP RD	BEAUMONT	TX	77705-6613
7	ENTERPRISE BEAUMONT MARINE WEST LP	ATTN: PROPERTY TAX DEPT PO BOX 4018	HOUSTON	TX	77210-4018
8	MARTIN OPERATING PARTNERS - NGL	ATTN: CHRIS BOOTH PO BOX 191	KILGORE	TX	75663-0191
9	CF MARTIN SULPHUR LP	ATTN: CONSOLIDATED TAX SERVICE LLP 4200 STONE RD	KILGORE	TX	75662
10	AIR LIQUIDE LARGE INDUSTRIES US LP	ATTN: PROPERTY TAX DEPT – DAVID NGO 9811 KATY FWY STE 100	HOUSTON	TX	77024-1274
11	LANDRY CAMILLE J ET AL FBA	ATTN: DEEP SOUTH CRANE & RIGGING CO 15324 AIRLINE HWY	BATON ROUGE	LA	70817-7311
12	HANSFORD ASSOCIATES LP	PO BOX 513	CHARLESTON	WV	25322-0513
13	TRANSCANADA KEYSTONE PIPELINE	ATTN: LP PROPERTY TAX DEPT	HOUSTON	TX	77252-2168
14	BNI LLC	95 TRANQUILITY DR	MANDEVILLE	LA	70471
15	ENTERPRISE REFINED PRODUCTS CO LLC	PO BOX 4018	HOUSTON	TX	77210-4018
16	ABCR LLC	3082 25 TH ST	PORT ARTHUR	TX	77642-5217
17	JEFFERSON COUNTY WATERWAY & NAVIGATION DISTRICT	PO BOX 778	NEDERLAND	TX	77627-0778

Adjacent Landowners List

18	SABINE-NECHES NAVIGATION DISTRICT	PO BOX 778	NEDERLAND	TX	77627-0778
19	HOLLYFELD J S TRUSTEE	ATTN: A STEINFELD LEE NATL CO 645 5 TH AVE	NEW YORK	NY	10022-5910
20	TEXACO EXPL & PROD INC	ATTN: CHEVRON SERV CO PROP TX DEPT PO BOX 285	HOUSTON	TX	77001-0285
21	STATE OF TEXAS	ATTN: TEXDOT PO BOX 5075	AUSTIN	TX	78763-5075
22	USA RAIL TERMINALS BEAUMONT LLC	1255 BLACKSMITH RD	PORT ALLEN	LA	70767
23	JEFFERSON TERMINAL SOUTH LLC	1345 AVE OF THE AMERICAS	NEW YORK	NY	10105

OCI BEAUMONT LLC
ATTN: PROPERTY TAX DEPARTMENT
5470 N TWIN CITY HIGHWAY
NEDERLAND, TX 77627-3168

CHEMOURS COMPANY FC LLC
1007 MARKET ST
WILMINGTON, DE 19898-1100

KANSAS CITY SOUTHERN RAILROAD
ATTN: PROPERTY TAX DEPT
PO BOX 219335
KANSAS CITY, MO 64121-9335

6405 HWY 346 LLC
2970 W LUCAS
BEAUMONT, TX 77706-7817

B F I SYS OF N AMERICA INC
ATTN: REPUBLIC SERVICES PROP TAX
PO BOX 29246
PHOENIX, AZ 85038-9246

NMS PROPERTIES LLC
1440 SPINDLETOP RD
BEAUMONT, TX 77705-6613

ENTERPRISE BEAUMONT MARINE
WEST LP
ATTN: PROPERTY TAX DEPT
PO BOX 4018
HOUSTON, TX 77210-4018

MARTIN OPERATING PARTNERS -
NGL
ATTN: CHRIS BOOTH
PO BOX 191
KILGORE, TX 75663-0191

CF MARTIN SULPHUR LP
ATTN: CONSOLIDATED TAX SERVICE
LLP
4200 STONE RD
KILGORE, TX 75662

AIR LIQUIDE LARGE INDUSTRIES US
LP
PROPERTY TAX DEPT – DAVID NGO
9811 KATY FWY STE 100
HOUSTON, TX 77024-1274

LANDRY CAMILLE J ET AL FBA
ATTN: DEEP SOUTH CRANE &
RIGGING CO
15324 AIRLINE HWY
BATON ROUGE, LA 70817-7311

HANSFORD ASSOCIATES LP
PO BOX 513
CHARLESTON, WV 25322-0513

TRANSCANADA KEYSTONE PIPELINE
ATTN: LP PROPERTY TAX DEPT
HOUSTON, TX 77252-2168

ATTN: LP PROPERTY TAX DEPT
HOUSTON, TX 77252-2168
BNI LLC
95 TRANQUILITY DR
MANDEVILLE, LA 70471

ENTERPRISE REFINED PRODUCTS CO
LLC
PO BOX 4018
HOUSTON, TX 77210-4018

ABCR LLC
3082 25TH ST
PORT ARTHUR, TX 77642-5217

JEFFERSON COUNTY WATERWAY &
NAVIGATION DISTRICT
PO BOX 778
NEDERLAND, TX 77627-0778

SABINE-NECHES NAVIGATION
DISTRICT
PO BOX 778
NEDERLAND, TX 77627-0778

HOLLYFELD J S TRUSTEE
ATTN: A STEINFELD LEE NATL CO
645 5TH AVE
NEW YORK, NY 10022-5910

TEXACO EXPL & PROD INC
ATTN: CHEVRON SERV CO PROP TX
DEPT
PO BOX 285
HOUSTON, TX 77001-0285

STATE OF TEXAS
ATTN: TEXDOT
PO BOX 5075
AUSTIN, TX 78763-5075

USA RAIL TERMINALS BEAUMONT
LLC
1255 BLACKSMITH RD
PORT ALLEN, LA 70767

JEFFERSON TERMINAL SOUTH LLC
1345 AVE OF THE AMERICAS
NEW YORK, NY 10105

ATTACHMENT 9

Attachment 9. Photo Locations Map & Photolog



Photo 1 - View of Outfall 001



Photo 2 - View of Neches River Looking Upstream at Outfall 001



PHOTOLOG

**Natgasoline LLC Beaumont Operations Wastewater
Permit Renewal Application**

GSI Project: 10025
Issued: July 2024
Prepared By: WMC
Approved By: GDT



Photo 3 - View of Neches River Looking Downstream at Outfall 001



Photo 4 - Outfall 001 Sampling Point



PHOTOLOG

**Natgasoline LLC Beaumont Operations Wastewater
Permit Renewal Application**

GSI Project: 10025
Issued: July 2024
Prepared By: WMC
Approved By: GDT



Photo 5 - View of Outfall 002



Photo 6 - View of Drainage Ditch Upstream of Outfall 002



PHOTOLOG

**Natgasoline LLC Beaumont Operations Wastewater
Permit Renewal Application**

GSI Project: 10025
Issued: July 2024
Prepared By: WMC
Approved By: GDT



Photo 7 - View of Outfall 002 Sampling Point



Photo 8 - View of Outfall 101



PHOTOLOG

Natgasoline LLC Beaumont Operations Wastewater

GSI Project: 10025
Issued: July 2024
Prepared By: WMC
Approved By: GDT



Photo 9 - View of Outfall 101 Sampling Point



PHOTOLOG

**Natgasoline LLC Beaumont Operations Wastewater
Permit Renewal Application**

GSI Project: 10025
Issued: July 2024
Prepared By: WMC
Approved By: GDT



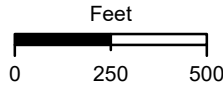
LEGEND

-  Natgasoline Property Boundary
-  Outfall
-  Outfall Sampling Point
-  Wastewater Treatment Area
-  Photo Location and Direction

PRELIMINARY

Notes

1. Background Imagery: ESRI, Maxar, Earthstar Geographics
2. Photo locations correspond to photographs in the photolog.



Projected Coordinate System
Datum: NAD 1983
STP: Texas IV; FIPS 4204 (ft)



PHOTO LOCATION MAP

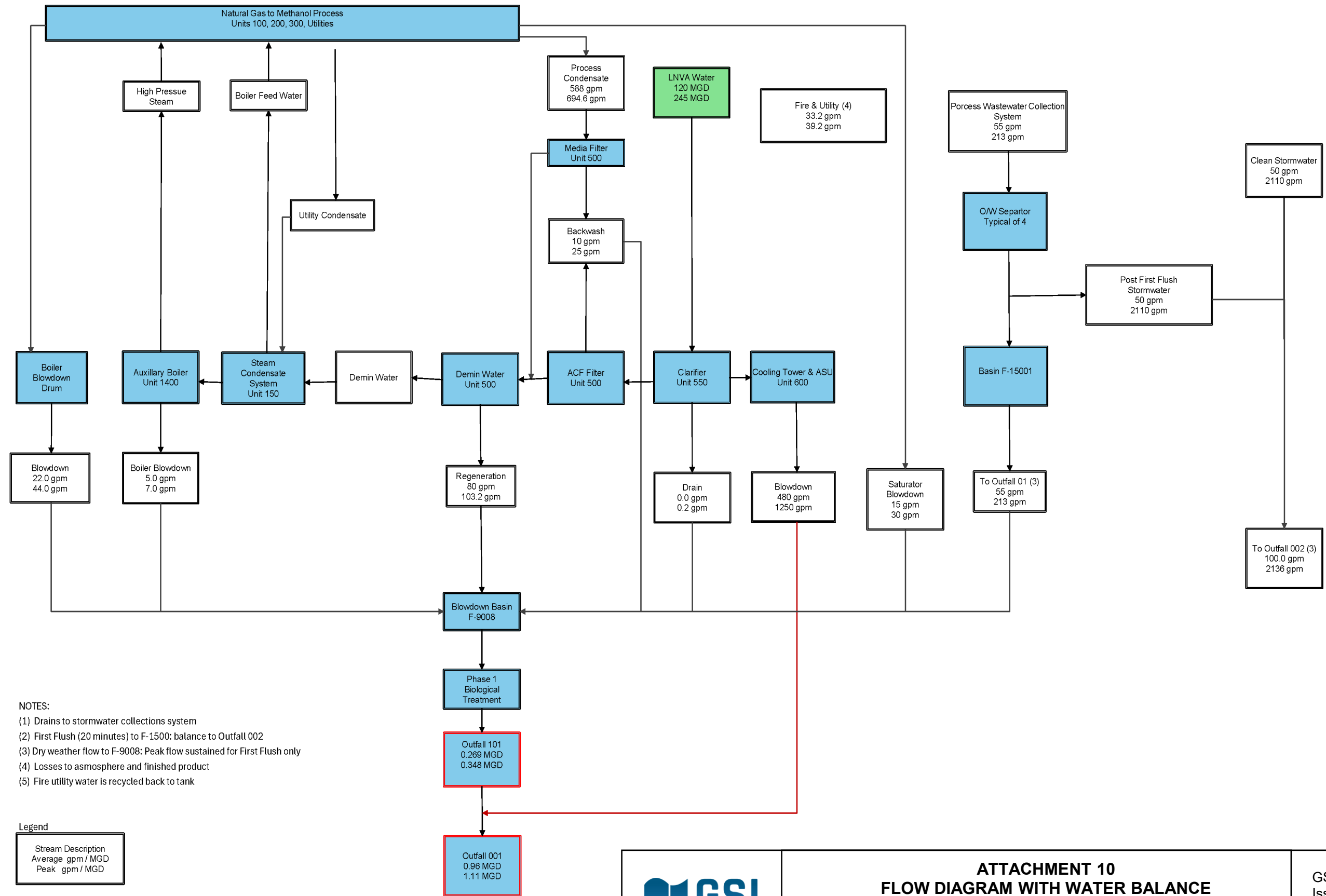
Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No.	10025	Drawn By:	WMC
Issued:	10-July-2024	Chk'd By:	GDT
Map ID:	001_01	Appv'd By:	JMM

ATTACHMENT 9

ATTACHMENT 10

Attachment 10. Wastewater Flow Schematic with Water Balance



ATTACHMENT 10
FLOW DIAGRAM WITH WATER BALANCE
 Wastewater Permit Renewal Application
 Natgasoline LLC, Beaumont, Texas

GSI Job No.: 10025
 Issued: 7/8/2024
 Prepared By: WMC
 Approved By: JMM

ATTACHMENT 11

Attachment 11. Description of Outdoor Activities Exposed to Stormwater

ATTACHMENT 11 – DESCRIPTION OF OUTDOOR ACTIVITIES

Wastewater Permit Renewal Application, Natgasoline LLC TPDES Permit No. WQ0005143000 Beaumont, Texas

Worksheet 7.0, Item 4.c – Materials Handled at the Facility

Natgasoline uses sulfur-free natural gas to produce methanol using nickel and copper catalyst.

The following items have the potential to be exposed to precipitation:

- raw water treatment and demineralization chemicals;
- methanol storage tanks;
- operating equipment and process vessels (liquids, transformers, etc).;
- waste drums and totes

Worksheet 7.0, Item 4.d – Narrative of Industrial Processes

Industrial processes at the facility include raw water treatment, synthesis, reforming, distillation, air separation (performed by Air Liquide), cooling towers, boilers, and bulk storage of methanol.

Storage vessels, piping, and process equipment are closed systems, which prevents stormwater exposure to materials and products. Exposure to precipitation would only occur in case of malfunctioning or damaged equipment, or maintenance activities occurring during the precipitation.

Waste drums are typically stored covered under roof but are not fully enclosed and may be exposed to precipitation. Drums are kept closed, minimizing the potential for contamination of runoff. The drum storage area drains contains secondary containment.

Worksheet 7.0, Item 4.e – BMPs and Controls

First flush stormwater from the process areas at the Natgasoline facility is collected in sumps and pumped to a stormwater basin where it can be treated by the wastewater treatment unit. Additionally, Natgasoline operates an oil/water separator system to treat stormwater from the process areas.

Natgasoline has standard operating storm water procedures which include segregation of clean and contaminated runoff. Contaminated runoff (first flush) from the process areas is pumped and treated through the wastewater treatment unit which then discharges to Outfall 101 and then to Outfall 001. Second flush process area stormwater is routed through the oil/water separator system and then to Outfall 002. Stormwater that does not contact any process areas is discharged to Outfall 002.

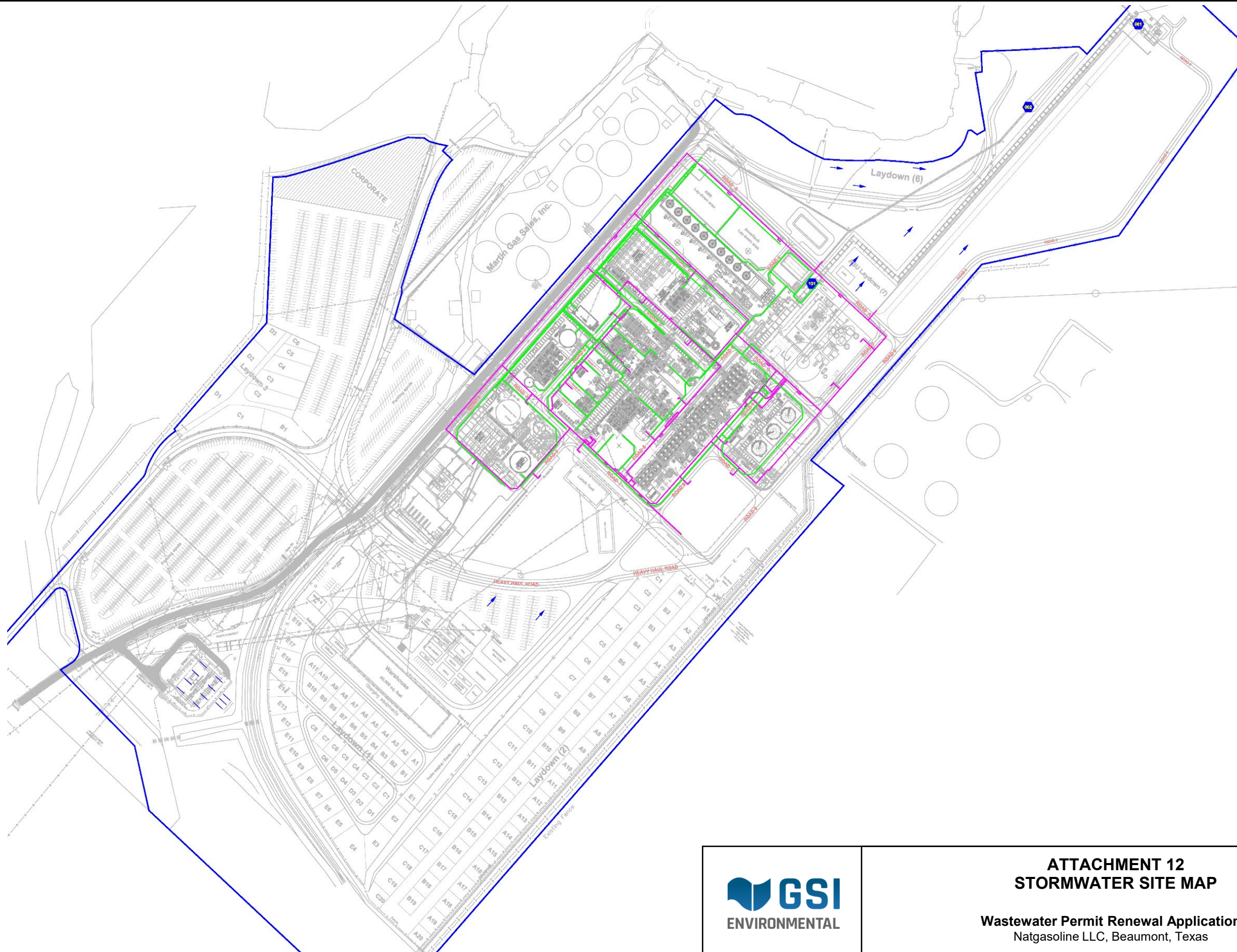
Other facility best management practices include:

- covered material handling areas (waste storage area, warehouse, chemical storage areas)
- secondary containment (curbs, dikes, portable containment units, ponds)

- Storm water outfall sluice gates (control valves)
- Storm Water Pollution Prevention Training (for all employees involved in materials handling)
- On-site spill response equipment
- Outfall 002 post-first-flush practice (operator intervention, inspection, monitoring)
- Storm water diversion practices (curbs, ditches and swales)
- Erosion control (site vegetation and gradient slope controls)
- Designated maintenance and equipment cleaning areas

ATTACHMENT 12

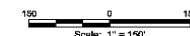
Attachment 12. Stormwater Site Map



- Legend**
- Property Boundary
 - Outfall 001 Drainage
 - Outfall 002 Drainage
 - Electric Line
 - Power Line
 - Underground Telephone Line
 - Water Line
 - Fence
 - Underground Gas Line
 - Surface Water Flow Direction
 - Outfall Location

Reference

Base map compiled of client provided drawing titled: Site Plot Plan (General Layout), Job #: 08905, Document # Y10310P-CB-00006, Rev 26, Date: June 25, 2017.



Facility Plot Plan and Storm Water Drainage Map

Storm Water Pollution Prevention Plan
Jefferson County

Natgasoline LLC
Beaumont, Texas

	Drawn By	CMM	05/31/18
	Checked By	MHM	05/31/18
	Approved By	MHM	05/31/18
	Project Number	1198-001	
	Drawing Number	1198-001-C002	

2
Figure



**ATTACHMENT 12
STORMWATER SITE MAP**

Wastewater Permit Renewal Application
Natgasoline LLC, Beaumont, Texas

GSI Job No.: 10025
Issued: 7/10/2024
Prepared By: WMC
Approved By: JMM

ATTACHMENT 13

Attachment 13. Pollutant Analyses for Additional Outfalls

Attachment 13 – Pollutant Analyses for Outfalls

Note: Natgasoline to provide additional results when data are received.

Table 1 for Outfall No.: 001

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)	<4.0	60.0		
CBOD (5-day)	<4.0	61.0		
Chemical oxygen demand	72	164		
Total organic carbon	22.3	83.3		
Dissolved oxygen	7.3	6.5		
Ammonia nitrogen	11.0	6.30		
Total suspended solids	5.3	6.0		
Nitrate nitrogen	0.38	<0.20		
Total organic nitrogen	2.80	2.55		
Total phosphorus	8.43	12.3		
Oil and grease	<2.2	<2.5		
Total residual chlorine	0.03	<0.02		
Total dissolved solids	696	1460		
Sulfate	807	574		
Chloride	92.0	90.0		
Fluoride	<0.10	0.12		
Total alkalinity (mg/L as CaCO ₃)	211	238		
Temperature (°F)	79.2	84.0		
pH (standard units)	8.3	8.4		

Table 2 for Outfall No.: 001

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	75.4	154			2.5
Antimony, total	<5.00	<5.00			5
Arsenic, total	1.06	1.73			0.5
Barium, total	121	143			3
Beryllium, total	<0.50	<0.50			0.5
Cadmium, total	<1.00	<1.00			1
Chromium, total	<3.00	<3.00			3
Chromium, hexavalent	<3	<3			3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Chromium, trivalent	<3	<3			N/A
Copper, total	13.8	22.5			2
Cyanide, available	32	8.6			2/10
Lead, total	<0.50	<0.50			0.5
Mercury, total	0.0141	0.0186			0.005/0.0005
Nickel, total	6.81	9.42			2
Selenium, total	<5.00	<5.00			5
Silver, total	<0.50	<0.50			0.5
Thallium, total	<0.50	<0.50			0.5
Zinc, total	21.5	57.1			5.0

Table 3 for Outfall No.: **001**

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			
Anthracene	<5	<5			
Benzene	<5	<5			
Benzidine	<5	<5			
Benzo(a)anthracene	<5	<5			
Benzo(a)pyrene	<5	<5			
Bis(2-chloroethyl)ether	<5	<5			
Bis(2-ethylhexyl)phthalate	<5	<5			
Bromodichloromethane [Dichlorobromomethane]	<5	<5			
Bromoform	<5	<5			
Carbon tetrachloride	<2	<2			
Chlorobenzene	<5	<5			
Chlorodibromomethane [Dibromochloromethane]	<5	<5			
Chloroform	7	4			
Chrysene	<5	<5			
m-Cresol [3-Methylphenol]	<5	<5			
o-Cresol [2-Methylphenol]	<5	<5			
p-Cresol [4-Methylphenol]	<5	<5			
1,2-Dibromoethane	<5	<1			
m-Dichlorobenzene	<5	<5			

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
[1,3-Dichlorobenzene]					
o-Dichlorobenzene [1,2-Dichlorobenzene]	<5	<5			
p-Dichlorobenzene [1,4-Dichlorobenzene]	<5	<5			
3,3'-Dichlorobenzidine	<5	<5			
1,2-Dichloroethane	<5	<5			
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5			
Dichloromethane [Methylene chloride]	<5	<5			
1,2-Dichloropropane	<5	<5			
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	<5			
2,4-Dimethylphenol	<5	<5			
Di-n-Butyl phthalate	<5	<5			
Ethylbenzene	<5	<5			
Fluoride	<100	0.00012			
Hexachlorobenzene	<5	<5			
Hexachlorobutadiene	<2	<2			
Hexachlorocyclopentadiene	<5	<5			
Hexachloroethane	<2	<2			
Methyl ethyl ketone	<5	<5			
Nitrobenzene	<5	<5			
N-Nitrosodiethylamine	<5	<5			
N-Nitroso-di-n-butylamine	<5	<5			
Nonylphenol	<4.85	<25.8			
Pentachlorobenzene	<5	<5			
Pentachlorophenol	<5	<5			
Phenanthrene	<5	<5			
Polychlorinated biphenyls (PCBs) (**)	NM	NM			
Pyridine	<3	<5			
1,2,4,5-Tetrachlorobenzene	<3	<5			
1,1,2,2-Tetrachloroethane	<5	<5			
Tetrachloroethene [Tetrachloroethylene]	<5	<5			

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Toluene	<5	<5			
1,1,1-Trichloroethane	<5	<5			
1,1,2-Trichloroethane	<5	<5			
Trichloroethene [Trichloroethylene]	<5	<5			
2,4,5-Trichlorophenol	<5	<5			
TTHM (Total trihalomethanes)	7	<5			
Vinyl chloride	<5	<5			

(*) 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 for Outfall No.: **001**

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	☐	☒	1.37	1.19			400
Color (PCU)	☒	☐	50.0	55.0			—
Nitrate-Nitrite (as N)	☒	☐	0.00038	<0.40			—
Sulfide (as S)	☒	☐	<0.010	0.487			—
Sulfite (as SO3)	☐	☒	<2.0	<2.0			—
Surfactants	☒	☐	0.21	0.14			—
Boron, total	☒	☐	0.125	0.0853			20
Cobalt, total	☐	☒	0.00033	0.0005			0.3
Iron, total	☒	☐	0.209	0.457			7
Magnesium, total	☒	☐	4.540	5.380			20
Manganese, total	☒	☐	0.165	0.246			0.5
Molybdenum, total	☒	☐	<0.001	0.00189			1
Tin, total	☐	☒	<0.005	<0.005			5
Titanium, total	☐	☒	<0.005	<0.005			30

Table 5 for Outfall No.: **001**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	<20	<20			50
Acrylonitrile	<20	<20			50
Benzene	<5	<5			10
Bromoform	<5	<5			10
Carbon tetrachloride	<2	<2			2
Chlorobenzene	<5	<5			10
Chlorodibromomethane	<5	<5			10
Chloroethane	<5	<5			50
2-Chloroethylvinyl ether	<5	<5			10
Chloroform	7	4			10
Dichlorobromomethane [Bromodichloromethane]	<5	<5			10
1,1-Dichloroethane	<5	<5			10
1,2-Dichloroethane	<5	<5			10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5	<5			10
1,2-Dichloropropane	<5	<5			10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5	<5			10
Ethylbenzene	<5	<5			10
Methyl bromide [Bromomethane]	<5	<5			50
Methyl chloride [Chloromethane]	<5	<5			50
Methylene chloride [Dichloromethane]	<5	<5			20
1,1,2,2-Tetrachloroethane	<5	<5			10
Tetrachloroethylene [Tetrachloroethene]	<5	<5			10
Toluene	<5	<5			10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<4	<4			10
1,1,1-Trichloroethane	<5	<5			10
1,1,2-Trichloroethane	<5	<5			10
Trichloroethylene [Trichloroethene]	<5	<5			10
Vinyl chloride	<5	<5			10

* Indicate units if different from µg/L.

Table 6 for Outfall No.: **001**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	<5	<5			10
2,4-Dichlorophenol	<5	<5			10
2,4-Dimethylphenol	<5	<5			10
4,6-Dinitro-o-cresol	<10	<10			50
2,4-Dinitrophenol	<10	<10			50
2-Nitrophenol	<5	<5			20
4-Nitrophenol	<10	<10			50
p-Chloro-m-cresol	<5	<5			10
Pentachlorophenol	<5	<5			5
Phenol	<2	<2			10
2,4,6-Trichlorophenol	<5	<5			10

* Indicate units if different from µg/L.

Table 7 for Outfall No.: **001**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	<5	<5			10
Acenaphthylene	<5	<5			10
Anthracene	<5	<5			10
Benzidine	<5	<5			50
Benzo(a)anthracene	<5	<5			5
Benzo(a)pyrene	<5	<5			5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<5	<5			10
Benzo(ghi)perylene	<5	<5			20
Benzo(k)fluoranthene	<5	<5			5
Bis(2-chloroethoxy)methane	<5	<5			10
Bis(2-chloroethyl)ether	<5	<5			10
Bis(2-chloroisopropyl)ether	<5	<5			10
Bis(2-ethylhexyl)phthalate	<5	<5			10
4-Bromophenyl phenyl ether	<5	<5			10
Butylbenzyl phthalate	<5	<5			10
2-Chloronaphthalene	<5	<5			10
4-Chlorophenyl phenyl ether	<5	<5			10
Chrysene	<5	<5			5

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Dibenzo(a,h)anthracene	<5	<5			5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<5	<5			10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<5	<5			10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<5	<5			10
3,3'-Dichlorobenzidine	<5	<5			5
Diethyl phthalate	<5	<5			10
Dimethyl phthalate	<2	<2			10
Di-n-butyl phthalate	<5	<5			10
2,4-Dinitrotoluene	<5	<5			10
2,6-Dinitrotoluene	<5	<5			10
Di-n-octyl phthalate	<5	<5			10
1,2-Diphenylhydrazine (as Azobenzene)	<5	<5			20
Fluoranthene	<5	<5			10
Fluorene	<5	<5			10
Hexachlorobenzene	<5	<5			5
Hexachlorobutadiene	<2	<2			10
Hexachlorocyclopentadiene	<5	<5			10
Hexachloroethane	<2	<2			20
Indeno(1,2,3-cd)pyrene	<5	<5			5
Isophorone	<5	<5			10
Naphthalene	<2	<2			10
Nitrobenzene	<5	<5			10
N-Nitrosodimethylamine	<5	<5			50
N-Nitrosodi-n-propylamine	<5	<5			20
N-Nitrosodiphenylamine	<5	<5			20
Phenanthrene	<5	<5			10
Pyrene	<5	<5			10
1,2,4-Trichlorobenzene	<5	<5			10

* Indicate units if different from µg/L.

Table 8 for Outfall No.: **001**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	<0.005	<0.005			0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	<0.005	<0.005			0.05
beta-BHC [beta-Hexachlorocyclohexane]	<0.010	<0.010			0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	<0.005	<0.005			0.05
delta-BHC [delta-Hexachlorocyclohexane]	<0.010	<0.010			0.05
Chlordane	<0.020	<0.020			0.2
4,4'-DDT	<0.020	<0.020			0.02
4,4'-DDE	<0.005	<0.005			0.1
4,4'-DDD	<0.020	<0.020			0.1
Dieldrin	<0.005	<0.005			0.02
Endosulfan I (alpha)	<0.020	<0.020			0.01
Endosulfan II (beta)	<0.005	<0.005			0.02
Endosulfan sulfate	<0.100	<0.100			0.1
Endrin	<0.010	<0.010			0.02
Endrin aldehyde	<0.050	<0.050			0.1
Heptachlor	<0.005	<0.005			0.01
Heptachlor epoxide	<0.100	<0.100			0.01
PCB 1242	NM	NM			0.2
PCB 1254	NM	NM			0.2
PCB 1221	NM	NM			0.2
PCB 1232	NM	NM			0.2
PCB 1248	NM	NM			0.2
PCB 1260	NM	NM			0.2
PCB 1016	NM	NM			0.2
Toxaphene	<0.500	<0.500			0.3

* Indicate units if different from µg/L.

** NM - Not Measured

Table 9 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)	<4.0	<4.0		
CBOD (5-day)	<4.0	<4.0		
Chemical oxygen demand	25	15		
Total organic carbon	9.88	4.86		
Dissolved oxygen	8.7	7.3		
Ammonia nitrogen	<0.20	<0.20		
Total suspended solids	4.6	9.4		
Nitrate nitrogen	1.20	1.57		
Total organic nitrogen	<1.00	<1.00		
Total phosphorus	3.01	1.17		
Oil and grease	<2.2	<2.2		
Total residual chlorine	<0.02	<0.02		
Total dissolved solids	388	268		
Sulfate	73.4	82.4		
Chloride	32.0	9.6		
Fluoride	<0.10	0.14		
Total alkalinity (mg/L as CaCO ₃)	82	76		
Temperature (°F)	75	73.2		
pH (standard units)	7.6	7.2		

Table 10 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	61.7	191			2.5
Antimony, total	<5.00	<5.00			5
Arsenic, total	1.48	1.23			0.5
Barium, total	49.2	43.0			3
Beryllium, total	<0.50	<0.50			0.5
Cadmium, total	<1.00	<1.00			1
Chromium, total	<3.00	3.98			3
Chromium, hexavalent	<3	<3			3
Chromium, trivalent	<3	4			N/A
Copper, total	16.6	16.4			2

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Cyanide, available	<2.0	<2.0			2/10
Lead, total	<0.50	<0.50			0.5
Mercury, total	0.00238	0.00359			0.005/0.0005
Nickel, total	<2.00	<2.00			2
Selenium, total	<5.00	<5.00			5
Silver, total	<0.50	<0.50			0.5
Thallium, total	<0.50	<0.50			0.5
Zinc, total	112	149			5.0

Table 11 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	☐	☒	0.57	<0.20			400
Color (PCU)	☒	☐	30.0	30.0			—
Nitrate-Nitrite (as N)	☒	☐	1.24	1.6			—
Sulfide (as S)	☒	☐	0.033	0.019			—
Sulfite (as SO ₃)	☐	☒	<2.0	<2.0			—
Surfactants	☒	☐	0.14	0.077			—
Boron, total	☒	☐	0.0492	0.0416			20
Cobalt, total	☐	☒	<0.0003	0.00035			0.3
Iron, total	☒	☐	0.127	0.251			7
Magnesium, total	☒	☐	3.780	5.280			20
Manganese, total	☒	☐	0.0231	0.0464			0.5
Molybdenum, total	☒	☐	0.375	0.0367			1
Tin, total	☐	☒	<0.005	<0.005			5
Titanium, total	☐	☒	<0.005	<0.005			30

Table 12 for Outfall No.: **101**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)	<4.0	162		
CBOD (5-day)	<4.0	171		
Chemical oxygen demand	50	433		
Total organic carbon	16.0	241		
Dissolved oxygen	7.2	2.0		
Ammonia nitrogen	42.5	23.0		
Total suspended solids	6.6	18.0		
Nitrate nitrogen	<0.20	<0.20		
Total organic nitrogen	6.00	4.00		
Total phosphorus	0.74	3.74		
Oil and grease	<2.2	5.0		
Total residual chlorine	0.02	<0.02		
Total dissolved solids	4590	4360		
Sulfate	2690	1800		
Chloride	86.0	79.0		
Fluoride	0.10	0.13		
Total alkalinity (mg/L as CaCO ₃)	254	536		
Temperature (°F)	84.0	84.0		
pH (standard units)	8.0	8.6		

Table 13 for Outfall No.: **101**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	39.2	124			2.5
Antimony, total	<5.00	<5.00			5
Arsenic, total	0.82	1.09			0.5
Barium, total	68.5	62.8			3
Beryllium, total	<0.50	<0.50			0.5
Cadmium, total	<1.00	<1.00			1
Chromium, total	<3.00	4.46			3
Chromium, hexavalent	<3	<3			3
Chromium, trivalent	<3	4			N/A
Copper, total	4.94	23.4			2

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Cyanide, available	120	20			2/10
Lead, total	<0.50	<0.50			0.5
Mercury, total	<36.1	<24.5			0.005/0.0005
Nickel, total	3.76	4.85			2
Selenium, total	<5.00	<5.00			5
Silver, total	<0.50	<0.50			0.5
Thallium, total	<0.50	<0.50			0.5
Zinc, total	18.0	142			5.0

Table 14 for Outfall No.: **101**

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			
Anthracene	<5	<5			
Benzene	<5	<5			
Benidine	<5	<5			
Benzo(a)anthracene	<5	<5			
Benzo(a)pyrene	<5	<5			
Bis(2-chloroethyl)ether	<5	<5			
Bis(2-ethylhexyl)phthalate	<5	<5			
Bromodichloromethane [Dichlorobromomethane]	<5	<5			
Bromoform	<5	<5			
Carbon tetrachloride	<2	<2			
Chlorobenzene	<5	<5			
Chlorodibromomethane [Dibromochloromethane]	<5	<5			
Chloroform	14	7			
Chrysene	<5	<5			
m-Cresol [3-Methylphenol]	<5	<5			
o-Cresol [2-Methylphenol]	<5	<5			
p-Cresol [4-Methylphenol]	<5	<5			
1,2-Dibromoethane	<5	<5			
m-Dichlorobenzene [1,3-Dichlorobenzene]	<5	<5			
o-Dichlorobenzene [1,2-Dichlorobenzene]	<5	<5			

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
p-Dichlorobenzene [1,4-Dichlorobenzene]	<5	<5			
3,3'-Dichlorobenzidine	<5	<5			
1,2-Dichloroethane	<5	<5			
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5			
Dichloromethane [Methylene chloride]	<5	<5			
1,2-Dichloropropane	<5	<5			
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	<5			
2,4-Dimethylphenol	<5	<5			
Di-n-Butyl phthalate	<5	<5			
Ethylbenzene	<5	<5			
Fluoride	<100	130			
Hexachlorobenzene	<5	<5			
Hexachlorobutadiene	<2	<2			
Hexachlorocyclopentadiene	<5	<5			
Hexachloroethane	<2	<2			
Methyl ethyl ketone	<5	<5			
Nitrobenzene	<5	<5			
N-Nitrosodiethylamine	<5	<5			
N-Nitroso-di-n-butylamine	<5	<5			
Nonylphenol	<4.90	<24.5			
Pentachlorobenzene	<5	<5			
Pentachlorophenol	<5	<5			
Phenanthrene	<5	<5			
Polychlorinated biphenyls (PCBs) (**)	NM	NM			
Pyridine	<5	<5			
1,2,4,5-Tetrachlorobenzene	<5	<5			
1,1,2,2-Tetrachloroethane	<5	<5			
Tetrachloroethene [Tetrachloroethylene]	<5	<5			
Toluene	<5	<5			
1,1,1-Trichloroethane	<5	<5			
1,1,2-Trichloroethane	<5	<5			

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Trichloroethene [Trichloroethylene]	<5	<5			
2,4,5-Trichlorophenol	<5	<5			
TTHM (Total trihalomethanes)	14	7			
Vinyl chloride	<5	<5			

(*) 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 15 for Outfall No.: **101**

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	<20	<20			50
Acrylonitrile	<20	<20			50
Benzene	<5	<5			10
Bromoform	<5	<5			10
Carbon tetrachloride	<2	<2			2
Chlorobenzene	<5	<5			10
Chlorodibromomethane	<5	<5			10
Chloroethane	<5	300			50
2-Chloroethylvinyl ether	<5	<5			10
Chloroform	14	7			10
Dichlorobromomethane [Bromodichloromethane]	<5	<5			10
1,1-Dichloroethane	<5	<5			10
1,2-Dichloroethane	<5	<5			10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5	<5			10
1,2-Dichloropropane	<5	<5			10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5	<5			10
Ethylbenzene	<5	<5			10
Methyl bromide [Bromomethane]	<5	<5			50
Methyl chloride [Chloromethane]	<5	<5			50
Methylene chloride [Dichloromethane]	<5	<5			20
1,1,2,2-Tetrachloroethane	<5	<5			10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Tetrachloroethylene [Tetrachloroethene]	<5	<5			10
Toluene	<5	<5			10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<4	<4			10
1,1,1-Trichloroethane	<5	<5			10
1,1,2-Trichloroethane	<5	<5			10
Trichloroethylene [Trichloroethene]	<5	<5			10
Vinyl chloride	<5	<5			10

* Indicate units if different from µg/L.

Table 16 for Outfall No.: **101**

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	<5	<5			10
2,4-Dichlorophenol	<5	<5			10
2,4-Dimethylphenol	<5	<5			10
4,6-Dinitro-o-cresol	<10	<10			50
2,4-Dinitrophenol	<10	<10			50
2-Nitrophenol	<5	<5			20
4-Nitrophenol	<10	<10			50
p-Chloro-m-cresol	<5	<5			10
Pentachlorophenol	<5	<5			5
Phenol	<2	<2			10
2,4,6-Trichlorophenol	<5	<5			10

* Indicate units if different from µg/L.

Table 17 for Outfall No.: **101**

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	<5	<5			10
Acenaphthylene	<5	<5			10
Anthracene	<5	<5			10
Benzidine	<5	<5			50
Benzo(a)anthracene	<5	<5			5
Benzo(a)pyrene	<5	<5			5

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<5	<5			10
Benzo(ghi)perylene	<5	<5			20
Benzo(k)fluoranthene	<5	<5			5
Bis(2-chloroethoxy)methane	<5	<5			10
Bis(2-chloroethyl)ether	<5	<5			10
Bis(2-chloroisopropyl)ether	<5	<5			10
Bis(2-ethylhexyl)phthalate	<5	<5			10
4-Bromophenyl phenyl ether	<5	<5			10
Butylbenzyl phthalate	<5	<5			10
2-Chloronaphthalene	<5	<5			10
4-Chlorophenyl phenyl ether	<5	<5			10
Chrysene	<5	<5			5
Dibenzo(a,h)anthracene	<5	<5			5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<5	<5			10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<5	<5			10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<5	<5			10
3,3'-Dichlorobenzidine	<5	<5			5
Diethyl phthalate	<5	<5			10
Dimethyl phthalate	<2	<2			10
Di-n-butyl phthalate	<5	<5			10
2,4-Dinitrotoluene	<5	<5			10
2,6-Dinitrotoluene	<5	<5			10
Di-n-octyl phthalate	<5	<5			10
1,2-Diphenylhydrazine (as Azobenzene)	<5	<5			20
Fluoranthene	<5	<5			10
Fluorene	<5	<5			10
Hexachlorobenzene	<5	<5			5
Hexachlorobutadiene	<2	<2			10
Hexachlorocyclopentadiene	<5	<5			10
Hexachloroethane	<2	<2			20
Indeno(1,2,3-cd)pyrene	<5	<5			5

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Isophorone	<5	<5			10
Naphthalene	<2	<2			10
Nitrobenzene	<5	<5			10
N-Nitrosodimethylamine	<5	<5			50
N-Nitrosodi-n-propylamine	<5	<5			20
N-Nitrosodiphenylamine	<5	<5			20
Phenanthrene	<5	<5			10
Pyrene	<5	<5			10
1,2,4-Trichlorobenzene	<5	<5			10

* Indicate units if different from µg/L.

Table 18 for Outfall No.: **101**

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	<0.005	<0.005			0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	<0.005	<0.005			0.05
beta-BHC [beta-Hexachlorocyclohexane]	<0.010	<0.010			0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	<0.005	<0.005			0.05
delta-BHC [delta-Hexachlorocyclohexane]	<0.010	<0.010			0.05
Chlordane	<0.020	<0.020			0.2
4,4'-DDT	<0.020	<0.020			0.02
4,4'-DDE	<0.005	<0.005			0.1
4,4'-DDD	<0.020	<0.020			0.1
Dieldrin	<0.005	<0.005			0.02
Endosulfan I (alpha)	<0.020	<0.020			0.01
Endosulfan II (beta)	<0.005	<0.005			0.02
Endosulfan sulfate	<0.100	<0.100			0.1
Endrin	<0.010	<0.010			0.02
Endrin aldehyde	<0.050	<0.050			0.1
Heptachlor	<0.005	<0.005			0.01
Heptachlor epoxide	<0.100	<0.100			0.01
PCB 1242	NM	NM			0.2
PCB 1254	NM	NM			0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1221	NM	NM			0.2
PCB 1232	NM	NM			0.2
PCB 1248	NM	NM			0.2
PCB 1260	NM	NM			0.2
PCB 1016	NM	NM			0.2
Toxaphene	<0.500	<0.500			0.3

* Indicate units if different from µg/L.

** NM - Not Measured

ATTACHMENT 14

Attachment 14. Toxicity Testing Summary and Lab Reports



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

March 24, 2022

LABORATORY REPORT

Kathleen Vienne
SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Report ID: 20220324121532MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Work Order Case Narrative

NWDLS Job No: 22C0408, 22C0409, 22C0410 (22-0137)

TPDES Permit No: WQ0005143000

Project: Natgasoline - WET

Sample Locations:

Sample Name

Outfall 001 - 1Q22 (chronic) + 1S22 (acute)

Receiving Water (chronic tests)

Chronic *Mysidopsis bahia* + *Menidia beryllina*

Acute *Mysidopsis bahia* + *Menidia beryllina*

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in the chronic tests, nor in the acute *Mysidopsis bahia*.

However, the acute *Menidia beryllina* did exhibit toxicity. Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001				
TPDES PERMIT NO.	WQ0005143000				
SPECIES	Mysidopsis bahia		TEST DATE	7-14 Mar 2022	
TEST RESULTS	Pass				
Parameter	Survival		Sublethal		
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40	
Control Results	96	8.78	0.33	15.23	
Critical Dilution (8%)	98	6.45	0.35	13.51	
DMR REPORTING				Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0	
Report the NOEC % for survival:			TOP3E	11	
Report the LOEC % for survival:			TXP3E	>11	
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0	
Report the NOEC % for growth:			TPP3E	11	
Report the LOEC % for growth:			TYP3E	>11	
PMSD (Acceptable Range: 37 or less):				15.74	
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.					

SPECIES	Menidia beryllina			TEST DATE	7-14 Mar 2022	
TEST RESULTS	Pass					
Parameter	Survival			Sublethal		
	Percentage (%)	Coef. of Var. (%)		Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40		≥0.50	≤ 40	
Control Results	98	4.56		1.15	9.97	
Critical Dilution (8%)	100	0.00		0.98	7.37	
DMR REPORTING					Parameter Code	
Is the NOEC for survival less than the critical dilution?				No	TLP6B	0
Report the NOEC % for survival:					TOP6B	11
Report the LOEC % for survival:					TXP6B	>11
Is the NOEC for growth less than the critical dilution?				No	TWP6B	0
Report the NOEC % for growth: ❶					TPP6B	11
Report the LOEC % for growth: ❶					TYP6B	>11
PMSD (Acceptable Range: 28 or less):						14.10
Retest Number 1	Parameter 22415	N/A	Retest Number 2		Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.						

❶ Although the standard hypothesis test for sublethal indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the dose-response percent effect was actually >11% (IC25 included for support). Therefore, there is no sublethal toxicity.

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	Mysidopsis bahia	TEST DATE	8-9 Mar 2022
TEST RESULTS	Pass		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE3E = 0		
ACUTE PERMIT REPORTING - Table 2 attached.			

SPECIES	Menidia beryllina	TEST DATE	8-9 Mar 2022
TEST RESULTS	Fail*		
Is the mean survival > 50% in the 100% effluent concentration?			No
DMR Parameter Code:	TIE6B = 1		
ACUTE PERMIT REPORTING - Table 2 attached.			

* Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests.

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Chemical Analyses

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Outfall 001-1

Lab Sample ID: 22C0408-01

Sample Matrix:

Waste Water

Date Collected:

03/07/2022 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	146	mg/L		1	10.0	10.0	BFC1103	03/09/2022 15:21	CST
General Chemistry SM 2510 B	Conductivity	A	1840	umhos/cm @ 25 °C		1	2.00	2.00	BFC1103	03/09/2022 15:21	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	142	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	6.94	mg/L		20	0.400	1.00	BFC1206	03/09/2022 11:37	JLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BFC1103	03/09/2022 15:21	CST
Field Hach 10360	DO Field	N	8.46	mg/L		1	1.00	1.00	BFC1007	03/07/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.30	pH Units @ 25 °C		1	1.00	1.00	BFC1007	03/07/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BFC1007	03/07/2022 08:00	DH

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Receiving Water

Lab Sample ID: 22C0408-02

Sample Matrix:

Waste Water

Date Collected:

03/07/2022 10:30

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	87.7	mg/L		1	10.0	10.0	BFC1103	03/09/2022 15:43	CST
General Chemistry SM 2510 B	Conductivity	A	5570	umhos/cm @ 25 °C		1	2.00	2.00	BFC1103	03/09/2022 15:43	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	546	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	0.124	mg/L		1	0.0200	0.0500	BFC1204	03/09/2022 09:46	JLK
General Chemistry SM 2520 B	Salinity	N	3.01	Salinity units		1	1.00	1.00	BFC1103	03/09/2022 15:43	CST
Field Hach 10360	DO Field	N	11.1	mg/L		1	1.00	1.00	BFC1007	03/07/2022 10:30	DH
Field SM 4500-H+ B	pH	A	7.88	pH Units @ 25 °C		1	1.00	1.00	BFC1007	03/07/2022 10:30	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BFC1007	03/07/2022 10:30	DH

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2

Lab Sample ID: 22C0409-01

Sample Matrix:

Waste Water

Date Collected:

03/09/2022 8:00

Collected by:

Claton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	163	mg/L		1	10.0	10.0	BFC1380	03/10/2022 14:53	CST
General Chemistry SM 2510 B	Conductivity	A	3600	umhos/cm @ 25 °C		1	2.00	2.00	BFC1380	03/10/2022 14:53	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	154	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	27.7	mg/L		50	1.00	2.50	BFC2001	03/15/2022 13:33	JLK
General Chemistry SM 2520 B	Salinity	N	1.89	Salinity units		1	1.00	1.00	BFC1380	03/10/2022 14:53	CST
Field Hach 10360	DO Field	N	8.65	mg/L		1	1.00	1.00	BFC1494	03/09/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.21	pH Units @ 25 °C		1	1.00	1.00	BFC1494	03/09/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.04	mg/L	U	1	0.25	0.25	BFC1494	03/09/2022 08:00	DH

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3

Lab Sample ID: 22C0410-01

Sample Matrix:

Waste Water

Date Collected:

03/11/2022 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	179	mg/L		1	10.0	10.0	BFC1949	03/15/2022 16:22	CST
General Chemistry SM 2510 B	Conductivity	A	3270	umhos/cm @ 25 °C		1	2.00	2.00	BFC1949	03/15/2022 16:22	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	170	mg/L		1		10.0	BFC2985	03/21/2022 17:30	CJP
General Chemistry EPA 350.1	Ammonia as N	A	24.7	mg/L		50	1.00	2.50	BFC2001	03/15/2022 13:34	JLK
General Chemistry SM 2520 B	Salinity	N	1.71	Salinity units		1	1.00	1.00	BFC1949	03/15/2022 16:22	CST
Field Hach 10360	DO Field	N	8.77	mg/L		1	1.00	1.00	BFC1861	03/11/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.36	pH Units @ 25 °C		1	1.00	1.00	BFC1861	03/11/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.10	mg/L	U	1	0.25	0.25	BFC1861	03/11/2022 08:00	DH

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Sample Condition Checklist

Work Order: 22C0408

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22C0409

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22C0410

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



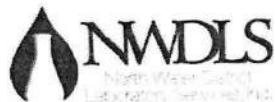
Page 1 of 2

22C0408

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes	Schedule Comments:
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0408-01	Outfall 001-1	3/6/22 08:00 - 3/7/22 08:00	3/7/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 1DL-2007.0 4°C MB 1DL-2006.0 4°C AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>8.46</u> pH Field <u>8.30</u> Total Chlorine <u>0.05</u> Residual WW Field
22C0408-02	Receiving Water		3/7/22 10:30	AQ Grab	A HDPE 250mL B HDPE 250mL H2SO4 C HDPE 250mL HNO3 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>11.07</u> pH Field <u>7.88</u> Total Chlorine <u>0.00</u> Residual WW Field



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 2 of 2

22C0408

(Continued)

Page 11 of 61

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes	Schedule Comments:
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Field Remarks:		Lab Preservation: H2SO4 (Circle and Write ID Below) 2108091 HNO3 2107601 NaOH Other:		
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 3/7/22 13:35	Received By: (Signature) 	Date/Time 3/7/22 13:35
Print Name Clinton Wallace	Relinquished By: (Signature) 	Date/Time 1400	Received By: (Signature) 	Date/Time 3-7-22 13:58
Affiliation Providence	Relinquished To Lab By: (Signature) 	Date/Time 3-7-22 1450	Received for Laboratory By: (Signature) 	Date/Time 3/7/22 1400
Custody Seal : Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact : Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
		Temperature: 2.5/2.5 °C		Thermometer ID: 210879256

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22C0409

TCEQ T104704238-21-34

TCEQ-TOX T104704202-21-16

TCEQ T104704238-21-34

TCEQ T104704238-21-34

Lab PM : Helen Conrad		Project Name : Natgasoline - WET Quarterly Sample 2		Schedule Comments:			
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478		Project Comments:					
Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0409-01	Outfall 001-2	3/8/22 08:00 3/9/22 08:00	3/9/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.65 pH Field 8.21 Total Chlorine 0.94 Residual WW Field

Field Remarks:		Lab Preservation: (Circle and Write ID Below) H2SO4 HNO3 NaOH Other:		
Sampler (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	3/9/22 13:55	<i>[Signature]</i>	3-9-22 13:56
Print Name	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Clinton Wallace	<i>[Signature]</i>	3-9-22	<i>[Signature]</i>	3-9-22 14:22
Affiliation	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature)	Date/Time
Providence	<i>[Signature]</i>	3-9-22 15:05	<i>[Signature]</i>	3/9/22 15:06
Custody Seal: Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 2-8/2-8 °C
Container Intact: Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210879256

Tox Weekly Kits - Deliver

Tox Weekly Kits - Deliver

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22C0410

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 3	Schedule Comments:
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/ <i>END</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0410-01	Outfall 001-3	3/10/22 08:00 3/11/22 08:00	3/11/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>8.77</u> pH Field <u>8.36</u> Total Chlorine <u>0.10</u> Residual WW Field

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other: _____	
		(Circle and Write ID Below)	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time 3/11/22 13:40	Received By: (Signature)
Print Name Anton Wallace	Relinquished By: (Signature)	Date/Time 3-11-22	Received By: (Signature)
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time 3-11-22 1555	Received for Laboratory By: (Signature)
Custody Seal: Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No
Container Intact: Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No
		Received on Ice: Yes / No	Samples Accepted: Yes / No
		Temperature: 4.1/4.1 °C	Thermometer ID: 2108792560

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-7-22	0800	Sample 3 Date/Time:	3-11-22	0800
Sample 2 Date/Time:	3-9-22	1000-①	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-7-22	22-0137-1	RW030722	SPD	Day 4	3-11-22	22-0137-2	RW030722	A0J
Day 1	3-8-22	22-0137-1	RW030722	SSS	Day 5	3-12-22	22-0137-3	RW030722	WPS/AB
Day 2	3-9-22	22-0137-1	RW030722	A0J	Day 6	3-13-22	22-0137-3	RW030722	WPS/SS
Day 3	3-10-22	22-0137-2	RW030722	JSS					

*LW Batch #: 2202362

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: ① IE A0J 3-11-22 → [0800]

Data Sheet Preparation : Initials: AAR/PO Date: 3-2-22

End of Test Review : Initials: NLL/A0J Date: 3-14-22

Final Review (signature)

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters

DATE	3-7-22	3-8-22	3-9-22	3-10-22	3-11-22	3-12-22	3-13-22	3/14/22
TIME	1200	0900	0900	0900	0910	0830	0830	0800
INITIALS	APB	JSS	JSS	JSS	APB	APB	APB	APB
DAY	0	1	2	3	4	5	6	7
Solution	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION							
RW	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.1
3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.1
5	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.1
6	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.1
8	8.3	8.2	8.3	8.2	8.3	8.3	8.3	8.1
11	8.3	8.2	8.2	8.2	8.3	8.3	8.3	8.2
*LW	8.3	8.1	8.3	8.1	8.4	8.0	8.2	8.1
METER No	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION							
RW	8.6	7.4	8.9	7.4	8.4	7.8	8.1	7.6
3	8.6	7.4	9.0	7.5	8.5	7.9	8.1	7.3
5	8.7	7.6	9.0	7.8	8.5	7.9	8.1	7.4
6	8.7	7.6	9.1	7.7	8.5	7.8	8.2	7.5
8	8.7	7.6	9.1	7.8	8.5	7.7	8.2	7.3
11	8.7	7.5	9.1	7.8	8.5	7.6	8.3	7.2
*LW	8.1	7.5	8.3	7.4	8.3	7.8	8.3	7.7
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)							
RW	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±°C)	0	0	0	0	0	0	0	0

Comments:

① SE DPO 3-7-22 → [1600]

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	26	26	26	26	27	26	26
3	26	26	26	26	27	26	26
5	26	26	26	26	27	26	26
6	26	26	26	26	27	26	26
8	26	26	26	26	27	26	26
11	26	26	26	26	26	26	26
*LW	24	26	26	26	26	26	26
Meter No.:	948	948	948	948	948	948	948

Biological Data

Test Organism Data			
Test Organism Batch #	22-0235	DOB	2-28-22
Source	NWDL5	Age	7 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	2111657	2111657	JSJ	4	2111657	2111657	SKW / SKW
1	2111657	2111657	KRO / KRO	5	2111656	2111656	KRO / KRO
2	2111657	2111657	AB / KRO	6	2111656	2111656	AB / AB
3	2111657	2111657	SKW / SKW	7	2111656	2111656	SKW / SKW

Comments: ① IE SKW 3/10/22 → [2111657]

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	5	5	5	5	5	5	5	5	8	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	4	4	4	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	4		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	4	5①		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	4	4	4
3	A	5	5	5	5	5	5	5	5	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	4	4	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	4	4	4	4
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	4	4	4		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	4	4	4	4	4
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	5	5	4		C								
	D	5	5	5	5	5	5	5	5		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	5	5	5	5		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	4	4	4	4	4		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	5	5		J								
Date	3/2/22	3/8/22	3/9/22	3/10/22	3/11/22	3/12/22	3/13/22	3/14/22		Comments: ① IF NULL 3-14-22 → [4]									
Time	1615	0930	1000	0930	0950	1030	0940	1120											
Init	JSS	VJC	APR	DPD	V22	DPD	JSS	NULL											

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00463	.00644	6	A	31	.00474	.00591
	B	2 *	.00443	.00625		B	32	.00468	.00651
	C	3	.00415	.00571		C	33	.00465	.00661
	D	4	.00418	.00593		D	34	.00496	.00673
	E	5	.00427	.00595		E	35 *	.00443	.00610
	F	6	.00402	.00562		F	36	.00414	.00621
	G	7	.00448	.00565		G	37	.00441	.00629
	H	8	.00453	.00618		H	38	.00405	.00572
	I	9	.00411	.00623		I	39	.00460	.00642
	J	10	.00384	.00527		J	40	.00461	.00655
3	A	11	.00460	.00600	8	A	41	.00435	.00640
	B	12	.00434	.00566		B	42	.00453	.00616
	C	13 *	.00465	.00603		C	43	.00437	.00630
	D	14	.00439	.00623		D	44	.00439	.00586
	E	15	.00444	.00630		E	45 *	.00467	.00585
	F	16	.00395	.00570		F	46	.00426	.00617
	G	17	.00439	.00622		G	47	.00494	.00681
	H	18	.00470	.00625		H	48	.00470	.00658
	I	19	.00445	.00636		I	49	.00417	.00579
	J	20	.00420	.00605		J	50	.00485	.00613
5	A	21	.00454	.00609	11	A	51	.00444	.00615
	B	22	.00358	.00507		B	52 *	.00463	.00633
	C	23	.00412	.00526		C	53	.00404	.00570
	D	24 *	.00457	.00670		D	54	.00460	.00668
	E	25	.00410	.00583		E	55	.00482	.00636
	F	26	.00447	.00681		F	56	.00475	.00617
	G	27	.00484	.00662		G	57	.00458	.00677
	H	28	.00472	.00651		H	58	.00449	.00636
	I	29	.00476	.00659		I	59	.00451	.00610
	J	30	.00416	.00625		J	60	.00504	.00633

Comments:

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#
*LW	A	61	.00432	.00576	791
	B	62	.00459	.00625	501
	C	63 *	.00433	.00580	DPD
	D	64	.00477	.00607	3-4-22, DPD
	E	65	.00429	.00645	
	F	66	.00474	.00642	3-14-22
	G	67	.00472	.00627	7410
	H	68	.00422	.00557	105, 105
	I	69	.00456	.00611	NLL
	J	70	.00462	.00641	
	A	71			DATE/TIME DRYING TERMINATED 3-15-22 / 1110
	B	72			OVEN TEMP (Act/Corr) (°C) 105, 105
	C	73			BALANCE VERIFICATION INITIALS VJC
	D	74			TOTAL WEIGHT DATE/INITIALS 3-15-22, VJC
	E	75			
	F	76			
	G	77			
	H	78			
	I	79			
	J	80			COMMENTS: @IE NLL 3-14-22 → [1500]
QA/QC (pans)	2		.00444	.00627	
	13		.00464	.00599	
	24		.00457	.00669	
	35		.00442	.00607	
	45		.00407	.00582	
	52		.00464	.00632	
	63		.00434	.00580	
TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism					

Test Notes

Include Date, Time, and Initials

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-7-22	0800	Sample 3 Date/Time:	3-11-22	0800
Sample 2 Date/Time:	3-9-22	0800	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-7-22	22-0137-1	RW030722	DPD	Day 4	3-11-22	22-0137-2	RW030722	ADJ
Day 1	3-8-22	22-0137-1	RW030722	JSS	Day 5	3-12-22	22-0137-3	RW030722	JSS/DPD
Day 2	3-9-22	22-0137-1	RW030722	ADJ	Day 6	3-13-22	22-0137-3	RW030722	JSS/DPD
Day 3	3-10-22	22-0137-2	RW030722	JSS					

*LW Batch #: 2202362

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

Data Sheet Preparation : Initials: AAR Date: 3-2-22
End of Test Review : Initials: JSS Date: 3-14-22 Final Review (signature) *Arturo Oronpe Jr*

Codes: IE-Incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	22-0223 ①	DOB	2-24-22
Source	NWDLS	Age	11 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	██████████	2111657	██████████ JSS	4	2111657	2111657	SKW, SKW
1	2111657	2111657	KRO, KRO	5	2111656	2111656	KRO, KRO
2	2111657	2111657	AM, KRO	6	2111655	2111655	MS, MS
3	2111657	2111657	SKW, SKW	7	██████████	██████████	██████████

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	9		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	10	10	10	10	10	*LW	A	10	9	9	9	9	9	9	9
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	10		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	10	10	10	10	9	9	9		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	3/7/22	3/8/22	3/9/22	3/10/22	3/11/22	3/12/22	3/13/22	3/14/22	Comments: ① IE KRO 3-7-22 → [22-0233]										
Time	1645	1030	1100	1030	1120	1100	1000	1445											
Initials	SKW	WJC	AM	SKW	AM	SKW	JSS	JSS											

Codes: IE-Incorrect entry; IL-Illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1 *	.00633	.01828	*LW	A	31	.00626	.01932
	B	2	.00660	.01956		B	32	.00667	.01992
	C	3	.00689	.01871		C	33	.00679	.02030
	D	4	.00709	.01751		D	34 *	.00698	.01913
	E	5	.00663	.01685		E	35	.00671	.01900
3	A	6	.00660	.01956	QA/QC (pans)		1	.00631	.01828
	B	7	.00681	.01811			14	.00714	.01872
	C	8	.00701	.01684			28	.00683	.01598
	D	9	.00687	.01555			34	.00699	.01912
	E	10	.00677	.01485					
5	A	11	.00694	.01687	BALANCE ID# <u>852</u>				
	B	12	.00632	.01666	OVEN ID# <u>5w1</u>				
	C	13	.00684	.01797	BALANCE VERIFICATION INITIALS <u>DD</u>				
	D	14 *	.00715	.01871	DATE / TARE WEIGHT INITIALS <u>3-4-22, DD</u>				
	E	15	.00649	.01574	DATE DRYING INITIATED <u>3-14-22</u>				
6	A	16	.00675	.01723	TIME DRYING INITIATED <u>1515</u>				
	B	17	.00692	.01739	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105 1105</u>				
	C	18	.00647	.01632	INITIALS <u>JSS</u>				
	D	19	.00664	.01624	DATE / TIME DRYING TERMINATED <u>3-15-22, 1110</u>				
	E	20	.00696	.01643	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105, 105</u>				
8	A	21	.00655	.01534	BALANCE VERIFICATION INITIALS <u>VJC</u>				
	B	22	.00640	.01686	TOTAL WEIGHT DATE / INITIALS <u>3-15-22, VJC</u>				
	C	23	.00682	.01671	COMMENTS:				
	D	24	.00706	.01643					
	E	25	.00678	.01724					
11	A	26	.00675	.01577	CONT = Control CONC = Concentration REP = Replicate				
	B	27	.00693	.01683	Wt. = Weight ORG. = Organism				
	C	28 *	.00679	.01600					
	D	29	.00696	.01647					
	E	30	.00702	.01702					

Water Quality Parameters

DATE	3-7-22	3-8-22	3-9-22	3-10-22	3-11-22	3-12-22	3-13-22	3/14/22						
TIME	1600	0900	0900	0900	0910	0910	0830	0830	0830	0830	0850	0850	0850	
INITIALS	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	PPD	
DAY	0	1	2	3	4	5	6	7						
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.3	8.2	8.3	8.2	8.3	8.1	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.1
3	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
5	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
6	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
8	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
11	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
*LW	8.3	8.1	8.3	8.2	8.4	8.1	8.2	8.1	8.3	8.2	8.3	8.1	8.3	8.1
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.6	7.8	8.9	7.8	8.4	7.5	8.1	7.5	8.0	7.8	8.2	7.9	8.4	7.3
3	8.6	7.8	9.0	7.8	8.5	7.4	8.1	7.4	8.0	7.8	8.2	7.8	8.4	7.1
5	8.7	7.7	9.0	7.8	8.5	7.4	8.1	7.4	8.0	7.8	8.3	7.8	8.4	7.2
6	8.7	7.7	9.1	7.8	8.5	7.4	8.2	7.3	8.0	7.8	8.3	7.9	8.4	7.3
8	8.7	7.7	9.1	7.8	8.5	7.5	8.2	7.2	8.1	7.8	8.3	7.9	8.4	7.4
11	8.7	7.8	9.1	7.8	8.5	7.5	8.3	7.4	8.1	7.7	8.4	7.9	8.4	7.5
*LW	8.1	7.9	8.3	7.9	8.3	7.7	8.3	7.7	8.2	7.8	8.4	7.9	8.4	7.3
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (+°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments: ① IE KRI 3-12-22 → [7.8]

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	26	26	26	26	27	26	26
3	26	25	26	26	27	26	26
5	26	26	26	26	27	26	26
6	26	26	26	26	27	26	26
8	26	25	26	26	26	26	26
11	26	26	26	26	26	26	26
*LW	24	26	26	26	26	26	26
Meter No.:	948	948	948	948	948	948	948

Comments:

Test Notes

Include Date, Time, and Initials



Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

BFC1294

24 h Acute *Mysidopsis bahia* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2007.0; NWDLS SOP No. 4017

Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	1-5 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	Once daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time Requirements:	Holding time must not exceed 36 h

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	22-0242	DOB	3-3-22
Source	NWDLS	Age (days)	5 days

Sample Date/Time:	3-7-22	1000
-------------------	--------	------

Test Initiation Date/Time:	3-8-22	1115	Test Initiation Initials:	A0J/ TRG
Test Termination Date/Time:	3-9-22	1115	Test Termination Initials:	A0J

1st Feed Date/Time/Initials:	3-8-22	1557	KRO	2nd Feed Date/Time/Initials:	3-9-22	6840	AM
------------------------------	--------	------	-----	------------------------------	--------	------	----

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments:

Arturo Onozco Jr
Final Review Signature

Data Sheet Preparation - Initials: VJC/aj Date: 3-3-22

End of Test First Review - Initials: A0J Date: 3-9-22

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Acute Toxicity Test with *Mysidopsis bahia*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24 hr			0 hr	24 hr
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	9		A		
	B	10	8		B		
	C	10	9		C		
	D	10	7		D		
	E	10	10		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Water Quality Parameters - *Mysidopsis bahia*

Conc. (%)	pH	
	0 hr	24 hr
Cont.	8.2	8.2
100	8.1	8.3
Meter No.	737	737
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	T-710	T-710
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24 hr
Cont.	8.3	7.7
100	9.4	7.6
Meter No.	YS16	YS16
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Salinity (‰)
	0 hr
Cont.	26
100	25
Meter No.	948
Time	1050
Initials	A0J

Comments:

Codes: IE-incorrec entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------



24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

BFC1293

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	---------------------	------------------------	-----

Test Organism Batch #	22-0243	DOB	2-22-22
Source	NWDLS	Age (days)	14 days

Sample 1 Date/Time:	3-7-22	1000
---------------------	--------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-8-22	1110	A05/TRG
Test Termination	3-9-22	1110	A05

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments:

Arturo Onojo Jr
 Final Review Signature

Data Sheet Preparation - Initials: VJC/A05 Date: 3-3-22

End of Test First Review - Initials: A05 Date: 3-8-22

Codes: IE-incorrec entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	4		A		
	B	10	4		B		
	C	10	3		C		
	D	10	3		D		
	E	10	2		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.2	8.2
100	8.1	8.3
Meter No.	737	737
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.3	8.0
100	9.4	8.0
Meter No.	YS16	YS16
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	T-710	T-710
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Salinity (‰)
	0 hr
Cont.	26
100	25
Meter No.	948
Time	1050
Initials	A0J

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 10-8508-3262	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 15:12	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4197-2443	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 07 Mar-22 16:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:20	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	9.32%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	110	75	2	18	Asymp	0.9223	Non-Significant Effect
		5	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		6	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		8	110	75	2	18	Asymp	0.9223	Non-Significant Effect
		11	105	75	2	18	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.08784	<<	0.4	Yes	Passes Criteria
Control Resp	0.96	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0075611	0.0015122	5	0.1756	0.9706	Non-Significant Effect
Error	0.465005	0.0086112	54			
Total	0.472566		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	1.768	15.09	0.8802	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5422	0.9459	2.1E-12	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
3		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	-2.08%
5		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
6		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
8		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	-2.08%
11		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
3		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	-1.84%
5		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
6		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
8		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	-1.84%
11		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 10-8508-3262

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 17 Mar-22 15:12

Analysis: Nonparametric-Control vs Treatments

Status Level: 1

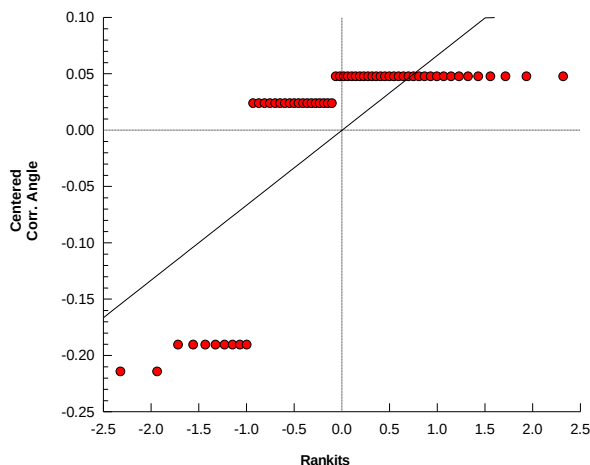
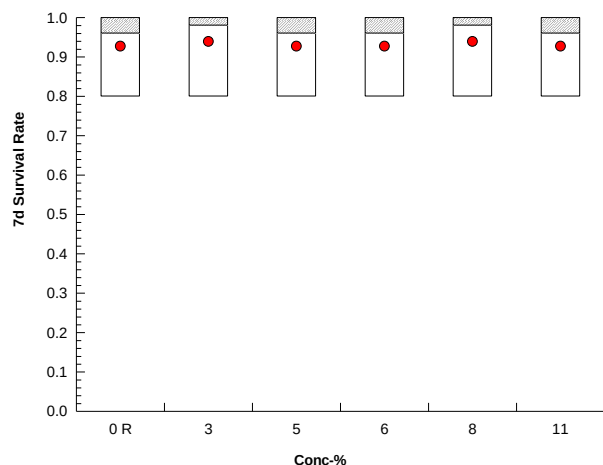
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	0.8000	1.0000	1.0000
3		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	0.8000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000
11		1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	0.8000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.107	1.345	1.345
3		1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345
5		1.345	1.107	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345
6		1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.107	1.345	1.345
8		1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.107
11		1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.107	1.345

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:12 (p 3 of 6)
 Test Code/ID: 22-0137 / 17-2046-4728

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 04-8331-3859	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 15:12	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4197-2443	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 07 Mar-22 16:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:20	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	15.74%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-0.08769	2.289	0.052	18	CDF	0.8581	Non-Significant Effect
		5	-1.473	2.289	0.052	18	CDF	0.9965	Non-Significant Effect
		6	-1.044	2.289	0.052	18	CDF	0.9862	Non-Significant Effect
		8	-0.6577	2.289	0.052	18	CDF	0.9598	Non-Significant Effect
		11	-0.4034	2.289	0.052	18	CDF	0.9261	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits			Decision
		Lower	Upper	Overlap	
Control CV	0.1523	<<	0.4	Yes	Passes Criteria
Control Resp	0.3318	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0084421	0.0016884	5	0.6492	0.6633	Non-Significant Effect
Error	0.140442	0.0026008	54			
Total	0.148884		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	0.6051	15.09	0.9878	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.987	0.9459	0.7719	Normal Distribution

Mean Dry Biomass-mg Summary

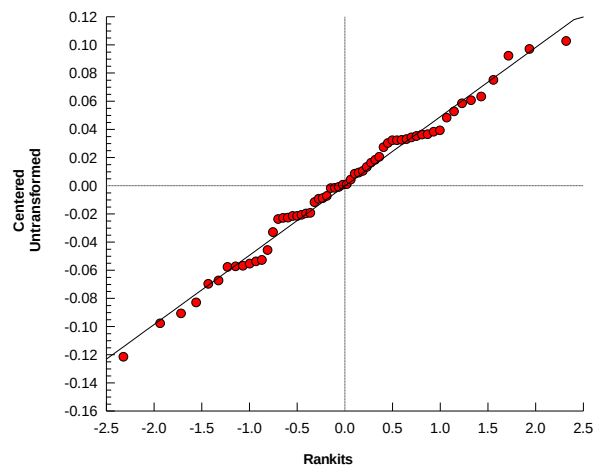
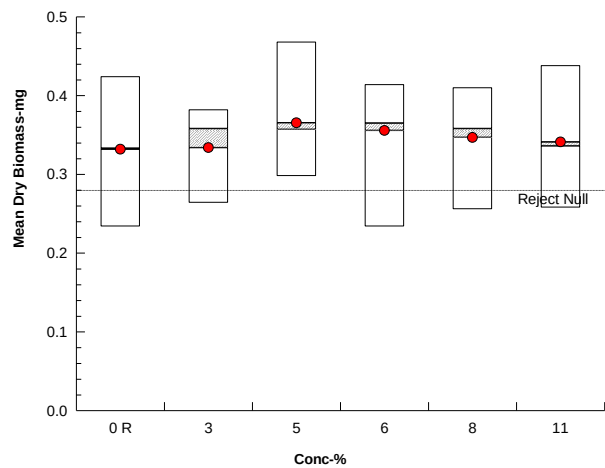
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3318	0.2956	0.368	0.333	0.234	0.424	0.01598	15.23%	0.00%
3		10	0.3338	0.3007	0.3669	0.358	0.264	0.382	0.01462	13.85%	-0.60%
5		10	0.3654	0.3252	0.4056	0.357	0.298	0.468	0.01776	15.37%	-10.13%
6		10	0.3556	0.3201	0.3911	0.365	0.234	0.414	0.01567	13.94%	-7.17%
8		10	0.3468	0.3133	0.3803	0.358	0.256	0.41	0.01482	13.51%	-4.52%
11		10	0.341	0.3011	0.3809	0.336	0.258	0.438	0.01763	16.35%	-2.77%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.362	0.364	0.312	0.35	0.336	0.32	0.234	0.33	0.424	0.286
3		0.28	0.264	0.276	0.368	0.372	0.35	0.366	0.31	0.382	0.37
5		0.31	0.298	0.308	0.426	0.346	0.468	0.356	0.358	0.366	0.418
6		0.234	0.366	0.392	0.354	0.334	0.414	0.376	0.334	0.364	0.388
8		0.41	0.326	0.386	0.294	0.356	0.382	0.374	0.36	0.324	0.256
11		0.342	0.34	0.332	0.416	0.308	0.284	0.438	0.374	0.318	0.258

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 04-8331-3859	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 15:12	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 00-2521-8639	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 15:12	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4197-2443	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 07 Mar-22 16:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:20	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	14.51%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.2372	2.289	0.050	18	CDF	0.7535	Non-Significant Effect
		5	-1.581	2.289	0.050	18	CDF	0.9976	Non-Significant Effect
		6	-1.27	2.289	0.050	18	CDF	0.9932	Non-Significant Effect
		8	-0.333	2.289	0.050	18	CDF	0.9137	Non-Significant Effect
		11	-0.463	2.289	0.050	18	CDF	0.9355	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0122834	0.0024567	5	1.022	0.4138	Non-Significant Effect
Error	0.129771	0.0024032	54			
Total	0.142055		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	3.796	15.09	0.5792	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9919	0.9459	0.9622	Normal Distribution

Mean Dry Weight-mg Summary

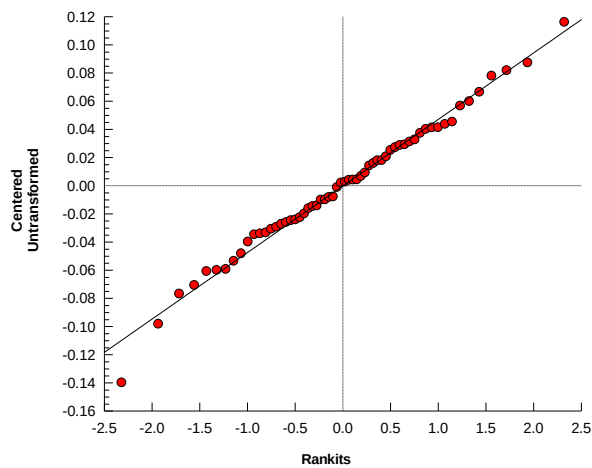
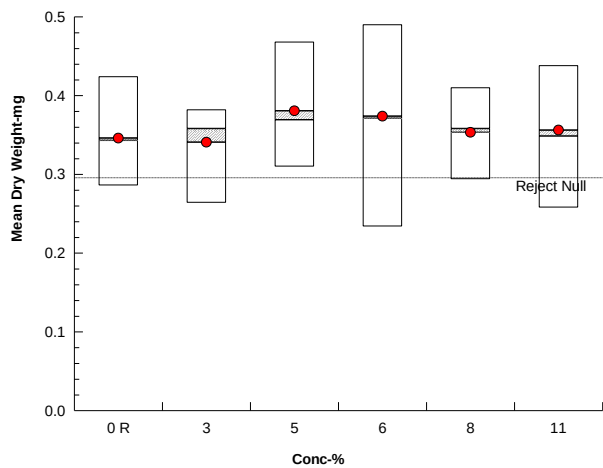
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3459	0.3126	0.3792	0.343	0.286	0.424	0.01472	13.46%	0.00%
3		10	0.3407	0.311	0.3704	0.358	0.264	0.382	0.01314	12.20%	1.50%
5		10	0.3806	0.3479	0.4132	0.3693	0.31	0.468	0.01441	11.98%	-10.02%
6		10	0.3738	0.3267	0.4208	0.371	0.234	0.49	0.02079	17.59%	-8.05%
8		10	0.3532	0.3273	0.3791	0.358	0.294	0.41	0.01146	10.26%	-2.11%
11		10	0.356	0.3181	0.394	0.3485	0.258	0.438	0.01677	14.89%	-2.93%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.362	0.364	0.312	0.35	0.336	0.32	0.2925	0.4125	0.424	0.286
3		0.28	0.264	0.345	0.368	0.372	0.35	0.366	0.31	0.382	0.37
5		0.31	0.3725	0.385	0.426	0.346	0.468	0.356	0.358	0.366	0.418
6		0.234	0.366	0.49	0.354	0.334	0.414	0.376	0.4175	0.364	0.388
8		0.41	0.326	0.386	0.294	0.356	0.382	0.374	0.36	0.324	0.32
11		0.342	0.34	0.332	0.416	0.308	0.355	0.438	0.374	0.3975	0.258

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 00-2521-8639	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 15:12	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 1 of 6)
Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 01-0894-7032	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 13:49	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 18-8800-8171	Test Type: Growth-Survival (7d)	Analyst: Jeffrey Southall
Start Date: 07 Mar-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:45	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 6d 22h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.41%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		5	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		6	27.5	16	2	8	Asymp	0.8333	Non-Significant Effect
		8	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		11	30	16	1	8	Asymp	0.9446	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.04563	<<	0.4	Yes	Passes Criteria
Control Resp	0.98	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0070825	0.0014165	5	0.8	0.5606	Non-Significant Effect
Error	0.0424949	0.0017706	24			
Total	0.0495774		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.689	3.895	0.0013	Unequal Variances
Variances	Mod Levene Equality of Variance Test	0.8	4.248	0.5640	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5454	0.9031	1.7E-08	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
6		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	0.00%
3		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
5		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
6		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	0.00%
8		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
11		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 01-0894-7032

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 17 Mar-22 13:49

Analysis: Nonparametric-Control vs Treatments

Status Level: 1

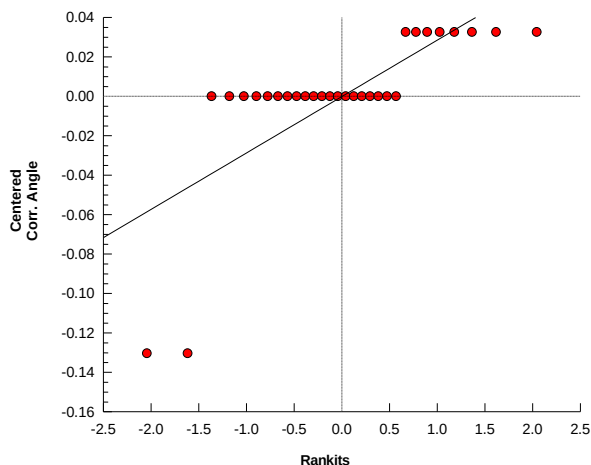
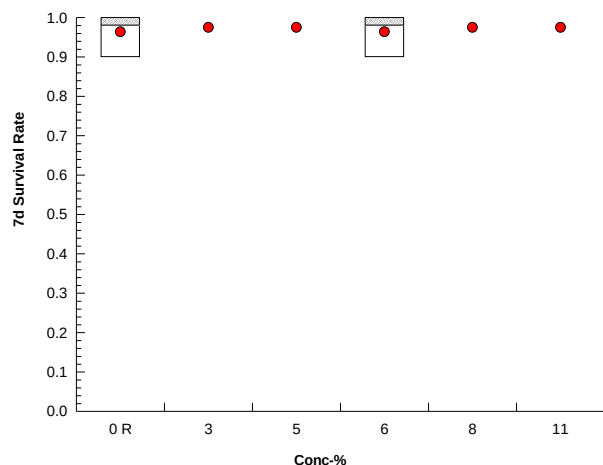
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	0.9000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	0.9000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.249
3		1.412	1.412	1.412	1.412	1.412
5		1.412	1.412	1.412	1.412	1.412
6		1.412	1.412	1.249	1.412	1.412
8		1.412	1.412	1.412	1.412	1.412
11		1.412	1.412	1.412	1.412	1.412

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 3 of 6)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 10-5675-1624	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 13:49	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 18-8800-8171	Test Type: Growth-Survival (7d)	Analyst: Jeffrey Southall
Start Date: 07 Mar-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:45	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 6d 22h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	6	8	6.928	16.67	14.10%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	1.904	2.362	0.162	8	CDF	0.1176	Non-Significant Effect
		5	1.507	2.362	0.162	8	CDF	0.2217	Non-Significant Effect
		6	2.19	2.362	0.162	8	CDF	0.0698	Non-Significant Effect
		8*	2.453	2.362	0.162	8	CDF	0.0416	Significant Effect
		11*	2.842	2.362	0.162	8	CDF	0.0182	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits			Decision
		Lower	Upper	Overlap	
Control CV	0.09973	<<	0.4	Yes	Passes Criteria
Control Resp	1.147	0.5	>>	Yes	Passes Criteria
PMSD	0.141	0.11	0.28	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.117226	0.0234452	5	2	0.1150	Non-Significant Effect
Error	0.281355	0.0117231	24			
Total	0.398581		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	12.09	15.09	0.0336	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9732	0.9031	0.6288	Normal Distribution

Mean Dry Biomass-mg Summary

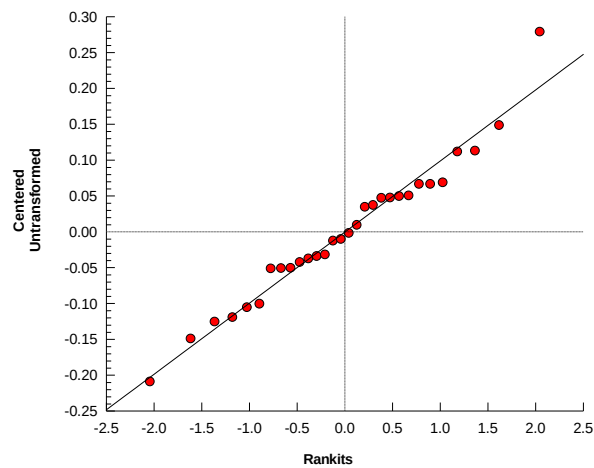
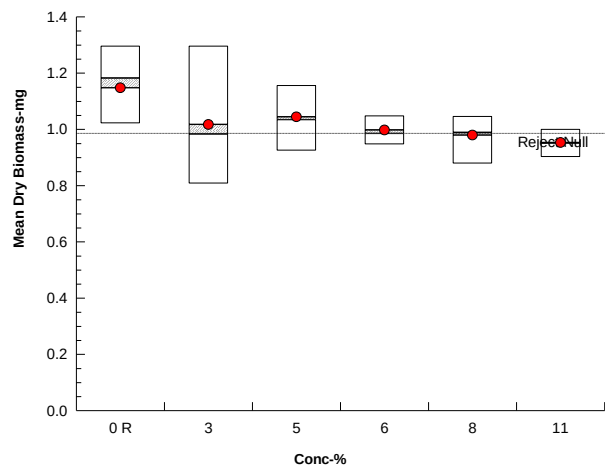
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.147	1.005	1.289	1.182	1.022	1.296	0.05118	9.97%	0.00%
3		5	1.017	0.7705	1.264	0.983	0.808	1.296	0.08878	19.52%	11.36%
5		5	1.044	0.9294	1.159	1.034	0.925	1.156	0.04133	8.85%	8.99%
6		5	0.9974	0.9381	1.057	0.985	0.947	1.048	0.02135	4.79%	13.07%
8		5	0.9794	0.8898	1.069	0.989	0.879	1.046	0.03228	7.37%	14.64%
11		5	0.9528	0.9001	1.006	0.951	0.902	1	0.01898	4.45%	16.96%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.022
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	0.985	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 10-5675-1624	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 13:49	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 5 of 6)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 15-1651-5057	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 13:49	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 18-8800-8171	Test Type: Growth-Survival (7d)	Analyst: Jeffrey Southall
Start Date: 07 Mar-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:45	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 6d 22h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	6	8	6.928	16.67	13.54%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	2.282	2.362	0.158	8	CDF	0.0585	Non-Significant Effect
		5	1.877	2.362	0.158	8	CDF	0.1233	Non-Significant Effect
		6	2.248	2.362	0.158	8	CDF	0.0625	Non-Significant Effect
		8*	2.843	2.362	0.158	8	CDF	0.0181	Significant Effect
		11*	3.239	2.362	0.158	8	CDF	0.0074	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.143177	0.0286354	5	2.545	0.0553	Non-Significant Effect
Error	0.270059	0.0112525	24			
Total	0.413236		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	10.69	15.09	0.0578	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9738	0.9031	0.6468	Normal Distribution

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.17	1.055	1.285	1.182	1.042	1.296	0.04136	7.90%	0.00%
3		5	1.017	0.7705	1.264	0.983	0.808	1.296	0.08878	19.52%	13.09%
5		5	1.044	0.9294	1.159	1.034	0.925	1.156	0.04133	8.85%	10.76%
6		5	1.019	0.9408	1.098	1.047	0.947	1.094	0.02827	6.20%	12.89%
8		5	0.9794	0.8898	1.069	0.989	0.879	1.046	0.03228	7.37%	16.30%
11		5	0.9528	0.9001	1.006	0.951	0.902	1	0.01898	4.45%	18.57%

Mean Dry Weight-mg Detail

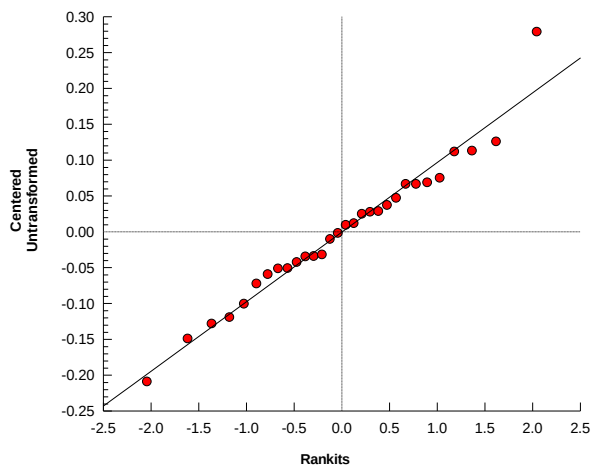
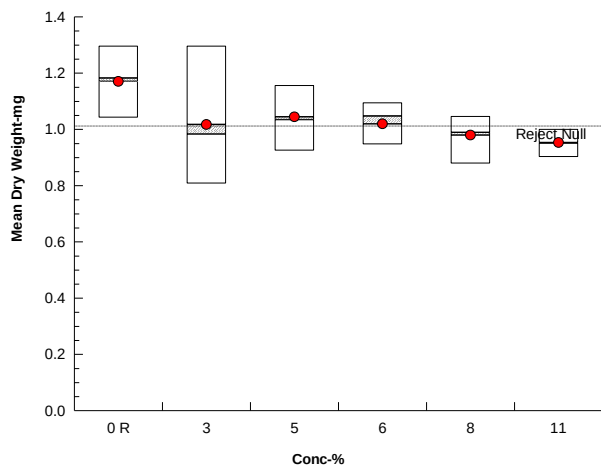
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.136
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	1.094	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 15-1651-5057
Analyzed: 17 Mar-22 13:49Endpoint: Mean Dry Weight-mg
Analysis: Parametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:18 (p 1 of 3)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	06-2145-0251	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 15:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS
				Age:	11
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	9h	Client:	SGS North America - Scott, LA		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	655704	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits		Overlap	Decision
Attribute	Test Stat	Lower	Upper		
Control CV	0.09973	<<	0.4	Yes	Passes Criteria
Control Resp	1.147	0.5	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Biomass-mg Summary

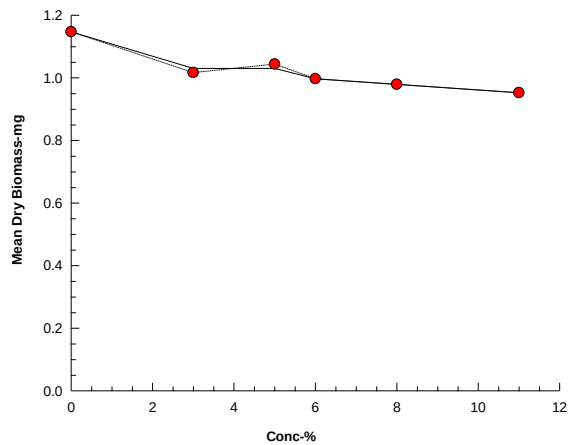
			Calculated Variate							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
0	R	5	1.147	1.022	1.296	0.1144	9.97%	0.0%		1.147	0.0%
3		5	1.017	0.808	1.296	0.1985	19.52%	11.36%		1.031	10.18%
5		5	1.044	0.925	1.156	0.09242	8.85%	8.99%		1.031	10.18%
6		5	0.9974	0.947	1.048	0.04773	4.79%	13.07%		0.9974	13.07%
8		5	0.9794	0.879	1.046	0.07218	7.37%	14.64%		0.9794	14.64%
11		5	0.9528	0.902	1	0.04245	4.46%	16.96%		0.9528	16.96%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.022
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	0.985	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 06-2145-0251	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 15:18	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:18 (p 3 of 3)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	16-8630-2480	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	17 Mar-22 15:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1	
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall	
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean	
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS	Age: 11
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056	
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	9h	Client:	SGS North America - Scott, LA			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	46281	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

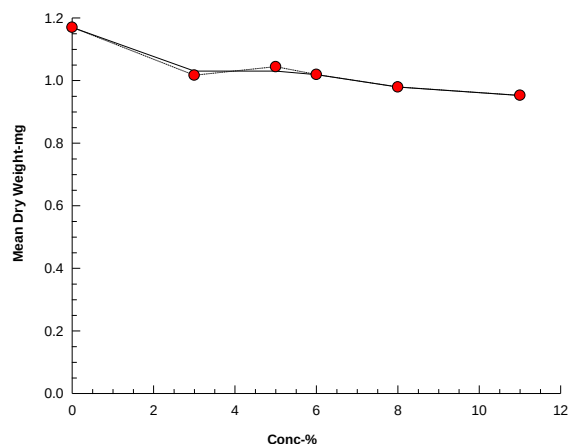
Mean Dry Weight-mg Summary

			Calculated Variate							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
0	R	5	1.17	1.042	1.296	0.09249	7.90%	0.0%		1.17	0.0%
3		5	1.017	0.808	1.296	0.1985	19.52%	13.09%		1.031	11.92%
5		5	1.044	0.925	1.156	0.09242	8.85%	10.76%		1.031	11.92%
6		5	1.019	0.947	1.094	0.06321	6.20%	12.89%		1.019	12.89%
8		5	0.9794	0.879	1.046	0.07218	7.37%	16.3%		0.9794	16.3%
11		5	0.9528	0.902	1	0.04245	4.46%	18.57%		0.9528	18.57%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.136
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	1.094	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:55 (p 1 of 2)
 Test Code/ID: 22-0137 / 07-4841-0635

Mysidopsis 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	11-1295-8060	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 13:54	Analysis:	No Statistical Comparisons Run	Status Level:	1
Batch ID:	05-4793-7344	Test Type:	Survival (1d)	Analyst:	Arturo Orozco
Start Date:	08 Mar-22 11:15	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	09 Mar-22 11:15	Species:	Mysidopsis bahia	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Malacostraca	Source:	NWDLS
				Age:	5
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	27h	Client:	SGS North America - Scott, LA		

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.9	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1106	0.1106	1	8.676	0.0186	Significant Effect
Error	0.101985	0.0127481	8			
Total	0.212585		9			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	10.82	11.26	0.0110	Equal Variances	
Variances	Mod Levene Equality of Variance Test	6.98	13.75	0.0384	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.8724	0.7411	0.1067	Normal Distribution	

24h Survival Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.8600	0.7184	1.0000	0.9000	0.7000	1.0000	0.0510	13.26%	14.00%

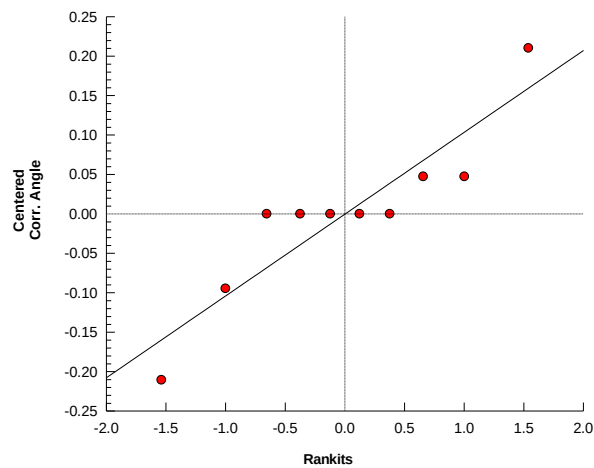
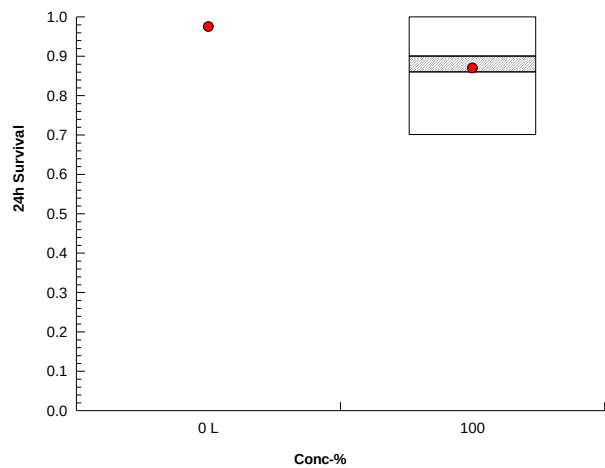
Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	1.202	1.003	1.4	1.249	0.9912	1.412	0.07141	13.29%	14.90%

24h Survival Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
100		0.9000	0.8000	0.9000	0.7000	1.0000

Angular (Corrected) Transformed Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.412	1.412	1.412	1.412	1.412
100		1.249	1.107	1.249	0.9912	1.412

Mysidopsis 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab	
Analysis ID:	11-1295-8060	Endpoint:	24h Survival	CETIS Version: CETISv1.9.4
Analyzed:	17 Mar-22 13:54	Analysis:	No Statistical Comparisons Run	Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:57 (p 1 of 2)
 Test Code/ID: 22-0137 / 13-1082-7466

Inland Silverside 24-h Acute Survival Test	NWDLS Environ. Toxicol. Lab
---	------------------------------------

Analysis ID: 14-9893-3880	Endpoint: 24h Survival	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 13:57	Analysis: Parametric-Two Sample	Status Level: 1	
Batch ID: 10-5256-3956	Test Type: Survival (1d)	Analyst: Arturo Orozco	
Start Date: 08 Mar-22 11:10	Protocol: EPA/821/R-02-012 (2002)	Diluent: Laboratory Seawater	
Ending Date: 09 Mar-22 11:10	Species: Menidia beryllina	Brine: Instant Ocean	
Test Length: 24h	Taxon: Actinopterygii	Source: NWDLS	Age: 14
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056	
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000	
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC	
Sample Age: 27h	Client: SGS North America - Scott, LA		

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed 24h survival	5.43%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water		100*	19.8	1.86	0.076	8	CDF	<1.0E-37	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.9	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.65463	1.65463	1	392	<1.0E-37	Significant Effect
Error	0.0337641	0.0042205	8			
Total	1.68839		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	9.558	11.26	0.0149	Equal Variances
Variances	Mod Levene Equality of Variance Test	8.92	13.75	0.0244	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8106	0.7411	0.0195	Normal Distribution

24h Survival Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.3200	0.2161	0.4239	0.3000	0.2000	0.4000	0.0374	26.15%	68.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	0.5985	0.4844	0.7126	0.5796	0.4636	0.6847	0.04109	15.35%	57.62%

24h Survival Detail

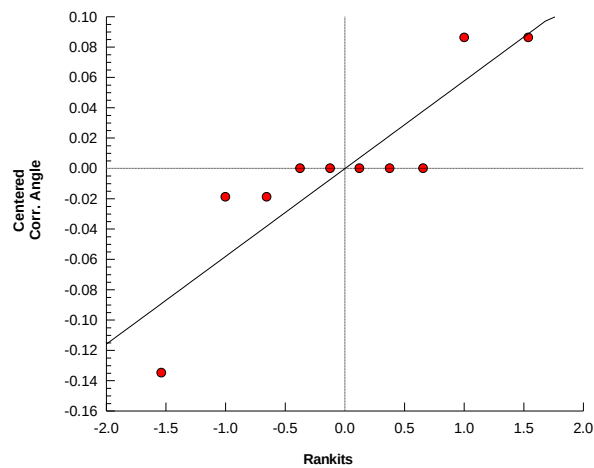
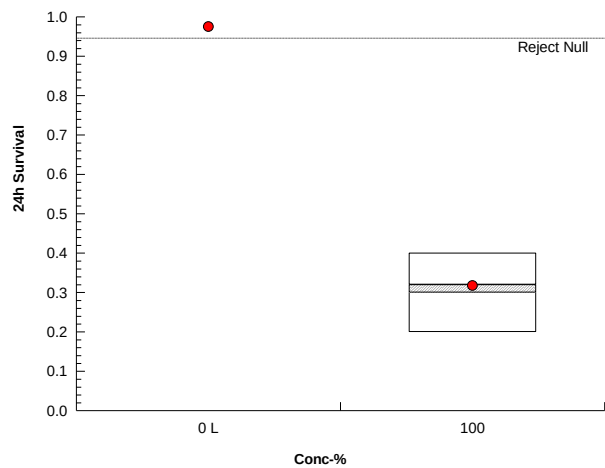
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
100		0.4000	0.4000	0.3000	0.3000	0.2000

Angular (Corrected) Transformed Detail

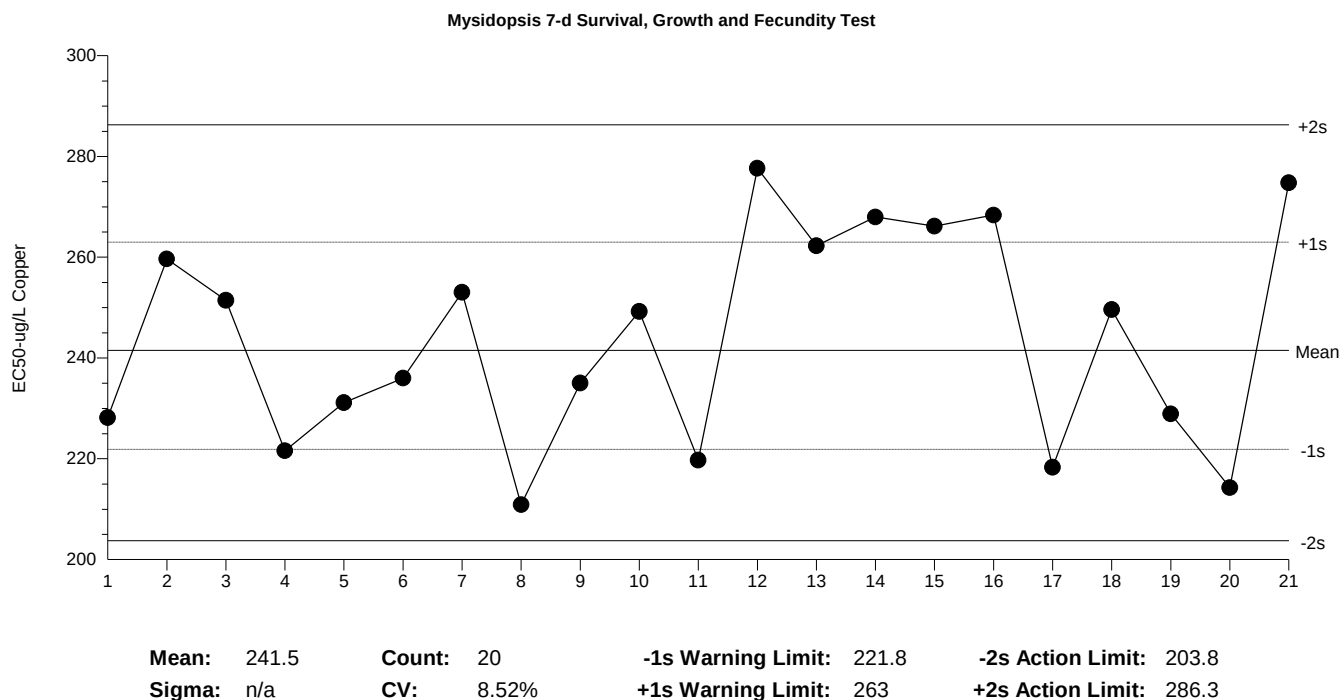
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.412	1.412	1.412	1.412	1.412
100		0.6847	0.6847	0.5796	0.5796	0.4636

Inland Silverside 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab	
Analysis ID:	14-9893-3880	Endpoint:	24h Survival	CETIS Version: CETISv1.9.4
Analyzed:	17 Mar-22 13:57	Analysis:	Parametric-Two Sample	Status Level: 1

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test				All Matching Labs	
Test Type: Growth-Survival-Fec (7d)		Organism: Mysidopsis bahia (Atlantic Mysid)		Material: Copper	
Protocol: EPA/821/R-02-014 (2002)		Endpoint: 7d Survival Rate		Source: Reference Toxicant-REF	



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Sep	8	15:00	228.2	-13.37	-0.6699			11-6087-0554	10-2410-1579	NWDLS Environ. Toxicol.
2			24	14:30	259.6	18.12	0.8508			12-7884-5083	09-0915-1491	NWDLS Environ. Toxicol.
3		Oct	1	17:00	251.5	9.921	0.4736			12-8673-2177	11-4372-5255	NWDLS Environ. Toxicol.
4		Nov	5	15:30	221.6	-19.96	-1.015	(-)		15-3559-8532	09-1641-2750	NWDLS Environ. Toxicol.
5		Dec	17	14:30	231.1	-10.39	-0.5175			21-4079-4760	09-8508-3275	NWDLS Environ. Toxicol.
6	2021	Jan	7	13:30	236	-5.54	-0.273			09-7625-2822	09-9824-9603	NWDLS Environ. Toxicol.
7		Feb	10	14:50	253	11.5	0.5471			16-9790-4594	13-0497-9071	NWDLS Environ. Toxicol.
8			24	13:00	210.9	-30.65	-1.597	(-)		16-9718-1415	03-8028-4958	NWDLS Environ. Toxicol.
9		Mar	17	15:50	235	-6.503	-0.3211			06-7780-0481	01-2571-5315	NWDLS Environ. Toxicol.
10		Apr	7	17:00	249.2	7.696	0.369			19-6064-2436	01-0304-3427	NWDLS Environ. Toxicol.
11		May	20	14:30	219.7	-21.8	-1.113	(-)		14-6201-6744	01-6829-2395	NWDLS Environ. Toxicol.
12		Jun	3	12:00	277.6	36.1	1.639	(+)		16-5190-0226	03-1102-1147	NWDLS Environ. Toxicol.
13		Jul	6	14:36	262.3	20.74	0.969			02-5459-6353	02-8769-4940	NWDLS Environ. Toxicol.
14		Aug	3	14:00	268	26.44	1.222	(+)		07-4115-5990	16-2172-2342	NWDLS Environ. Toxicol.
15		Sep	7	10:30	266.1	24.61	1.142	(+)		08-0819-8101	12-0660-4206	NWDLS Environ. Toxicol.
16		Oct	1	9:50	268.3	26.82	1.239	(+)		06-6763-0892	02-0293-6999	NWDLS Environ. Toxicol.
17		Nov	17	15:15	218.3	-23.24	-1.19	(-)		02-7564-0424	02-4811-1177	NWDLS Environ. Toxicol.
18		Dec	20	13:15	249.6	8.06	0.3862			12-9085-3704	04-5280-3800	NWDLS Environ. Toxicol.
19	2022	Jan	7	12:00	228.9	-12.63	-0.632			09-7824-2132	19-5290-7852	NWDLS Environ. Toxicol.
20		Feb	2	14:30	214.3	-27.26	-1.409	(-)		08-7070-1131	04-2971-6813	NWDLS Environ. Toxicol.
21		Mar	3	16:50	274.7	33.21	1.516	(+)		21-2022-6914	10-4405-5946	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

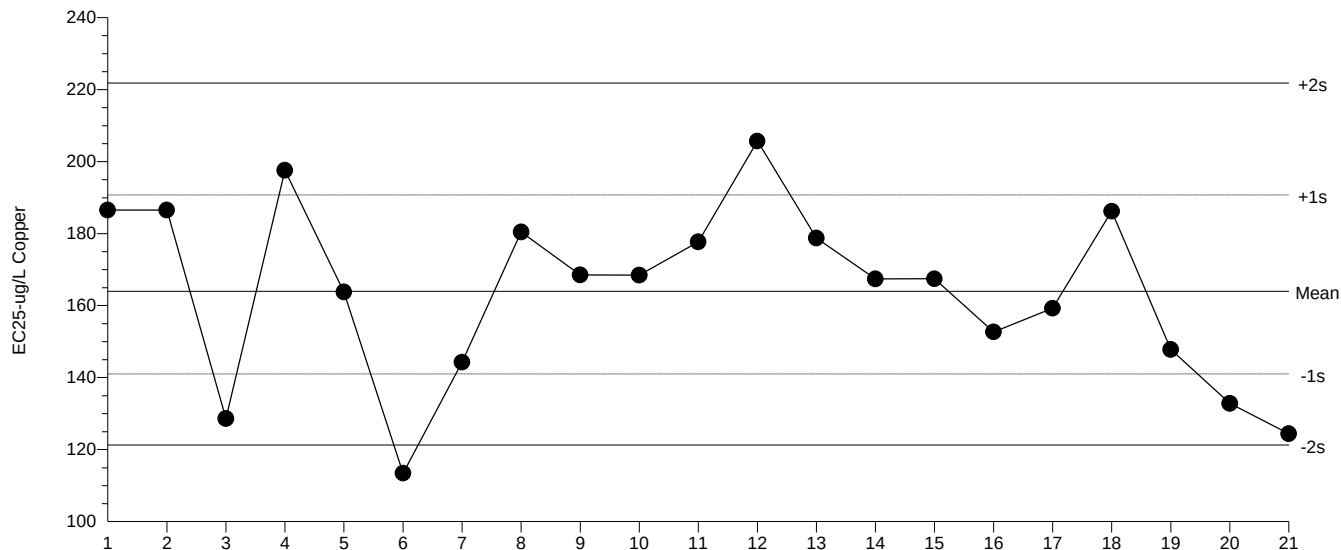
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 164

Count: 20

-1s Warning Limit: 141

-2s Action Limit: 121.3

Sigma: n/a

CV: 15.20%

+1s Warning Limit: 190.8

+2s Action Limit: 221.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	14:00	186.5	22.52	0.852			00-5007-0192	02-6643-7773	NWDLS Environ. Toxicol.
2		Sep	8	15:00	186.5	22.51	0.8517			11-6087-0554	05-0666-6653	NWDLS Environ. Toxicol.
3			24	14:30	128.6	-35.41	-1.611	(-)		12-7884-5083	18-1267-6814	NWDLS Environ. Toxicol.
4		Oct	1	17:00	197.6	33.56	1.233	(+)		12-8673-2177	21-3275-2149	NWDLS Environ. Toxicol.
5		Nov	5	15:30	163.8	-0.2512	-0.01015			15-3559-8532	06-2198-3034	NWDLS Environ. Toxicol.
6		Dec	17	14:30	113.4	-50.6	-2.443	(-)	(-)	21-4079-4760	11-0487-5642	NWDLS Environ. Toxicol.
7	2021	Jan	7	13:30	144.3	-19.77	-0.8504			09-7625-2822	00-0312-2687	NWDLS Environ. Toxicol.
8		Feb	24	13:00	180.4	16.42	0.6317			16-9718-1415	05-7426-9890	NWDLS Environ. Toxicol.
9		Mar	17	15:50	168.5	4.484	0.1786			06-7780-0481	05-6203-8521	NWDLS Environ. Toxicol.
10		Apr	7	17:00	168.5	4.437	0.1768			19-6064-2436	10-6743-6316	NWDLS Environ. Toxicol.
11		May	20	14:30	177.7	13.68	0.5306			14-6201-6744	05-5381-5466	NWDLS Environ. Toxicol.
12		Jun	3	12:00	205.7	41.67	1.499	(+)		16-5190-0226	03-1838-2648	NWDLS Environ. Toxicol.
13		Jul	6	14:36	178.7	14.7	0.5685			02-5459-6353	09-0315-4751	NWDLS Environ. Toxicol.
14		Aug	3	14:00	167.4	3.359	0.1343			07-4115-5990	19-7716-0639	NWDLS Environ. Toxicol.
15		Sep	7	10:30	167.4	3.409	0.1362			08-0819-8101	05-4285-4798	NWDLS Environ. Toxicol.
16		Oct	1	9:50	152.7	-11.35	-0.4748			06-6763-0892	00-3098-5433	NWDLS Environ. Toxicol.
17		Nov	17	15:15	159.2	-4.785	-0.1961			02-7564-0424	06-0870-5824	NWDLS Environ. Toxicol.
18		Dec	20	13:15	186.2	22.19	0.8402			12-9085-3704	17-3888-7616	NWDLS Environ. Toxicol.
19	2022	Jan	7	12:00	147.8	-16.23	-0.69			09-7824-2132	18-9406-9090	NWDLS Environ. Toxicol.
20		Feb	2	14:30	132.8	-31.22	-1.398	(-)		08-7070-1131	16-8447-9830	NWDLS Environ. Toxicol.
21		Mar	3	16:50	124.4	-39.64	-1.832	(-)		21-2022-6914	18-2966-6761	NWDLS Environ. Toxicol.

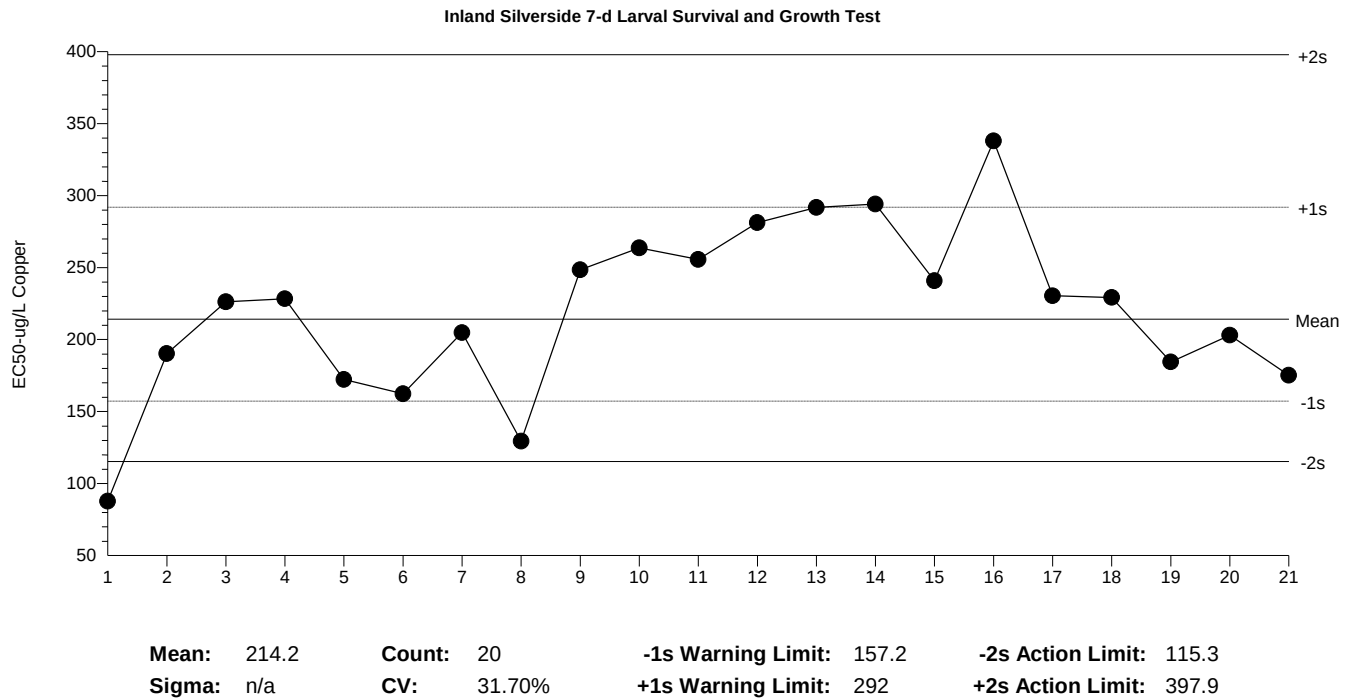
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	13:00	87.75	-126.5	-2.883	(-)	(-)	00-2067-2281	01-9684-0239	NWDLS Environ. Toxicol.
2			28	12:00	190.3	-23.95	-0.383			08-9090-1114	17-7032-0201	NWDLS Environ. Toxicol.
3		Sep	3	14:30	226.2	12.02	0.1764			12-3520-4933	14-0147-4372	NWDLS Environ. Toxicol.
4		Oct	1	17:00	228.3	14.12	0.2061			02-3690-0331	14-5182-1701	NWDLS Environ. Toxicol.
5		Nov	5	15:15	172.2	-42	-0.7048			17-5658-0648	10-4083-3854	NWDLS Environ. Toxicol.
6		Dec	17	14:30	162.4	-51.86	-0.8954			09-0707-2334	05-7930-5297	NWDLS Environ. Toxicol.
7	2021	Jan	7	14:30	204.8	-9.392	-0.1448			11-8669-1134	15-7346-5259	NWDLS Environ. Toxicol.
8		Feb	10	12:00	129.4	-84.79	-1.627	(-)		19-0426-1634	11-0292-5070	NWDLS Environ. Toxicol.
9		Mar	18	12:00	248.5	34.25	0.4791			19-2942-0562	19-3228-2714	NWDLS Environ. Toxicol.
10		Apr	7	17:00	263.6	49.41	0.6704			09-6023-9668	00-7899-7098	NWDLS Environ. Toxicol.
11		May	20	13:30	255.6	41.4	0.5707			16-8999-3463	08-8634-5597	NWDLS Environ. Toxicol.
12		Jun	3	13:00	281.2	66.99	0.8788			09-4953-8218	06-7574-1585	NWDLS Environ. Toxicol.
13		Jul	6	14:30	291.7	77.52	0.9976			06-6487-9714	14-1219-8967	NWDLS Environ. Toxicol.
14		Aug	18	16:00	294.1	79.85	1.023	(+)		15-8347-6079	20-3670-2984	NWDLS Environ. Toxicol.
15		Sep	7	10:30	240.9	26.69	0.3792			01-3526-1514	20-5345-6399	NWDLS Environ. Toxicol.
16		Oct	1	11:45	337.9	123.7	1.472	(+)		19-5909-2091	14-4131-0545	NWDLS Environ. Toxicol.
17		Nov	17	15:30	230.4	16.19	0.2353			05-7761-2074	00-5531-0604	NWDLS Environ. Toxicol.
18		Dec	20	13:30	229.2	14.99	0.2185			16-9811-7085	01-0812-0412	NWDLS Environ. Toxicol.
19	2022	Jan	4	13:00	184.5	-29.76	-0.4831			19-3164-8761	02-7203-5408	NWDLS Environ. Toxicol.
20		Feb	28	13:30	203	-11.17	-0.173			21-2117-1383	01-0955-3278	NWDLS Environ. Toxicol.
21		Mar	2	13:30	175.1	-39.07	-0.6505			12-9241-9919	08-0675-1644	NWDLS Environ. Toxicol.

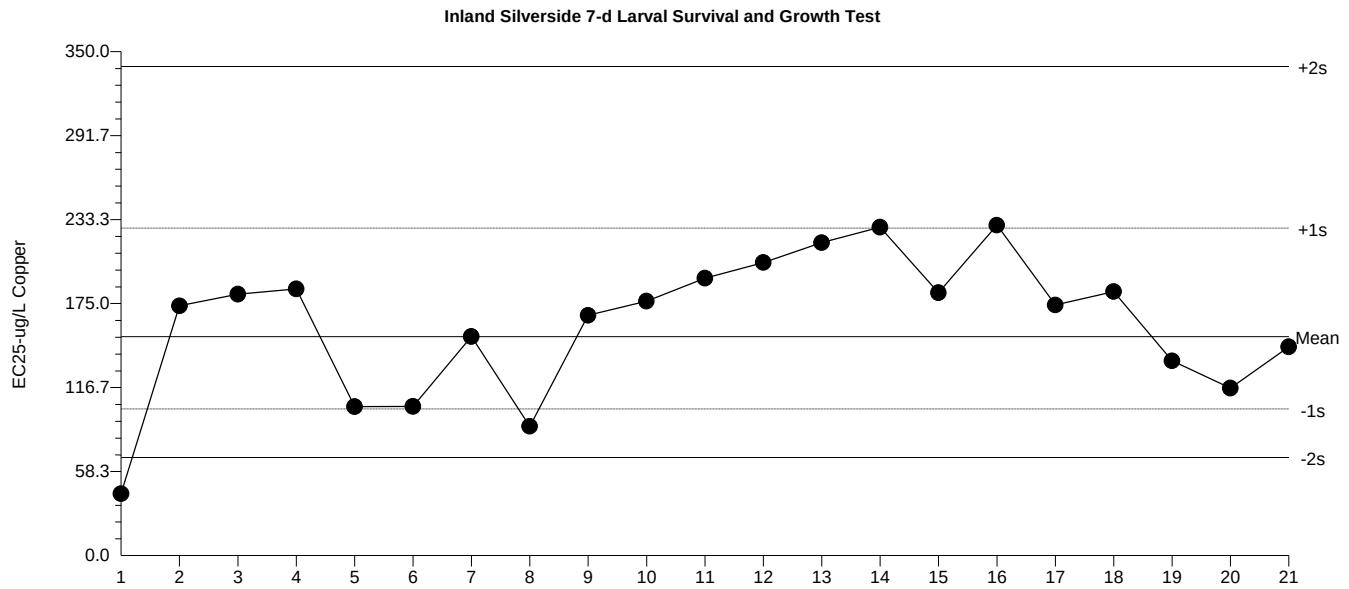
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF



Mean: 152.2 **Count:** 20 **-1s Warning Limit:** 101.8 **-2s Action Limit:** 68.14
Sigma: n/a **CV:** 41.80% **+1s Warning Limit:** 227.4 **+2s Action Limit:** 339.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	13:00	42.93	-109.2	-3.15	(-)	(-)	00-2067-2281	19-7900-6410	NWDLS Environ. Toxicol.
2			28	12:00	173.4	21.23	0.3251			08-9090-1114	05-9001-0008	NWDLS Environ. Toxicol.
3		Sep	3	14:30	181.5	29.35	0.439			12-3520-4933	20-0362-1111	NWDLS Environ. Toxicol.
4		Oct	1	17:00	185.1	32.96	0.4881			02-3690-0331	12-6851-2253	NWDLS Environ. Toxicol.
5		Nov	5	15:15	103.4	-48.76	-0.9616			17-5658-0648	14-5079-1687	NWDLS Environ. Toxicol.
6		Dec	17	14:30	103.6	-48.6	-0.9578			09-0707-2334	05-4814-6520	NWDLS Environ. Toxicol.
7	2021	Jan	7	14:30	152.1	-0.06726	-0.0011			11-8669-1134	11-6048-4214	NWDLS Environ. Toxicol.
8		Feb	10	12:00	89.72	-62.46	-1.315	(-)		19-0426-1634	08-1298-5961	NWDLS Environ. Toxicol.
9		Mar	18	12:00	166.8	14.64	0.2287			19-2942-0562	07-9357-5238	NWDLS Environ. Toxicol.
10		Apr	7	17:00	176.7	24.54	0.3722			09-6023-9668	07-2914-9717	NWDLS Environ. Toxicol.
11		May	20	13:30	192.6	40.45	0.5868			16-8999-3463	05-3918-8320	NWDLS Environ. Toxicol.
12		Jun	3	13:00	203.5	51.32	0.7235			09-4953-8218	00-4075-3486	NWDLS Environ. Toxicol.
13		Jul	6	14:30	217.3	65.09	0.8865			06-6487-9714	15-4338-5084	NWDLS Environ. Toxicol.
14		Aug	18	16:00	228.1	75.89	1.007	(+)		15-8347-6079	18-3962-2909	NWDLS Environ. Toxicol.
15		Sep	7	10:30	182.6	30.39	0.4533			01-3526-1514	11-6816-4915	NWDLS Environ. Toxicol.
16		Oct	1	11:45	229.4	77.24	1.022	(+)		19-5909-2091	10-6419-2141	NWDLS Environ. Toxicol.
17		Nov	17	15:30	174	21.81	0.3334			05-7761-2074	00-0061-5553	NWDLS Environ. Toxicol.
18		Dec	20	13:30	183.3	31.14	0.4635			16-9811-7085	09-5560-0815	NWDLS Environ. Toxicol.
19	2022	Jan	4	13:00	135.2	-16.95	-0.2939			19-3164-8761	15-9947-7419	NWDLS Environ. Toxicol.
20		Feb	28	13:30	116.3	-35.88	-0.6693			21-2117-1383	02-2853-0020	NWDLS Environ. Toxicol.
21		Mar	2	13:30	145	-7.204	-0.1207			12-9241-9919	11-2717-2616	NWDLS Environ. Toxicol.

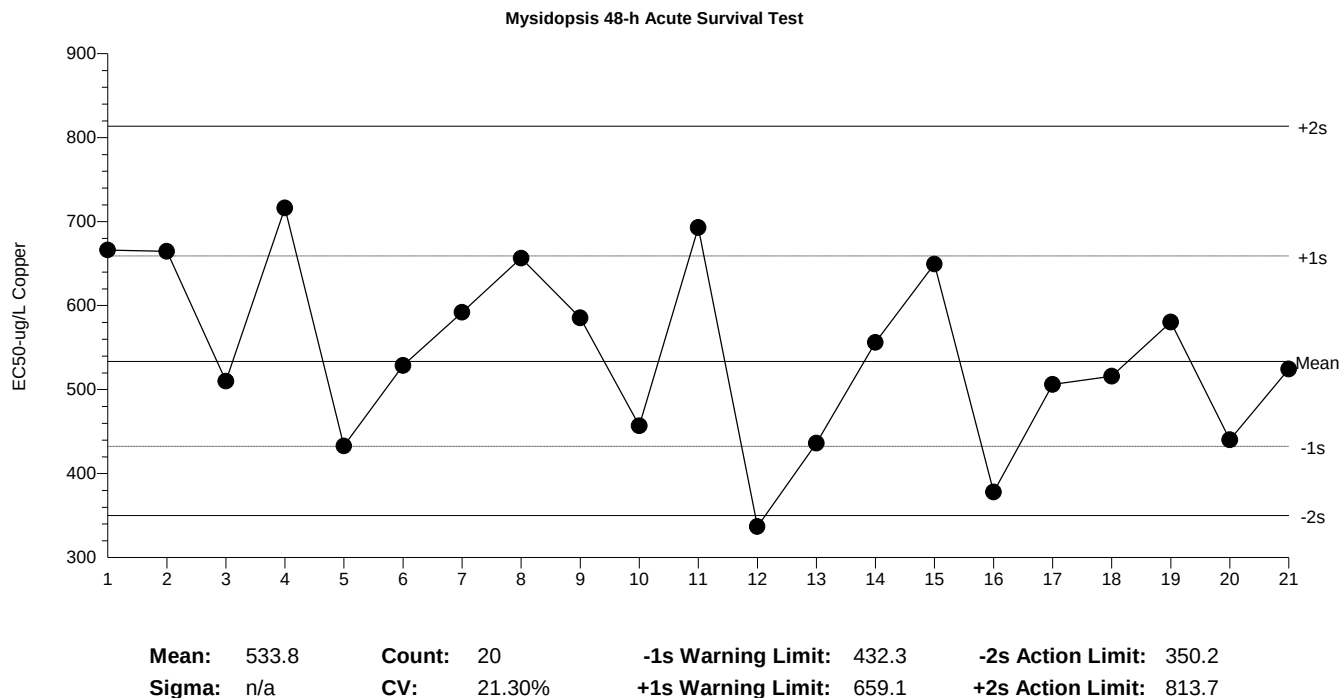
Mysidopsis 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 24h Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	20	15:00	666.2	132.4	1.051	(+)		12-8954-6498	19-3354-4680	NWDLS Environ. Toxicol.
2		Sep	8	10:45	664.6	130.8	1.04	(+)		08-1280-6786	10-4850-9214	NWDLS Environ. Toxicol.
3		Oct	1	11:00	510	-23.79	-0.2163			04-7978-6726	11-4477-8753	NWDLS Environ. Toxicol.
4		Nov	5	11:00	716.2	182.4	1.395	(+)		03-7542-9576	02-0369-4172	NWDLS Environ. Toxicol.
5		Dec	17	12:00	432.7	-101	-0.9955			17-7539-9530	15-0700-7542	NWDLS Environ. Toxicol.
6	2021	Jan	7	12:00	528.7	-5.077	-0.04534			04-7169-2283	14-4089-2063	NWDLS Environ. Toxicol.
7		Feb	10	11:20	592	58.17	0.4907			07-4566-1012	15-4676-0068	NWDLS Environ. Toxicol.
8		Mar	17	14:45	656.4	122.7	0.9812			18-1331-1255	00-7317-9711	NWDLS Environ. Toxicol.
9		Apr	7	12:30	585.4	51.59	0.4377			03-6046-2365	21-0932-1728	NWDLS Environ. Toxicol.
10		May	19	12:00	456.8	-76.96	-0.7386			21-2526-5582	18-1190-0787	NWDLS Environ. Toxicol.
11		Jun	16	14:00	692.8	159	1.237	(+)		18-4204-1639	00-7051-9201	NWDLS Environ. Toxicol.
12		Jul	6	10:30	336.8	-197	-2.184	(-)	(-)	16-8850-0499	11-3157-5193	NWDLS Environ. Toxicol.
13			14	11:40	436.1	-97.7	-0.959			18-4022-8710	02-2968-5096	NWDLS Environ. Toxicol.
14		Aug	18	16:30	556.1	22.35	0.1946			09-8714-0571	11-5627-8812	NWDLS Environ. Toxicol.
15		Sep	16	14:20	649.4	115.6	0.93			00-5356-8850	21-2851-7126	NWDLS Environ. Toxicol.
16		Oct	1	10:00	377.9	-155.9	-1.638	(-)		15-3507-3847	07-3904-5265	NWDLS Environ. Toxicol.
17		Nov	17	10:10	506.1	-27.71	-0.2529			13-5199-3437	14-5824-0094	NWDLS Environ. Toxicol.
18		Dec	20	13:30	515.9	-17.89	-0.1617			03-4349-9991	20-1400-9527	NWDLS Environ. Toxicol.
19	2022	Jan	4	10:00	580.2	46.44	0.3957			07-5397-4255	21-3233-2826	NWDLS Environ. Toxicol.
20		Feb	2	11:00	440.1	-93.68	-0.9155			11-4910-6286	20-0748-0881	NWDLS Environ. Toxicol.
21		Mar	3	12:00	524.5	-9.336	-0.0837			13-9230-6288	11-4681-8989	NWDLS Environ. Toxicol.

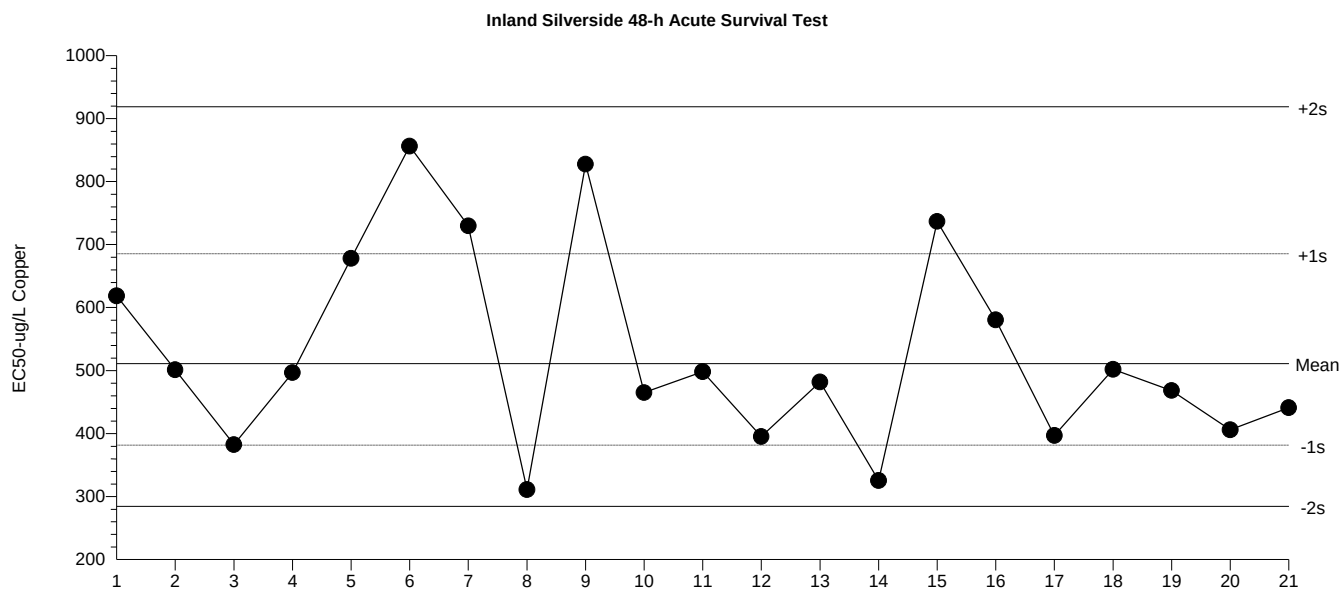
Inland Silverside 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Mean: 511.3

Count: 20

-1s Warning Limit: 381.4

-2s Action Limit: 284.5

Sigma: n/a

CV: 30.00%

+1s Warning Limit: 685.5

+2s Action Limit: 918.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Jul	23	14:30	618.5	107.1	0.649			08-6415-6891	14-2769-4565	NWDLS Environ. Toxicol.
2		Aug	26	15:30	501.2	-10.11	-0.06814			13-6348-3831	07-0928-6134	NWDLS Environ. Toxicol.
3		Sep	3	16:00	382.4	-129	-0.9917			20-0107-6947	13-0962-2231	NWDLS Environ. Toxicol.
4		Oct	1	11:30	496.7	-14.66	-0.09922			21-0806-7567	04-4491-5029	NWDLS Environ. Toxicol.
5		Nov	5	11:30	678	166.7	0.9626			16-0360-1563	17-0164-0989	NWDLS Environ. Toxicol.
6		Dec	17	13:00	856.2	344.9	1.759	(+)		19-0568-2938	17-4103-8796	NWDLS Environ. Toxicol.
7	2021	Jan	7	13:15	729.7	218.4	1.214	(+)		00-5449-9827	10-8170-9875	NWDLS Environ. Toxicol.
8		Feb	10	15:00	310.9	-200.4	-1.697	(-)		15-7072-1482	03-0536-5095	NWDLS Environ. Toxicol.
9		Mar	14	12:30	827.7	316.4	1.643	(+)		08-7079-1152	09-7911-7847	NWDLS Environ. Toxicol.
10		Apr	7	14:00	464.9	-46.37	-0.3244			16-8079-9145	16-8594-2765	NWDLS Environ. Toxicol.
11		May	19	14:15	498.2	-13.1	-0.08856			14-7855-2168	12-8544-1889	NWDLS Environ. Toxicol.
12		Jun	16	16:20	395.3	-116	-0.8783			17-6017-6916	05-3206-1990	NWDLS Environ. Toxicol.
13		Jul	6	11:00	481.7	-29.6	-0.2035			14-3117-5634	14-6518-7616	NWDLS Environ. Toxicol.
14		Aug	18	11:35	325.2	-186.1	-1.544	(-)		21-0942-3375	17-5943-5259	NWDLS Environ. Toxicol.
15		Sep	7	13:40	736.7	225.3	1.246	(+)		11-4858-6608	17-2141-1518	NWDLS Environ. Toxicol.
16		Oct	1	11:00	580.5	69.17	0.4329			20-1412-2999	02-1468-1616	NWDLS Environ. Toxicol.
17		Nov	17	10:45	396.9	-114.4	-0.8642			21-3705-1925	15-2997-3563	NWDLS Environ. Toxicol.
18		Dec	20	14:00	501.9	-9.443	-0.0636			13-9527-6827	03-4522-6833	NWDLS Environ. Toxicol.
19	2022	Jan	4	10:20	468.2	-43.11	-0.3005			18-9783-1551	07-5649-3213	NWDLS Environ. Toxicol.
20		Feb	2	11:45	405.8	-105.5	-0.7883			03-3697-0262	04-9245-6423	NWDLS Environ. Toxicol.
21		Mar	1	12:50	441	-70.31	-0.5047			01-0829-9135	16-3183-8146	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 03-06-22 0800 TO 03-07-22 0800
NO. 2: FROM 03-08-22 0800 TO 03-09-22 0800
NO. 3: FROM 03-10-22 0800 TO 03-11-22 0800

Test Initiated: 1615 TIME 03-07-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	100	100	100	100	100
	B	100	100	80	100	100	100
	C	100	80	80	80	100	100
	D	100	100	100	100	100	100
	E	100	100	100	100	100	100
	F	100	100	100	100	100	80
	G	80	100	100	100	100	100
	H	80	100	100	80	100	100
	I	100	100	100	100	100	80
	J	100	100	100	100	80	100
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	100	100	100	100	100
	7 day	96	98	96	96	98	96
	CV%❶	8.78	6.45	8.78	8.78	6.45	8.78

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.36	0.28	0.31	0.23	0.41	0.34
B	0.36	0.26	0.30	0.37	0.33	0.34
C	0.31	0.28	0.31	0.39	0.39	0.33
D	0.35	0.37	0.43	0.35	0.29	0.42
E	0.34	0.37	0.35	0.33	0.36	0.31
F	0.32	0.35	0.47	0.41	0.38	0.28
G	0.23	0.37	0.36	0.38	0.37	0.44
H	0.33	0.31	0.36	0.33	0.36	0.37
I	0.42	0.38	0.37	0.36	0.32	0.32
J	0.29	0.37	0.42	0.39	0.26	0.26
Mean Dry Weight in Milligrams	0.33	0.33	0.37	0.36	0.35	0.34
CV (%)❶	15.23	13.85	15.37	13.94	13.51	16.35
PMSD	Acceptable Range: 37 or less					15.74

❶ coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and NO. 1: FROM 03-06-22 0800 TO 03-07-22 0800
Times Composites NO. 2: FROM 03-08-22 0800 TO 03-09-22 0800
Collected: NO. 3: FROM 03-10-22 0800 TO 03-11-22 0800

Test Initiated: 1645 TIME 03-07-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^①
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	90	100	100	98	4.56
3%	100	100	100	100	100	100	100	100	0.00
5%	100	100	100	100	100	100	100	100	0.00
6%	100	100	90	100	100	100	100	98	4.56
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

① coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS ②

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV%①
	A	B	C	D	E		
0%	1.20	1.30	1.18	1.04	1.02	1.15	9.97
3%	1.30	1.13	0.98	0.87	0.81	1.02	19.52
5%	0.99	1.03	1.11	1.16	0.93	1.04	8.85
6%	1.05	1.05	0.99	0.96	0.95	1.00	4.79
8%	0.88	1.05	0.99	0.94	1.05	0.98	7.37
11%	0.90	0.99	0.92	0.95	1.00	0.95	4.45
PMSD	Acceptable Range: 28 or less					14.10	

Weights are for: preserved larvae, or X unpreserved larvae

① coefficient of variation = standard deviation x 100/mean

② Although the standard hypothesis test for sublethal indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the dose-response percent effect was actually >11% (IC25 included for support). Therefore, there is no sublethal toxicity.

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth ② = 11 % effluent
d. LOEC growth ② = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Mysidopsis bahia SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-06-22 to 03-07-22
Test Initiated	1115	03-08-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	90
	B	100	80
	C	100	90
	D	100	70
	E	100	100
	MEAN	100	86

1. LC_{50} (*Mysidopsis bahia*) = >100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-06-22 to 03-07-22
Test Initiated	1110	03-08-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	40
	B	100	40
	C	100	30
	D	100	30
	E	100	20
	MEAN	100	32

2. LC_{50} (*Menidia beryllina*) = <100 % effluent
- 95% Confidence Limits: N/A
- Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

April 13, 2022

LABORATORY REPORT

Leimar Rodriguez
SGS North America Inc. - Houston
10165 Harwin Drive
Houston, TX 77036

Report ID: 20220413085610MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
10165 Harwin Drive
Houston, TX 77036

Reported:
04/13/2022 08:56

Work Order Case Narrative

NWDLS Job No: 22C3246 (22-0176)

TPDES Permit No: WQ0005143000

Project: Natgasoline - WET

Sample Locations:

Sample Name

Outfall 001 - Retest #1

Acute *Menidia beryllina*

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed.

Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2022 compliance test. One more retest is required.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

NWDLS
ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001		
TPDES PERMIT NO.	WQ0005143000		
SPECIES	<i>Menidia beryllina</i>	TEST DATE	30-31 Mar 2022
TEST RESULTS	Pass*		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE6B = 0		
Retest Number 1	Parameter 22415	0	
Retest Number 2	Parameter 22416	N/A	
ACUTE PERMIT REPORTING - Table 2 attached.			

* Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2022 compliance test. One more retest is required.

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
10165 Harwin Drive
Houston, TX 77036

Reported:
04/13/2022 08:56

Chemical Analyses

Natgasoline - WET Non Scheduled Retest

Client Sample ID: Outfall 001
Lab Sample ID: 22C3246-01

Sample Matrix: Waste Water
Date Collected: 03/30/2022 8:00
Collected by: Claton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	106	mg/L		1	10.0	10.0	BFC4181	03/31/2022 10:47	AKA
General Chemistry SM 2510 B	Conductivity	A	2950	umhos/cm @ 25 °C		1	2.00	2.00	BFC4181	03/31/2022 10:47	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	134	mg/L		1		10.0	BFD0794	04/11/2022 16:26	CJP
General Chemistry EPA 350.1	Ammonia as N	A	30.1	mg/L		50	1.00	2.50	BFC4352	04/01/2022 13:51	CST
General Chemistry SM 2520 B	Salinity	N	1.53	Salinity units		1	1.00	1.00	BFC4181	03/31/2022 10:47	AKA
Field Hach 10360	DO Field	N	9.92	mg/L		1	1.00	1.00	BFC4359	03/30/2022 08:00	ALR
Field SM 4500-H+ B	pH	A	7.46	pH Units @ 25 °C		1	1.00	1.00	BFC4359	03/30/2022 08:00	ALR
Field SM 4500-Cl G	Total Residual Chlorine	A	0.11	mg/L	U	1	0.25	0.25	BFC4359	03/30/2022 08:00	ALR

* A = Accredited, N = Not Accredited or Accreditation not available



SGS North America Inc. - Houston
10165 Harwin Drive
Houston, TX 77036

130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

Reported:
04/13/2022 08:56

Sample Condition Checklist

Work Order: 22C3246

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted



SGS North America Inc. - Houston
10165 Harwin Drive
Houston, TX 77036

Reported:
04/13/2022 08:56

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22C3246

TCEQ T104704238-22-35 TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Name : Natgasoline - WET Non Scheduled Retest		Schedule Comments:
	Project Comments: Deliver kits to SGS Houston Receiving 10165 Harwin Drive, Suite 150 Houston, TX 77036		

Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C3246-01	Outfall 001	3/29/22 08:00/ 3/30/22 08:00	3/30/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	MB 1DD-2006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.92 pH Field 7.46 Total Chlorine 0.11 Residual WW Field ALR 3-30-22

Field Remarks:		Preservation: H2SO4 (Circle and Write ID) <u>2105091</u> HNO3 <u>2104001</u> NaOH Other: _____	
Sampler (Signature) <u>[Signature]</u>	Relinquished By (Signature) <u>[Signature]</u>	Date/Time <u>3/30/22 13:25</u>	Received By (Signature) <u>[Signature]</u>
Print Name <u>Clinton Wallace</u>	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation <u>Providence</u>	Relinquished To Lab By: (Signature) <u>[Signature]</u>	Date/Time <u>3-30-22/1450</u>	Received for Laboratory By: (Signature) <u>[Signature]</u>
Custody Seal: Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No
Container Intact: Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No
Received on Ice: Yes / No		Samples Accepted: Yes / No	Temperature: <u>41/41</u> °C
Thermometer ID: <u>210579249</u>			

Box Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



Client	SGS-Natgasoline	OF	001	Login	22-0176	NWDLS Job No.	NT-1000
--------	-----------------	----	-----	-------	---------	---------------	---------

BFC4419

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
 Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 6, 13, 25, 50, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	--------------------------	--------------	------------------------	-----

Test Organism Batch #	22-0304	DOB	3-16-22
Source	NWDLS	Age (days)	14 days

Sample 1 Date/Time:	3-30-22	0800
---------------------	---------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-30-22	1545	AOS / JSS
Test Termination	3-31-22	1635	AOT

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments:

Arturo Orozco JL
 Final Review Signature

Data Sheet Preparation - Initials: AOT JSS Date: 3-29-22

End of Test First Review - Initials: AOT Date: 3-31-22

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0176	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	10	50	A	10	10
	B	10	10		B	10	9
	C	10	10		C	10	10
	D	10	10		D	10	10
	E	10	10		E	10	10
6	A	10	10	100	A	10	10
	B	10	10		B	10	6
	C	10	10		C	10	10
	D	10	10		D	10	7
	E	10	9		E	10	8
13	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
25	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0176	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.2	8.0
6	8.2	8.0
13	8.2	8.1
25	8.2	8.2
50	8.2	8.2
100	8.1	8.2
Meter No.	737	737
Time	1530	1630
Initials	JSS / A0J	A0J

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
6	25 / 25	25 / 25
13	25 / 25	25 / 25
25	25 / 25	25 / 25
50	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	T-710	T-710
Time	1530	1630
Initials	JSS / A0J	A0J

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.3	8.2
6	8.3	8.1
13	8.4	8.1
25	8.4	8.1
50	8.4	8.1
100	8.5	7.9
Meter No.	YS16	YS16
Time	1530	1630
Initials	JSS / A0J	A0J

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25
6	25
13	25
25	25
50	25
100	25
Meter No.	948
Time	1530
Initials	JSS / A0J

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

CETIS Analytical Report

Report Date: 08 Apr-22 13:11 (p 1 of 2)
 Test Code/ID: 22-0176 / 12-9175-0313

Inland Silverside 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	07-7233-5657	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	08 Apr-22 13:08	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	19-1466-6693	Test Type:	Survival (1d)	Analyst:	Arturo Orozco
Start Date:	30 Mar-22 15:45	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	31 Mar-22 16:35	Species:	Menidia beryllina	Brine:	HW-Marinemix
Test Length:	25h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	16-6232-2158	Code:	631505EE	Project:	NT-100056
Sample Date:	30 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	30 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	8h	Client:	SGS North America - Scott, LA		

Comments:

Weekly Re-test #1

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1881852	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.9	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	n/a	n/a	<1	n/a	n/a

24h Survival Summary

Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	L	5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
6		5	0.9800	0.9000	1.0000	0.0447	4.56%	2.0%	49/50	0.9933	0.67%
13		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	0.9933	0.67%
25		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	0.9933	0.67%
50		5	0.9800	0.9000	1.0000	0.0447	4.56%	2.0%	49/50	0.98	2.0%
100		5	0.8200	0.6000	1.0000	0.1789	21.82%	18.0%	41/50	0.82	18.0%

24h Survival Detail

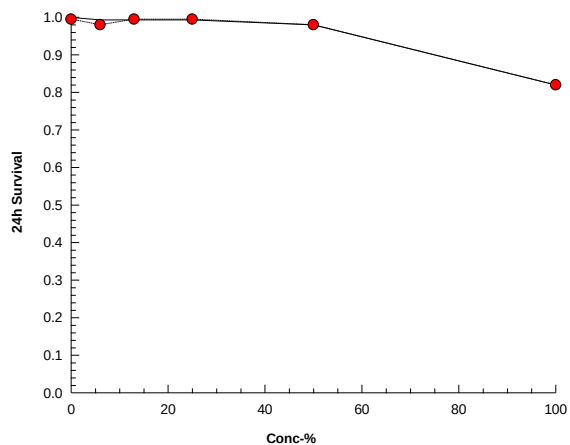
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	0.9000
13		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	0.9000	1.0000	1.0000	1.0000
100		1.0000	0.6000	1.0000	0.7000	0.8000

CETIS Analytical Report

Report Date: 08 Apr-22 13:11 (p 2 of 2)
Test Code/ID: 22-0176 / 12-9175-0313

Inland Silverside 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 07-7233-5657	Endpoint: 24h Survival	CETIS Version: CETISv1.9.4	
Analyzed: 08 Apr-22 13:08	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	

Graphics



Inland Silverside 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)

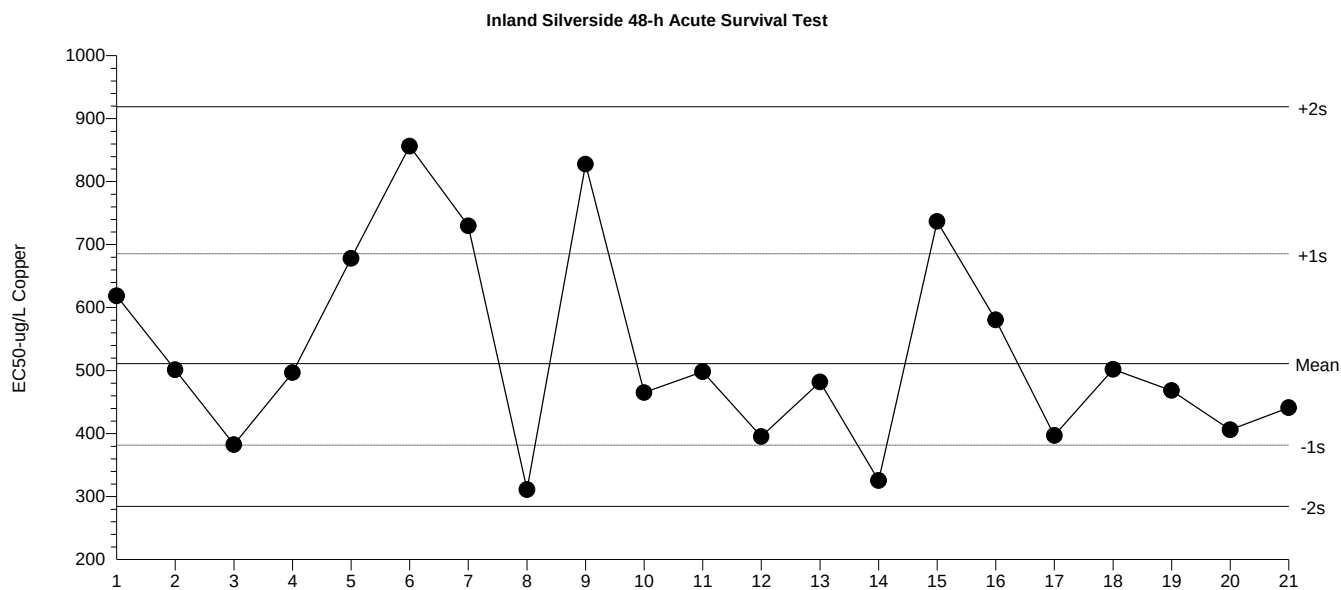
Organism: Menidia beryllina (Inland Silverside)

Material: Copper

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 24h Survival Rate

Source: Reference Toxicant-REF



Mean: 511.3

Count: 20

-1s Warning Limit: 381.4

-2s Action Limit: 284.5

Sigma: n/a

CV: 30.00%

+1s Warning Limit: 685.5

+2s Action Limit: 918.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Jul	23	14:30	618.5	107.1	0.649			08-6415-6891	14-2769-4565	NWDLS Environ. Toxicol.
2		Aug	26	15:30	501.2	-10.11	-0.06814			13-6348-3831	07-0928-6134	NWDLS Environ. Toxicol.
3		Sep	3	16:00	382.4	-129	-0.9917			20-0107-6947	13-0962-2231	NWDLS Environ. Toxicol.
4		Oct	1	11:30	496.7	-14.66	-0.09922			21-0806-7567	04-4491-5029	NWDLS Environ. Toxicol.
5		Nov	5	11:30	678	166.7	0.9626			16-0360-1563	17-0164-0989	NWDLS Environ. Toxicol.
6		Dec	17	13:00	856.2	344.9	1.759	(+)		19-0568-2938	17-4103-8796	NWDLS Environ. Toxicol.
7	2021	Jan	7	13:15	729.7	218.4	1.214	(+)		00-5449-9827	10-8170-9875	NWDLS Environ. Toxicol.
8		Feb	10	15:00	310.9	-200.4	-1.697	(-)		15-7072-1482	03-0536-5095	NWDLS Environ. Toxicol.
9		Mar	14	12:30	827.7	316.4	1.643	(+)		08-7079-1152	09-7911-7847	NWDLS Environ. Toxicol.
10		Apr	7	14:00	464.9	-46.37	-0.3244			16-8079-9145	16-8594-2765	NWDLS Environ. Toxicol.
11		May	19	14:15	498.2	-13.1	-0.08856			14-7855-2168	12-8544-1889	NWDLS Environ. Toxicol.
12		Jun	16	16:20	395.3	-116	-0.8783			17-6017-6916	05-3206-1990	NWDLS Environ. Toxicol.
13		Jul	6	11:00	481.7	-29.6	-0.2035			14-3117-5634	14-6518-7616	NWDLS Environ. Toxicol.
14		Aug	18	11:35	325.2	-186.1	-1.544	(-)		21-0942-3375	17-5943-5259	NWDLS Environ. Toxicol.
15		Sep	7	13:40	736.7	225.3	1.246	(+)		11-4858-6608	17-2141-1518	NWDLS Environ. Toxicol.
16		Oct	1	11:00	580.5	69.17	0.4329			20-1412-2999	02-1468-1616	NWDLS Environ. Toxicol.
17		Nov	17	10:45	396.9	-114.4	-0.8642			21-3705-1925	15-2997-3563	NWDLS Environ. Toxicol.
18		Dec	20	14:00	501.9	-9.443	-0.0636			13-9527-6827	03-4522-6833	NWDLS Environ. Toxicol.
19	2022	Jan	4	10:20	468.2	-43.11	-0.3005			18-9783-1551	07-5649-3213	NWDLS Environ. Toxicol.
20		Feb	2	11:45	405.8	-105.5	-0.7883			03-3697-0262	04-9245-6423	NWDLS Environ. Toxicol.
21		Mar	1	12:50	441	-70.31	-0.5047			01-0829-9135	16-3183-8146	NWDLS Environ. Toxicol.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GENERAL INFORMATION

	TIME	DATE
Composite Sample Collected	0800 to 0800	03-29-22 to 03-30-22
Test Initiated	1545	03-30-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A	100	100	100	100	100	100
	B	100	100	100	100	90	60
	C	100	100	100	100	100	100
	D	100	100	100	100	100	70
	E	100	90	100	100	100	80
	MEAN	100	98	100	100	98	82

1. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ (*Menidia beryllina*) = >100 % effluent

95% Confidence Limits: N/A

Method of LC₅₀ Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Providence Engineering & Environmental

NATGSTXB: Natgasoline Weekly Compliance Sampling, Beaumont, TX

1198-0003-001 (1.0)

SGS Job Number: LA78206

Sampling Dates: 03/07/22 - 03/11/22

Report to:

Providence Engineering & Environmental
1201 Main Street
Baton Rouge, LA 70802
clintonwallace@providenceeng.com; charlesfranklin@providenceeng.com;
deannakliebert@providenceeng.com
ATTN: Charles Franklin

Total number of pages in report: **70**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Penny Cormier 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Subcontract Lab Data	4
Section 3: Misc. Forms	66
3.1: Chain of Custody	67



Sample Summary

Providence Engineering & Environmental

Job No: LA78206

NATGSTXB: Natgasoline Weekly Compliance Sampling, Beaumont, TX
Project No: 1198-0003-001 (1.0)

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
LA78206-1	03/07/22	10:00	03/07/22	AQ	Water	OUTFALL 001-1
LA78206-2	03/07/22	10:30	03/07/22	AQ	Water	RECEIVING WATER
LA78206-3	03/09/22	10:00	03/09/22	AQ	Water	OUTFALL 001-2
LA78206-4	03/11/22	10:00	03/11/22	AQ	Water	OUTFALL 001-3



Subcontract Lab Data

Report of Analysis



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www. NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

2

March 24, 2022

LABORATORY REPORT

Kathleen Vienne
SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Report ID: 20220324121532MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:

03/24/2022 12:15

2

Work Order Case Narrative

NWDLS Job No: 22C0408, 22C0409, 22C0410 (22-0137)

TPDES Permit No: WQ0005143000

Project: Natgasoline - WET

Sample Locations:

Sample Name

Outfall 001 - 1Q22 (chronic) + 1S22 (acute)

Receiving Water (chronic tests)

Chronic *Mysidopsis bahia* + *Menidia beryllina*

Acute *Mysidopsis bahia* + *Menidia beryllina*

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in the chronic tests, nor in the acute *Mysidopsis bahia*.

However, the acute *Menidia beryllina* did exhibit toxicity. Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

* A = Accredited, N = Not Accredited or Accreditation not available

NWDLS_TOXFinal Revision 4.5 Effective 11/18/2021

Page 2 of 61

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	<i>Mysidopsis bahia</i>		TEST DATE	7-14 Mar 2022
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40
Control Results	96	8.78	0.33	15.23
Critical Dilution (8%)	98	6.45	0.35	13.51
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0
Report the NOEC % for survival:			TOP3E	11
Report the LOEC % for survival:			TXP3E	>11
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0
Report the NOEC % for growth:			TPP3E	11
Report the LOEC % for growth:			TYP3E	>11
PMSD (Acceptable Range: 37 or less):				15.74
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

SPECIES	<i>Menidia beryllina</i>		TEST DATE	7-14 Mar 2022
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.50	≤ 40
Control Results	98	4.56	1.15	9.97
Critical Dilution (8%)	100	0.00	0.98	7.37
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP6B	0
Report the NOEC % for survival:			TOP6B	11
Report the LOEC % for survival:			TXP6B	>11
Is the NOEC for growth less than the critical dilution?		No	TWP6B	0
Report the NOEC % for growth: ❶			TPP6B	11
Report the LOEC % for growth: ❶			TYP6B	>11
PMSD (Acceptable Range: 28 or less):				14.10
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

❶ Although the standard hypothesis test for sublethal indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the dose-response percent effect was actually >11% (IC25 included for support). Therefore, there is no sublethal toxicity.

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	Mysidopsis bahia	TEST DATE	8-9 Mar 2022
TEST RESULTS	Pass		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE3E = 0		
ACUTE PERMIT REPORTING - Table 2 attached.			

SPECIES	Menidia beryllina	TEST DATE	8-9 Mar 2022
TEST RESULTS	Fail*		
Is the mean survival > 50% in the 100% effluent concentration?			No
DMR Parameter Code:	TIE6B = 1		
ACUTE PERMIT REPORTING - Table 2 attached.			

* Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests.

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

Chemical Analyses

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Outfall 001-1

Lab Sample ID: 22C0408-01

Sample Matrix:

Waste Water

Date Collected:

03/07/2022 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	146	mg/L		1	10.0	10.0	BFC1103	03/09/2022 15:21	CST
General Chemistry SM 2510 B	Conductivity	A	1840	umhos/cm @ 25 °C		1	2.00	2.00	BFC1103	03/09/2022 15:21	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	142	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	6.94	mg/L		20	0.400	1.00	BFC1206	03/09/2022 11:37	JLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BFC1103	03/09/2022 15:21	CST
Field Hach 10360	DO Field	N	8.46	mg/L		1	1.00	1.00	BFC1007	03/07/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.30	pH Units @ 25 °C		1	1.00	1.00	BFC1007	03/07/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BFC1007	03/07/2022 08:00	DH

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Receiving Water

Lab Sample ID: 22C0408-02

Sample Matrix:

Waste Water

Date Collected:

03/07/2022 10:30

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	87.7	mg/L		1	10.0	10.0	BFC1103	03/09/2022 15:43	CST
General Chemistry SM 2510 B	Conductivity	A	5570	umhos/cm @ 25 °C		1	2.00	2.00	BFC1103	03/09/2022 15:43	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	546	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	0.124	mg/L		1	0.0200	0.0500	BFC1204	03/09/2022 09:46	JLK
General Chemistry SM 2520 B	Salinity	N	3.01	Salinity units		1	1.00	1.00	BFC1103	03/09/2022 15:43	CST
Field Hach 10360	DO Field	N	11.1	mg/L		1	1.00	1.00	BFC1007	03/07/2022 10:30	DH
Field SM 4500-H+ B	pH	A	7.88	pH Units @ 25 °C		1	1.00	1.00	BFC1007	03/07/2022 10:30	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BFC1007	03/07/2022 10:30	DH

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2

Lab Sample ID: 22C0409-01

Sample Matrix:

Waste Water

Date Collected:

03/09/2022 8:00

Collected by:

Claton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	163	mg/L		1	10.0	10.0	BFC1380	03/10/2022 14:53	CST
General Chemistry SM 2510 B	Conductivity	A	3600	umhos/cm @ 25 °C		1	2.00	2.00	BFC1380	03/10/2022 14:53	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	154	mg/L		1		10.0	BFC1542	03/10/2022 17:40	CJP
General Chemistry EPA 350.1	Ammonia as N	A	27.7	mg/L		50	1.00	2.50	BFC2001	03/15/2022 13:33	JLK
General Chemistry SM 2520 B	Salinity	N	1.89	Salinity units		1	1.00	1.00	BFC1380	03/10/2022 14:53	CST
Field Hach 10360	DO Field	N	8.65	mg/L		1	1.00	1.00	BFC1494	03/09/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.21	pH Units @ 25 °C		1	1.00	1.00	BFC1494	03/09/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.04	mg/L	U	1	0.25	0.25	BFC1494	03/09/2022 08:00	DH

* A = Accredited, N = Not Accredited or Accreditation not available

NWDLS_TOXFinal Revision 4.5 Effective 11/18/2021

Page 6 of 61



10 of 70

LA78206



SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

Reported:
03/24/2022 12:15

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 3
Client Sample ID: Outfall 001-3
Lab Sample ID: 22C0410-01

Sample Matrix: Waste Water
Date Collected: 03/11/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	179	mg/L		1	10.0	10.0	BFC1949	03/15/2022 16:22	CST
General Chemistry SM 2510 B	Conductivity	A	3270	umhos/cm @ 25 °C		1	2.00	2.00	BFC1949	03/15/2022 16:22	CST
General Chemistry SM 2340 C	Total hardness as CaCO3	N	170	mg/L		1		10.0	BFC2985	03/21/2022 17:30	CJP
General Chemistry EPA 350.1	Ammonia as N	A	24.7	mg/L		50	1.00	2.50	BFC2001	03/15/2022 13:34	JLK
General Chemistry SM 2520 B	Salinity	N	1.71	Salinity units		1	1.00	1.00	BFC1949	03/15/2022 16:22	CST
Field Hach 10360	DO Field	N	8.77	mg/L		1	1.00	1.00	BFC1861	03/11/2022 08:00	DH
Field SM 4500-H+ B	pH	A	8.36	pH Units @ 25 °C		1	1.00	1.00	BFC1861	03/11/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.10	mg/L	U	1	0.25	0.25	BFC1861	03/11/2022 08:00	DH

* A = Accredited, N = Not Accredited or Accreditation not available



SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

Reported:
03/24/2022 12:15

2

Sample Condition Checklist

Work Order: 22C0408

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22C0409

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22C0410

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-35
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
03/24/2022 12:15

2

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe TX 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 1 of 2

22C0408

Page 10 of 61

Lab PM : Helen Conrad		Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes		Schedule Comments:			
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478		Project Comments:					
Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0408-01	Outfall 001-1	3/6/22 08:00 3/7/22 08:00	3/7/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 1DL-2007.0 4°C MB 1DL-2006.0 4°C AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field pH Field Total Chlorine Residual WW Field 246 8.30 0.05
22C0408-02	Receiving Water		3/7/22 10:30	AQ Grab	A HDPE 250mL B HDPE 250mL H2SO4 C HDPE 250mL HNO3 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 HNO3 Hardness T-2340 C H2SO4 4°C NH3-N SEAL-350.1 4°C Salinity-2520	DO Field pH Field Total Chlorine Residual WW Field 11.07 7.88 0.00



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe TX 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 2 of 2

22C0408

(Continued)

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes	Schedule Comments:
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Field Remarks:		NaOH	HNO3	H2SO4	Other:
Relinquished By: (Signature)	Relinquished By: (Signature)	Relinquished By: (Signature)	Relinquished By: (Signature)	Relinquished By: (Signature)	Relinquished By: (Signature)
Print Name	Print Name	Print Name	Print Name	Print Name	Print Name
Affiliation	Affiliation	Affiliation	Affiliation	Affiliation	Affiliation
Custody Seal: Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 2.5/2.5 °C	Thermometer ID: 210879206
Container Intact: Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No		

Wko_NWDLs_COC_LS Revision 4.1 Effective: 2/17/2022

Tox Weekly Kits - Deliver



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe TX 77385
(936) 321-5060 - lab@nwdls.com

Page 1 of 1
22C0409

TCEQ T104704238-21-34

TCEQ-TOX T104704202-21-16

Lab PM : Helen Conrad		Project Name : Natgasoline - WET Quarterly Sample 2		Schedule Comments:	
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478		Project Comments: New Gasoline 500 Ambassador Caffery Parkway Scott, LA 70583			

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0409-01	Outfall 001-2	3/8/22 08:00 3/9/22 08:00	3/9/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.65 pH Field 8.21 Total Chlorine 0.04 Residual WW Field

Field Remarks:		Lab Preservation (Circle and Write ID Below)		NaOH		Other:	
Sampler (Signature) <i>Chad Wilk</i>	Relinquished By: (Signature) <i>Chad Wilk</i>	Date/Time 3/9/22 13:55	Received By: (Signature) <i>Chad Wilk</i>	HNO3	Date/Time 3-9-22 13:56		
Print Name <i>Chad Wilk</i>	Relinquished By: (Signature) <i>Chad Wilk</i>	Date/Time 3-9-22	Received By: (Signature) <i>Chad Wilk</i>		Date/Time 3-9-22 1422		
Affiliation <i>Produce</i>	Relinquished To Lab By: (Signature) <i>Chad Wilk</i>	Date/Time 3-9-22 1505	Received for Laboratory By: (Signature) <i>Chad Wilk</i>		Date/Time 3/9/22		
COC Labels Agree: Yes / No		Received on Ice: Yes / No		Temperature: 2-8/2.8 °C			
Container Intact: Yes / No		Appropriate Volume: Yes / No		Thermometer ID: 210879256			
Appropriate Containers: Yes / No		Coolers Intact: Yes / No					
Tox Weekly Kits - Deliver		Tox Weekly Kits - Deliver		who_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022			



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe TX 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22C0410

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16

Lab PM : Helen Conrad		Project Name : Natgasoline - WET Quarterly Sample 3		Schedule Comments:	
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478		Project Comments:			

Sample ID	Collection Point	Date/Time Begin/Exp	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0410-01	Outfall 001-3	3/10/22 08:00 3/11/22 08:00	3/11/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.77 pH Field 8.34 Total Chlorine 0.1e Residual WW Field

Field Remarks:		Lab Preservation: H2SO4		HNO3		NaOH		Other:	
Sampler (Signature)		Date/Time 3/11/22 13:40		Received By: (Signature)		Date/Time 3-11-22 13:42			
Print Name		Date/Time 3-11-22		Received By: (Signature)		Date/Time 3-11-22 1450			
Affiliation		Date/Time 3-11-22 1555		Received for Laboratory By: (Signature)		Date/Time 3-11-22 1600			
Custody Seal : Yes / No		Appropriate Volume: Yes / No		Received on Ice: Yes / No		Temperature: 41/4.1 °C			
Container Intact : Yes / No		Coolers Intact: Yes / No		Samples Accepted: Yes / No		Thermometer ID: 2108792010			

Tox Weekly Kits - Deliver

wko_NWDLs_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	>80% survival in control; > .20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-7-22	0800	Sample 3 Date/Time:	3-11-22	0800
Sample 2 Date/Time:	3-9-22	1000-01	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-7-22	22-0137-1	RW030722	SPD	Day 4	3-11-22	22-0137-2	RW030722	A0J
Day 1	3-8-22	22-0137-1	RW030722	SSS	Day 5	3-12-22	22-0137-3	RW030722	NR/10
Day 2	3-9-22	22-0137-1	RW030722	A0J	Day 6	3-13-22	22-0137-3	RW030722	NR/83
Day 3	3-10-22	22-0137-2	RW030722	JSS					

*LW Batch #: 2202362

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: ① IE A0J 3-11-22 → [0800]

Data Sheet Preparation : Initials: AAR/MD Date: 3-2-22
End of Test Review : Initials: NL/A0J Date: 3-14-22

Final Review (signature) *Arturo Orozco Jr*

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters

DATE	3-7-22	3-8-22		3-9-22		3-10-22		3-11-22		3-12-22		3-13-22		3/14/22
TIME	1700	0900	0900	0900	0900	0910	0910	0830	0830	0830	0830	0850	0850	0800
INITIALS	APB	SSJ	SSJ	SSJ	SSJ	APB	APB	APB	APB	APB	APB	SSJ	SSJ	APB
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.3	8.2	8.3	8.2	8.3	8.1	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.1
3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.1
5	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.1
6	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.1
8	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.1
11	8.3	8.2	8.2	8.2	8.3	8.2	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2
*LW	8.3	8.1	8.3	8.1	8.4	8.0	8.2	8.1	8.3	8.1	8.3	8.2	8.3	8.1
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.6	7.4	8.9	7.4	8.4	7.8	8.1	7.6	8.0	8.0	8.2	8.3	8.4	7.6
3	8.6	7.4	9.0	7.5	8.5	7.9	8.1	7.6	8.0	8.1	8.2	8.2	8.4	7.3
5	8.7	7.6	9.0	7.8	8.5	7.9	8.1	7.6	8.0	8.3	8.3	8.3	8.4	7.4
6	8.7	7.6	9.1	7.7	8.5	7.8	8.2	7.6	8.0	8.2	8.3	8.3	8.4	7.5
8	8.7	7.6	9.1	7.8	8.5	7.7	8.2	7.5	8.1	8.1	8.3	8.2	8.4	7.3
11	8.7	7.5	9.1	7.8	8.5	7.6	8.3	7.5	8.1	8.1	8.4	8.1	8.4	7.2
*LW	8.1	7.5	8.3	7.4	8.3	7.8	8.3	7.7	8.2	8.0	8.4	8.3	8.4	7.7
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

USE RW 3-7-22 → [1600]

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	26	26	26	26	27	26	26
3	26	26	26	26	27	26	26
5	26	26	26	26	27	26	26
6	26	26	26	26	27	26	26
8	26	26	26	26	27	26	26
11	26	26	26	26	26	26	26
*LW	24	26	26	26	26	26	26
Meter No.:	948	948	948	948	948	948	948

Biological Data

Test Organism Data			
Test Organism Batch #	22-0235	DOB	2-28-22
Source	NWDLS	Age	7 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2111657	JSJ	4	2111657	2111657	SKW JSW
1	2111657	2111657	KRO, KRO	5	2111656	2111656	KRO, KRO
2	2111657	2111657	AB, KRO	6	2111656	2111656	AB, AB
3	2111657 ①	2111657	SKW, SKW	7	2111656		SKW

Comments: ① IE SKW 3/10/22 → [2111657]

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
8	A	5	5	5	5	5	5	5	5	8	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	4	4	4	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	4		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	4	5①		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	4	4	4
3	A	5	5	5	5	5	5	5	5	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	4	4	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	4	4	4	4
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	4	4	4		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	4	4	4	4	4
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	5	4	4		C								
	D	5	5	5	5	5	5	5	5		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	5	5	5	5		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	4	4	4	4	4		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	5	5		J								
Date	3/1/22	3/8/22	3/9/22	3/10/22	3/11/22	3/12/22	3/13/22	3/14/22	3/15/22	Comments: ① IF NLL 3-14-22 → [4]									
Time	1615	0930	1000	0930	0950	1030	0940	N20											
Init	JS	VJC	APR	SPD	W2	SPD	SSS	NLL	APC										

Codes: IE-Incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00463	.00644	6	A	31	.00474	.00591
	B	2 *	.00443	.00625		B	32	.00468	.00651
	C	3	.00415	.00571		C	33	.00465	.00661
	D	4	.00418	.00593		D	34	.00496	.00673
	E	5	.00427	.00595		E	35 *	.00443	.00610
	F	6	.00402	.00562		F	36	.00414	.00621
	G	7	.00448	.00565		G	37	.00441	.00629
	H	8	.00453	.00618		H	38	.00405	.00572
	I	9	.00411	.00623		I	39	.00460	.00642
	J	10	.00384	.00527		J	40	.00461	.00655
3	A	11	.00460	.00600	8	A	41	.00435	.00640
	B	12	.00434	.00566		B	42	.00453	.00616
	C	13 *	.00465	.00603		C	43	.00437	.00630
	D	14	.00439	.00623		D	44	.00439	.00586
	E	15	.00444	.00630		E	45 *	.00467	.00585
	F	16	.00395	.00570		F	46	.00426	.00617
	G	17	.00439	.00622		G	47	.00494	.00681
	H	18	.00470	.00625		H	48	.00470	.00658
	I	19	.00445	.00636		I	49	.00417	.00579
	J	20	.00420	.00605		J	50	.00485	.00613
5	A	21	.00454	.00609	11	A	51	.00444	.00615
	B	22	.00358	.00507		B	52 *	.00463	.00633
	C	23	.00412	.00526		C	53	.00404	.00570
	D	24 *	.00457	.00670		D	54	.00460	.00668
	E	25	.00410	.00583		E	55	.00482	.00636
	F	26	.00447	.00681		F	56	.00475	.00617
	G	27	.00484	.00662		G	57	.00458	.00677
	H	28	.00472	.00651		H	58	.00449	.00636
	I	29	.00476	.00659		I	59	.00451	.00610
	J	30	.00416	.00625		J	60	.00504	.00633

Comments:

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	OVEN ID#	BALANCE VERIFICATION INITIALS	DATE/ TARE WEIGHT INITIALS	DATE DRYING INITIATED	TIME DRYING INITIATED	OVEN TEMP (Act/Corr) (°C)	INITIALS
*LW	A	61	.00432	.00576	791	SW1	DPD	3-4-22, DPD	3-14-22	7:40 ①	105, 105	NLL
	B	62	.00459	.00625								
	C	63 *	.00433	.00580								
	D	64	.00477	.00607								
	E	65	.00429	.00645								
	F	66	.00474	.00642								
	G	67	.00472	.00627								
	H	68	.00422	.00557								
	I	69	.00456	.00611								
	J	70	.00462	.00641								
	A	71										
	B	72										
	C	73										
	D	74										
	E	75										
	F	76										
	G	77										
	H	78										
	I	79										
	J	80										
QA/QC (pans)	2		.00444	.00627								
	13		.00464	.00599								
	24		.00457	.00669								
	35		.00412	.00607								
	45		.00407	.00582								
	52		.00464	.00632								
	63		.00434	.00580								

DATE/TIME DRYING TERMINATED 3-15-22 / 1110
 OVEN TEMP (Act/Corr) (°C) 105, 105
 BALANCE VERIFICATION INITIALS VJC
 TOTAL WEIGHT DATE/INITIALS 3-15-22, VJC
 COMMENTS: @IE NLL 3-14-22 → [1500]

TREAT = Treatment REP = Replicate CONT = Control No. = Number
 ORG. = Organism

Test Notes

Include Date, Time, and Initials

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-7-22	0800	Sample 3 Date/Time:	3-11-22	0800
Sample 2 Date/Time:	3-9-22	0800	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-7-22	22-0137 -1	RW030722	DPD	Day 4	3-11-22	22-0137 -2	RW030722	AOJ
Day 1	3-8-22	22-0137 -1	RW030722	JSS	Day 5	3-12-22	22-0137 -3	RW030722	WES/DPD
Day 2	3-9-22	22-0137 -1	RW030722	AOJ	Day 6	3-13-22	22-0137 -3	RW030722	WES/JSS
Day 3	3-10-22	22-0137 -2	RW030722	JSS					

*LW Batch #: 2202362

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

Data Sheet Preparation : Initials: AAR Date: 3-2-22
End of Test Review : Initials: JSS Date: 3-14-22 Final Review (signature) *Arturo Orozco Jr*

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data

Test Organism Batch #	22-0223 ①	DOB	2-24-22
Source	NWDLS	Age	11 days

Feeding

Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2111657	JSS	4	2111657	2111657	SKW, SKW
1	2111657	2111657	KRO, KRO	5	2111656	2111656	KRO, KRO
2	2111657	2111657	AM, KRO	6	2111656	2111656	AM, AM
3	2111657	2111657	SKW, SKW	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	9		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	10	10	10	10	10	*LW	A	10	9	9	9	9	9	9	9
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	10		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	10	10	10	10	9	9	9		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	3/7/22	3/8/22	3/9/22	3/10/22	3/11/22	3/12/22	3/13/22	3/14/22	Comments: ① IE PRO 3-7-22 → [22-0233]										
Time	1645	1030	1100	1030	1120	1100	1000	1445											
Initials	JSS	VJC	AM	KRO	AM	KRO	JSS	JSS											

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0137
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1 *	.00633	.01828	*LW	A	31	.00626	.01932
	B	2	.00660	.01956		B	32	.00667	.01992
	C	3	.00689	.01871		C	33	.00679	.02030
	D	4	.00709	.01751		D	34 *	.00698	.01913
	E	5	.00663	.01685		E	35	.00671	.01900
3	A	6	.00660	.01956	QA/QC (pans)		1	.00631	.01828
	B	7	.00681	.01811			14	.00714	.01872
	C	8	.00701	.01684			28	.00683	.01598
	D	9	.00687	.01555			34	.00699	.01912
	E	10	.00677	.01485					
5	A	11	.00694	.01687	BALANCE ID#	852			
	B	12	.00632	.01666	OVEN ID#	501			
	C	13	.00684	.01797	BALANCE VERIFICATION INITIALS	DPD			
	D	14 *	.00715	.01871	DATE / TARE WEIGHT INITIALS	3-4-22, DPD			
	E	15	.00649	.01574	DATE DRYING INITIATED	3-14-22			
6	A	16	.00675	.01723	TIME DRYING INITIATED	1515			
	B	17	.00692	.01739	OVEN TEMPERATURE (°C) (Actual/Corrected)	105 1105			
	C	18	.00647	.01632	INITIALS	JSS			
	D	19	.00664	.01624	DATE / TIME DRYING TERMINATED	3-15-22, 1110			
	E	20	.00696	.01643	OVEN TEMPERATURE (°C) (Actual/Corrected)	105, 105			
8	A	21	.00655	.01534	BALANCE VERIFICATION INITIALS	VJC			
	B	22	.00640	.01686	TOTAL WEIGHT DATE / INITIALS	3-15-22, VJC			
	C	23	.00682	.01671	COMMENTS:				
	D	24	.00706	.01643					
	E	25	.00678	.01724					
11	A	26	.00675	.01577	CONT = Control	CONC = Concentration	REP = Replicate		
	B	27	.00693	.01683	Wt. = Weight	ORG. = Organism			
	C	28 *	.00679	.01600					
	D	29	.00696	.01647					
	E	30	.00702	.01702					

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters

DATE	3-7-22	3-8-22	3-9-22	3-10-22	3-11-22	3-12-22	3-13-22	3-14-22
TIME	1600	0900	0900	0900	0910	0910	0830	0830
INITIALS	APD	APD	APD	APD	APD	APD	APD	APD
DAY	0	1	2	3	4	5	6	7
Solution	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION							
RW	8.3	8.2	8.3	8.2	8.3	8.2	8.3	8.2
3	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2
5	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2
6	8.3	8.2	8.3	8.3	8.3	8.2	8.3	8.2
8	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2
11	8.3	8.3	8.3	8.3	8.3	8.2	8.3	8.2
*LW	8.3	8.1	8.3	8.2	8.4	8.1	8.2	8.1
METER No	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION							
RW	8.6	7.8	8.9	7.8	8.4	7.5	8.1	7.5
3	8.6	7.8	9.0	7.8	8.5	7.4	8.1	7.4
5	8.7	7.7	9.0	7.8	8.5	7.4	8.1	7.4
6	8.7	7.7	9.1	7.8	8.5	7.4	8.2	7.3
8	8.7	7.7	9.1	7.8	8.5	7.5	8.2	7.2
11	8.7	7.8	9.1	7.8	8.5	7.5	8.3	7.4
*LW	8.1	7.9	8.3	7.9	8.3	7.7	8.3	7.7
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)							
RW	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±°C)	0	0	0	0	0	0	0	0

Comments: ① IE KRI 3-12-22 → [7.8]

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	26	26	26	26	27	26	26
3	26	25	26	26	27	26	26
5	26	26	26	26	27	26	26
6	26	26	26	26	27	26	26
8	26	25	26	26	26	26	26
11	26	26	26	26	26	26	26
*LW	24	26	26	26	26	26	26
Meter No.:	948	948	948	948	948	948	948

Comments:

Test Notes

Include Date, Time, and Initials

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria



Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

BFC1294

24 h Acute *Mysidopsis bahia* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2007.0; NWDLS SOP No. 4017

Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	1-5 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	Once daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time Requirements:	Holding time must not exceed 36 h

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	22-0242	DOB	3-3-22
Source	NWDLS	Age (days)	5 days

Sample Date/Time:	3-7-22	1000
-------------------	--------	------

Test Initiation Date/Time:	3-8-22	1115	Test Initiation Initials:	A0J/ TRG
Test Termination Date/Time:	3-9-22	1115	Test Termination Initials:	A0J

1st Feed Date/Time/Initials:	3-8-22	1557	XRT	2nd Feed Date/Time/Initials:	3-9-22	0840	MB
------------------------------	--------	------	-----	------------------------------	--------	------	----

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments:

Arturo Orozco Jr
Final Review Signature

Data Sheet Preparation - Initials: VJC/AG Date: 3-3-22

End of Test First Review - Initials: A0J Date: 3-9-22

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Acute Toxicity Test with Mysidopsis bahia

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24 hr			0 hr	24 hr
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	9		A		
	B	10	8		B		
	C	10	9		C		
	D	10	7		D		
	E	10	10		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Water Quality Parameters - *Mysidopsis bahia*

Conc. (%)	pH	
	0 hr	24 hr
Cont.	8.2	8.2
100	8.1	8.3
Meter No.	737	737
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	T-710	T-710
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24 hr
Cont.	8.3	7.7
100	9.4	7.6
Meter No.	YS16	YS16
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Salinity (‰)
	0 hr
Cont.	26
100	25
Meter No.	948
Time	1050
Initials	A0J

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------



BFC1293

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	22-0243	DOB	2-22-22
Source	NWDLS	Age (days)	14 days

Sample 1 Date/Time:	3-7-22	1000
---------------------	--------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-8-22	1110	AOS/TRG
Test Termination	3-9-22	1110	AOS

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments:

Arturo Orozco Jr
Final Review Signature

Data Sheet Preparation - Initials: VJC/AOS Date: 3-3-22

End of Test First Review - Initials: AOS Date: 3-8-22

Codes: IE-incorrec entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	4		A		
	B	10	4		B		
	C	10	3		C		
	D	10	3		D		
	E	10	2		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Codes: IE-incorrec entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	SGS-Natgasoline	OF	001	Login	22-0137	NWDLS Job No.	NT-100056
--------	-----------------	----	-----	-------	---------	---------------	-----------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.2	8.2
100	8.1	8.3
Meter No.	737	737
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	T-710	T-710
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.3	8.0
100	9.4	8.0
Meter No.	YS16	YS16
Time	1050	1000
Initials	A0J	A0J

Conc. (%)	Salinity (‰)
	0 hr
Cont.	26
100	25
Meter No.	948
Time	1050
Initials	A0J

Comments:

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

CETIS Analytical Report

Report Date: 17 Mar-22 15:12 (p 1 of 6)
Test Code/ID: 22-0137 / 17-2046-4728

Mysidopsis 7-d Survival, Growth and Fecundity Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	10-8508-3262	Endpoint:	7d Survival Rate	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 15:12	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Batch ID:	04-4197-2443	Test Type:	Growth-Survival-Fec (7d)	Analyst:	Arturo Orozco
Start Date:	07 Mar-22 16:15	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:20	Species:	Mysidopsis bahia	Brine:	HW-Marinemix
Test Length:	6d 22h	Taxon:	Malacostraca	Source:	NWDLS
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	8h	Client:	SGS North America - Scott, LA		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	9.32%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	110	75	2	18	Asymp	0.9223	Non-Significant Effect
		5	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		6	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		8	110	75	2	18	Asymp	0.9223	Non-Significant Effect
		11	105	75	2	18	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.08784	<<	0.4	Yes	Passes Criteria
Control Resp	0.96	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0075611	0.0015122	5	0.1756	0.9706	Non-Significant Effect
Error	0.465005	0.0086112	54			
Total	0.472566		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	1.768	15.09	0.8802	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5422	0.9459	2.1E-12	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
3		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	-2.08%
5		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
6		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
8		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	-2.08%
11		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
3		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	-1.84%
5		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
6		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
8		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	-1.84%
11		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 10-8508-3262
Analyzed: 17 Mar-22 15:12

Endpoint: 7d Survival Rate
Analysis: Nonparametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

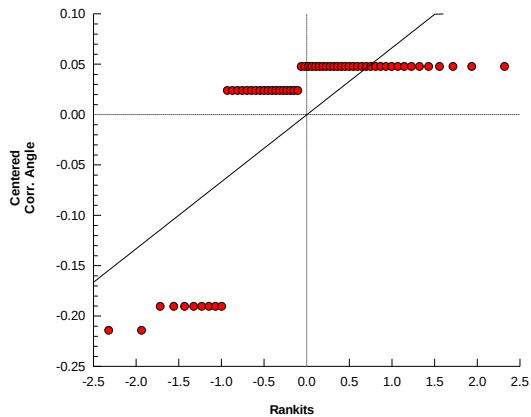
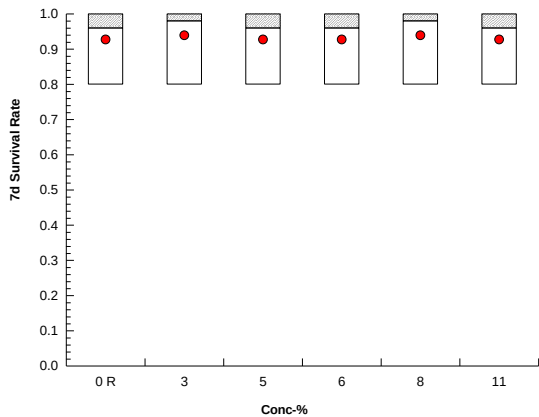
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	0.8000	1.0000	1.0000
3		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	0.8000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000
11		1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	0.8000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.107	1.345	1.345
3		1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345
5		1.345	1.107	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345
6		1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.107	1.345	1.345
8		1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.107
11		1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.107	1.345

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:12 (p 3 of 6)
Test Code/ID: 22-0137 / 17-2046-4728

Mysidopsis 7-d Survival, Growth and Fecundity Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	04-8331-3859	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 15:12	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Batch ID:	04-4197-2443	Test Type:	Growth-Survival-Fec (7d)	Analyst:	Arturo Orozco
Start Date:	07 Mar-22 16:15	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:20	Species:	Mysidopsis bahia	Brine:	HW-Marinemix
Test Length:	6d 22h	Taxon:	Malacostraca	Source:	NWDLS
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	8h	Client:	SGS North America - Scott, LA		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	15.74%

Dunnnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-0.08769	2.289	0.052	18	CDF	0.8581	Non-Significant Effect
		5	-1.473	2.289	0.052	18	CDF	0.9965	Non-Significant Effect
		6	-1.044	2.289	0.052	18	CDF	0.9862	Non-Significant Effect
		8	-0.6577	2.289	0.052	18	CDF	0.9598	Non-Significant Effect
		11	-0.4034	2.289	0.052	18	CDF	0.9261	Non-Significant Effect

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.1523	<<	0.4	Yes	Passes Criteria
Control Resp	0.3318	0.2	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0084421	0.0016884	5	0.6492	0.6633	Non-Significant Effect
Error	0.140442	0.0026008	54			
Total	0.148884		59			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	0.6051	15.09	0.9878	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.987	0.9459	0.7719	Normal Distribution	

Mean Dry Biomass-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3318	0.2956	0.368	0.333	0.234	0.424	0.01598	15.23%	0.00%
3		10	0.3338	0.3007	0.3669	0.358	0.264	0.382	0.01462	13.85%	-0.60%
5		10	0.3654	0.3252	0.4056	0.357	0.298	0.468	0.01776	15.37%	-10.13%
6		10	0.3556	0.3201	0.3911	0.365	0.234	0.414	0.01567	13.94%	-7.17%
8		10	0.3468	0.3133	0.3803	0.358	0.256	0.41	0.01482	13.51%	-4.52%
11		10	0.341	0.3011	0.3809	0.336	0.258	0.438	0.01763	16.35%	-2.77%

Mean Dry Biomass-mg Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.362	0.364	0.312	0.35	0.336	0.32	0.234	0.33	0.424	0.286
3		0.28	0.264	0.276	0.368	0.372	0.35	0.366	0.31	0.382	0.37
5		0.31	0.298	0.308	0.426	0.346	0.468	0.356	0.358	0.366	0.418
6		0.234	0.366	0.392	0.354	0.334	0.414	0.376	0.334	0.364	0.388
8		0.41	0.326	0.386	0.294	0.356	0.382	0.374	0.36	0.324	0.256
11		0.342	0.34	0.332	0.416	0.308	0.284	0.438	0.374	0.318	0.258

Mysidopsis 7-d Survival, Growth and Fecundity Test

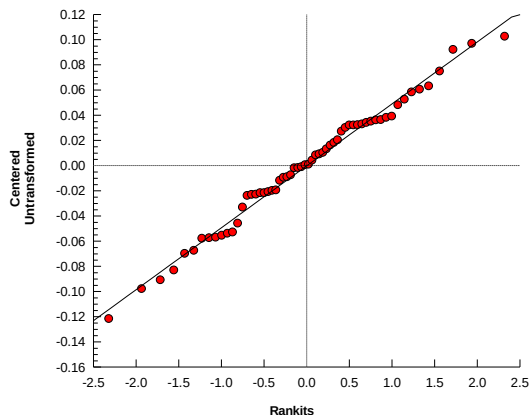
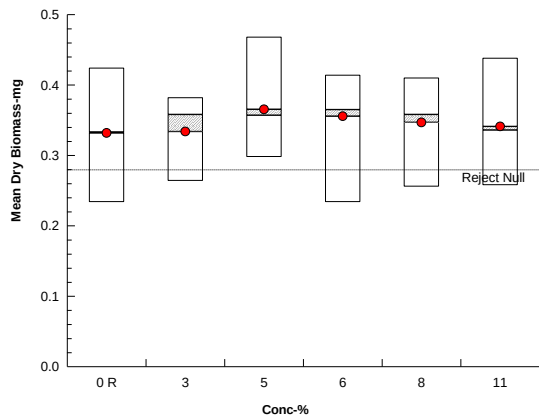
NWDLS Environ. Toxicol. Lab

Analysis ID: 04-8331-3859
 Analyzed: 17 Mar-22 15:12

Endpoint: Mean Dry Biomass-mg
 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
 Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:12 (p 5 of 6)
Test Code/ID: 22-0137 / 17-2046-4728

Mysidopsis 7-d Survival, Growth and Fecundity Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	00-2521-8639	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 15:12	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Batch ID:	04-4197-2443	Test Type:	Growth-Survival-Fec (7d)	Analyst:	Arturo Orozco
Start Date:	07 Mar-22 16:15	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:20	Species:	Mysidopsis bahia	Brine:	HW-Marinemix
Test Length:	6d 22h	Taxon:	Malacostraca	Source:	NWDLS
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	8h	Client:	SGS North America - Scott, LA		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	14.51%

Dunnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.2372	2.289	0.050	18	CDF	0.7535	Non-Significant Effect
		5	-1.581	2.289	0.050	18	CDF	0.9976	Non-Significant Effect
		6	-1.27	2.289	0.050	18	CDF	0.9932	Non-Significant Effect
		8	-0.333	2.289	0.050	18	CDF	0.9137	Non-Significant Effect
		11	-0.463	2.289	0.050	18	CDF	0.9355	Non-Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0122834	0.0024567	5	1.022	0.4138	Non-Significant Effect
Error	0.129771	0.0024032	54			
Total	0.142055		59			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	3.796	15.09	0.5792	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9919	0.9459	0.9622	Normal Distribution	

Mean Dry Weight-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3459	0.3126	0.3792	0.343	0.286	0.424	0.01472	13.46%	0.00%
3		10	0.3407	0.311	0.3704	0.358	0.264	0.382	0.01314	12.20%	1.50%
5		10	0.3806	0.3479	0.4132	0.3693	0.31	0.468	0.01441	11.98%	-10.02%
6		10	0.3738	0.3267	0.4208	0.371	0.234	0.49	0.02079	17.59%	-8.05%
8		10	0.3532	0.3273	0.3791	0.358	0.294	0.41	0.01146	10.26%	-2.11%
11		10	0.356	0.3181	0.394	0.3485	0.258	0.438	0.01677	14.89%	-2.93%

Mean Dry Weight-mg Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.362	0.364	0.312	0.35	0.336	0.32	0.2925	0.4125	0.424	0.286
3		0.28	0.264	0.345	0.368	0.372	0.35	0.366	0.31	0.382	0.37
5		0.31	0.3725	0.385	0.426	0.346	0.468	0.356	0.358	0.366	0.418
6		0.234	0.366	0.49	0.354	0.334	0.414	0.376	0.4175	0.364	0.388
8		0.41	0.326	0.386	0.294	0.356	0.382	0.374	0.36	0.324	0.32
11		0.342	0.34	0.332	0.416	0.308	0.355	0.438	0.374	0.3975	0.258

Mysidopsis 7-d Survival, Growth and Fecundity Test

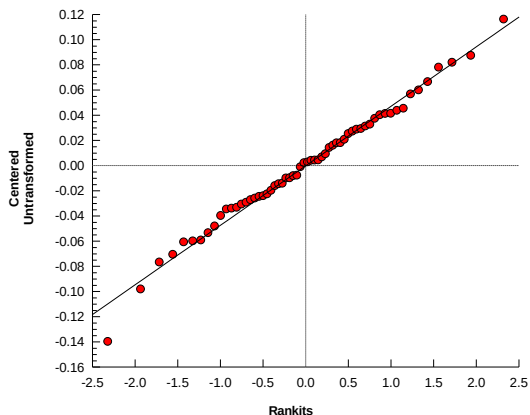
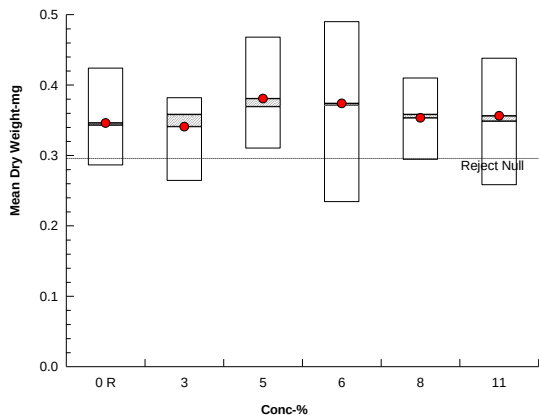
NWDLS Environ. Toxicol. Lab

Analysis ID: 00-2521-8639
 Analyzed: 17 Mar-22 15:12

Endpoint: Mean Dry Weight-mg
 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
 Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 1 of 6)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	01-0894-7032	Endpoint:	7d Survival Rate	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 13:49	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	9h	Client:	SGS North America - Scott, LA		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.41%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		5	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		6	27.5	16	2	8	Asymp	0.8333	Non-Significant Effect
		8	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		11	30	16	1	8	Asymp	0.9446	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.04563	<<	0.4	Yes	Passes Criteria
Control Resp	0.98	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0070825	0.0014165	5	0.8	0.5606	Non-Significant Effect
Error	0.0424949	0.0017706	24			
Total	0.0495774		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.689	3.895	0.0013	Unequal Variances
Variances	Mod Levene Equality of Variance Test	0.8	4.248	0.5640	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5454	0.9031	1.7E-08	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
6		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	0.00%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	0.00%
3		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
5		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
6		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	0.00%
8		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%
11		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-2.36%

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 01-0894-7032	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 13:49	Analysis: Nonparametric-Control vs Treatments	Status Level: 1

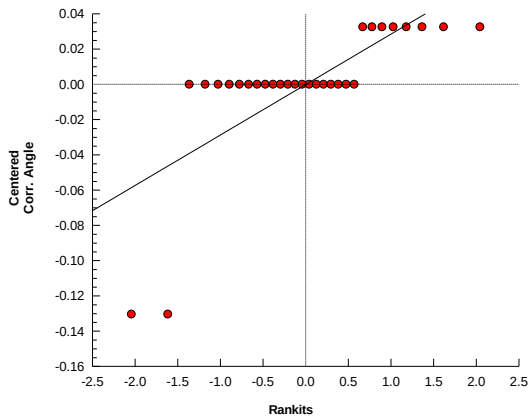
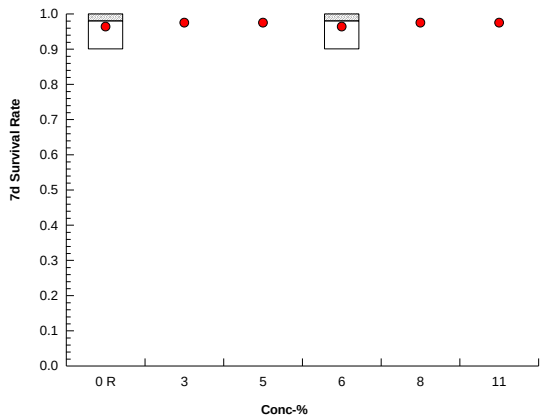
7d Survival Rate Detail

Conc.-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	0.9000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	0.9000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc.-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.249
3		1.412	1.412	1.412	1.412	1.412
5		1.412	1.412	1.412	1.412	1.412
6		1.412	1.412	1.249	1.412	1.412
8		1.412	1.412	1.412	1.412	1.412
11		1.412	1.412	1.412	1.412	1.412

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 3 of 6)
Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	10-5675-1624	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	17 Mar-22 13:49	Analysis:	Parametric-Control vs Treatments	Status Level:	1	
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall	
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean	
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS	Age: 11
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056	
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	9h	Client:	SGS North America - Scott, LA			

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	6	8	6.928	16.67	14.10%

Dunnnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	1.904	2.362	0.162	8	CDF	0.1176	Non-Significant Effect
		5	1.507	2.362	0.162	8	CDF	0.2217	Non-Significant Effect
		6	2.19	2.362	0.162	8	CDF	0.0698	Non-Significant Effect
		8*	2.453	2.362	0.162	8	CDF	0.0416	Significant Effect
		11*	2.842	2.362	0.162	8	CDF	0.0182	Significant Effect

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.09973	<<	0.4	Yes	Passes Criteria
Control Resp	1.147	0.5	>>	Yes	Passes Criteria
PMSD	0.141	0.11	0.28	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.117226	0.0234452	5	2	0.1150	Non-Significant Effect
Error	0.281355	0.0117231	24			
Total	0.398581		29			

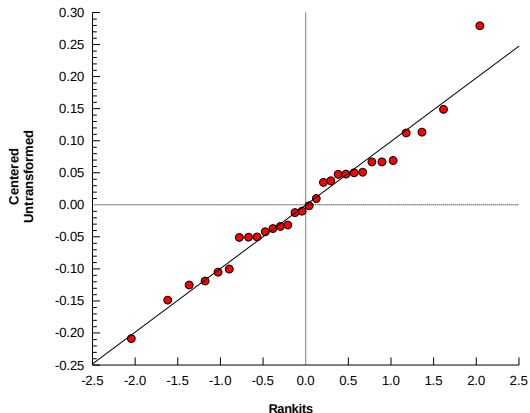
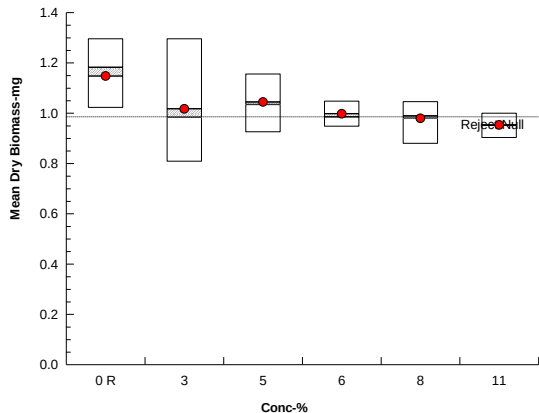
Distributional Tests						
Attribute	Test		Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test		12.09	15.09	0.0336	Equal Variances
Distribution	Shapiro-Wilk W Normality Test		0.9732	0.9031	0.6288	Normal Distribution

Mean Dry Biomass-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.147	1.005	1.289	1.182	1.022	1.296	0.05118	9.97%	0.00%
3		5	1.017	0.7705	1.264	0.983	0.808	1.296	0.08878	19.52%	11.36%
5		5	1.044	0.9294	1.159	1.034	0.925	1.156	0.04133	8.85%	8.99%
6		5	0.9974	0.9381	1.057	0.985	0.947	1.048	0.02135	4.79%	13.07%
8		5	0.9794	0.8898	1.069	0.989	0.879	1.046	0.03228	7.37%	14.64%
11		5	0.9528	0.9001	1.006	0.951	0.902	1	0.01898	4.45%	16.96%

Mean Dry Biomass-mg Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.022
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	0.985	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 10-5675-1624	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-22 13:49	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:50 (p 5 of 6)
Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	15-1651-5057	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	17 Mar-22 13:49	Analysis:	Parametric-Control vs Treatments	Status Level:	1	
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall	
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean	
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS	Age: 11
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056	
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	9h	Client:	SGS North America - Scott, LA			

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	6	8	6.928	16.67	13.54%

Dunnnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	2.282	2.362	0.158	8	CDF	0.0585	Non-Significant Effect
		5	1.877	2.362	0.158	8	CDF	0.1233	Non-Significant Effect
		6	2.248	2.362	0.158	8	CDF	0.0625	Non-Significant Effect
		8*	2.843	2.362	0.158	8	CDF	0.0181	Significant Effect
		11*	3.239	2.362	0.158	8	CDF	0.0074	Significant Effect

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.143177	0.0286354	5	2.545	0.0553	Non-Significant Effect
Error	0.270059	0.0112525	24			
Total	0.413236		29			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	10.69	15.09	0.0578	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9738	0.9031	0.6468	Normal Distribution	

Mean Dry Weight-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.17	1.055	1.285	1.182	1.042	1.296	0.04136	7.90%	0.00%
3		5	1.017	0.7705	1.264	0.983	0.808	1.296	0.08878	19.52%	13.09%
5		5	1.044	0.9294	1.159	1.034	0.925	1.156	0.04133	8.85%	10.76%
6		5	1.019	0.9408	1.098	1.047	0.947	1.094	0.02827	6.20%	12.89%
8		5	0.9794	0.8898	1.069	0.989	0.879	1.046	0.03228	7.37%	16.30%
11		5	0.9528	0.9001	1.006	0.951	0.902	1	0.01898	4.45%	18.57%

Mean Dry Weight-mg Detail						
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.136
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	1.094	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Inland Silverside 7-d Larval Survival and Growth Test

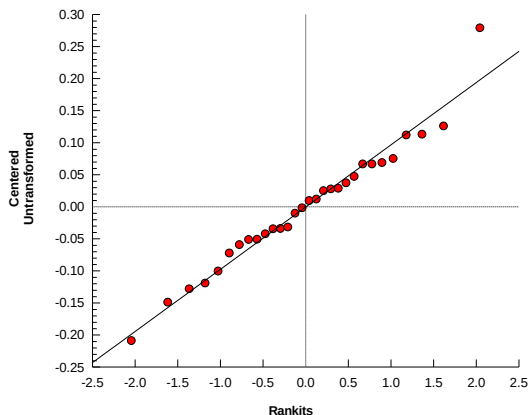
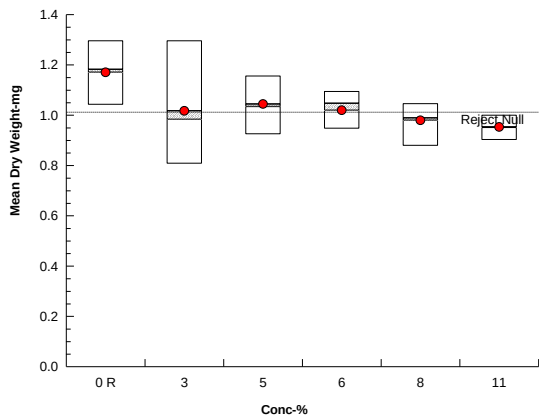
NWDLS Environ. Toxicol. Lab

Analysis ID: 15-1651-5057
 Analyzed: 17 Mar-22 13:49

Endpoint: Mean Dry Weight-mg
 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
 Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:18 (p 1 of 3)
Test Code/ID: 22-0137 / 15-7446-6032Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 06-2145-0251	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-22 15:18	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Batch ID: 18-8800-8171	Test Type: Growth-Survival (7d)	Analyst: Jeffrey Southall
Start Date: 07 Mar-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 14 Mar-22 14:45	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 6d 22h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 01-5631-6243	Code: 9513253	Project: NT-100056
Sample Date: 07 Mar-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 07 Mar-22 14:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	655704	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.09973	<<	0.4	Yes	Passes Criteria
Control Resp	1.147	0.5	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Biomass-mg Summary				Calculated Variate					Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	R	5	1.147	1.022	1.296	0.1144	9.97%	0.0%	1.147	0.0%
3		5	1.017	0.808	1.296	0.1985	19.52%	11.36%	1.031	10.18%
5		5	1.044	0.925	1.156	0.09242	8.85%	8.99%	1.031	10.18%
6		5	0.9974	0.947	1.048	0.04773	4.79%	13.07%	0.9974	13.07%
8		5	0.9794	0.879	1.046	0.07218	7.37%	14.64%	0.9794	14.64%
11		5	0.9528	0.902	1	0.04245	4.46%	16.96%	0.9528	16.96%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.022
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	0.985	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

CETIS Analytical Report

Report Date: 17 Mar-22 15:18 (p 2 of 3)
 Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test

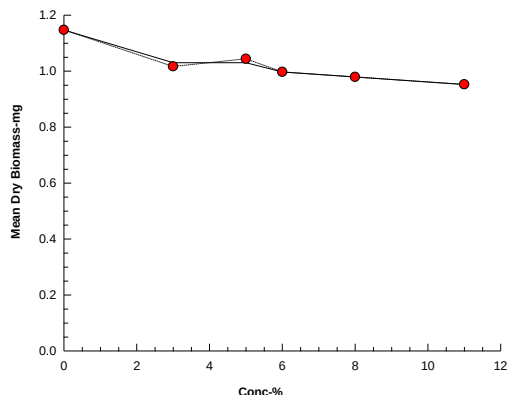
NWDLS Environ. Toxicol. Lab

Analysis ID: 06-2145-0251
 Analyzed: 17 Mar-22 15:18

Endpoint: Mean Dry Biomass-mg
 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.4
 Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 15:18 (p 3 of 3)
Test Code/ID: 22-0137 / 15-7446-6032

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	16-8630-2480	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 15:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	18-8800-8171	Test Type:	Growth-Survival (7d)	Analyst:	Jeffrey Southall
Start Date:	07 Mar-22 16:45	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	14 Mar-22 14:45	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	6d 22h	Taxon:	Actinopterygii	Source:	NWDLS
					Age: 11
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	9h	Client:	SGS North America - Scott, LA		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	46281	200	Yes	Two-Point Interpolation

Point Estimates

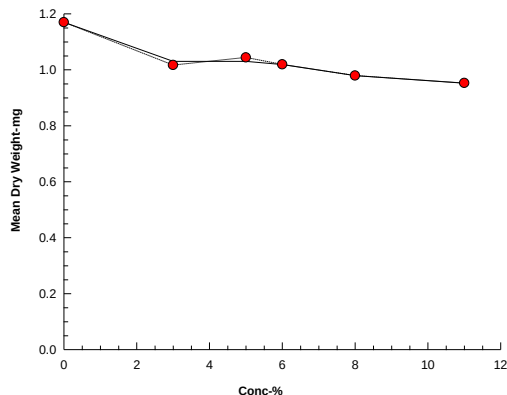
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Weight-mg Summary			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	R	5	1.17	1.042	1.296	0.09249	7.90%	0.0%	1.17	0.0%
3		5	1.017	0.808	1.296	0.1985	19.52%	13.09%	1.031	11.92%
5		5	1.044	0.925	1.156	0.09242	8.85%	10.76%	1.031	11.92%
6		5	1.019	0.947	1.094	0.06321	6.20%	12.89%	1.019	12.89%
8		5	0.9794	0.879	1.046	0.07218	7.37%	16.3%	0.9794	16.3%
11		5	0.9528	0.902	1	0.04245	4.46%	18.57%	0.9528	18.57%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.195	1.296	1.182	1.042	1.136
3		1.296	1.13	0.983	0.868	0.808
5		0.993	1.034	1.113	1.156	0.925
6		1.048	1.047	1.094	0.96	0.947
8		0.879	1.046	0.989	0.937	1.046
11		0.902	0.99	0.921	0.951	1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:55 (p 1 of 2)
Test Code/ID: 22-0137 / 07-4841-0635

Mysidopsis 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	11-1295-8060	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	17 Mar-22 13:54	Analysis:	No Statistical Comparisons Run	Status Level:	1
Batch ID:	05-4793-7344	Test Type:	Survival (1d)	Analyst:	Arturo Orozco
Start Date:	08 Mar-22 11:15	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	09 Mar-22 11:15	Species:	Mysidopsis bahia	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Malacostraca	Source:	NWDLS
					Age: 5
Sample ID:	01-5631-6243	Code:	9513253	Project:	NT-100056
Sample Date:	07 Mar-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	07 Mar-22 14:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	27h	Client:	SGS North America - Scott, LA		

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.9	>>	Yes	Passes Criteria

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.1106	0.1106	1	8.676	0.0186	Significant Effect
Error	0.101985	0.0127481	8			
Total	0.212585		9			

Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Levene Equality of Variance Test	10.82	11.26	0.0110	Equal Variances	
Variances	Mod Levene Equality of Variance Test	6.98	13.75	0.0384	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.8724	0.7411	0.1067	Normal Distribution	

24h Survival Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.8600	0.7184	1.0000	0.9000	0.7000	1.0000	0.0510	13.26%	14.00%

Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	1.202	1.003	1.4	1.249	0.9912	1.412	0.07141	13.29%	14.90%

24h Survival Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	L	1.0000	1.0000	1.0000	1.0000	1.0000	
100		0.9000	0.8000	0.9000	0.7000	1.0000	

Angular (Corrected) Transformed Detail							
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	
0	L	1.412	1.412	1.412	1.412	1.412	
100		1.249	1.107	1.249	0.9912	1.412	

CETIS Analytical Report

Report Date: 17 Mar-22 13:55 (p 2 of 2)
Test Code/ID: 22-0137 / 07-4841-0635

Mysidopsis 24-h Acute Survival Test

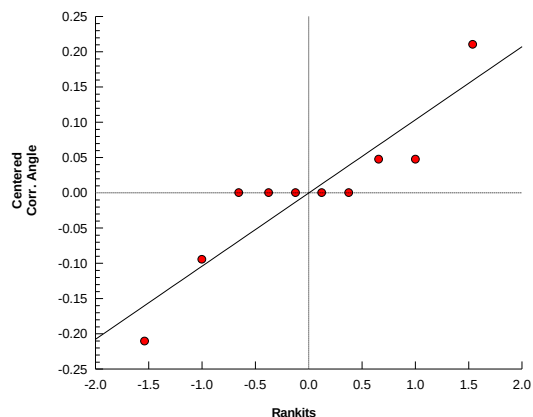
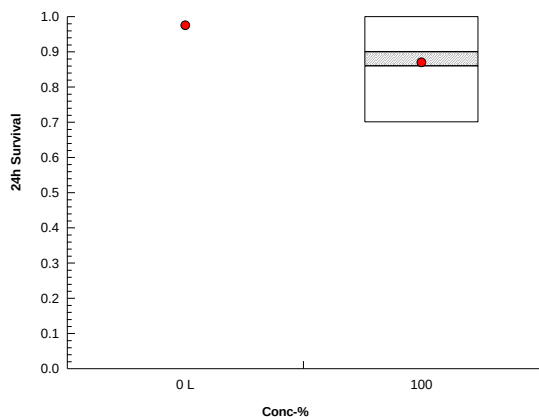
NWDLS Environ. Toxicol. Lab

Analysis ID: 11-1295-8060
Analyzed: 17 Mar-22 13:54

Endpoint: 24h Survival
Analysis: No Statistical Comparisons Run

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Mar-22 13:57 (p 1 of 2)
Test Code/ID: 22-0137 / 13-1082-7466

Inland Silverside 24-h Acute Survival Test										NWDLS Environ. Toxicol. Lab	
Analysis ID:	14-9893-3880		Endpoint:	24h Survival				CETIS Version:	CETISv1.9.4		
Analyzed:	17 Mar-22 13:57		Analysis:	Parametric-Two Sample				Status Level:	1		
Batch ID:	10-5256-3956		Test Type:	Survival (1d)				Analyst:	Arturo Orozco		
Start Date:	08 Mar-22 11:10		Protocol:	EPA/821/R-02-012 (2002)				Diluent:	Laboratory Seawater		
Ending Date:	09 Mar-22 11:10		Species:	Menidia beryllina				Brine:	Instant Ocean		
Test Length:	24h		Taxon:	Actinopterygii				Source:	NWDLS		Age: 14
Sample ID:	01-5631-6243		Code:	9513253				Project:	NT-100056		
Sample Date:	07 Mar-22 08:00		Material:	Industrial Effluent				Source:	WQ0005143000		
Receipt Date:	07 Mar-22 14:50		CAS (PC):					Station:	Natgasoline LLC		
Sample Age:	27h		Client:	SGS North America - Scott, LA							
Data Transform			Alt Hyp				Comparison Result			PMSD	
Angular (Corrected)			C > T				100% failed 24h survival			5.43%	
Equal Variance t Two-Sample Test											
Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)		
Lab Water		100*	19.8	1.86	0.076	8	CDF	<1.0E-37	Significant Effect		
Test Acceptability Criteria											
Attribute		Test Stat	TAC Limits		Overlap		Decision				
Control Resp		1	0.9	>>	Yes		Passes Criteria				
ANOVA Table											
Source		Sum Squares		Mean Square		DF	F Stat	P-Value	Decision(α:5%)		
Between		1.65463		1.65463		1	392	<1.0E-37	Significant Effect		
Error		0.0337641		0.0042205		8					
Total		1.68839				9					
Distributional Tests											
Attribute		Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variances		Levene Equality of Variance Test				9.558	11.26	0.0149	Equal Variances		
Variances		Mod Levene Equality of Variance Test				8.92	13.75	0.0244	Equal Variances		
Distribution		Shapiro-Wilk W Normality Test				0.8106	0.7411	0.0195	Normal Distribution		
24h Survival Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.3200	0.2161	0.4239	0.3000	0.2000	0.4000	0.0374	26.15%	68.00%
Angular (Corrected) Transformed Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	0.5985	0.4844	0.7126	0.5796	0.4636	0.6847	0.04109	15.35%	57.62%
24h Survival Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	L	1.0000	1.0000	1.0000	1.0000	1.0000					
100		0.4000	0.4000	0.3000	0.3000	0.2000					
Angular (Corrected) Transformed Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5					
0	L	1.412	1.412	1.412	1.412	1.412					
100		0.6847	0.6847	0.5796	0.5796	0.4636					

CETIS Analytical Report

Report Date: 17 Mar-22 13:57 (p 2 of 2)
 Test Code/ID: 22-0137 / 13-1082-7466

Inland Silverside 24-h Acute Survival Test

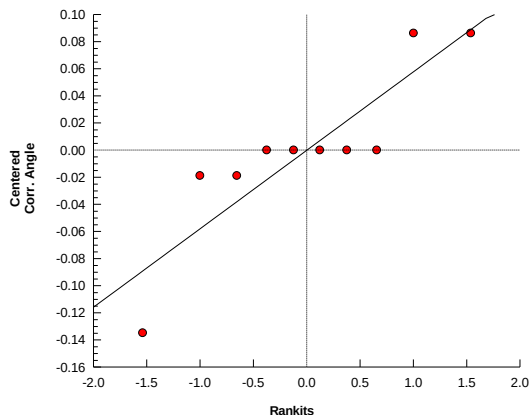
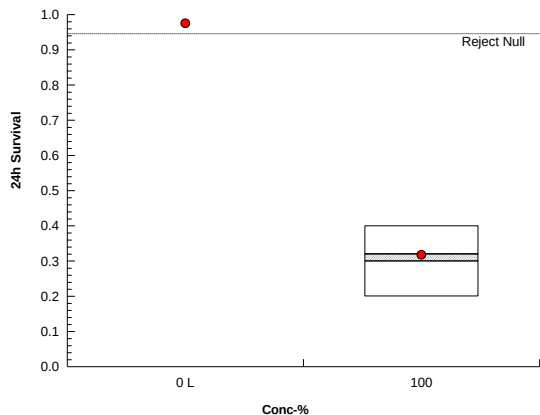
NWDLS Environ. Toxicol. Lab

Analysis ID: 14-9893-3880
 Analyzed: 17 Mar-22 13:57

Endpoint: 24h Survival
 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.4
 Status Level: 1

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

Material: Copper

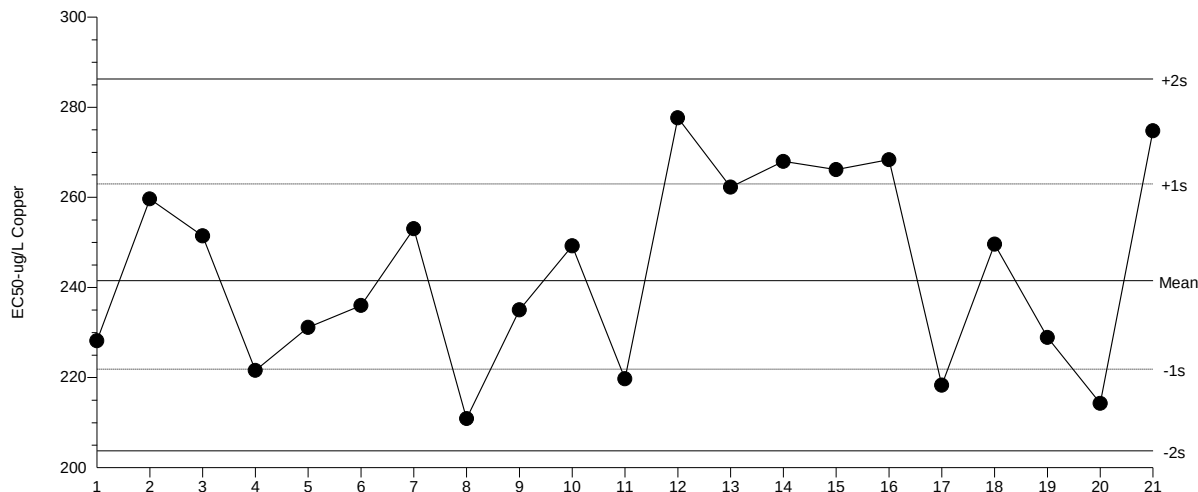
Protocol: EPA/821/R-02-014 (2002)

Endpoint: 7d Survival Rate

Source: Reference Toxicant-REF

2

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 241.5

Count: 20

-1s Warning Limit: 221.8

-2s Action Limit: 203.8

Sigma: n/a

CV: 8.52%

+1s Warning Limit: 263

+2s Action Limit: 286.3

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Sep	8	15:00	228.2	-13.37	-0.6699			11-6087-0554	10-2410-1579	NWDLS Environ. Toxicol.
2			24	14:30	259.6	18.12	0.8508			12-7884-5083	09-0915-1491	NWDLS Environ. Toxicol.
3		Oct	1	17:00	251.5	9.921	0.4736			12-8673-2177	11-4372-5255	NWDLS Environ. Toxicol.
4		Nov	5	15:30	221.6	-19.96	-1.015	(-)		15-3559-8532	09-1641-2750	NWDLS Environ. Toxicol.
5		Dec	17	14:30	231.1	-10.39	-0.5175			21-4079-4760	09-8508-3275	NWDLS Environ. Toxicol.
6	2021	Jan	7	13:30	236	-5.54	-0.273			09-7625-2822	09-9824-9603	NWDLS Environ. Toxicol.
7		Feb	10	14:50	253	11.5	0.5471			16-9790-4594	13-0497-9071	NWDLS Environ. Toxicol.
8			24	13:00	210.9	-30.65	-1.597	(-)		16-9718-1415	03-8028-4958	NWDLS Environ. Toxicol.
9		Mar	17	15:50	235	-6.503	-0.3211			06-7780-0481	01-2571-5315	NWDLS Environ. Toxicol.
10		Apr	7	17:00	249.2	7.696	0.369			19-6064-2436	01-0304-3427	NWDLS Environ. Toxicol.
11		May	20	14:30	219.7	-21.8	-1.113	(-)		14-6201-6744	01-6829-2395	NWDLS Environ. Toxicol.
12		Jun	3	12:00	277.6	36.1	1.639	(+)		16-5190-0226	03-1102-1147	NWDLS Environ. Toxicol.
13		Jul	6	14:36	262.3	20.74	0.969			02-5459-6353	02-8769-4940	NWDLS Environ. Toxicol.
14		Aug	3	14:00	268	26.44	1.222	(+)		07-4115-5990	16-2172-2342	NWDLS Environ. Toxicol.
15		Sep	7	10:30	266.1	24.61	1.142	(+)		08-0819-8101	12-0660-4206	NWDLS Environ. Toxicol.
16		Oct	1	9:50	268.3	26.82	1.239	(+)		06-6763-0892	02-0293-6999	NWDLS Environ. Toxicol.
17		Nov	17	15:15	218.3	-23.24	-1.19	(-)		02-7564-0424	02-4811-1177	NWDLS Environ. Toxicol.
18		Dec	20	13:15	249.6	8.06	0.3862			12-9085-3704	04-5280-3800	NWDLS Environ. Toxicol.
19	2022	Jan	7	12:00	228.9	-12.63	-0.632			09-7824-2132	19-5290-7852	NWDLS Environ. Toxicol.
20		Feb	2	14:30	214.3	-27.26	-1.409	(-)		08-7070-1131	04-2971-6813	NWDLS Environ. Toxicol.
21		Mar	3	16:50	274.7	33.21	1.516	(+)		21-2022-6914	10-4405-5946	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

Material: Copper

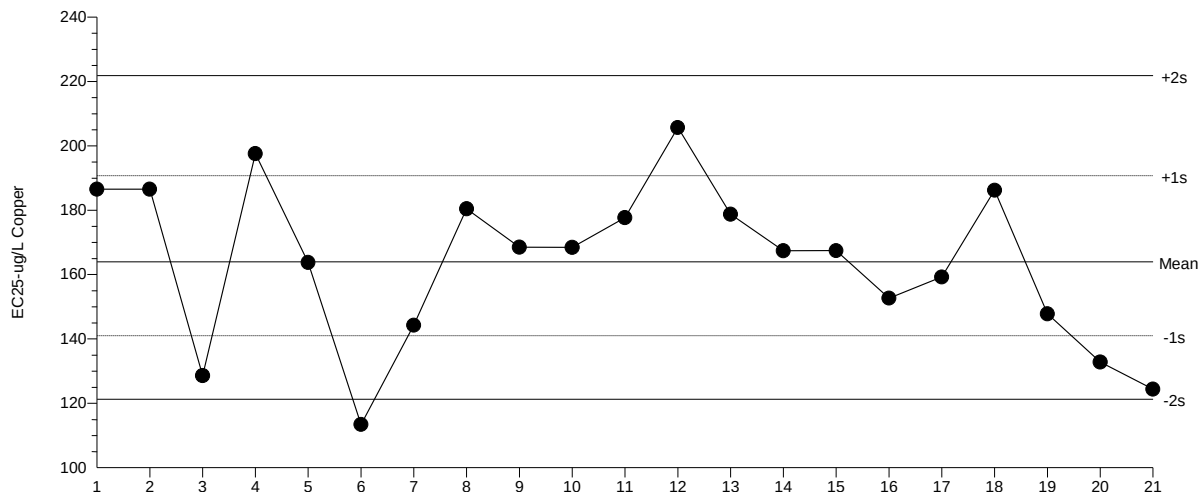
Protocol: EPA/821/R-02-014 (2002)

Endpoint: Mean Dry Biomass-mg

Source: Reference Toxicant-REF

2

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 164

Count: 20

-1s Warning Limit: 141

-2s Action Limit: 121.3

Sigma: n/a

CV: 15.20%

+1s Warning Limit: 190.8

+2s Action Limit: 221.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	14:00	186.5	22.52	0.852			00-5007-0192	02-6643-7773	NWDLS Environ. Toxicol.
2		Sep	8	15:00	186.5	22.51	0.8517			11-6087-0554	05-0666-6653	NWDLS Environ. Toxicol.
3			24	14:30	128.6	-35.41	-1.611	(-)		12-7884-5083	18-1267-6814	NWDLS Environ. Toxicol.
4		Oct	1	17:00	197.6	33.56	1.233	(+)		12-8673-2177	21-3275-2149	NWDLS Environ. Toxicol.
5		Nov	5	15:30	163.8	-0.2512	-0.01015			15-3559-8532	06-2198-3034	NWDLS Environ. Toxicol.
6		Dec	17	14:30	113.4	-50.6	-2.443	(-)	(-)	21-4079-4760	11-0487-5642	NWDLS Environ. Toxicol.
7	2021	Jan	7	13:30	144.3	-19.77	-0.8504			09-7625-2822	00-0312-2687	NWDLS Environ. Toxicol.
8		Feb	24	13:00	180.4	16.42	0.6317			16-9718-1415	05-7426-9890	NWDLS Environ. Toxicol.
9		Mar	17	15:50	168.5	4.484	0.1786			06-7780-0481	05-6203-8521	NWDLS Environ. Toxicol.
10		Apr	7	17:00	168.5	4.437	0.1768			19-6064-2436	10-6743-6316	NWDLS Environ. Toxicol.
11		May	20	14:30	177.7	13.68	0.5306			14-6201-6744	05-5381-5466	NWDLS Environ. Toxicol.
12		Jun	3	12:00	205.7	41.67	1.499	(+)		16-5190-0226	03-1838-2648	NWDLS Environ. Toxicol.
13		Jul	6	14:36	178.7	14.7	0.5685			02-5459-6353	09-0315-4751	NWDLS Environ. Toxicol.
14		Aug	3	14:00	167.4	3.359	0.1343			07-4115-5990	19-7716-0639	NWDLS Environ. Toxicol.
15		Sep	7	10:30	167.4	3.409	0.1362			08-0819-8101	05-4285-4798	NWDLS Environ. Toxicol.
16		Oct	1	9:50	152.7	-11.35	-0.4748			06-6763-0892	00-3098-5433	NWDLS Environ. Toxicol.
17		Nov	17	15:15	159.2	-4.785	-0.1961			02-7564-0424	06-0870-5824	NWDLS Environ. Toxicol.
18		Dec	20	13:15	186.2	22.19	0.8402			12-9085-3704	17-3888-7616	NWDLS Environ. Toxicol.
19	2022	Jan	7	12:00	147.8	-16.23	-0.69			09-7824-2132	18-9406-9090	NWDLS Environ. Toxicol.
20		Feb	2	14:30	132.8	-31.22	-1.398	(-)		08-7070-1131	16-8447-9830	NWDLS Environ. Toxicol.
21		Mar	3	16:50	124.4	-39.64	-1.832	(-)		21-2022-6914	18-2966-6761	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)

Organism: Menidia beryllina (Inland Silverside)

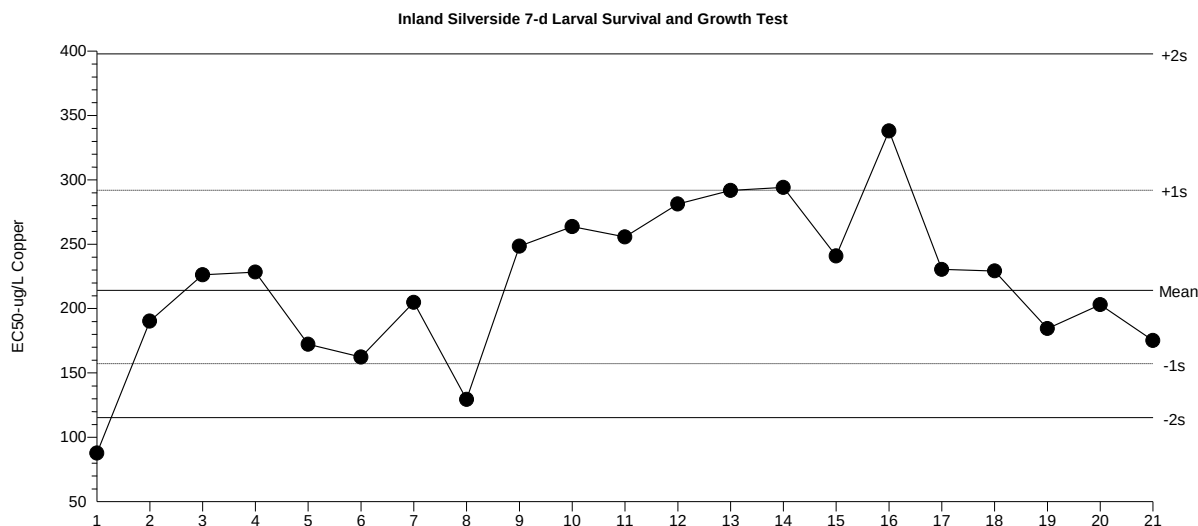
Material: Copper

Protocol: EPA/821/R-02-014 (2002)

Endpoint: 7d Survival Rate

Source: Reference Toxicant-REF

2



Mean: 214.2

Count: 20

-1s Warning Limit: 157.2

-2s Action Limit: 115.3

Sigma: n/a

CV: 31.70%

+1s Warning Limit: 292

+2s Action Limit: 397.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	13:00	87.75	-126.5	-2.883	(-)	(-)	00-2067-2281	01-9684-0239	NWDLS Environ. Toxicol.
2			28	12:00	190.3	-23.95	-0.383			08-9090-1114	17-7032-0201	NWDLS Environ. Toxicol.
3		Sep	3	14:30	226.2	12.02	0.1764			12-3520-4933	14-0147-4372	NWDLS Environ. Toxicol.
4		Oct	1	17:00	228.3	14.12	0.2061			02-3690-0331	14-5182-1701	NWDLS Environ. Toxicol.
5		Nov	5	15:15	172.2	-42	-0.7048			17-5658-0648	10-4083-3854	NWDLS Environ. Toxicol.
6		Dec	17	14:30	162.4	-51.86	-0.8954			09-0707-2334	05-7930-5297	NWDLS Environ. Toxicol.
7	2021	Jan	7	14:30	204.8	-9.392	-0.1448			11-8669-1134	15-7346-5259	NWDLS Environ. Toxicol.
8		Feb	10	12:00	129.4	-84.79	-1.627	(-)		19-0426-1634	11-0292-5070	NWDLS Environ. Toxicol.
9		Mar	18	12:00	248.5	34.25	0.4791			19-2942-0562	19-3228-2714	NWDLS Environ. Toxicol.
10		Apr	7	17:00	263.6	49.41	0.6704			09-6023-9668	00-7899-7098	NWDLS Environ. Toxicol.
11		May	20	13:30	255.6	41.4	0.5707			16-8999-3463	08-8634-5597	NWDLS Environ. Toxicol.
12		Jun	3	13:00	281.2	66.99	0.8788			09-4953-8218	06-7574-1585	NWDLS Environ. Toxicol.
13		Jul	6	14:30	291.7	77.52	0.9976			06-6487-9714	14-1219-8967	NWDLS Environ. Toxicol.
14		Aug	18	16:00	294.1	79.85	1.023	(+)		15-8347-6079	20-3670-2984	NWDLS Environ. Toxicol.
15		Sep	7	10:30	240.9	26.69	0.3792			01-3526-1514	20-5345-6399	NWDLS Environ. Toxicol.
16		Oct	1	11:45	337.9	123.7	1.472	(+)		19-5909-2091	14-4131-0545	NWDLS Environ. Toxicol.
17		Nov	17	15:30	230.4	16.19	0.2353			05-7761-2074	00-5531-0604	NWDLS Environ. Toxicol.
18		Dec	20	13:30	229.2	14.99	0.2185			16-9811-7085	01-0812-0412	NWDLS Environ. Toxicol.
19	2022	Jan	4	13:00	184.5	-29.76	-0.4831			19-3164-8761	02-7203-5408	NWDLS Environ. Toxicol.
20		Feb	28	13:30	203	-11.17	-0.173			21-2117-1383	01-0955-3278	NWDLS Environ. Toxicol.
21		Mar	2	13:30	175.1	-39.07	-0.6505			12-9241-9919	08-0675-1644	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)

Organism: Menidia beryllina (Inland Silverside)

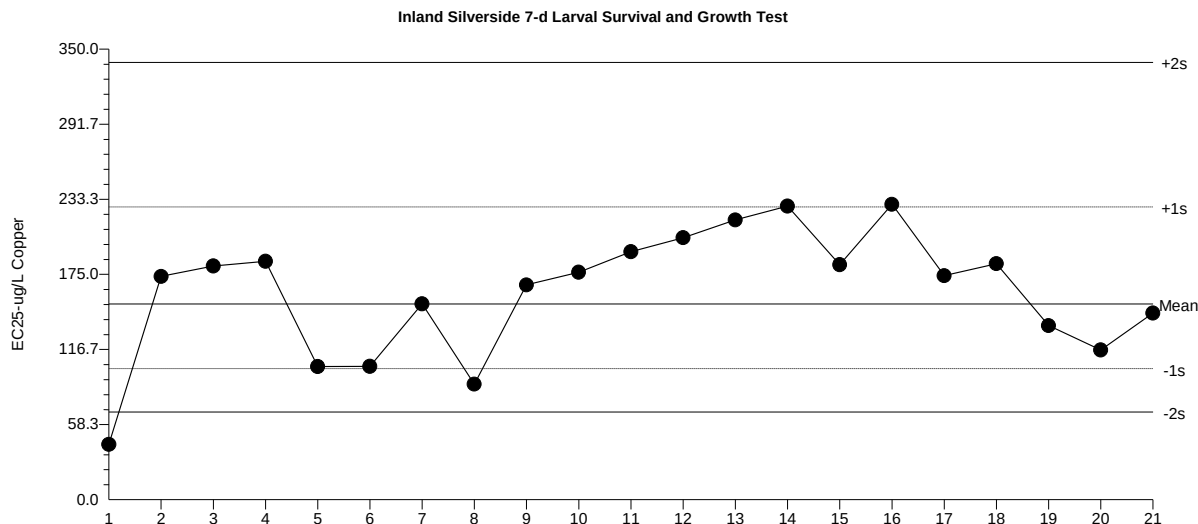
Material: Copper

Protocol: EPA/821/R-02-014 (2002)

Endpoint: Mean Dry Biomass-mg

Source: Reference Toxicant-REF

2



Mean: 152.2

Count: 20

-1s Warning Limit: 101.8

-2s Action Limit: 68.14

Sigma: n/a

CV: 41.80%

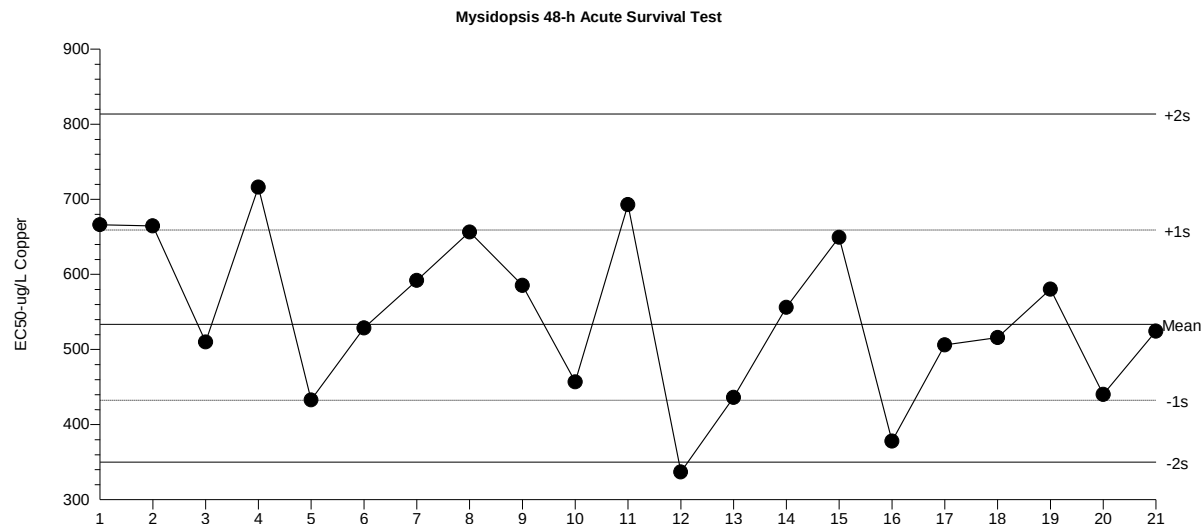
+1s Warning Limit: 227.4

+2s Action Limit: 339.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	19	13:00	42.93	-109.2	-3.15	(-)	(-)	00-2067-2281	19-7900-6410	NWDLS Environ. Toxicol.
2			28	12:00	173.4	21.23	0.3251			08-9090-1114	05-9001-0008	NWDLS Environ. Toxicol.
3		Sep	3	14:30	181.5	29.35	0.439			12-3520-4933	20-0362-1111	NWDLS Environ. Toxicol.
4		Oct	1	17:00	185.1	32.96	0.4881			02-3690-0331	12-6851-2253	NWDLS Environ. Toxicol.
5		Nov	5	15:15	103.4	-48.76	-0.9616			17-5658-0648	14-5079-1687	NWDLS Environ. Toxicol.
6		Dec	17	14:30	103.6	-48.6	-0.9578			09-0707-2334	05-4814-6520	NWDLS Environ. Toxicol.
7	2021	Jan	7	14:30	152.1	-0.06726	-0.0011			11-8669-1134	11-6048-4214	NWDLS Environ. Toxicol.
8		Feb	10	12:00	89.72	-62.46	-1.315	(-)		19-0426-1634	08-1298-5961	NWDLS Environ. Toxicol.
9		Mar	18	12:00	166.8	14.64	0.2287			19-2942-0562	07-9357-5238	NWDLS Environ. Toxicol.
10		Apr	7	17:00	176.7	24.54	0.3722			09-6023-9668	07-2914-9717	NWDLS Environ. Toxicol.
11		May	20	13:30	192.6	40.45	0.5868			16-8999-3463	05-3918-8320	NWDLS Environ. Toxicol.
12		Jun	3	13:00	203.5	51.32	0.7235			09-4953-8218	00-4075-3486	NWDLS Environ. Toxicol.
13		Jul	6	14:30	217.3	65.09	0.8865			06-6487-9714	15-4338-5084	NWDLS Environ. Toxicol.
14		Aug	18	16:00	228.1	75.89	1.007	(+)		15-8347-6079	18-3962-2909	NWDLS Environ. Toxicol.
15		Sep	7	10:30	182.6	30.39	0.4533			01-3526-1514	11-6816-4915	NWDLS Environ. Toxicol.
16		Oct	1	11:45	229.4	77.24	1.022	(+)		19-5909-2091	10-6419-2141	NWDLS Environ. Toxicol.
17		Nov	17	15:30	174	21.81	0.3334			05-7761-2074	00-0061-5553	NWDLS Environ. Toxicol.
18		Dec	20	13:30	183.3	31.14	0.4635			16-9811-7085	09-5560-0815	NWDLS Environ. Toxicol.
19	2022	Jan	4	13:00	135.2	-16.95	-0.2939			19-3164-8761	15-9947-7419	NWDLS Environ. Toxicol.
20		Feb	28	13:30	116.3	-35.88	-0.6693			21-2117-1383	02-2853-0020	NWDLS Environ. Toxicol.
21		Mar	2	13:30	145	-7.204	-0.1207			12-9241-9919	11-2717-2616	NWDLS Environ. Toxicol.

Mysidopsis 48-h Acute Survival Test				All Matching Labs
Test Type: Survival (48h)	Organism: Mysidopsis bahia (Atlantic Mysid)	Material: Copper		
Protocol: EPA/821/R-02-012 (2002)	Endpoint: 24h Survival Rate	Source: Reference Toxicant-REF		



Mean: 533.8 **Count:** 20 **-1s Warning Limit:** 432.3 **-2s Action Limit:** 350.2
Sigma: n/a **CV:** 21.30% **+1s Warning Limit:** 659.1 **+2s Action Limit:** 813.7

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	20	15:00	666.2	132.4	1.051	(+)		12-8954-6498	19-3354-4680	NWDLS Environ. Toxicol.
2		Sep	8	10:45	664.6	130.8	1.04	(+)		08-1280-6786	10-4850-9214	NWDLS Environ. Toxicol.
3		Oct	1	11:00	510	-23.79	-0.2163			04-7978-6726	11-4477-8753	NWDLS Environ. Toxicol.
4		Nov	5	11:00	716.2	182.4	1.395	(+)		03-7542-9576	02-0369-4172	NWDLS Environ. Toxicol.
5		Dec	17	12:00	432.7	-101	-0.9955			17-7539-9530	15-0700-7542	NWDLS Environ. Toxicol.
6	2021	Jan	7	12:00	528.7	-5.077	-0.04534			04-7169-2283	14-4089-2063	NWDLS Environ. Toxicol.
7		Feb	10	11:20	592	58.17	0.4907			07-4566-1012	15-4676-0068	NWDLS Environ. Toxicol.
8		Mar	17	14:45	656.4	122.7	0.9812			18-1331-1255	00-7317-9711	NWDLS Environ. Toxicol.
9		Apr	7	12:30	585.4	51.59	0.4377			03-6046-2365	21-0932-1728	NWDLS Environ. Toxicol.
10		May	19	12:00	456.8	-76.96	-0.7386			21-2526-5582	18-1190-0787	NWDLS Environ. Toxicol.
11		Jun	16	14:00	692.8	159	1.237	(+)		18-4204-1639	00-7051-9201	NWDLS Environ. Toxicol.
12		Jul	6	10:30	336.8	-197	-2.184	(-)	(-)	16-8850-0499	11-3157-5193	NWDLS Environ. Toxicol.
13			14	11:40	436.1	-97.7	-0.959			18-4022-8710	02-2968-5096	NWDLS Environ. Toxicol.
14		Aug	18	16:30	556.1	22.35	0.1946			09-8714-0571	11-5627-8812	NWDLS Environ. Toxicol.
15		Sep	16	14:20	649.4	115.6	0.93			00-5356-8850	21-2851-7126	NWDLS Environ. Toxicol.
16		Oct	1	10:00	377.9	-155.9	-1.638	(-)		15-3507-3847	07-3904-5265	NWDLS Environ. Toxicol.
17		Nov	17	10:10	506.1	-27.71	-0.2529			13-5199-3437	14-5824-0094	NWDLS Environ. Toxicol.
18		Dec	20	13:30	515.9	-17.89	-0.1617			03-4349-9991	20-1400-9527	NWDLS Environ. Toxicol.
19	2022	Jan	4	10:00	580.2	46.44	0.3957			07-5397-4255	21-3233-2826	NWDLS Environ. Toxicol.
20		Feb	2	11:00	440.1	-93.68	-0.9155			11-4910-6286	20-0748-0881	NWDLS Environ. Toxicol.
21		Mar	3	12:00	524.5	-9.336	-0.0837			13-9230-6288	11-4681-8989	NWDLS Environ. Toxicol.

Inland Silverside 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)

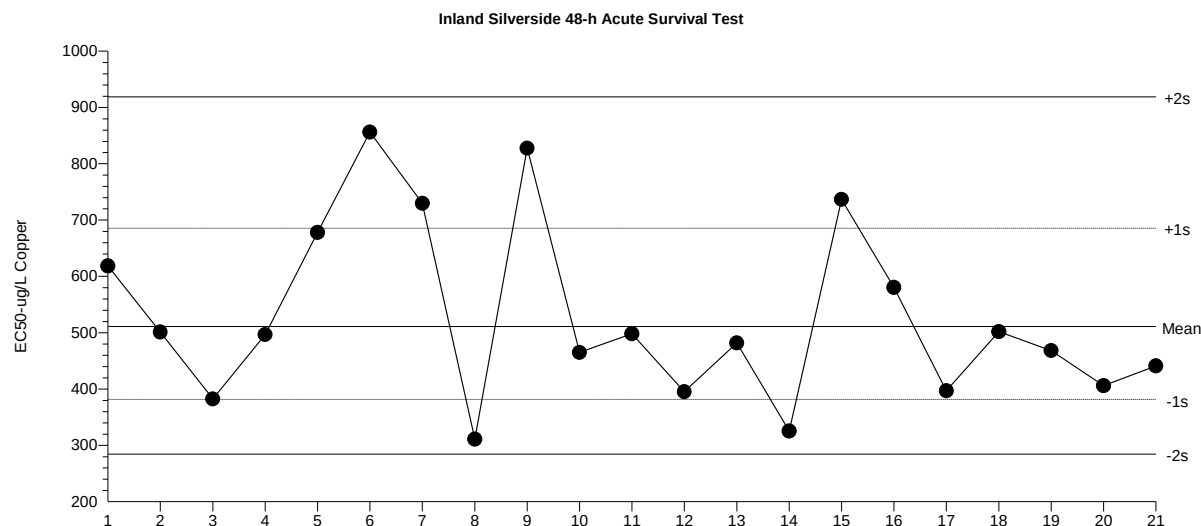
Organism: Menidia beryllina (Inland Silverside)

Material: Copper

Protocol: EPA/821/R-02-012 (2002)

Endpoint: 24h Survival Rate

Source: Reference Toxicant-REF



Mean: 511.3

Count: 20

-1s Warning Limit: 381.4

-2s Action Limit: 284.5

Sigma: n/a

CV: 30.00%

+1s Warning Limit: 685.5

+2s Action Limit: 918.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Jul	23	14:30	618.5	107.1	0.649			08-6415-6891	14-2769-4565	NWDLS Environ. Toxicol.
2		Aug	26	15:30	501.2	-10.11	-0.06814			13-6348-3831	07-0928-6134	NWDLS Environ. Toxicol.
3		Sep	3	16:00	382.4	-129	-0.9917			20-0107-6947	13-0962-2231	NWDLS Environ. Toxicol.
4		Oct	1	11:30	496.7	-14.66	-0.09922			21-0806-7567	04-4491-5029	NWDLS Environ. Toxicol.
5		Nov	5	11:30	678	166.7	0.9626			16-0360-1563	17-0164-0989	NWDLS Environ. Toxicol.
6		Dec	17	13:00	856.2	344.9	1.759	(+)		19-0568-2938	17-4103-8796	NWDLS Environ. Toxicol.
7	2021	Jan	7	13:15	729.7	218.4	1.214	(+)		00-5449-9827	10-8170-9875	NWDLS Environ. Toxicol.
8		Feb	10	15:00	310.9	-200.4	-1.697	(-)		15-7072-1482	03-0536-5095	NWDLS Environ. Toxicol.
9		Mar	14	12:30	827.7	316.4	1.643	(+)		08-7079-1152	09-7911-7847	NWDLS Environ. Toxicol.
10		Apr	7	14:00	464.9	-46.37	-0.3244			16-8079-9145	16-8594-2765	NWDLS Environ. Toxicol.
11		May	19	14:15	498.2	-13.1	-0.08856			14-7855-2168	12-8544-1889	NWDLS Environ. Toxicol.
12		Jun	16	16:20	395.3	-116	-0.8783			17-6017-6916	05-3206-1990	NWDLS Environ. Toxicol.
13		Jul	6	11:00	481.7	-29.6	-0.2035			14-3117-5634	14-6518-7616	NWDLS Environ. Toxicol.
14		Aug	18	11:35	325.2	-186.1	-1.544	(-)		21-0942-3375	17-5943-5259	NWDLS Environ. Toxicol.
15		Sep	7	13:40	736.7	225.3	1.246	(+)		11-4858-6608	17-2141-1518	NWDLS Environ. Toxicol.
16		Oct	1	11:00	580.5	69.17	0.4329			20-1412-2999	02-1468-1616	NWDLS Environ. Toxicol.
17		Nov	17	10:45	396.9	-114.4	-0.8642			21-3705-1925	15-2997-3563	NWDLS Environ. Toxicol.
18		Dec	20	14:00	501.9	-9.443	-0.0636			13-9527-6827	03-4522-6833	NWDLS Environ. Toxicol.
19	2022	Jan	4	10:20	468.2	-43.11	-0.3005			18-9783-1551	07-5649-3213	NWDLS Environ. Toxicol.
20		Feb	2	11:45	405.8	-105.5	-0.7883			03-3697-0262	04-9245-6423	NWDLS Environ. Toxicol.
21		Mar	1	12:50	441	-70.31	-0.5047			01-0829-9135	16-3183-8146	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 03-06-22 0800 TO 03-07-22 0800
NO. 2: FROM 03-08-22 0800 TO 03-09-22 0800
NO. 3: FROM 03-10-22 0800 TO 03-11-22 0800

Test Initiated: 1615 TIME 03-07-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	100	100	100	100	100
	B	100	100	80	100	100	100
	C	100	80	80	80	100	100
	D	100	100	100	100	100	100
	E	100	100	100	100	100	100
	F	100	100	100	100	100	80
	G	80	100	100	100	100	100
	H	80	100	100	80	100	100
	I	100	100	100	100	100	80
	J	100	100	100	100	80	100
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	100	100	100	100	100
	7 day	96	98	96	96	98	96
	CV%①	8.78	6.45	8.78	8.78	6.45	8.78

① coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

NWDLS Job No. NT-100056
NWDLS Login No. 22-0137

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.36	0.28	0.31	0.23	0.41	0.34
B	0.36	0.26	0.30	0.37	0.33	0.34
C	0.31	0.28	0.31	0.39	0.39	0.33
D	0.35	0.37	0.43	0.35	0.29	0.42
E	0.34	0.37	0.35	0.33	0.36	0.31
F	0.32	0.35	0.47	0.41	0.38	0.28
G	0.23	0.37	0.36	0.38	0.37	0.44
H	0.33	0.31	0.36	0.33	0.36	0.37
I	0.42	0.38	0.37	0.36	0.32	0.32
J	0.29	0.37	0.42	0.39	0.26	0.26
Mean Dry Weight in Milligrams	0.33	0.33	0.37	0.36	0.35	0.34
CV (%) ^①	15.23	13.85	15.37	13.94	13.51	16.35
PMSD	Acceptable Range: 37 or less					15.74

① coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

NWDLS Job No. NT-100056
NWDLS Login No. 22-0137

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites
Collected:

NO. 1: FROM <u>03-06-22</u> 0800	TO <u>03-07-22</u> 0800
NO. 2: FROM <u>03-08-22</u> 0800	TO <u>03-09-22</u> 0800
NO. 3: FROM <u>03-10-22</u> 0800	TO <u>03-11-22</u> 0800

Test Initiated: 1645 TIME 03-07-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^❶
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	90	100	100	98	4.56
3%	100	100	100	100	100	100	100	100	0.00
5%	100	100	100	100	100	100	100	100	0.00
6%	100	100	90	100	100	100	100	98	4.56
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

❶ coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

NWDLS Job No. NT-100056
NWDLS Login No. 22-0137

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS ②

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^①
	A	B	C	D	E		
0%	1.20	1.30	1.18	1.04	1.02	1.15	9.97
3%	1.30	1.13	0.98	0.87	0.81	1.02	19.52
5%	0.99	1.03	1.11	1.16	0.93	1.04	8.85
6%	1.05	1.05	0.99	0.96	0.95	1.00	4.79
8%	0.88	1.05	0.99	0.94	1.05	0.98	7.37
11%	0.90	0.99	0.92	0.95	1.00	0.95	4.45
PMSD	Acceptable Range: 28 or less					14.10	

Weights are for: preserved larvae, or X unpreserved larvae

① coefficient of variation = standard deviation x 100/mean

② Although the standard hypothesis test for sublethal indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the dose-response percent effect was actually >11% (IC25 included for support). Therefore, there is no sublethal toxicity.

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth ② = 11 % effluent
d. LOEC growth ② = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Mysidopsis bahia SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-06-22 to 03-07-22
Test Initiated	1115	03-08-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	90
	B	100	80
	C	100	90
	D	100	70
	E	100	100
	MEAN	100	86

1. LC_{50} (*Mysidopsis bahia*) = >100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-06-22 to 03-07-22
Test Initiated	1110	03-08-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	40
	B	100	40
	C	100	30
	D	100	30
	E	100	20
	MEAN	100	32

2. LC_{50} (*Menidia beryllina*) = <100 % effluent
95% Confidence Limits: N/A
Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 1 of 2

22C0408

LA 78206

Lab PM : Helen Conrad		Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes						Schedule Comments:	
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478		Project Comments:							
Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation		Field Results	
22C0408-01	Outfall 001-1	3/6/22 08:00 - 3/7/22 08:00	3/7/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 1DL-2007.0 4°C MB 1DL-2006.0 4°C AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 2.46 pH Field 8.20 Total Chlorine 0.05 Residual WW Field		
22C0408-02	Receiving Water		3/7/22 10:30	AQ Grab	A HDPE 250mL B HDPE 250mL H2SO4 C HDPE 250mL HNO3 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 11.67 pH Field 7.88 Total Chlorine 0.00 Residual WW Field		

LA78206: Chain of Custody

Page 1 of 4





CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 2 of 2

22C0408

(Continued)

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes	Schedule Comments:
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other:		
Sampler (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	3/7/22 13:35	<i>[Signature]</i>	3/7/22 13:55
Print Name	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Clinton Wallace	<i>[Signature]</i> 3/7/22	1400	<i>[Signature]</i>	3-7-22 13:55
Affiliation	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature)	Date/Time
Providence	<i>[Signature]</i>	3-7-22 1450	<i>[Signature]</i>	3/7/22 1400
Custody Seal: Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 2.5/2.5 °C
Container Intact: Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210879256

Tox Weekly Kits - Deliver

wko_NWDLs_COC_LS Revision 4.1 Effective: 2/17/2022

LA78206: Chain of Custody

Page 2 of 4



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

22C0409

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 2	Schedule Comm
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0409-01	Outfall 001-2	3/8/22 08:00 3/9/22 08:00	3/9/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.6 pH Field 8.2 Total Chlorine 0.9 Residual WW Field

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other:	
Sampler (Signature)	Relinquished By (Signature)	Date/Time 3/9/22 13:55	Received By (Signature)
Print Name	Relinquished By (Signature)	Date/Time 3/9/22	Received By (Signature)
Affiliation	Relinquished To Lab By (Signature)	Date/Time 3-9-22 15:05	Received for Laboratory By (Signature)
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
Tox Weekly Kits - Deliver		Tox Weekly Kits - Deliver	

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/202

LA78206: Chain of Custody

Page 3 of 4



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-21-34 TCEQ-TOX T104704202-21-16



Page 1 of 1

22C0410

Lab PM : Helen Conrad	Project Name : Natgasoline - WET Quarterly Sample 3	Schedule Comments
SGS North America Inc. - Houston Amy Jackson 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 230-0478	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/EUP	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22C0410-01	Outfall 001-3	3/10/22 08:00 3/11/22 08:00	3/11/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.77 pH Field 8.36 Total Chlorine 0.1e Residual WW Field

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other:	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time (Circle and Write ID Below)	Received By: (Signature)
Print Name	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature)
Custody Seal: Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact: Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
Temperature: 41/4.1 °C		Thermometer ID: 210879256	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/20

Page 13 of 61

LA78206: Chain of Custody

Page 4 of 4





130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www. NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

June 08, 2022

LABORATORY REPORT

Leimar Rodriguez
SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Report ID: 20220608135722MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
06/08/2022 13:57

Work Order Case Narrative

NWDLS Job No: 22E0487, 22E0497, 22E0498 (22-0313)
TPDES Permit No: WQ0005143000
Project: SGS North America (Scott, LA) - Natgasoline
Sample Locations: Outfall 001 - 2Q'22 - 7-day chronic (*M. bahia*, *M. beryllina*)

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001				
TPDES PERMIT NO.	WQ0005143000				
SPECIES	Mysidopsis bahia		TEST DATE	16-23 May 2022	
TEST RESULTS	Pass				
Parameter	Survival		Sublethal		
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40	
Control Results	98	6.45	0.40	15.66	
Critical Dilution (8%)	98	6.45	0.38	30.95	
DMR REPORTING			Parameter Code		
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0	
Report the NOEC % for survival:			TOP3E	11	
Report the LOEC % for survival:			TXP3E	>11	
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0	
Report the NOEC % for growth:			TPP3E	11	
Report the LOEC % for growth:			TYP3E	>11	
PMSD (Acceptable Range: 37 or less):				18.03	
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.					

SPECIES	Menidia beryllina			TEST DATE	16-23 May 2022	
TEST RESULTS	Pass					
Parameter	Survival			Sublethal		
	Percentage (%)	Coef. of Var. (%)		Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40		≥0.50	≤ 40	
Control Results	100	0.00		1.17	3.33	
Critical Dilution (8%)	100	0.00		1.39	11.31	
DMR REPORTING					Parameter Code	
Is the NOEC for survival less than the critical dilution?				No	TLP6B	0
Report the NOEC % for survival:					TOP6B	11
Report the LOEC % for survival:					TXP6B	>11
Is the NOEC for growth less than the critical dilution?				No	TWP6B	0
Report the NOEC % for growth:					TPP6B	11
Report the LOEC % for growth:					TYP6B	>11
PMSD (Acceptable Range: 28 or less):						16.30
Retest Number 1	Parameter 22415	N/A	Retest Number 2		Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.						

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
06/08/2022 13:57

Chemical Analyses

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001
Lab Sample ID: 22E0487-01

Sample Matrix: Waste Water
Date Collected: 05/16/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	100	mg/L		1	10.0	10.0	BFE2835	05/23/2022 09:31	AKA
General Chemistry SM 2510 B	Conductivity	A	2410	umhos/cm @ 25 °C		1	2.00	2.00	BFE2835	05/23/2022 09:31	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	164	mg/L		1		10.0	BFE2720	05/19/2022 17:22	CJP
General Chemistry EPA 350.1	Ammonia as N	A	15.6	mg/L		20	0.400	1.00	BFE2203	05/17/2022 14:24	CST
General Chemistry SM 2520 B	Salinity	N	1.24	Salinity units		1	1.00	1.00	BFE2835	05/23/2022 09:31	AKA
Field Hach 10360	DO Field	N	10.3	mg/L		1	1.00	1.00	BFE2144	05/16/2022 08:00	DH
Field SM 4500-H+ B	pH	A	7.95	pH Units @ 25 °C		1	1.00	1.00	BFE2144	05/16/2022 08:00	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BFE2144	05/16/2022 08:00	DH

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water
Lab Sample ID: 22E0487-02

Sample Matrix: Waste Water
Date Collected: 05/16/2022 10:45
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	256	mg/L		1		10.0	BFE2720	05/19/2022 17:22	CJP
General Chemistry EPA 350.1	Ammonia as N	A	0.309	mg/L		1	0.0200	0.0500	BFE2203	05/17/2022 11:42	CST
Field Hach 10360	DO Field	N	10.4	mg/L		1	1.00	1.00	BFE2144	05/16/2022 10:45	DH
Field SM 4500-H+ B	pH	A	7.80	pH Units @ 25 °C		1	1.00	1.00	BFE2144	05/16/2022 10:45	DH
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BFE2144	05/16/2022 10:45	DH

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water
Lab Sample ID: 22E0487-02RE1

Sample Matrix: Waste Water
Date Collected: 05/16/2022 10:45
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃ (Rerun)	A	36.5	mg/L		1	10.0	10.0	BFE3327	05/26/2022 13:05	AKA
General Chemistry SM 2510 B	Conductivity (Rerun)	A	2010	umhos/cm @ 25 °C		1	2.00	2.00	BFE3327	05/26/2022 13:05	AKA
General Chemistry SM 2520 B	Salinity (Rerun)	N	1.02	Salinity units		1	1.00	1.00	BFE3327	05/26/2022 13:05	AKA

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2
Lab Sample ID: 22E0497-01

Sample Matrix: Waste Water
Date Collected: 05/18/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	120	mg/L		1	10.0	10.0	BFE3327	05/26/2022 12:07	AKA
General Chemistry SM 2510 B	Conductivity	A	1920	umhos/cm @ 25 °C		1	2.00	2.00	BFE3327	05/26/2022 12:07	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	126	mg/L		1		10.0	BFE2677	05/19/2022 15:31	CJP
General Chemistry EPA 350.1	Ammonia as N	A	9.78	mg/L		10	0.200	0.500	BFE2473	05/19/2022 12:10	PNU
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BFE3327	05/26/2022 12:07	AKA

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
 Tel: (936) 321-6060
 Email: lab@nwdls.com
 www: NWDLS.com
 TCEQ T104704238-22-36
 TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
 500 Ambassador Caffery Parkway
 Scott, LA 70583

Reported:
 06/08/2022 13:57

Chemical Analyses
 (Continued)

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2 (Continued)
Lab Sample ID: 22E0497-01

Sample Matrix: Waste Water
Date Collected: 05/18/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
Field Hach 10360	DO Field	N	6.25	mg/L		1	1.00	1.00	BFE2606	05/18/2022 08:00	ALR
Field SM 4500-H+ B	pH	A	7.76	pH Units @ 25 °C		1	1.00	1.00	BFE2606	05/18/2022 08:00	ALR
Field SM 4500-Cl G	Total Residual Chlorine	A	0.03	mg/L	U	1	0.25	0.25	BFE2606	05/18/2022 08:00	ALR

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3
Lab Sample ID: 22E0498-01

Sample Matrix: Waste Water
Date Collected: 05/20/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	91.2	mg/L		1	10.0	10.0	BFE3518	05/27/2022 12:10	AKA
General Chemistry SM 2510 B	Conductivity	A	1360	umhos/cm @ 25 °C		1	2.00	2.00	BFE3518	05/27/2022 12:10	AKA
General Chemistry SM 2340 C	Total hardness as CaCO3	N	176	mg/L		1		10.0	BFE3095	05/23/2022 18:00	CJP
General Chemistry EPA 350.1	Ammonia as N	A	5.64	mg/L		10	0.200	0.500	BFE2931	05/23/2022 13:27	PNU
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BFE3518	05/27/2022 12:10	AKA
Field Hach 10360	DO Field	N	7.29	mg/L		1	1.00	1.00	BFE3017	05/20/2022 08:00	ALR
Field SM 4500-H+ B	pH	A	7.84	pH Units @ 25 °C		1	1.00	1.00	BFE3017	05/20/2022 08:00	ALR
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BFE3017	05/20/2022 08:00	ALR

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
06/08/2022 13:57

Sample Condition Checklist

Work Order: 22E0487

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22E0497

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22E0498

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



SGS North America Inc. - Houston
500 Ambassador Caffery Parkway
Scott, LA 70583

Reported:
06/08/2022 13:57

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available

CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 2

22E0487

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston Kathleen Vienne 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 237-4775	Project Name : Natgasoline - WET Quarterly Sample 1 Project Comments:	Schedule Comments:
---	--	---------------------------

Sample ID	Collection Point	Date/Time Begin/ END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22E0487-01	Outfall 001	5/15/22 08:00/ 5/16/22 08:00	5/16/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field ① <u>10.30</u> pH Field <u>7.80</u> Total Chlorine <u>0.00</u> Residual WW Field
22E0487-02	Receiving Water	—	5/16/22 10:45	AQ Grab	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>10.30</u> pH Field <u>7.80</u> Total Chlorine <u>0.00</u> Residual WW Field



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 2 of 2

22E0487

(Continued)

TCEQ T104704238-22-36

TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston
Kathleen Vienne
500 Ambassador Caffery Parkway
Scott, LA 70583
Phone: (337) 237-4775

Project Name : Natgasoline - WET Quarterly Sample 1

Schedule Comments:

Project Comments:

Field Remarks: ① IE DH 05-16-22 (DO 10.29 pH 7.95)		Preservation: H2SO4 HNO3 NaOH Other: _____	
Sampler (Signature): <i>[Signature]</i>	Relinquished By (Signature): <i>[Signature]</i>	Date/Time: 5/16/22 13:40	Received By (Signature): <i>[Signature]</i>
Print Name: Clinton Wallace	Relinquished By (Signature): <i>[Signature]</i>	Date/Time: 5-16-22 2:07	Received By (Signature): <i>[Signature]</i>
Affiliation: Providence	Relinquished To Lab By (Signature): <i>[Signature]</i>	Date/Time: 5-16-22 1510	Received for Laboratory By (Signature): <i>[Signature]</i>
Custody Seal : Yes / No		COC Labels Agree: Yes / No	
Container Intact : Yes / No		Appropriate Containers: Yes / No	
Appropriate Volume: Yes / No		Coolers Intact: Yes / No	
Received on Ice: Yes / No		Samples Accepted: Yes / No	
Temperature: _____ °C		Thermometer ID: _____	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22E0497

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston Kathleen Vienne 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 237-4775	Project Name : Natgasoline - WET Quarterly Sample 2		Schedule Comments:
	Project Comments:		

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22E0497-01	Outfall 001-2	5/17/22 08:00 5/18/22 08:00	5/18/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 6.25 pH Field 7.70 Total Chlorine 0.03 Residual WW Field ALR 5-18-22

Field Remarks:		Preservation: <u>H2SO4</u> <u>HNO3</u> NaOH Other:	
Sampler (Signature)		Relinquished By (Signature)	
Print Name Clinton Wallace		Relinquished By (Signature)	
Affiliation Providence		Relinquished To Lab By (Signature)	
Custody Seal: Yes / No		COC Labels Agree: Yes / No	
Container Intact: Yes / No		Appropriate Containers: Yes / No	
Appropriate Volume: Yes / No		Coolers Intact: Yes / No	
Received on Ice: Yes / No		Samples Accepted: Yes / No	
Temperature: 4.1/4.1 °C		Thermometer ID: 210879256	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22E0498

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16

SGS North America Inc. - Houston Kathleen Vienne 500 Ambassador Caffery Parkway Scott, LA 70583 Phone: (337) 237-4775	Project Name : Natgasoline - WET Quarterly Sample 3		Schedule Comments:
	Project Comments:		

Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22E0498-01	Outfall 001-3	5/19/22 08:00 5/20/22 08:00	5/20/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 7.29 pH Field 7.84 Total Chlorine 0.08 Residual WW Field 0.08 #1 5/20/22 @ 13:50

Field Remarks:		Preservation: (Circle and Write ID) H2SO4 22E0498 HNO3 22E0498 NaOH Other:	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time 5/20/22 13:35	Received By: (Signature) [Signature]
Print Name	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation	Relinquished To Lab By: (Signature)	Date/Time 5/20/22 14:56	Received for Laboratory By: (Signature)
Custody Seal: Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No
Container Intact: Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No
		Received on Ice: Yes / No	Samples Accepted: Yes / No
		Temperature: 3.1 °C	Thermometer ID: 210879264

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	5-16-22	0500	Sample 3 Date/Time:	5-20-22	0800
Sample 2 Date/Time:	5-18-22	0800 (1)	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	5-16-22	22-0313 -1	RW051622	JSS	Day 4	5-20-22	22-0313 -2	RW051622	WAS JSS
Day 1	5-17-22	22-0313 -1	RW051622	JSS	Day 5	5-21-22	22-0313 -3	RW051622	WAS JSS
Day 2	5-18-22	22-0313 -1	RW051622	JSS	Day 6	5-22-22	22-0313 -3	RW051622	WAS JSS
Day 3	5-19-22	22-0313 -2	RW051622	WAS JSS					

*LW Batch #: 2205154-2205341

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: ① IE M_u 5-27-22 → [0800]

Data Sheet Preparation : Initials: JSS Date: 5-12-22
End of Test Review : Initials: JSS Date: 5-23-22 Final Review (signature) Sharon Hay

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters

DATE	5/16/22	5-17-22	5-18-22	5-19-22	5-20-22	5-21-22	5-22-22	5/23/22						
TIME	1530	0845	0845	0900	0900	1000	1000	0815						
INITIALS	SS PPD	BRM SS	BRM SS	SS BRM	SS BRM	SS BRM	SS BRM	SS BRM						
DAY	0	1	2	3	4	5	6	7						
Solution	New	Old	New	Old	New	Old	New	Old						
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.3	8.1	8.5	8.0	8.4	7.9	8.2	8.3	8.0	8.4	8.1	8.3	8.1	
3	8.3	8.1	8.5	8.1	8.4	7.9	8.2	8.0	8.3	8.1	8.4	8.2	8.3	
5	8.3	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	
6	8.4	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	
8	8.4	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	
11	8.3	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	
*LW	8.4	8.1	8.4	8.0	8.2	7.8	8.2	8.0	8.3	8.0	8.3	8.1	8.2	
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.2	8.5	8.5	7.9	8.4	7.6	8.7	8.3	8.3	8.3	8.5	8.4	8.7	
3	8.0	8.1	8.4	7.8	8.3	7.6	8.7	8.3	8.3	8.3	8.5	8.4	8.7	
5	8.1	8.0	8.5	7.8	8.3	7.5	8.7	8.2	8.4	8.2	8.5	8.4	7.8	
6	8.1	8.0	8.5	7.8	8.4	7.7	8.7	8.1	8.4	8.0	8.5	8.3	8.7	
8	8.2	8.0	8.5	7.8	8.4	7.8	8.7	8.1	8.5	7.9	8.5	8.3	8.7	
11	8.2	8.0	8.6	7.9	8.4	7.7	8.8	8.0	8.5	7.8	8.5	8.2	8.7	
*LW	8.3	8.2	8.8	7.9	8.5	7.6	8.8	8.2	7.9	8.2	8.5	8.2	8.4	
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	
3	25	25	25	25	25	25	25	25	25	25	25	25	25	
5	25	25	25	25	25	25	25	25	25	25	25	25	25	
6	25	25	25	25	25	25	25	25	25	25	25	25	25	
8	25	25	25	25	25	25	25	25	25	25	25	25	25	
11	25	25	25	25	25	25	25	25	25	25	25	25	25	
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

- ① IE MAGS 20-22-22 [7.0]
- ② IE MAG 5-20-22 [8.3]
- ③ IE BEM 5-22-22 [8.7]

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	24	24	24	25	25	24	25
3	24	24	24	25	25	24	25
5	24	24	24	25	25	24	25
6	24	24	24	25	25	24	25
8	24	24	24	25	25	24	25
11	24	24	24	25	25	24	25
*LW	25	25	25	25	24	25	25
Meter No.:	948	948	948	948	948	948	948

Biological Data

Test Organism Data			
Test Organism Batch #	22-0429	DOB	5-9-22
Source	NWDLS	Age	7 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	██████████	2201868	██████████	4	2201880	2201866	JKW/KRO
1	2201880	2201880	JKW/JKW	5	2201866	2201866	KRO/KRS
2	2201880	2201880	JKW/JKW	6	2201866	2201866	KRO/KRO
3	2201880	2201880	JKW/JKW	7	2201866	██████████	JKW/██████████

Comments:

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	5	5	5	5	5	5	5	5	8	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	4	4	4		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	4	4	4	4	4
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
3	A	5	5	5	5	5	5	5	5	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	4	4	4	4	4	4	4
	G	5	4	4	4	4	4	4	4		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	3	3	3	3
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	4	4	4	4	4	3	3		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	4	4	4
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	5	5	5		C								
	D	5	5	5	5	5	5	5	5		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	5	5	5	5		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	5	5	5	5	5		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	5	5		J								
Date	5/16/22	5/17/22	5/18/22	5/19/22	5/20/22	5/21/22	5/22/22	5/23/22		Comments: DIEB RM 5-23-22 -> L4									
Time	1700	1400	1100	1120	1035	1640	1350	1500											
Init	BRN	SSS	SSS	SSS	SSS	SSS	SSS	SSS											

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00451	.00642	6	A	31	.00447	.00648
	B	2	.00436	.0065		B	32	.00438	.00617
	C	3	.00436	.00616		C	33	.00412	.00622
	D	4	.00446	.00645		D	34	.00418	.00628
	E	5	.00444	.00620		E	35 *	.00440	.00620
	F	6	.00435	.00667		F	36	.00428	.00554
	G	7 *	.00483	.00683		G	37	.00436	.00629
	H	8	.00462	.00696		H	38	.00447	.00636
	I	9	.00421	.00620		I	39	.00437	.00624
	J	10	.00461	.00705		J	40	.00430	.00612
3	A	11	.00464	.00648	8	A	41	.00450	.00562
	B	12	.00446	.00603		B	42 *	.00444	.00686
	C	13	.00468	.00650		C	43	.00416	.00550
	D	14	.00416	.00613		D	44	.00457	.00698
	E	15 *	.00454	.00655		E	45	.00459	.00645
	F	16	.00479	.00685		F	46	.00452	.00587
	G	17	.00420	.00546		G	47	.00428	.00639
	H	18	.00431	.00608		H	48	.00460	.00608
	I	19	.00448	.00592		I	49	.00446	.00645
	J	20	.00459	.00618		J	50	.00444	.00747 ③
5	A	21	.00459	.00616	11	A	51	.00462	.00620
	B	22	.00433	.00620		B	52	.00446	.00647
	C	23	.00439	.00593		C	53	.00435	.00618
	D	24	.00470	.00608		D	54	.00458	.00640
	E	25	.00420	.00566		E	55	.00447	.00634
	F	26	.00425	.00613		F	56	.00432	.00525
	G	27	.00466	.00635		G	57	.00469	.00670
	H	28	.00411	.00592		H	58 *	.00433	.00617
	I	29 *	.00482	.00669		I	59	.00479	.00642
	J	30	.00436	.00637		J	60	.00466	.00601

Comments:
 ① IEMAG52622 → (.00647)
 ② IEMAG52622 → (.00642)
 ③ IEMAG52622 → (.00754)
 ④ IEMAG52622 → (.00570)
 ⑤ IEMAG52622 → (.00606)

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	
*LW	A	61	.00451	.00582	BALANCE ID#	852
	B	62	.00468	.00632	OVEN ID#	5W1
	C	63	.00470	.00680	BALANCE VERIFICATION INITIALS	DPD
	D	64	.00450	.00623	DATE/ TARE WEIGHT INITIALS	5-19-22, DPD
	E	65	.00471	.00694	DATE DRYING INITIATED	5/23/22
	F	66	.00454	.00628	TIME DRYING INITIATED	1530
	G	67	.00469	.00654	OVEN TEMP(Act/Corr) (°C)	105, 105
	H	68	.00472	.00637	INITIALS	BRM/JS
	I	69	.00431	.00617		
	J	70	.00458	.00570		
	A	71			DATE/TIME DRYING TERMINATED	5-24-22/1530
	B	72			OVEN TEMP (Act/Corr) (°C)	105, 105
	C	73			BALANCE VERIFICATION INITIALS	MAG
	D	74			TOTAL WEIGHT DATE/INITIALS	5-26-22, MAG
	E	75			COMMENTS:	
	F	76				
	G	77				
	H	78				
	I	79				
	J	80				
QA/QC (pans)		7	.00482	.00681	TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism	
		15	.00455	.00659		
		29	.00485	.00669		
		35	.00441	.00621		
		42	.00445	.00687		
		58	.00432	.00616		
		63	.00471	.00653		

Test Notes

Include Date, Time, and Initials
 01EMAG 52622-3C-00653

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	5-16-22	0800	Sample 3 Date/Time:	5-20-22	0800
Sample 2 Date/Time:	5-18-22	1030	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	5-16-22	22-0313 -1	RW051622	JSS	Day 4	5-20-22	22-0313 -2	RW051622	KRE/PRO
Day 1	5-17-22	22-0313 -1	RW051622	JSS	Day 5	5-21-22	22-0313 -3	RW051622	KRE/PRO
Day 2	5-18-22	22-0313 -1	RW051622	JSS	Day 6	5-22-22	22-0313 -3	RW051622	KRE/PRO
Day 3	5-19-22	22-0313 -2	RW051622	PRO					

*LW Batch #: 2205154-2205341

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: ① IE m4 5-27-22 → [0800]

Data Sheet Preparation : Initials: PRO/SS Date: 5-12-22

End of Test Review : Initials: PRO Date: 5-23-22 Final Review (signature) Theran Day

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	22-0431	DOB	5-6-22
Source	NWDLS	Age	10 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	////	2201868	////	4	2201880	2201866	JKW / KPO
1	2201880	2201880	JKW / JKW	5	2201866	2201866	KPO / KPO
2	2201880	2201880	JKW / JKW	6	2201866	2201866	KPO / KPO
3	2201880	2201880	JKW / JKW	7	////	////	////

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	10	10	9	9	9	*LW	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	9	9	9	9
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	10		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	9	9	9	9	9	9	9		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	5/16/22	5/17/22	5/18/22	5/19/22	5/20/22	5/21/22	5/22/22	5/23/22	5/24/22	Comments:									
Time	1645	1700	1600	1155	1126	1730	1430	1645											
Initials	JKW	JKW	JKW	JKW	JKW	JKW	JKW	JKW	JKW										

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1	.00683	.01800	*LW	A	31	.00635	.01821
	B	2	.00624	.01831		B	32	.00652	.01954
	C	3	.00633	.01817		C	33	.00631	.02112
	D	4	.00673	.01787		D	* 34	.00660	.02117
	E	5	.00641	.01838		E	35	.00687	.02166
3	A	6	.00685	.01900	QA/QC (pans)		10	.00687	.02072
	B	7	.00675	.02131			16	.00714	.02266
	C	8	.00725	.02109			21	.00666	.02223
	D	9	.00689	.02265			34	.00635	.02164
	E	* 10	.00688	.02071					
5	A	11	.00671	.01720	BALANCE ID#				
	B	12	.00650	.02156	OVEN ID#				
	C	13	.006420	.02223	BALANCE VERIFICATION INITIALS				
	D	14	.00647	.02133	DATE / TARE WEIGHT INITIALS				
	E	15	.00688	.01843	DATE DRYING INITIATED				
6	A	* 16	.00716	.02267	TIME DRYING INITIATED				
	B	17	.00636	.02156	OVEN TEMPERATURE (°C)				
	C	18	.00667	.02262	(Actual/Corrected)				
	D	19	.00681	.02002	INITIALS				
	E	20	.00655	.02084	DATE / TIME DRYING TERMINATED				
8	A	21	.00666	.02220	OVEN TEMPERATURE (°C)				
	B	22	.00699	.02204	(Actual/Corrected)				
	C	23	.00685	.02063	BALANCE VERIFICATION INITIALS				
	D	24	.00662	.02024	TOTAL WEIGHT DATE / INITIALS				
	E	25	.00649	.01800	COMMENTS:				
11	A	26	.00657	.02108	CONT = Control				
	B	27	.00634	.01870	CONC = Concentration				
	C	28	.00701	.02236	REP = Replicate				
	D	29	.00683	.02136	Wt. = Weight				
	E	30	.00635	.02048	ORG. = Organism				

① ILMAGS 20-22 → [.00642]
 ② IEMAGS 20-22 → [.00638]
 ③ IEMAGS 20-22 → [.00655]

Water Quality Parameters

DATE	5/16/22	5-17-22		5-18-22		5-19-22		5-20-22		5-21-22		5-22-22		5/23/22
TIME	1530	0845	0845	0900	0900	1800	1800	0810	0810	0840	0840	0920	0920	0815
INITIALS	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD	JS DPD
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.3	8.2	8.5	8.1	8.4	8.0	8.2	8.0	8.3	8.0	8.4	8.1	8.1	8.1
3	8.3	8.2	8.5	8.1	8.4	8.0	8.2	8.1	8.3	8.0	8.4	8.2	8.3	8.1
5	8.3	8.2	8.5	8.2	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	8.1
6	8.4	8.2	8.5	8.2	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	8.1
8	8.4	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	8.1
11	8.3	8.2	8.5	8.1	8.4	8.0	8.3	8.1	8.3	8.1	8.4	8.2	8.3	8.2
*LW	8.4	8.2	8.4	7.9	8.2	7.8	8.2	8.0	8.3	7.9	8.3	8.1	8.2	8.1
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.2	7.1	8.5	7.2	8.4	7.5	8.7	7.7	8.3	7.5	8.5	8.2	8.7	8.4
3	8.0	7.8	8.4	7.3	8.3	7.5	8.7	7.7	8.3	7.5	8.5	8.1	8.7	8.2
5	8.1	7.6	8.5	7.2	8.3	7.5	8.7	7.8	8.4	7.5	8.5	8.1	7.8	8.1
6	8.1	7.8	8.5	7.4	8.4	7.4	8.7	7.8	8.4	7.5	8.5	8.0	8.7	8.1
8	8.2	7.8	8.5	7.7	8.4	7.5	8.7	8.1	8.5	7.5	8.5	8.2	8.7	8.2
11	8.2	7.8	8.6	7.5	8.4	7.3	8.8	7.9	8.5	7.5	8.5	8.3	8.7	8.2
*LW	8.3	8.1	8.8	7.0	8.5	7.4	8.8	7.6	7.9	7.9	8.5	8.1	8.6	8.5
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments: (DIEMAGS2022) [8.1]

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0313
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	24	24	24	25	25	24	25
3	24	24	24	25	25	24	25
5	24	24	24	25	25	24	25
6	24	24	24	25	25	24	25
8	24	24	24	25	25	24	25
11	24	24	24	25	25	24	25
*LW	25	25	25	25	25	25	25
Meter No.:	948	948	948	948	948	948	948

Comments: ① IEMAGS 2022-7 [16]

Test Notes

Include Date, Time, and Initials

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 06-5957-2267	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 15:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 14-0175-0321	Test Type: Growth-Survival-Fec (7d)	Analyst: Jeffrey Southall
Start Date: 16 May-22 17:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 15:00	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	10.62%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	100	75	2	18	Asymp	0.6974	Non-Significant Effect
		5	99.5	75	2	18	Asymp	0.6816	Non-Significant Effect
		6	110	75	1	18	Asymp	0.9223	Non-Significant Effect
		8	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		11	99.5	75	2	18	Asymp	0.6816	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06454	<<	0.4	Yes	Passes Criteria
Control Resp	0.98	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0394576	0.0078915	5	0.6757	0.6437	Non-Significant Effect
Error	0.630706	0.0116797	54			
Total	0.670164		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	270.6	15.09	1.5E-07	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.6267	0.9459	4.3E-11	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%
3		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	2.04%
5		10	0.9400	0.8434	1.0000	1.0000	0.6000	1.0000	0.0427	14.36%	4.08%
6		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
8		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%
11		10	0.9400	0.8434	1.0000	1.0000	0.6000	1.0000	0.0427	14.36%	4.08%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%
3		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	1.80%
5		10	1.276	1.164	1.387	1.345	0.8861	1.345	0.04932	12.23%	3.47%
6		10	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-1.80%
8		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%
11		10	1.276	1.164	1.387	1.345	0.8861	1.345	0.04932	12.23%	3.47%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 06-5957-2267
Analyzed: 31 May-22 15:06Endpoint: 7d Survival Rate
Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

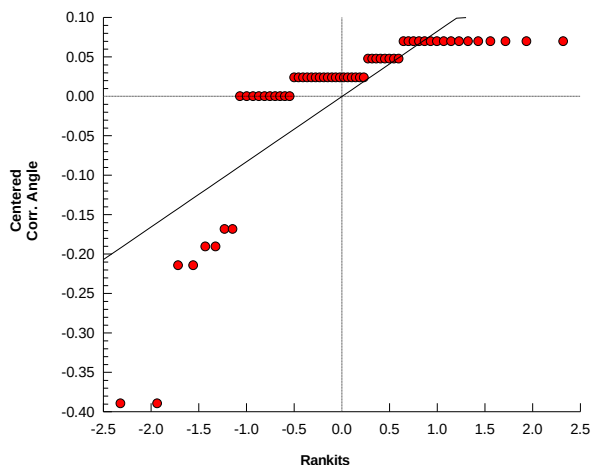
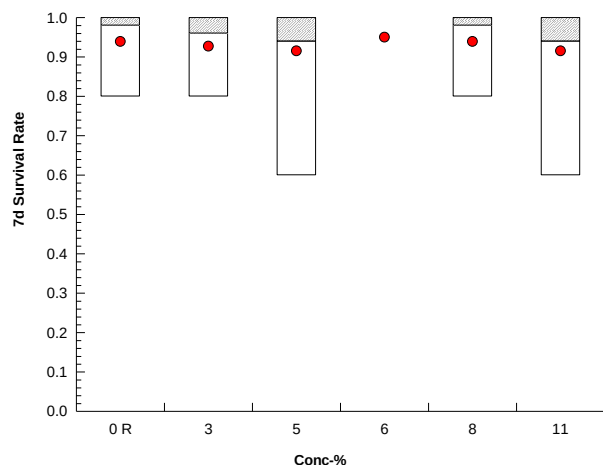
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000
5		1.0000	1.0000	0.8000	1.0000	0.6000	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	0.6000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345
3		1.345	1.107	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345
5		1.345	1.345	1.107	1.345	0.8861	1.345	1.345	1.345	1.345	1.345
6		1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345
8		1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345
11		1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345	0.8861

Graphics



CETIS Analytical Report

Report Date: 31 May-22 15:08 (p 3 of 6)
 Test Code/ID: 22-0313 / 21-2336-6436

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 18-6858-8427	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 15:06	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 14-0175-0321	Test Type: Growth-Survival-Fec (7d)	Analyst: Jeffrey Southall
Start Date: 16 May-22 17:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 15:00	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	18.03%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	1.562	2.289	0.071	18	CDF	0.1972	Non-Significant Effect
		5	1.672	2.289	0.071	18	CDF	0.1651	Non-Significant Effect
		6	0.7586	2.289	0.071	18	CDF	0.5281	Non-Significant Effect
		8	0.495	2.289	0.071	18	CDF	0.6481	Non-Significant Effect
		11	1.852	2.289	0.071	18	CDF	0.1205	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.1566	<<	0.4	Yes	Passes Criteria
Control Resp	0.395	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0269653	0.0053931	5	1.115	0.3637	Non-Significant Effect
Error	0.261298	0.0048389	54			
Total	0.288263		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	13.31	15.09	0.0207	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9546	0.9459	0.0258	Normal Distribution

Mean Dry Biomass-mg Summary

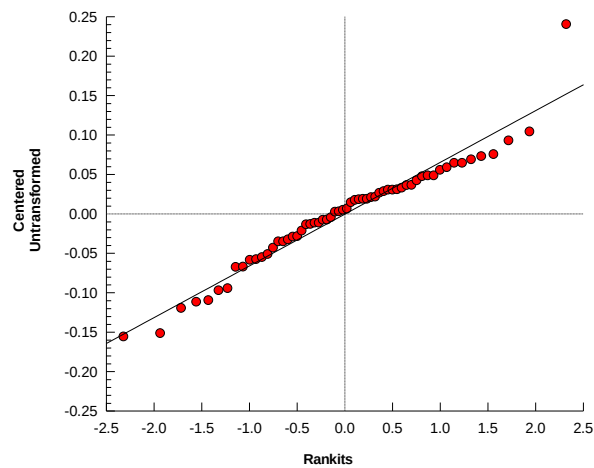
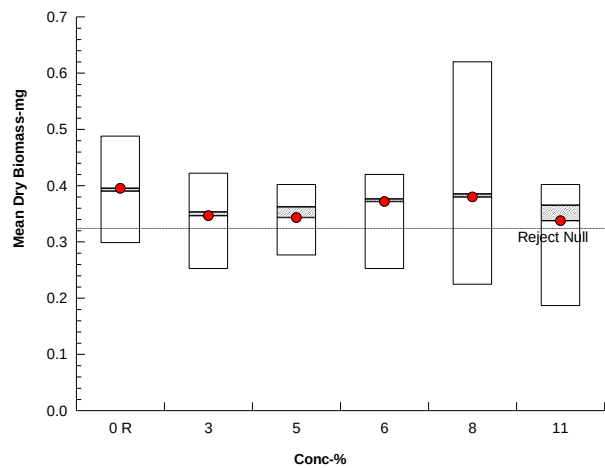
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.395	0.3507	0.4393	0.39	0.298	0.488	0.01956	15.66%	0.00%
3		10	0.3464	0.3079	0.3849	0.353	0.252	0.422	0.01701	15.53%	12.30%
5		10	0.343	0.313	0.373	0.362	0.276	0.402	0.01327	12.23%	13.16%
6		10	0.3714	0.3372	0.4056	0.376	0.252	0.42	0.01511	12.86%	5.97%
8		10	0.3796	0.2956	0.4636	0.385	0.224	0.62	0.03715	30.95%	3.90%
11		10	0.3374	0.2896	0.3852	0.365	0.186	0.402	0.02113	19.81%	14.58%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.382	0.34	0.36	0.398	0.352	0.464	0.4	0.468	0.298	0.488
3		0.368	0.314	0.364	0.394	0.402	0.342	0.252	0.422	0.288	0.318
5		0.314	0.374	0.308	0.276	0.292	0.376	0.362	0.362	0.364	0.402
6		0.402	0.358	0.42	0.42	0.36	0.252	0.386	0.378	0.374	0.364
8		0.224	0.484	0.268	0.322	0.372	0.27	0.422	0.416	0.398	0.62
11		0.316	0.402	0.366	0.364	0.374	0.186	0.402	0.368	0.326	0.27

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 18-6858-8427	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 31 May-22 15:06	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 31 May-22 15:08 (p 5 of 6)
 Test Code/ID: 22-0313 / 21-2336-6436

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 03-1711-0692	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 15:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 14-0175-0321	Test Type: Growth-Survival-Fec (7d)	Analyst: Jeffrey Southall
Start Date: 16 May-22 17:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 15:00	Species: Mysidopsis bahia	Brine: HW-Marinemix
Test Length: 6d 22h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	18.03%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	85	75	0	18	Asymp	0.2076	Non-Significant Effect
		5	90	75	0	18	Asymp	0.3541	Non-Significant Effect
		6	90.5	75	1	18	Asymp	0.3707	Non-Significant Effect
		8	98.5	75	1	18	Asymp	0.6489	Non-Significant Effect
		11	88	75	0	18	Asymp	0.2908	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0152135	0.0030427	5	0.6016	0.6988	Non-Significant Effect
Error	0.273096	0.0050573	54			
Total	0.28831		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	15.65	15.09	0.0079	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9618	0.9459	0.0577	Normal Distribution

Mean Dry Weight-mg Summary

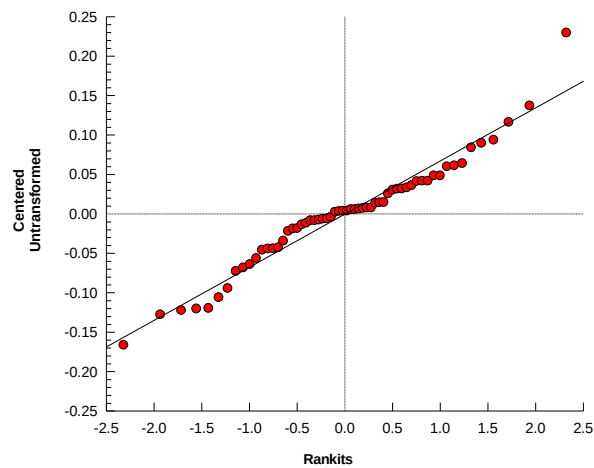
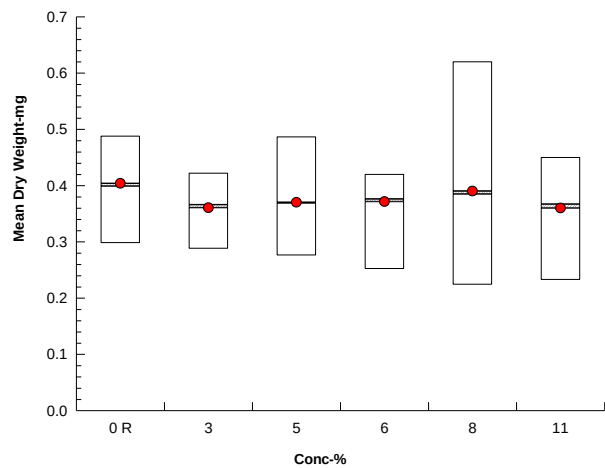
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.4038	0.3599	0.4477	0.399	0.298	0.488	0.01939	15.19%	0.00%
3		10	0.3606	0.3293	0.3918	0.366	0.288	0.422	0.01382	12.12%	10.71%
5		10	0.3702	0.331	0.4094	0.369	0.276	0.4867	0.01734	14.81%	8.33%
6		10	0.3714	0.3372	0.4056	0.376	0.252	0.42	0.01511	12.86%	8.02%
8		10	0.3901	0.2999	0.4804	0.385	0.224	0.62	0.03988	32.33%	3.38%
11		10	0.3601	0.3179	0.4022	0.367	0.2325	0.45	0.01865	16.38%	10.83%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.382	0.34	0.36	0.398	0.44	0.464	0.4	0.468	0.298	0.488
3		0.368	0.3925	0.364	0.394	0.402	0.342	0.315	0.422	0.288	0.318
5		0.314	0.374	0.385	0.276	0.4867	0.376	0.362	0.362	0.364	0.402
6		0.402	0.358	0.42	0.42	0.36	0.252	0.386	0.378	0.374	0.364
8		0.224	0.484	0.268	0.322	0.372	0.27	0.5275	0.416	0.398	0.62
11		0.316	0.402	0.366	0.364	0.374	0.2325	0.402	0.368	0.326	0.45

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 03-1711-0692	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 31 May-22 15:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1	

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 09-6255-1247	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 14:51	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 13-1794-7283	Test Type: Growth-Survival (7d)	Analyst: Dane DeGuzman
Start Date: 16 May-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 16:45	Species: Menidia beryllina	Brine: HW-Marinemix
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.83%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		5	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		6	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		8	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		11	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0	<<	0.4	Yes	Passes Criteria
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0070825	0.0014165	5	0.8	0.5606	Non-Significant Effect
Error	0.0424949	0.0017706	24			
Total	0.0495774		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.689	3.895	0.0013	Unequal Variances
Variances	Mod Levene Equality of Variance Test	0.8	4.248	0.5640	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.5454	0.9031	1.7E-08	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
6		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
3		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
5		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
6		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
8		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
11		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 09-6255-1247
Analyzed: 31 May-22 14:51Endpoint: 7d Survival Rate
Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

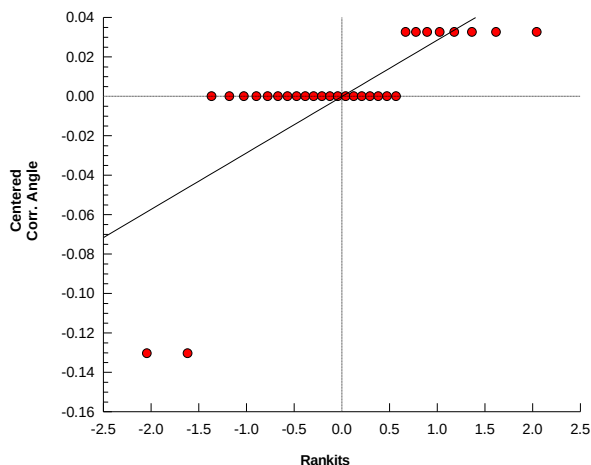
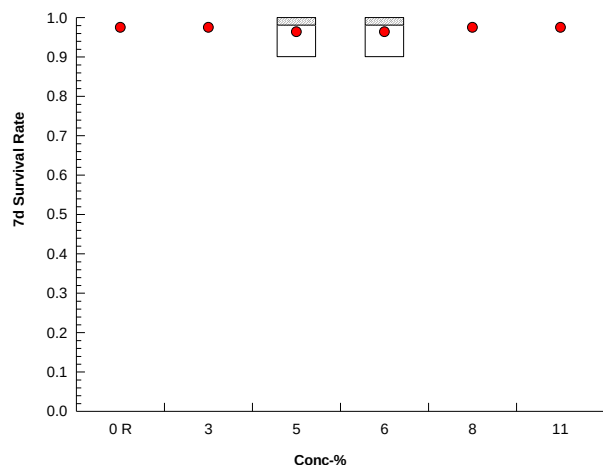
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		0.9000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	0.9000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.412
3		1.412	1.412	1.412	1.412	1.412
5		1.249	1.412	1.412	1.412	1.412
6		1.412	1.412	1.249	1.412	1.412
8		1.412	1.412	1.412	1.412	1.412
11		1.412	1.412	1.412	1.412	1.412

Graphics



CETIS Analytical Report

Report Date: 31 May-22 14:52 (p 3 of 6)
 Test Code/ID: 22-0313 / 10-9494-9475

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 14-1320-0959	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 14:51	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 13-1794-7283	Test Type: Growth-Survival (7d)	Analyst: Dane DeGuzman
Start Date: 16 May-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 16:45	Species: Menidia beryllina	Brine: HW-Marinemix
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	16.30%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-2.892	2.362	0.191	8	CDF	1.0000	Non-Significant Effect
		5	-3.568	2.362	0.191	8	CDF	1.0000	Non-Significant Effect
		6	-3.888	2.362	0.191	8	CDF	1.0000	Non-Significant Effect
		8	-2.741	2.362	0.191	8	CDF	0.9999	Non-Significant Effect
		11	-3.075	2.362	0.191	8	CDF	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.03327	<<	0.4	Yes	Passes Criteria
Control Resp	1.169	0.5	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.313796	0.0627591	5	3.854	0.0105	Significant Effect
Error	0.390836	0.0162848	24			
Total	0.704632		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.868	15.09	0.2307	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9179	0.9031	0.0236	Normal Distribution

Mean Dry Biomass-mg Summary

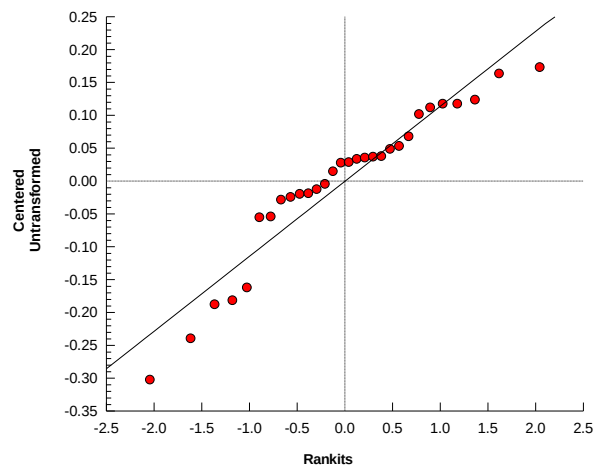
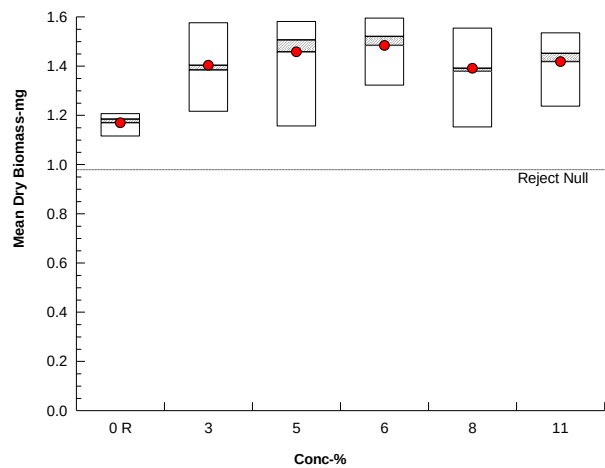
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.169	1.121	1.218	1.184	1.114	1.207	0.0174	3.33%	0.00%
3		5	1.403	1.24	1.566	1.384	1.215	1.576	0.05867	9.35%	-19.96%
5		5	1.457	1.242	1.673	1.506	1.155	1.581	0.07753	11.90%	-24.63%
6		5	1.483	1.348	1.619	1.52	1.321	1.595	0.04883	7.36%	-26.83%
8		5	1.391	1.195	1.586	1.378	1.151	1.554	0.07031	11.31%	-18.92%
11		5	1.418	1.28	1.555	1.451	1.236	1.535	0.04957	7.82%	-21.22%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.145	1.207	1.184	1.114	1.197
3		1.215	1.456	1.384	1.576	1.383
5		1.559	1.506	1.581	1.486	1.155
6		1.551	1.52	1.595	1.321	1.429
8		1.554	1.508	1.378	1.362	1.151
11		1.451	1.236	1.535	1.453	1.413

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 14-1320-0959	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 31 May-22 14:51	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 13-0885-9082	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 31 May-22 14:51	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 13-1794-7283	Test Type: Growth-Survival (7d)	Analyst: Dane DeGuzman
Start Date: 16 May-22 16:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 23 May-22 16:45	Species: Menidia beryllina	Brine: HW-Marinemix
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 11-4505-3198	Code: 4440200E	Project: NT-100056
Sample Date: 16 May-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 16 May-22 15:10	CAS (PC):	Station: Natgasoline LLC
Sample Age: 9h	Client: SGS North America - Scott, LA	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	18.71%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-2.52	2.362	0.219	8	CDF	0.9999	Non-Significant Effect
		5	-3.483	2.362	0.219	8	CDF	1.0000	Non-Significant Effect
		6	-3.77	2.362	0.219	8	CDF	1.0000	Non-Significant Effect
		8	-2.388	2.362	0.219	8	CDF	0.9998	Non-Significant Effect
		11	-2.68	2.362	0.219	8	CDF	0.9999	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.380589	0.0761178	5	3.549	0.0153	Significant Effect
Error	0.514793	0.0214497	24			
Total	0.895382		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.307	15.09	0.1401	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9503	0.9031	0.1725	Normal Distribution

Mean Dry Weight-mg Summary

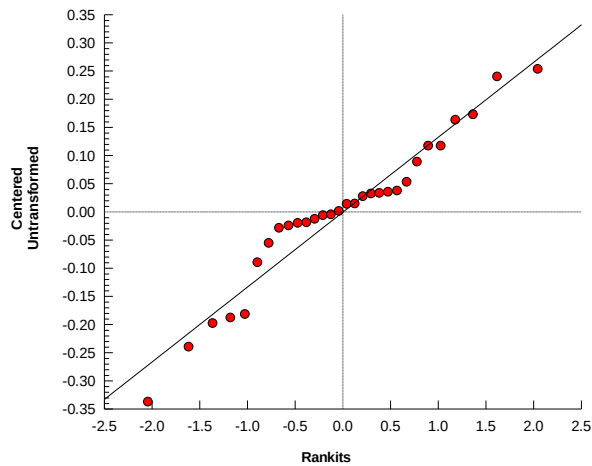
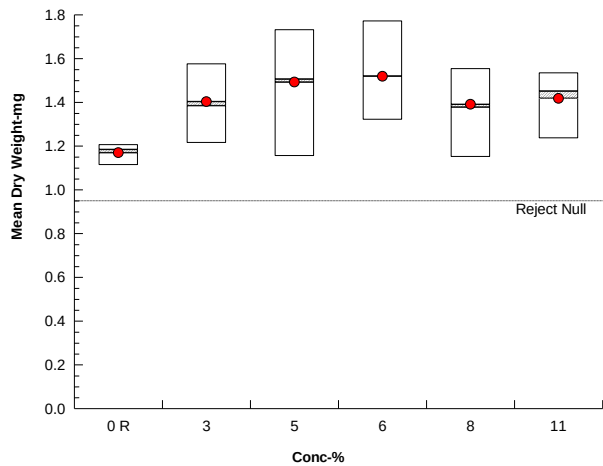
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.169	1.121	1.218	1.184	1.114	1.207	0.0174	3.33%	0.00%
3		5	1.403	1.24	1.566	1.384	1.215	1.576	0.05867	9.35%	-19.96%
5		5	1.492	1.229	1.755	1.506	1.155	1.732	0.09472	14.19%	-27.59%
6		5	1.519	1.31	1.727	1.52	1.321	1.772	0.07498	11.04%	-29.87%
8		5	1.391	1.195	1.586	1.378	1.151	1.554	0.07031	11.31%	-18.92%
11		5	1.418	1.28	1.555	1.451	1.236	1.535	0.04957	7.82%	-21.22%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.145	1.207	1.184	1.114	1.197
3		1.215	1.456	1.384	1.576	1.383
5		1.732	1.506	1.581	1.486	1.155
6		1.551	1.52	1.772	1.321	1.429
8		1.554	1.508	1.378	1.362	1.151
11		1.451	1.236	1.535	1.453	1.413

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 13-0885-9082	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 31 May-22 14:51	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



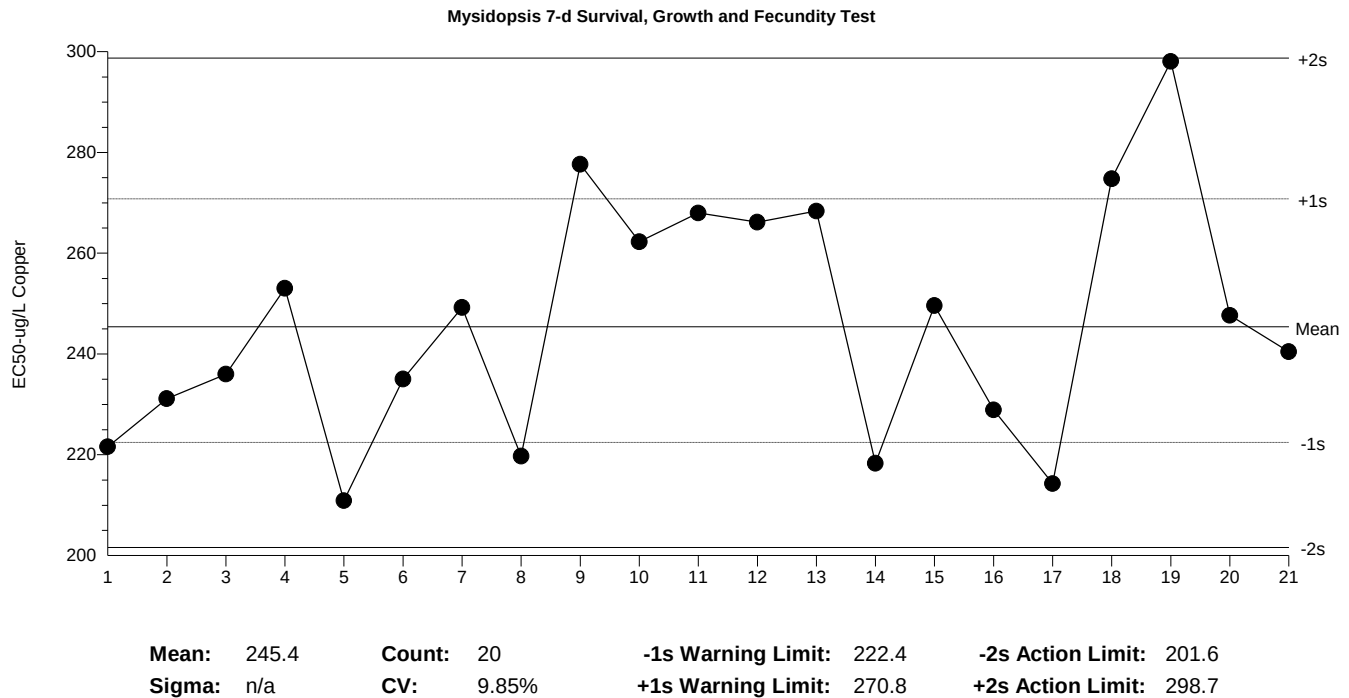
Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Nov	5	15:30	221.6	-23.85	-1.04	(-)		15-3559-8532	09-1641-2750	NWDLS Environ. Toxicol.
2		Dec	17	14:30	231.1	-14.29	-0.6102			21-4079-4760	09-8508-3275	NWDLS Environ. Toxicol.
3	2021	Jan	7	13:30	236	-9.436	-0.3988			09-7625-2822	09-9824-9603	NWDLS Environ. Toxicol.
4		Feb	10	14:50	253	7.601	0.3103			16-9790-4594	13-0497-9071	NWDLS Environ. Toxicol.
5			24	13:00	210.9	-34.55	-1.543	(-)		16-9718-1415	03-8028-4958	NWDLS Environ. Toxicol.
6		Mar	17	15:50	235	-10.4	-0.4404			06-7780-0481	01-2571-5315	NWDLS Environ. Toxicol.
7		Apr	7	17:00	249.2	3.801	0.1563			19-6064-2436	01-0304-3427	NWDLS Environ. Toxicol.
8		May	20	14:30	219.7	-25.69	-1.125	(-)		14-6201-6744	01-6829-2395	NWDLS Environ. Toxicol.
9		Jun	3	12:00	277.6	32.2	1.254	(+)		16-5190-0226	03-1102-1147	NWDLS Environ. Toxicol.
10		Jul	6	14:36	262.3	16.84	0.6751			02-5459-6353	02-8769-4940	NWDLS Environ. Toxicol.
11		Aug	3	14:00	268	22.54	0.8939			07-4115-5990	16-2172-2342	NWDLS Environ. Toxicol.
12		Sep	7	10:30	266.1	20.72	0.8244			08-0819-8101	12-0660-4206	NWDLS Environ. Toxicol.
13		Oct	1	9:50	268.3	22.92	0.9083			06-6763-0892	02-0293-6999	NWDLS Environ. Toxicol.
14		Nov	17	15:15	218.3	-27.14	-1.192	(-)		02-7564-0424	02-4811-1177	NWDLS Environ. Toxicol.
15		Dec	20	13:15	249.6	4.165	0.1712			12-9085-3704	04-5280-3800	NWDLS Environ. Toxicol.
16	2022	Jan	7	12:00	228.9	-16.53	-0.7093			09-7824-2132	19-5290-7852	NWDLS Environ. Toxicol.
17		Feb	2	14:30	214.3	-31.15	-1.381	(-)		08-7070-1131	04-2971-6813	NWDLS Environ. Toxicol.
18		Mar	3	16:50	274.7	29.32	1.148	(+)		21-2022-6914	10-4405-5946	NWDLS Environ. Toxicol.
19		Apr	1	11:45	298	52.62	1.976	(+)		10-9273-3745	07-1870-5289	NWDLS Environ. Toxicol.
20			20	15:00	247.7	2.231	0.09205			06-4858-7523	10-6642-1452	NWDLS Environ. Toxicol.
21		May	4	14:15	240.4	-4.983	-0.2087			12-1858-3405	16-6015-0969	NWDLS Environ. Toxicol.

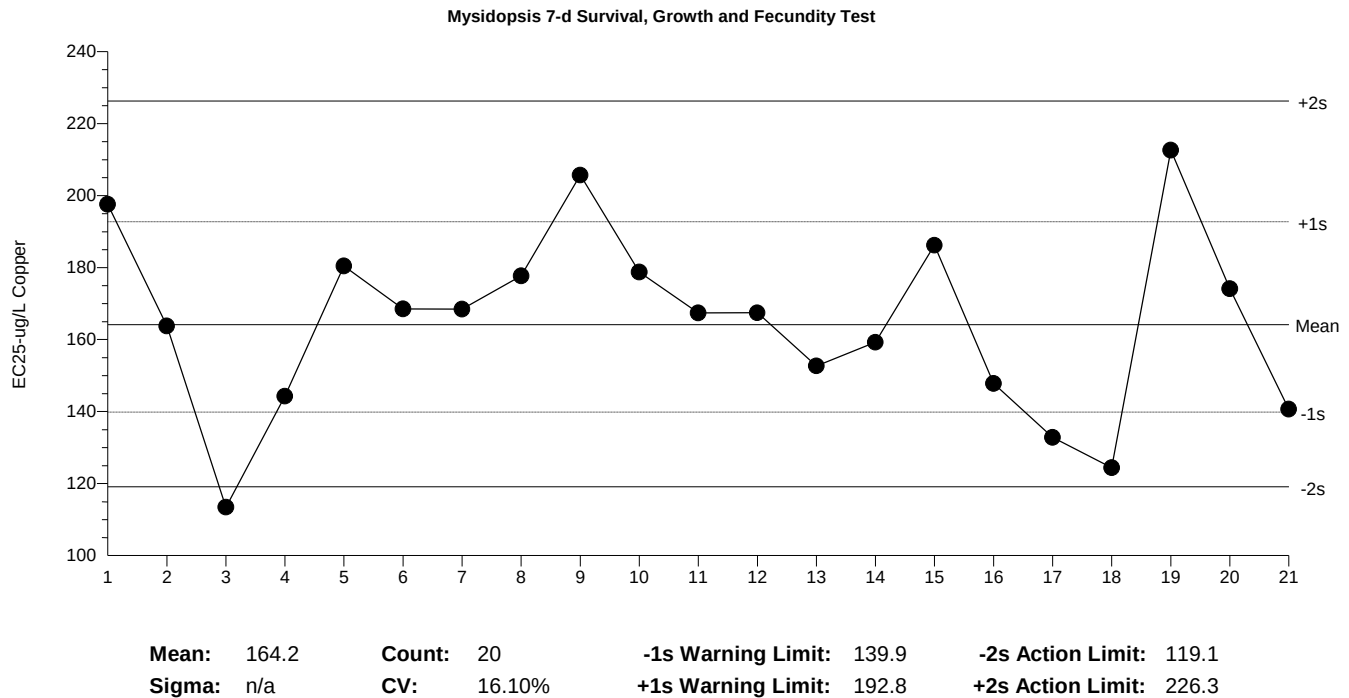
Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Oct	1	17:00	197.6	33.39	1.154	(+)		12-8673-2177	21-3275-2149	NWDLS Environ. Toxicol.
2		Nov	5	15:30	163.8	-0.4153	-0.01579			15-3559-8532	06-2198-3034	NWDLS Environ. Toxicol.
3		Dec	17	14:30	113.4	-50.77	-2.306	(-)	(-)	21-4079-4760	11-0487-5642	NWDLS Environ. Toxicol.
4	2021	Jan	7	13:30	144.3	-19.93	-0.8068			09-7625-2822	00-0312-2687	NWDLS Environ. Toxicol.
5		Feb	24	13:00	180.4	16.25	0.5884			16-9718-1415	05-7426-9890	NWDLS Environ. Toxicol.
6		Mar	17	15:50	168.5	4.319	0.1619			06-7780-0481	05-6203-8521	NWDLS Environ. Toxicol.
7		Apr	7	17:00	168.5	4.273	0.1602			19-6064-2436	10-6743-6316	NWDLS Environ. Toxicol.
8		May	20	14:30	177.7	13.52	0.4933			14-6201-6744	05-5381-5466	NWDLS Environ. Toxicol.
9		Jun	3	12:00	205.7	41.5	1.405	(+)		16-5190-0226	03-1838-2648	NWDLS Environ. Toxicol.
10		Jul	6	14:36	178.7	14.54	0.529			02-5459-6353	09-0315-4751	NWDLS Environ. Toxicol.
11		Aug	3	14:00	167.4	3.195	0.1202			07-4115-5990	19-7716-0639	NWDLS Environ. Toxicol.
12		Sep	7	10:30	167.4	3.245	0.122			08-0819-8101	05-4285-4798	NWDLS Environ. Toxicol.
13		Oct	1	9:50	152.7	-11.51	-0.4532			06-6763-0892	00-3098-5433	NWDLS Environ. Toxicol.
14		Nov	17	15:15	159.2	-4.949	-0.1908			02-7564-0424	06-0870-5824	NWDLS Environ. Toxicol.
15		Dec	20	13:15	186.2	22.02	0.7847			12-9085-3704	17-3888-7616	NWDLS Environ. Toxicol.
16	2022	Jan	7	12:00	147.8	-16.39	-0.6558			09-7824-2132	18-9406-9090	NWDLS Environ. Toxicol.
17		Feb	2	14:30	132.8	-31.39	-1.323	(-)		08-7070-1131	16-8447-9830	NWDLS Environ. Toxicol.
18		Mar	3	16:50	124.4	-39.81	-1.731	(-)		21-2022-6914	18-2966-6761	NWDLS Environ. Toxicol.
19		Apr	1	11:45	212.6	48.43	1.612	(+)		10-9273-3745	01-6504-1547	NWDLS Environ. Toxicol.
20			20	15:00	174.1	9.944	0.3666			06-4858-7523	10-7382-1607	NWDLS Environ. Toxicol.
21		May	4	14:15	140.7	-23.52	-0.964			12-1858-3405	19-6615-1827	NWDLS Environ. Toxicol.

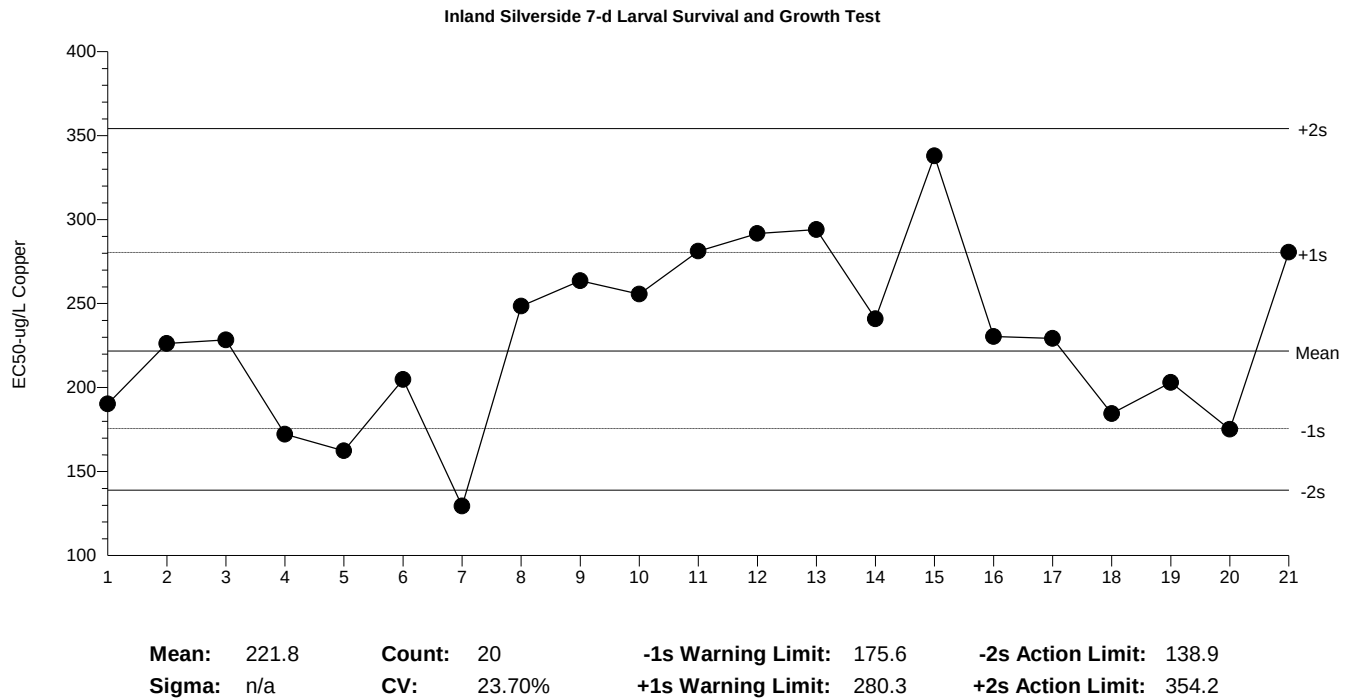
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	28	12:00	190.3	-31.58	-0.6563			08-9090-1114	17-7032-0201	NWDLS Environ. Toxicol.
2		Sep	3	14:30	226.2	4.391	0.08375			12-3520-4933	14-0147-4372	NWDLS Environ. Toxicol.
3		Oct	1	17:00	228.3	6.485	0.1231			02-3690-0331	14-5182-1701	NWDLS Environ. Toxicol.
4		Nov	5	15:15	172.2	-49.63	-1.082	(-)		17-5658-0648	10-4083-3854	NWDLS Environ. Toxicol.
5		Dec	17	14:30	162.4	-59.5	-1.334	(-)		09-0707-2334	05-7930-5297	NWDLS Environ. Toxicol.
6	2021	Jan	7	14:30	204.8	-17.02	-0.3412			11-8669-1134	15-7346-5259	NWDLS Environ. Toxicol.
7		Feb	10	12:00	129.4	-92.42	-2.303	(-)	(-)	19-0426-1634	11-0292-5070	NWDLS Environ. Toxicol.
8		Mar	18	12:00	248.5	26.62	0.4843			19-2942-0562	19-3228-2714	NWDLS Environ. Toxicol.
9		Apr	7	17:00	263.6	41.78	0.7374			09-6023-9668	00-7899-7098	NWDLS Environ. Toxicol.
10		May	20	13:30	255.6	33.77	0.6055			16-8999-3463	08-8634-5597	NWDLS Environ. Toxicol.
11		Jun	3	13:00	281.2	59.36	1.013	(+)		09-4953-8218	06-7574-1585	NWDLS Environ. Toxicol.
12		Jul	6	14:30	291.7	69.89	1.17	(+)		06-6487-9714	14-1219-8967	NWDLS Environ. Toxicol.
13		Aug	18	16:00	294.1	72.22	1.204	(+)		15-8347-6079	20-3670-2984	NWDLS Environ. Toxicol.
14		Sep	7	10:30	240.9	19.06	0.3522			01-3526-1514	20-5345-6399	NWDLS Environ. Toxicol.
15		Oct	1	11:45	337.9	116.1	1.799	(+)		19-5909-2091	14-4131-0545	NWDLS Environ. Toxicol.
16		Nov	17	15:30	230.4	8.556	0.1617			05-7761-2074	00-5531-0604	NWDLS Environ. Toxicol.
17		Dec	20	13:30	229.2	7.364	0.1395			16-9811-7085	01-0812-0412	NWDLS Environ. Toxicol.
18	2022	Jan	4	13:00	184.5	-37.39	-0.7888			19-3164-8761	02-7203-5408	NWDLS Environ. Toxicol.
19		Feb	28	13:30	203	-18.8	-0.3784			21-2117-1383	01-0955-3278	NWDLS Environ. Toxicol.
20		Mar	2	13:30	175.1	-46.7	-1.01	(-)		12-9241-9919	08-0675-1644	NWDLS Environ. Toxicol.
21		Apr	1	11:00	280.6	58.72	1.004	(+)		19-3392-2474	19-5278-6182	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

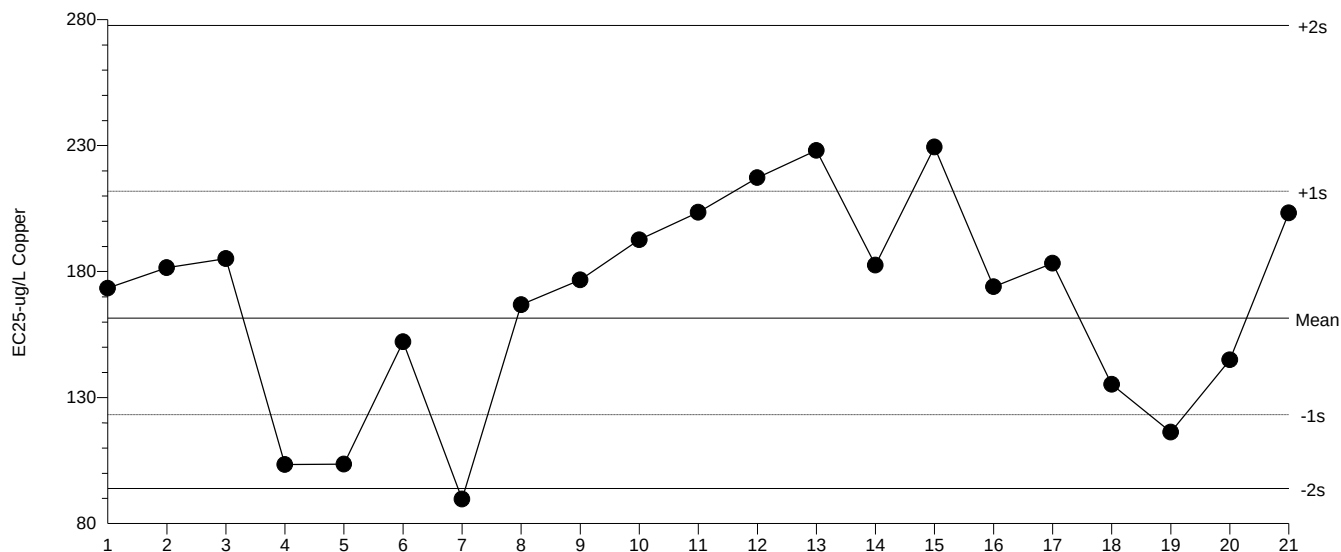
All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF

Inland Silverside 7-d Larval Survival and Growth Test



Mean: 161.6

Count: 20

-1s Warning Limit: 123.2

-2s Action Limit: 93.99

Sigma: n/a

CV: 27.60%

+1s Warning Limit: 211.9

+2s Action Limit: 277.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2020	Aug	28	12:00	173.4	11.82	0.2606			08-9090-1114	05-9001-0008	NWDLS Environ. Toxicol.
2		Sep	3	14:30	181.5	19.94	0.4295			12-3520-4933	20-0362-1111	NWDLS Environ. Toxicol.
3		Oct	1	17:00	185.1	23.55	0.5023			02-3690-0331	12-6851-2253	NWDLS Environ. Toxicol.
4		Nov	5	15:15	103.4	-58.17	-1.647	(-)		17-5658-0648	14-5079-1687	NWDLS Environ. Toxicol.
5		Dec	17	14:30	103.6	-58.01	-1.642	(-)		09-0707-2334	05-4814-6520	NWDLS Environ. Toxicol.
6	2021	Jan	7	14:30	152.1	-9.477	-0.2231			11-8669-1134	11-6048-4214	NWDLS Environ. Toxicol.
7		Feb	10	12:00	89.72	-71.86	-2.172	(-)	(-)	19-0426-1634	08-1298-5961	NWDLS Environ. Toxicol.
8		Mar	18	12:00	166.8	5.229	0.1176			19-2942-0562	07-9357-5238	NWDLS Environ. Toxicol.
9		Apr	7	17:00	176.7	15.13	0.3305			09-6023-9668	07-2914-9717	NWDLS Environ. Toxicol.
10		May	20	13:30	192.6	31.04	0.6487			16-8999-3463	05-3918-8320	NWDLS Environ. Toxicol.
11		Jun	3	13:00	203.5	41.92	0.8514			09-4953-8218	00-4075-3486	NWDLS Environ. Toxicol.
12		Jul	6	14:30	217.3	55.68	1.093	(+)		06-6487-9714	15-4338-5084	NWDLS Environ. Toxicol.
13		Aug	18	16:00	228.1	66.48	1.272	(+)		15-8347-6079	18-3962-2909	NWDLS Environ. Toxicol.
14		Sep	7	10:30	182.6	20.98	0.4506			01-3526-1514	11-6816-4915	NWDLS Environ. Toxicol.
15		Oct	1	11:45	229.4	67.83	1.294	(+)		19-5909-2091	10-6419-2141	NWDLS Environ. Toxicol.
16		Nov	17	15:30	174	12.4	0.2729			05-7761-2074	00-0061-5553	NWDLS Environ. Toxicol.
17		Dec	20	13:30	183.3	21.73	0.4658			16-9811-7085	09-5560-0815	NWDLS Environ. Toxicol.
18	2022	Jan	4	13:00	135.2	-26.36	-0.6574			19-3164-8761	15-9947-7419	NWDLS Environ. Toxicol.
19		Feb	28	13:30	116.3	-45.29	-1.214	(-)		21-2117-1383	02-2853-0020	NWDLS Environ. Toxicol.
20		Mar	2	13:30	145	-16.61	-0.4005			12-9241-9919	11-2717-2616	NWDLS Environ. Toxicol.
21		Apr	1	11:00	203.3	41.72	0.8478			19-3392-2474	00-5366-5950	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 05-15-22 0800 TO 05-16-22 0800
NO. 2: FROM 05-17-22 0800 TO 05-18-22 0800
NO. 3: FROM 05-19-22 0800 TO 05-20-22 0800

Test Initiated: 1700 TIME 05-16-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	100	100	100	100	100
	B	100	80	100	100	100	100
	C	100	100	80	100	100	100
	D	100	100	100	100	100	100
	E	80	100	60	100	100	100
	F	100	100	100	100	100	80
	G	100	80	100	100	80	100
	H	100	100	100	100	100	100
	I	100	100	100	100	100	100
	J	100	100	100	100	100	60
Mean Percent Survival	24 hr.	100	98	98	100	100	98
	48 hr.	100	98	98	100	100	98
	7 day	98	96	94	100	98	94
	CV%❶	6.45	8.78	14.36	0.00	6.45	14.36

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.38	0.37	0.31	0.40	0.22	0.32
B	0.34	0.31	0.37	0.36	0.48	0.40
C	0.36	0.36	0.31	0.42	0.27	0.37
D	0.40	0.39	0.28	0.42	0.32	0.36
E	0.35	0.40	0.29	0.36	0.37	0.37
F	0.46	0.34	0.38	0.25	0.27	0.19
G	0.40	0.25	0.36	0.39	0.42	0.40
H	0.47	0.42	0.36	0.38	0.42	0.37
I	0.30	0.29	0.36	0.37	0.40	0.33
J	0.49	0.32	0.40	0.36	0.62	0.27
Mean Dry Weight in Milligrams	0.40	0.35	0.34	0.37	0.38	0.34
CV (%)❶	15.66	15.53	12.23	12.86	30.95	19.81
PMSD	Acceptable Range: 37 or less					18.03

❶ coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 05-15-22 0800 TO 05-16-22 0800
NO. 2: FROM 05-17-22 0800 TO 05-18-22 0800
NO. 3: FROM 05-19-22 0800 TO 05-20-22 0800

Test Initiated: 1645 TIME 05-16-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^①
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	100	100	100	100	0.00
3%	100	100	100	100	100	100	100	100	0.00
5%	90	100	100	100	100	100	100	98	4.56
6%	100	100	90	100	100	98	98	98	4.56
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

① coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^❶
	A	B	C	D	E		
0%	1.15	1.21	1.18	1.11	1.20	1.17	3.33
3%	1.22	1.46	1.38	1.58	1.38	1.40	9.35
5%	1.56	1.51	1.58	1.49	1.16	1.46	11.90
6%	1.55	1.52	1.60	1.32	1.43	1.48	7.36
8%	1.55	1.51	1.38	1.36	1.15	1.39	11.31
11%	1.45	1.24	1.54	1.45	1.41	1.42	7.82
PMSD	Acceptable Range: 28 or less					16.30	

Weights are for: preserved larvae, or X unpreserved larvae

❶ coefficient of variation = standard deviation x 100/mean

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www. NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

October 17, 2022

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20221017121212MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/17/2022 12:12

Work Order Case Narrative

NWDLS Job No: 22H2101, 22H2102, 22H2103 (22-0543)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall 001
Test Description: 4Q'22, 7-day chronic + 2S'22, 24-hour acute - [*M. bahia*, *M. beryllina*]

Enclosed is the NWDLS report with supporting records for toxicity testing. Toxicity was not observed.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001				
TPDES PERMIT NO.	WQ0005143000				
SPECIES	Mysidopsis bahia		TEST DATE	23-30 Sep 2022	
TEST RESULTS	Pass				
Parameter	Survival		Sublethal		
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40	
Control Results	94	10.28	0.31	15.73	
Critical Dilution (8%)	84	10.04	0.30	5.56	
DMR REPORTING				Parameter Code	
Is the NOEC for survival less than the critical dilution?			No	TLP3E	0
Report the NOEC % for survival:				TOP3E	11
Report the LOEC % for survival:				TXP3E	>11
Is the NOEC for growth less than the critical dilution?			No	TWP3E	0
Report the NOEC % for growth:				TPP3E	11
Report the LOEC % for growth:				TYP3E	>11
PMSD (Acceptable Range: 37 or less):					18.03
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.					

SPECIES	Menidia beryllina			TEST DATE	23-30 Sep 2022	
TEST RESULTS	Pass					
Parameter	Survival			Sublethal		
	Percentage (%)	Coef. of Var. (%)		Growth (mg)	Coef. of Var. (%)	
Control Acceptability	≥80	≤ 40		≥0.50	≤ 40	
Control Results	100	0.00		0.67	30.97	
Critical Dilution (8%)	100	0.00		0.78	19.88	
DMR REPORTING					Parameter Code	
Is the NOEC for survival less than the critical dilution?				No	TLP6B	0
Report the NOEC % for survival:					TOP6B	11
Report the LOEC % for survival:					TXP6B	>11
Is the NOEC for growth less than the critical dilution?				No	TWP6B	0
Report the NOEC % for growth:					TPP6B	11
Report the LOEC % for growth:					TYP6B	>11
PMSD (Acceptable Range: 28 or less):						29.71 ⓘ
Retest Number 1	Parameter 22415	N/A	Retest Number 2		Parameter 22416	N/A
CHRONIC PERMIT REPORTING - Table 1 attached.						

❶ The PMSD exceeds upper acceptance limit indicating that the test may not be sensitive enough to detect toxicity; however, the IC25 is >8% effluent. Therefore, there is no sublethal toxicity.

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	Mysidopsis bahia	TEST DATE	23-24 Sep 2022
TEST RESULTS	Pass		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE3E = 0		
ACUTE PERMIT REPORTING - Table 2 attached.			

SPECIES	Menidia beryllina	TEST DATE	23-24 Sep 2022
TEST RESULTS	Pass		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE6B = 0		
ACUTE PERMIT REPORTING - Table 2 attached.			

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/17/2022 12:12

Chemical Analyses

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Outfall 001-1
Lab Sample ID: 22H2101-01

Sample Matrix: Waste Water
Date Collected: 09/23/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	112	mg/L		1	10.0	10.0	BF13392	09/26/2022 14:27	CST
General Chemistry SM 2510 B	Conductivity	A	1510	umhos/cm @ 25 °C		1	2.00	2.00	BF13392	09/26/2022 14:27	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	66.0	mg/L		1		10.0	BF13636	09/27/2022 17:20	EGL
General Chemistry EPA 350.1	Ammonia as N	A	1.12	mg/L		2	0.0400	0.100	BF13563	09/27/2022 16:35	DLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BF13392	09/26/2022 14:27	CST
Field Hach 10360	DO Field	N	7.70	mg/L		1	1.00	1.00	BF13238	09/23/2022 08:00	AOJ
Field SM 4500-H+ B	pH	A	7.70	pH Units @ 25 °C		1	1.00	1.00	BF13238	09/23/2022 08:00	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.02	mg/L	U	1	0.25	0.25	BF13238	09/23/2022 08:00	AOJ

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Receiving Water
Lab Sample ID: 22H2101-02

Sample Matrix: Waste Water
Date Collected: 09/23/2022 11:15
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	63.8	mg/L		1	10.0	10.0	BF13392	09/26/2022 15:01	CST
General Chemistry SM 2510 B	Conductivity	A	9790	umhos/cm @ 25 °C		1	2.00	2.00	BF13392	09/26/2022 15:01	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	1080	mg/L		1		10.0	BFJ0319	10/04/2022 16:50	SAB
General Chemistry EPA 350.1	Ammonia as N	A	0.0977	mg/L		1	0.0200	0.0500	BF13563	09/27/2022 15:25	DLK
General Chemistry SM 2520 B	Salinity	N	6.00	Salinity units		1	1.00	1.00	BF13392	09/26/2022 15:01	CST
Field Hach 10360	DO Field	N	7.00	mg/L		1	1.00	1.00	BF13238	09/23/2022 11:15	AOJ
Field SM 4500-H+ B	pH	A	7.90	pH Units @ 25 °C		1	1.00	1.00	BF13238	09/23/2022 11:15	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.04	mg/L	U	1	0.25	0.25	BF13238	09/23/2022 11:15	AOJ

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2
Lab Sample ID: 22H2102-01

Sample Matrix: Waste Water
Date Collected: 09/25/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	139	mg/L		1	10.0	10.0	BF13393	09/27/2022 14:35	CST
General Chemistry SM 2510 B	Conductivity	A	3400	umhos/cm @ 25 °C		1	2.00	2.00	BF13393	09/27/2022 14:35	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	94.0	mg/L		1		10.0	BF13636	09/27/2022 17:20	EGL
General Chemistry EPA 350.1	Ammonia as N	A	7.16	mg/L		10	0.200	0.500	BF13563	09/27/2022 16:30	DLK
General Chemistry SM 2520 B	Salinity	N	1.94	Salinity units		1	1.00	1.00	BF13393	09/27/2022 14:35	CST
Field Hach 10360	DO Field	N	10.6	mg/L	H	1	1.00	1.00	BFJ2105	10/17/2022 08:00	AOJ
Field SM 4500-H+ B	pH	A	7.70	pH Units @ 25 °C	H	1	1.00	1.00	BFJ2105	10/17/2022 08:00	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	H, U	1	0.25	0.25	BFJ2105	10/17/2022 08:00	AOJ

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
 Tel: (936) 321-6060
 Email: lab@nwdls.com
 www: NWDLS.com
 TCEQ T104704238-22-36
 TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
 1201 Main Street
 Baton Rouge, LA 70802

Reported:
 10/17/2022 12:12

Chemical Analyses
 (Continued)

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3

Lab Sample ID: 22H2103-01

Sample Matrix:

Waste Water

Date Collected:

09/27/2022 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	142	mg/L		1	10.0	10.0	BFI3849	09/29/2022 12:48	CST
General Chemistry SM 2510 B	Conductivity	A	3630	umhos/cm @ 25 °C		1	2.00	2.00	BFI3849	09/29/2022 12:48	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	54.0	mg/L		1		10.0	BFJ0319	10/04/2022 16:50	SAB
General Chemistry EPA 350.1	Ammonia as N	A	11.1	mg/L		20	0.400	1.00	BFI3752	09/28/2022 16:51	DLK
General Chemistry SM 2520 B	Salinity	N	2.08	Salinity units		1	1.00	1.00	BFI3849	09/29/2022 12:48	CST
Field Hach 10360	DO Field	N	9.40	mg/L		1	1.00	1.00	BFI3651	09/27/2022 10:30	BRM
Field SM 4500-H+ B	pH	A	7.60	pH Units @ 25 °C		1	1.00	1.00	BFI3651	09/27/2022 10:30	BRM
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BFI3651	09/27/2022 10:30	BRM

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/17/2022 12:12

Sample Condition Checklist

Work Order: 22H2101

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22H2102

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22H2103

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/17/2022 12:12

Term and Qualifier Definitions

Item	Definition
H	The parameter was analyzed outside the method specified holding time.
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 2

22H2101

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16

Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes		Schedule Comments:
	Project Comments:		

Sample ID	Collection Point	Date/Time Begin - END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22H2101-01	Outfall 001-1	9/22/22 08:00 - 9/23/22 08:00	9/23/22 10:45	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 1DL-2007.0 4°C MB 1DL-2006.0 4°C AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 2.7 pH Field 7.7 Total Chlorine .02 Residual WW Field
22H2101-02	Receiving Water	—	9/23/22 11:15	AQ Grab	A HDPE 250mL B HDPE 250mL H2SO4 C HDPE 250mL HNO3 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 7 pH Field 7.9 Total Chlorine .04 Residual WW Field



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16



Page 2 of 2

22H2101

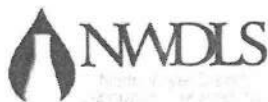
(Continued)

Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes		Schedule Comments:
	Project Comments:		

Field Remarks:		Preservation: (Circle and Write ID)	H2SO4	HNO3	NaOH	Other:
Sampler (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time		
Print Name	Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time		
Affiliation	Relinquished To Lab By (Signature)	Date/Time	Received for Laboratory By (Signature)	Date/Time		
Custody Seal : Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature:	18.3 °C
Container Intact : Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID:	210879256

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16



Page 1 of 1

22H2102

Page 12 of 61

Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 2		Schedule Comments:
	Project Comments:		

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22H2102-01	Outfall 001-2	9/24/22 08:00 - 9/25/22 08:00	9/25/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 10.6 pH Field 7.7 Total Chlorine 0.0 Residual WW Field -A0J 10-17-22

Field Remarks:		Preservation: H2SO4 HNO3 NaOH Other:	
Sampler (Signature)		Relinquished By: (Signature)	
Print Name		Relinquished By: (Signature)	
Affiliation		Relinquished To Lab By: (Signature)	
Custody Seal : Yes / No		COC Labels Agree: Yes / No	
Container Intact : Yes / No		Appropriate Containers: Yes / No	
Appropriate Volume: Yes / No		Coolers Intact: Yes / No	
Received on Ice: Yes / No		Samples Accepted: Yes / No	
Temperature: 3.5 °C		Thermometer ID: 210879 264	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-21-16



Page 1 of 1

22H2103

Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 3		Schedule Comments:
	Project Comments:		

Sample ID	Collection Point	Date/Time Begin /END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22H2103-01	Outfall 001-3	9/26/22 08:00 9/27/22 08:00	9/27/22 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.4 pH Field 7.6 Total Chlorine .05 Residual WW Field BRM

Field Remarks:		Preservation: (Circle and Write ID) H2SO4 2108091 HNO3 21080916 NaOH Other:	
Sampler (Signature) <i>[Signature]</i>	Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 9/27/22 14:35	Received By: (Signature) <i>[Signature]</i>
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>[Signature]</i>
Custody Seal : Yes / No		COC Labels Agree: Yes / No	
Container Intact : Yes / No		Appropriate Containers: Yes / No	
Appropriate Volume: Yes / No		Coolers Intact: Yes / No	
Received on Ice: Yes / No		Samples Accepted: Yes / No	
Temperature: 9.2/9.2 °C		Thermometer ID: 210879256	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	9-23-22	6800	Sample 3 Date/Time:	9-27-22	0800
Sample 2 Date/Time:	9-25-22	0800	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	9-23-22	22-0543 -1	RW092322	DPD	Day 4	9-27-22	22-0543 -80	RW092322	BRH
Day 1	9-24-22	22-0543 -1	RW092322	DPD	Day 5	9-28-22	22-0543 -3	RW092322	BRH
Day 2	9-25-22	22-0543 -1	RW092322	KRS	Day 6	9-29-22	22-0543 -3	RW092322	DPD
Day 3	9-26-22	22-0543 -2	RW092322	DPD					

*LW Batch #: 2210776

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

OJE DPD 9-29-22 → [2]

Data Sheet Preparation : Initials: DPD/AOS Date: 8-12-22

End of Test Review : Initials: DPD Date: 9-30-22 Final Review (signature)

Arturo Oronoz Jr.

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters

DATE	9/23/22	9-24-22	9-25-22	9-26-22	9-27-22	9-28-22	9/29/22	10/30/22						
TIME	1500	0815	0815	0810	0810	0800	1200	0830	0830	0900	0910	0750	0750	0800
INITIALS	ABH DPD	DPD KRI	DPD KRI	ABH KRI	ABH KRI	DPD KRI	DPD KRI	WJH Bem	WJH Bem	Bem ABH	Bem ABH	DPD Bem	DPD Bem	WJH DPD
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.0	8.1	8.2	8.2	8.2	8.1	8.1	8.1	8.2	8.0	8.3	8.0	8.4	8.0
3	8.1	8.0	8.2	8.2	8.2	8.1	8.1	8.1	8.2	8.1	8.4	8.0	8.3	8.0
5	8.1	8.1	8.2	8.2	8.2	8.1	8.1	7.6	8.2	8.1	8.4	8.0	8.3	8.1
6	8.1	8.1	8.2	8.2	8.2	8.1	8.1	8.1	8.2	8.1	8.3	8.0	8.3	8.1
8	8.1	8.1	8.2	8.2	8.2	8.1	8.1	8.1	8.2	8.1	8.3	8.0	8.3	8.1
11	8.1	8.1	8.2	8.2	8.2	8.0	8.1	8.1	8.3	8.1	8.3	8.0	8.3	8.0
*LW	8.2	8.0	8.3	8.0	8.3	7.9	8.3	8.0	8.3	8.1	8.3	7.9	8.3	8.0
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.3	7.7	7.8	8.0	8.0	7.6	8.2	7.5	8.1	8.1	8.2	7.4	8.3	7.8
3	8.2	7.7	7.8	8.0	8.0	7.6	8.2	7.8	8.3	7.5	8.2	7.2	8.3	7.6
5	8.1	7.5	7.8	7.9	8.1	7.5	8.2	8.1	8.3	7.4	8.3	6.9	8.2	7.5
6	8.1	7.5	7.9	7.9	8.2	7.6	8.3	7.5	8.2	7.2	8.3	6.9	8.2	7.5
8	8.1	7.6	7.9	7.9	8.3	7.7	8.3	7.5	8.2	7.2	8.3	6.9	8.2	7.5
11	8.1	7.6	7.9	8.0	8.3	7.6	8.3	7.5	8.2	7.0	8.4	6.8	8.2	7.8
*LW	8.2	7.8	8.1	8.1	8.2	7.5	8.1	7.8	8.2	7.5	8.3	7.4	8.1	8.0
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (+°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments: ① IE Bpm 9/28/22 → [0845]

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	23	25	25	25	24	27	25
3	24	25	25	25	24	26	24
5	24	25	25	25	24	26	24
6	24	25	25	25	24	26	24
8	24	25	25	25	24	25	24
11	24	25	25	25	24	25	26
*LW	24	25	25	25	25	25	24
Meter No.:	948	948	948	948	948	948	948

Biological Data

Test Organism Data			
Test Organism Batch #	22-0879	DOB	9-16-22
Source	NW DLS	Age	7d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	///	2201896	/// AB	4	2201896	2201896	AB 1 AB
1	2201896	2201896	KPB 1 KBI	5	2201894	2208337	SKW 1 AB
2	2201896	2201896	KPB 1 KPB	6	2208337	2208337	SKW 1 SKW
3	2201896	2201896	AB 1 SKW	7	2208337	///	SKW 1 ///

Comments:

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
8	A	5	5	5	4	4	4	4	4	8	A	5	5	5	5	4	4	4	4
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	4	4	4
	C	5	5	5	5	5	4	4	4		C	5	5	5	5	4	4	4	4
	D	5	5	5	5	5	5	5	5		D	5	5	4	4	4	4	4	4
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	4	4		F	5	5	4	4	4	4	4	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	4	4	4	4	4	4
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	4	4
	J	5	5	5	5	5	5	4	5		J	5	5	5	4	4	4	4	4
11	A	5	5	5	5	5	5	5	5	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	4	4	4	4	4		B	5	5	5	5	5	5	5	5
	C	5	5	4	4	4	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	4	4	4	4	3		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	4	4	4	4	4
	F	5	5	5	5	4	3	3	3		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	3	3
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	4	4	4	4	4		I	5	5	5	5	5	5	5	5
	J	5	5	5	3	3	2	2	2		J	5	5	5	5	4	4	4	4
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	4	4	4	4
	C	5	5	5	5	5	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	4	4	4	4		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	4	4		E	5	5	5	5	5	5	4	4
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	4	4	4
	G	5	5	5	5	5	5	4	4		G	5	5	5	4	4	4	4	3
	H	5	5	5	5	5	5	5	5		H	5	5	5	3	3	3	3	3
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	4	4	4	3	3	3		J	5	5	5	5	5	5	5	4
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	5	5	5		C								
	D	5	5	4	4	4	4	4	4		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	4	4	4	4	4		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	5	5	3	3	3		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	5	5		J								
Date	9/23/22	9/24/22	9/25/22	9/26/22	9/27/22	9/28/22	9/29/22	9/30/22		Comments: ① IL ABH 9/28/22 → [1930] ② IE CBR 9/29/22 → [5]									
Time	1545	1450	1730	1400	0900	1800	1040	1500											
Init	WES	WES	CBR	BLM	AOJ	ABH	CBR	WES											

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00468	.00593	6	A	31	.00518	.00712
	B	2	.00446	.00588		B	32	.00471	.00647
	C	3	.00467	.00618		C	33	.00480	.00640
	D	4	.00422	.00583		D	34 *	.00463	.00646
	E	5	.00442	.00596		E	35	.00462	.00639
	F	6 *	.00445	.00589		F	36	.00462	.00619
	G	7	.00410	.00565		G	37	.00450	.00616
	H	8	.00456	.00629		H	38	.00471	.00588
	I	9	.00432	.00564		I	39	.00449	.00607
	J	10	.00439	.00651		J	40	.00494	.00643
3	A	11	.00437	.00641	8	A	41	.00453	.00593
	B	12	.00470	.00641		B	42	.00504	.00666
	C	13	.00423	.00557		C	43	.00456	.00604
	D	14 *	.00462	.00590		D	44	.00470	.00614
	E	15	.00438	.00631		E	45	.00434	.00582
	F	16	.00438	.00524		F	46 *	.00483	.00630
	G	17	.00410	.00595		G	47	.00435	.00578
	H	18	.00432	.00592		H	48	.00466	.00632
	I	19	.00441	.00597		I	49	.00442	.00588
	J	20	.00444	.00518		J	50	.00460	.00607
5	A	21	.00454	.00583	11	A	51	.00427	.00589
	B	22	.00398	.00504		B	52	.00487	.00665
	C	23	.00428	.00554		C	53	.00496	.00680
	D	24	.00454	.00547		D	54	.00492	.00699
	E	25 *	.00436	.00563		E	55	.00468	.00608
	F	26	.00439	.00627		F	56 *	.00479	.00661
	G	27	.00443	.00611		G	57	.00472	.00640
	H	28	.00422	.00595		H	58	.00449	.00642
	I	29	.00442	.00601		I	59	.00474	.00645
	J	30	.00448	.00550		J	60	.00453	.00600

Comments:

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	OVEN ID#
*LW	A	61	.00429	.00612	852	SW1
	B	62	.00446	.00602		
	C	63	.00428	.00621	BALANCE VERIFICATION INITIALS	DPD
	D	64	.00435	.00586	DATE/ TARE WEIGHT INITIALS	9-2-22, DPD
	E	65	.00450	.00624	DATE DRYING INITIATED	9-30-22
	F	66	.00472	.00615	TIME DRYING INITIATED	1530
	G	67	.00475	.00585	OVEN TEMP (Act/Corr) (°C)	105, 105
	H	68	.00483	.00611	INITIALS	DPD
	I	69	.00461	.00641		
	J	70	.00448	.00613		
QA/QC (pans)	A	71			DATE/TIME DRYING TERMINATED	10-1-22 / 1530
	B	72			OVEN TEMP (Act/Corr) (°C)	105, 105
	C	73			BALANCE VERIFICATION INITIALS	DPD
	D	74			TOTAL WEIGHT DATE/INITIALS	10-1-22, DPD
	E	75				
	F	76			COMMENTS:	
	G	77				
	H	78				
	I	79				
	J	80				
QA/QC (pans)		6	.00444	.00591		
		14	.00461	.00587		
		25	.00436	.00565		
		34	.00462	.00650		
		46	.00482	.00610		
		56	.00478	.00662		
		70	.00449	.00615		

TREAT = Treatment REP = Replicate CONT = Control No. = Number

ORG. = Organism

Test Notes

Include Date, Time, and Initials

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	9-23-22	0800	Sample 3 Date/Time:	9-27-22	0800
Sample 2 Date/Time:	9-25-22	0800	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	9-23-22	22-0543 -1	RW092322	DPD	Day 4	9-27-22	22-0543 -30	RW092322	Bem
Day 1	9-24-22	22-0543 -1	RW092322	DPD	Day 5	9-28-22	22-0543 -3	RW092322	BPM
Day 2	9-25-22	22-0543 -1	RW092322	KRF	Day 6	9-29-22	22-0543 -3	RW092322	DPD
Day 3	9-26-22	22-0543 -2	RW092322	DPD					

*LW Batch #: 2210376

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

DIE DPD 9-27-22 → [2]

Data Sheet Preparation : Initials: DPD/PO Date: 8-12-22

End of Test Review : Initials: WST/PO Date: 9/30/22 Final Review (signature)

Arturo Orozco JL

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	22-0880	DOB	9-12-22
Source	NWDLs	Age	11d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2201860		4	2201898	2201898	AM 1 AM
1	2201860	220186	KPS 1 KPS	5	2201894	2208337	SKW 1 AM
2	2201896	2201896	KPS 1 KPS	6	2208337	2208337	SKW 1 SKW
3	2201898	2201896	AM 1 SKW	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	9	9	9	9	9	*LW	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	10		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	10	10	10	10	10	10	10		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	7/13/22	7/24/22	9/15/22	9/26/22	9/27/22	9/28/22	9/29/22	9/30/22	9/30/22	Comments:									
Time	1515	1530	1315	1415	1015	1500	1100	1530											
Initials	CBZ	KPS	CBZ	KPS	CBZ	AMH	Bum	way											

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1 *	.00675	.01434	*LW	A	31	.00616	.01422
	B	2	.00709	.001470		B	32	.00605	.01372
	C	3	.00607	.01345		C	33	.00646	.01549
	D	4	.00704	.01008		D	34 *	.00663	.01420
	E	5	.00727	.01538		E	35	.00683	.01468
3	A	6	.00668	.01362	QA/QC (pans)		1	.00676	.01437
	B	7	.00669	.01476			17	.00661	.01351
	C	8	.00657	.01565			27	.00666	.01312
	D	9	.00704	.01440			34	.00685 ^①	.01419
	E	10	.00661	.01586					
5	A	11	.00704	.01432	BALANCE ID# <u>791</u>				
	B	12	.00676	.01291	OVEN ID# <u>SW1</u>				
	C	13	.00658	.01283	BALANCE VERIFICATION INITIALS <u>DPD</u>				
	D	14	.00659	.01404	DATE / TARE WEIGHT INITIALS <u>9-2-22, DPD</u>				
	E	15	.00650	.01564	DATE DRYING INITIATED <u>9/30/22</u>				
6	A	16	.00716	.01413	TIME DRYING INITIATED <u>1600</u>				
	B	17 *	.00662	.01349	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105 / 105</u>				
	C	18	.00646	.01437	INITIALS <u>WJH/POJ</u>				
	D	19	.00697	.01350	DATE / TIME DRYING TERMINATED <u>10-1-22, 1600</u>				
	E	20	.00551	.01309	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105, 105</u>				
8	A	21	.00655	.01610	BALANCE VERIFICATION INITIALS <u>DPD</u>				
	B	22	.00738	.01595	TOTAL WEIGHT DATE / INITIALS <u>10-1-22, DPD</u>				
	C	23	.00678	.01239	COMMENTS: ① IE AOT 10-3-22 → [.00664]				
	D	24	.00670	.01497					
	E	25	.00710	.01396					
11	A	26	.00606	.01470	CONT = Control CONC = Concentration REP = Replicate				
	B	27 *	.00667	.01311	Wt. = Weight ORG. = Organism				
	C	28	.00632	.01298					
	D	29	.00630	.01470					
	E	30	.00655	.01521					

Water Quality Parameters

DATE	9/23/22	9-24-22		9-25-22		9-26-22		9-27-22		9/28/22		9-29-22		9/30/22
TIME	1500	0815	0815	0810	0810	0800	1200	0830	0830	0800	0845	0750	0750	0800
INITIALS	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB	DB DB
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.0	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.1	8.3	8.1	8.4	8.1
3	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.1	8.4	8.2	8.3	8.1
5	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.4	8.2	8.3	8.2
6	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.3	8.2	8.3	8.1
8	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.2	8.2	8.3	8.2	8.3	8.1
11	8.1	8.1	8.2	8.2	8.2	8.2	8.1	8.2	8.3	8.2	8.3	8.2	8.3	8.1
*LW	8.2	8.1	8.3	8.2	8.3	8.1	8.3	8.0	8.3	8.1	8.3	8.0	8.3	8.0
METER No	737	737	737	737	737	737	737	777	773	777	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.3	7.9	7.8	8.1	8.0	7.9	8.2	7.3	8.1	7.6	8.2	7.3	8.3	8.0
3	8.2	7.9	7.8	8.1	8.0	7.8	8.2	7.5	8.3	7.4	8.2	7.3	8.3	8.0
5	8.1	7.8	7.8	8.1	8.1	7.7	8.2	7.5	8.3	7.5	8.3	7.3	8.2	7.8
6	8.1	7.8	7.9	8.1	8.2	7.7	8.3	7.5	8.2	7.5	8.3	7.3	8.2	7.8
8	8.1	7.6	7.9	8.0	8.3	7.7	8.3	7.5	8.2	7.4	8.3	7.3	8.2	8.1
11	8.1	7.6	7.9	8.3	8.3	7.7	8.3	7.6	8.2	7.6	8.4	7.4	8.2	8.1
*LW	8.2	7.8	8.1	8.3	8.2	8.0	8.1	7.3	8.2	7.9	8.3	7.2	8.1	8.0
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (+°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments: DIE Perm 9/28/22 → 0845

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0543
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	23	25	25	25	24	27	25
3	24	25	25	25	24	26	26
5	24	25	25	25	24	24	26
6	24	25	25	25	24	24	26
8	24	25	25	25	24	25	26
11	24	25	25	25	24	25	26
*LW	24	25	25	25	25	25	24
Meter No.:	948	948	948	948	948	948	948

Comments:

Test Notes

Include Date, Time, and Initials



Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-100
--------	-------------------	----	-----	-------	---------	---------------	--------

BFI3538

24 h Acute *Mysidopsis bahia* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2007.0; NWDLS SOP No. 4017

Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	1-5 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	Once daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time Requirements:	Holding time must not exceed 36 h

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	22-0878	DOB	9-18-22
Source	NWDLS	Age (days)	5d

Sample Date/Time:	9-23-22	0800
-------------------	---------	------

Test Initiation Date/Time:	9-23-22	1630	Test Initiation Initials:	AOJ/KRI
Test Termination Date/Time:	9-24-22	1625 ⁰	Test Termination Initials:	KRI/VJC

1st Feed Date/Time/Initials:	9-23-22	1650	AOJ	2nd Feed Date/Time/Initials:	9-24-22	0821	KRI
------------------------------	---------	------	-----	------------------------------	---------	------	-----

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: ① IE KRI 9-24-22 → [1630]

Kyanna Chitolic
Final Review Signature

Data Sheet Preparation - Initials: VJC/KRI Date: 8-19-22

End of Test First Review - Initials: KRI/VJC Date: 9-24-22

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Mysidopsis bahia*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24 hr			0 hr	24 hr
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Mysidopsis bahia*

Conc. (%)	pH	
	0 hr	24 hr
Cont.	8.0	8.0
100	8.2	8.0
Meter No.	1028 ②	737
Time	1630	1700
Initials	A0J	KRY/VJC

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	F-710 ①	4WS
Time	1630	1700
Initials	A0J	KRY/VJC

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24 hr
Cont.	8.3	8.2
100	8.1	8.2
Meter No.	YS16	YS16
Time	1630	1700
Initials	A0J	KRY/VJC

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25
100	26
Meter No.	948
Time	1630
Initials	A0J

Comments:

① IE A0J 9-23-22 → [4WS]
 ② IE A0J 9-27-22 → [737]



Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-1
--------	-------------------	----	-----	-------	---------	---------------	------

BF13542

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	22-0881	DOB	9-9-22
Source	NWDLS	Age (days)	14d

Sample 1 Date/Time:	9-23-22	0800
---------------------	---------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	9-23-22	1640	A0J/KFS
Test Termination	9-24-22	1635①	KFS/VJC

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: ① IEKRI 9-24-22 → C1640 J

Kyma Chitolic

Final Review Signature

Data Sheet Preparation - Initials: VJC/A0J Date: 8-19-22

End of Test First Review - Initials: KFS/VJC Date: 9-24-22

Codes: IE-incorrec entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	22-0543	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.0	7.9
100	8.2	8.0
Meter No.	4628 ②	737
Time	1630	1700
Initials	A0J	KRY / VJC

Conc. (%)	Temp. °C (Actual / Corrected)	
	0 hr	24 hr
Cont.	25 / 25	25 / 25
100	25 / 25	25 / 25
Therm. No.	4 ①	4WS
Time	1630	1700
Initials	A0J	KRY / VJC

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.3	8.2
100	8.1	8.1
Meter No.	YS16	YS16
Time	1630	1700
Initials	A0J	KRY / VJC

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25
100	26
Meter No.	948
Time	1630
Initials	A0J

Comments:

① IE A0J 9-23-22 → [4WS]
 ② IE A0J 9-27-22 → [737]

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 05-8473-3625	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:02	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 19-6138-7752	Test Type: Growth-Survival-Fec (7d)	Analyst: Dane DeGuzman
Start Date: 23 Sep-22 15:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 6d 23h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	14.86%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	85.5	75	2	18	Asymp	0.2204	Non-Significant Effect
		5	93.5	75	2	18	Asymp	0.4745	Non-Significant Effect
		6	103.5	75	2	18	Asymp	0.7973	Non-Significant Effect
		8	80	75	2	18	Asymp	0.1054	Non-Significant Effect
		11	103.5	75	2	18	Asymp	0.7973	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.1028	<<	0.4	Yes	Passes Criteria
Control Resp	0.94	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.194801	0.0389601	5	1.477	0.2125	Non-Significant Effect
Error	1.42402	0.0263707	54			
Total	1.61882		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	7.78	15.09	0.1688	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9247	0.9459	0.0012	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9400	0.8709	1.0000	1.0000	0.8000	1.0000	0.0306	10.28%	0.00%
3		10	0.8000	0.6492	0.9508	0.8000	0.4000	1.0000	0.0667	26.35%	14.89%
5		10	0.8800	0.7800	0.9800	0.9000	0.6000	1.0000	0.0442	15.89%	6.38%
6		10	0.9200	0.8200	1.0000	1.0000	0.6000	1.0000	0.0442	15.20%	2.13%
8		10	0.8400	0.7797	0.9003	0.8000	0.8000	1.0000	0.0267	10.04%	10.64%
11		10	0.9200	0.8200	1.0000	1.0000	0.6000	1.0000	0.0442	15.20%	2.13%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.274	1.192	1.356	1.345	1.107	1.345	0.03638	9.03%	0.00%
3		10	1.116	0.947	1.285	1.107	0.6847	1.345	0.0747	21.17%	12.40%
5		10	1.204	1.088	1.321	1.226	0.8861	1.345	0.05147	13.52%	5.47%
6		10	1.252	1.136	1.368	1.345	0.8861	1.345	0.05129	12.96%	1.74%
8		10	1.155	1.083	1.227	1.107	1.107	1.345	0.03175	8.69%	9.35%
11		10	1.252	1.136	1.368	1.345	0.8861	1.345	0.05129	12.96%	1.74%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 05-8473-3625

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 12 Oct-22 16:02

Analysis: Nonparametric-Control vs Treatments

Status Level: 1

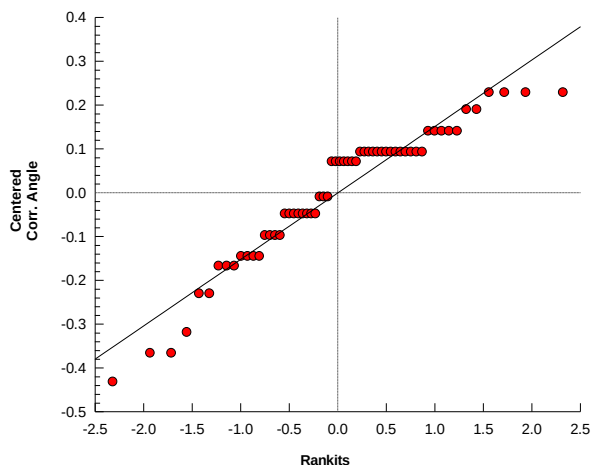
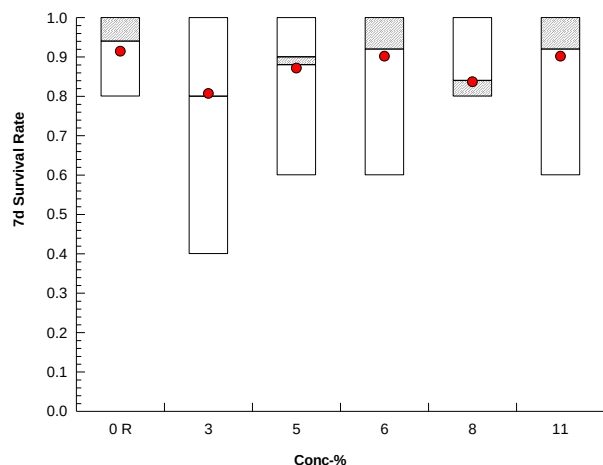
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.8000	1.0000	0.8000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000
3		1.0000	0.8000	0.8000	0.6000	1.0000	0.6000	1.0000	1.0000	0.8000	0.4000
5		1.0000	1.0000	0.8000	0.8000	0.8000	1.0000	0.8000	1.0000	1.0000	0.6000
6		1.0000	1.0000	1.0000	0.8000	1.0000	0.8000	1.0000	0.6000	1.0000	1.0000
8		0.8000	0.8000	0.8000	0.8000	1.0000	0.8000	1.0000	0.8000	0.8000	0.8000
11		1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	0.6000	1.0000	1.0000	0.8000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.107	1.345	1.107	1.345	1.345	1.107	1.345	1.345	1.345	1.345
3		1.345	1.107	1.107	0.8861	1.345	0.8861	1.345	1.345	1.107	0.6847
5		1.345	1.345	1.107	1.107	1.107	1.345	1.107	1.345	1.345	0.8861
6		1.345	1.345	1.345	1.107	1.345	1.107	1.345	0.8861	1.345	1.345
8		1.107	1.107	1.107	1.107	1.345	1.107	1.345	1.107	1.107	1.107
11		1.345	1.345	1.345	1.345	1.107	1.345	0.8861	1.345	1.345	1.107

Graphics



CETIS Analytical Report

Report Date: 12 Oct-22 16:05 (p 3 of 6)
 Test Code/ID: 22-0543 / 04-8988-9798

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 05-5477-7534	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:02	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 19-6138-7752	Test Type: Growth-Survival-Fec (7d)	Analyst: Dane DeGuzman
Start Date: 23 Sep-22 15:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 6d 23h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	18.03%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	107	75	0	18	Asymp	0.8746	Non-Significant Effect
		5	98.5	75	1	18	Asymp	0.6489	Non-Significant Effect
		6	124	75	0	18	Asymp	0.9966	Non-Significant Effect
		8	99.5	75	1	18	Asymp	0.6816	Non-Significant Effect
		11	130	75	0	18	Asymp	0.9994	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.1573	<<	0.4	Yes	Passes Criteria
Control Resp	0.3098	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0246627	0.0049326	5	1.656	0.1610	Non-Significant Effect
Error	0.160805	0.0029779	54			
Total	0.185468		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	20.93	15.09	8.3E-04	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9778	0.9459	0.3430	Normal Distribution

Mean Dry Biomass-mg Summary

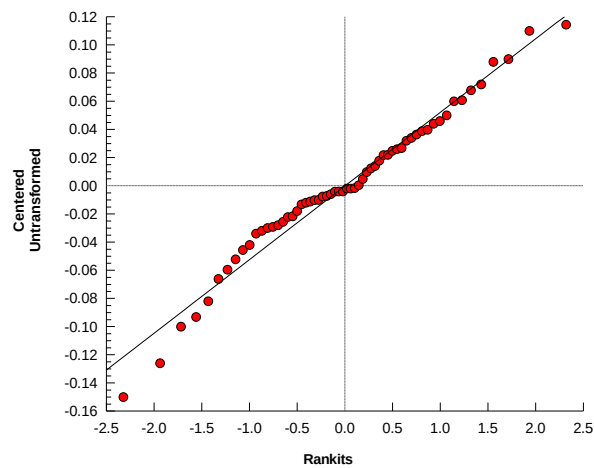
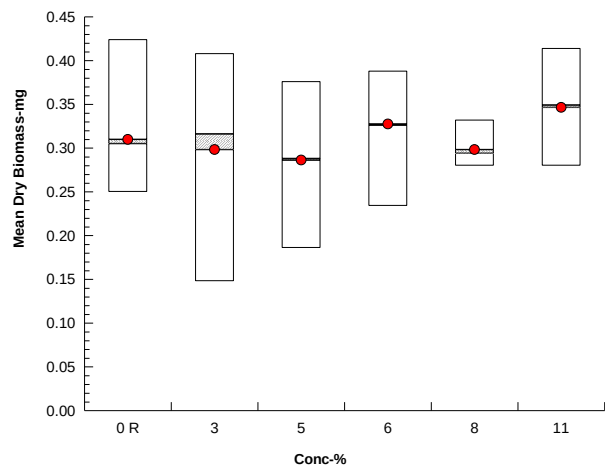
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3098	0.2749	0.3447	0.305	0.25	0.424	0.01541	15.73%	0.00%
3		10	0.2982	0.2357	0.3607	0.316	0.148	0.408	0.02763	29.30%	3.74%
5		10	0.2862	0.2403	0.3321	0.288	0.186	0.376	0.02028	22.41%	7.62%
6		10	0.3274	0.2968	0.358	0.326	0.234	0.388	0.01352	13.06%	-5.68%
8		10	0.2982	0.2863	0.3101	0.294	0.28	0.332	0.005245	5.56%	3.74%
11		10	0.3464	0.3174	0.3754	0.349	0.28	0.414	0.01282	11.70%	-11.81%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.25	0.284	0.302	0.322	0.308	0.288	0.31	0.346	0.264	0.424
3		0.408	0.342	0.268	0.256	0.386	0.172	0.37	0.32	0.312	0.148
5		0.258	0.332	0.252	0.186	0.254	0.376	0.336	0.346	0.318	0.204
6		0.388	0.352	0.32	0.366	0.354	0.314	0.332	0.234	0.316	0.298
8		0.28	0.324	0.296	0.288	0.296	0.294	0.286	0.332	0.292	0.294
11		0.324	0.356	0.368	0.414	0.28	0.364	0.336	0.386	0.342	0.294

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 05-5477-7534	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 12 Oct-22 16:02	Analysis: Nonparametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 12 Oct-22 16:05 (p 5 of 6)
Test Code/ID: 22-0543 / 04-8988-9798

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 18-0174-8890	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:02	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 19-6138-7752	Test Type: Growth-Survival-Fec (7d)	Analyst: Dane DeGuzman
Start Date: 23 Sep-22 15:45	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 6d 23h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	15.78%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-1.806	2.289	0.052	18	CDF	0.9990	Non-Significant Effect
		5	0.2325	2.289	0.052	18	CDF	0.7552	Non-Significant Effect
		6	-1.281	2.289	0.052	18	CDF	0.9934	Non-Significant Effect
		8	-1.202	2.289	0.052	18	CDF	0.9915	Non-Significant Effect
		11	-2.296	2.289	0.052	18	CDF	0.9998	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0257196	0.0051439	5	1.979	0.0965	Non-Significant Effect
Error	0.140347	0.0025990	54			
Total	0.166067		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	2.63	15.09	0.7568	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9592	0.9459	0.0428	Normal Distribution

Mean Dry Weight-mg Summary

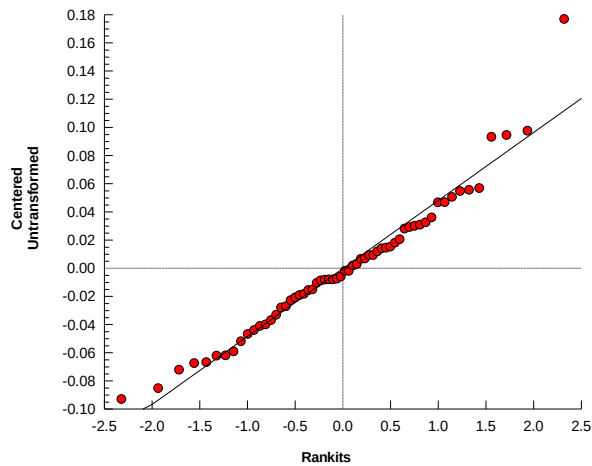
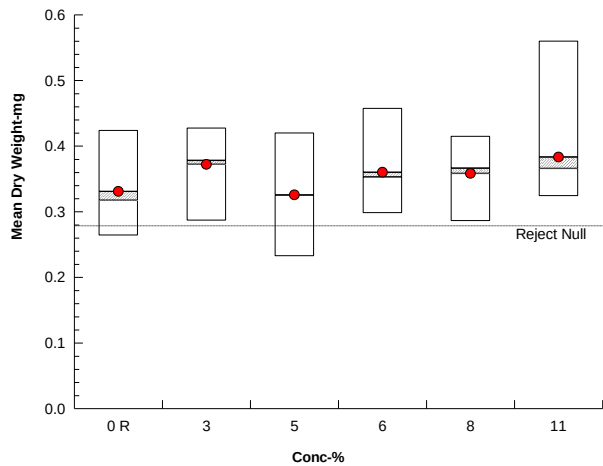
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3308	0.2971	0.3645	0.3173	0.264	0.424	0.0149	14.24%	0.00%
3		10	0.372	0.3389	0.4051	0.378	0.2867	0.4275	0.01462	12.43%	-12.45%
5		10	0.3255	0.2874	0.3636	0.325	0.2325	0.42	0.01686	16.38%	1.60%
6		10	0.36	0.3259	0.3941	0.353	0.298	0.4575	0.0151	13.26%	-8.83%
8		10	0.3582	0.3291	0.3873	0.3663	0.286	0.415	0.01288	11.37%	-8.28%
11		10	0.3832	0.3354	0.4309	0.3657	0.324	0.56	0.02111	17.42%	-15.83%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.3125	0.284	0.3775	0.322	0.308	0.36	0.31	0.346	0.264	0.424
3		0.408	0.4275	0.335	0.4267	0.386	0.2867	0.37	0.32	0.39	0.37
5		0.258	0.332	0.315	0.2325	0.3175	0.376	0.42	0.346	0.318	0.34
6		0.388	0.352	0.32	0.4575	0.354	0.3925	0.332	0.39	0.316	0.298
8		0.35	0.405	0.37	0.36	0.296	0.3675	0.286	0.415	0.365	0.3675
11		0.324	0.356	0.368	0.414	0.35	0.364	0.56	0.386	0.342	0.3675

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 18-0174-8890	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 12 Oct-22 16:02	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Oct-22 11:50 (p 1 of 6)
 Test Code/ID: 22-0543 / 15-6746-5631

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 16-9473-4094	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:22	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 12-0675-5303	Test Type: Growth-Survival (7d)	Analyst: Arturo Orozco
Start Date: 23 Sep-22 15:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.07%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		5	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		6	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		8	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		11	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0	<<	0.4	Yes	Passes Criteria
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0044266	0.0008853	5	1	0.4389	Non-Significant Effect
Error	0.0212475	0.0008853	24			
Total	0.025674		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	7.111	3.895	3.3E-04	Unequal Variances
Variances	Mod Levene Equality of Variance Test	1	4.248	0.4457	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4063	0.9031	6.2E-10	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
6		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
3		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
5		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
6		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
8		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
11		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 16-9473-4094 Endpoint: 7d Survival Rate
Analyzed: 12 Oct-22 16:22 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

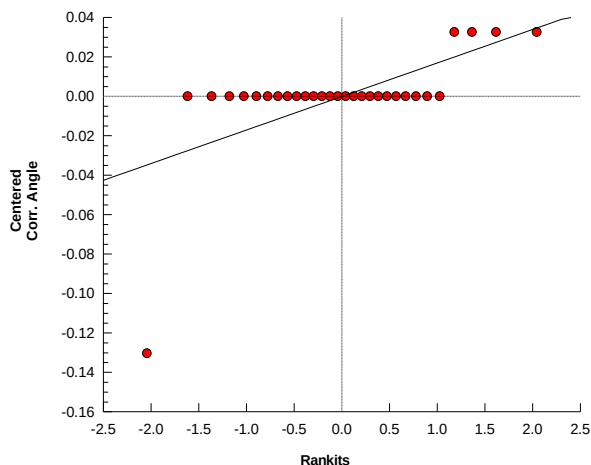
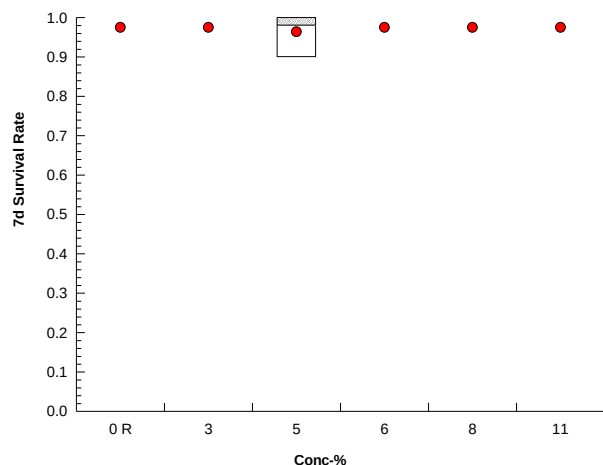
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		0.9000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.412
3		1.412	1.412	1.412	1.412	1.412
5		1.249	1.412	1.412	1.412	1.412
6		1.412	1.412	1.412	1.412	1.412
8		1.412	1.412	1.412	1.412	1.412
11		1.412	1.412	1.412	1.412	1.412

Graphics



CETIS Analytical Report

Report Date: 17 Oct-22 11:50 (p 3 of 6)
 Test Code/ID: 22-0543 / 15-6746-5631

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 15-6251-7874	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:22	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 12-0675-5303	Test Type: Growth-Survival (7d)	Analyst: Arturo Orozco
Start Date: 23 Sep-22 15:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	29.71%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-1.643	2.362	0.200	8	CDF	0.9976	Non-Significant Effect
		5	-0.5987	2.362	0.200	8	CDF	0.9525	Non-Significant Effect
		6	-0.502	2.362	0.200	8	CDF	0.9404	Non-Significant Effect
		8	-1.209	2.362	0.200	8	CDF	0.9909	Non-Significant Effect
		11	-1.195	2.362	0.200	8	CDF	0.9905	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.3097	<<	0.4	Yes	Passes Criteria
Control Resp	0.6746	0.5	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0641872	0.0128374	5	0.7132	0.6196	Non-Significant Effect
Error	0.432014	0.0180006	24			
Total	0.496201		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.244	15.09	0.2832	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9307	0.9031	0.0512	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.6746	0.4152	0.934	0.759	0.304	0.811	0.09342	30.97%	0.00%
3		5	0.814	0.6872	0.9408	0.807	0.694	0.925	0.04566	12.54%	-20.66%
5		5	0.7254	0.5756	0.8752	0.728	0.615	0.914	0.05396	16.63%	-7.53%
6		5	0.7172	0.6476	0.7868	0.697	0.653	0.791	0.02505	7.81%	-6.31%
8		5	0.7772	0.5853	0.9691	0.827	0.561	0.955	0.06911	19.88%	-15.21%
11		5	0.776	0.6379	0.9141	0.84	0.644	0.866	0.04973	14.33%	-15.03%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.759	0.761	0.738	0.304	0.811
3		0.694	0.807	0.908	0.736	0.925
5		0.728	0.615	0.625	0.745	0.914
6		0.697	0.687	0.791	0.653	0.758
8		0.955	0.857	0.561	0.827	0.686
11		0.864	0.644	0.666	0.84	0.866

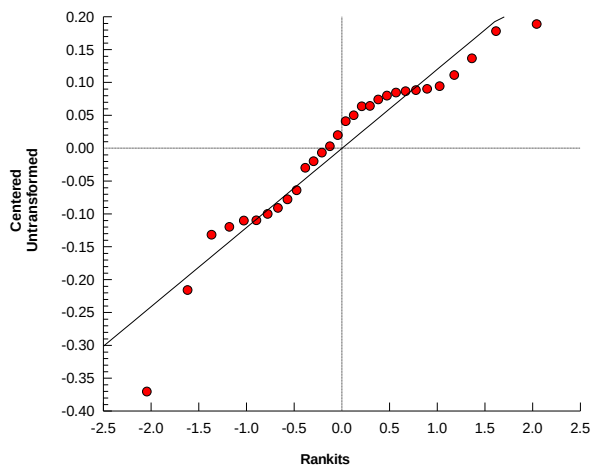
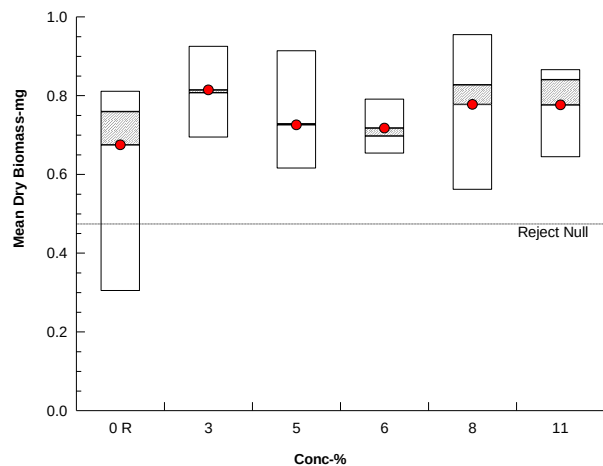
Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 15-6251-7874 Endpoint: Mean Dry Biomass-mg
Analyzed: 12 Oct-22 16:22 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 10-1462-8763	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 12 Oct-22 16:22	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 12-0675-5303	Test Type: Growth-Survival (7d)	Analyst: Arturo Orozco
Start Date: 23 Sep-22 15:15	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 30 Sep-22 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	29.90%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-1.632	2.362	0.202	8	CDF	0.9975	Non-Significant Effect
		5	-0.7842	2.362	0.202	8	CDF	0.9702	Non-Significant Effect
		6	-0.4988	2.362	0.202	8	CDF	0.9399	Non-Significant Effect
		8	-1.201	2.362	0.202	8	CDF	0.9906	Non-Significant Effect
		11	-1.187	2.362	0.202	8	CDF	0.9902	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0617186	0.0123437	5	0.6769	0.6451	Non-Significant Effect
Error	0.437669	0.0182362	24			
Total	0.499388		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	6.191	15.09	0.2881	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9186	0.9031	0.0247	Normal Distribution

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.6746	0.4152	0.934	0.759	0.304	0.811	0.09342	30.97%	0.00%
3		5	0.814	0.6872	0.9408	0.807	0.694	0.925	0.04566	12.54%	-20.66%
5		5	0.7416	0.5847	0.8985	0.745	0.615	0.914	0.05652	17.04%	-9.93%
6		5	0.7172	0.6476	0.7868	0.697	0.653	0.791	0.02505	7.81%	-6.31%
8		5	0.7772	0.5853	0.9691	0.827	0.561	0.955	0.06911	19.88%	-15.21%
11		5	0.776	0.6379	0.9141	0.84	0.644	0.866	0.04973	14.33%	-15.03%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.759	0.761	0.738	0.304	0.811
3		0.694	0.807	0.908	0.736	0.925
5		0.8089	0.615	0.625	0.745	0.914
6		0.697	0.687	0.791	0.653	0.758
8		0.955	0.857	0.561	0.827	0.686
11		0.864	0.644	0.666	0.84	0.866

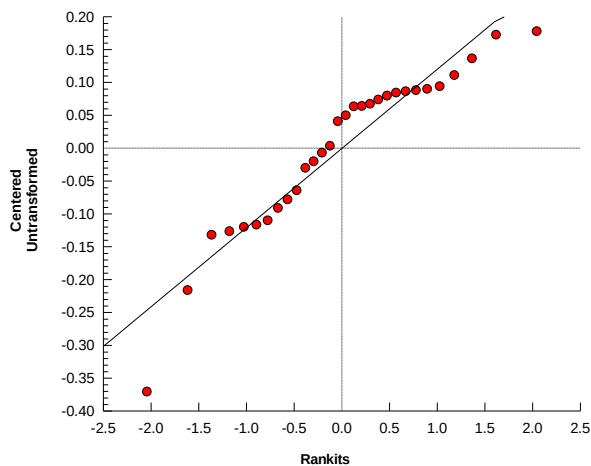
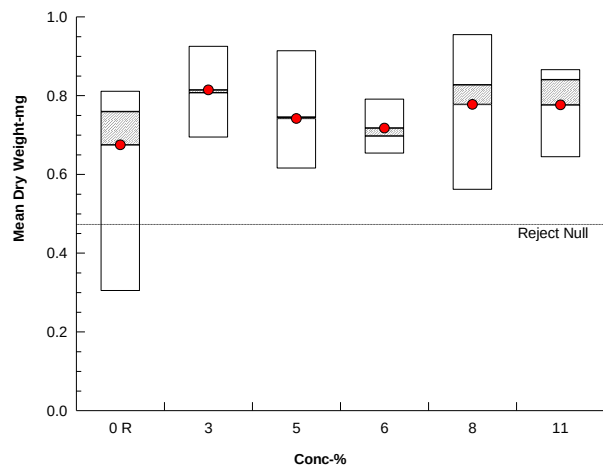
Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 10-1462-8763 Endpoint: Mean Dry Weight-mg
Analyzed: 12 Oct-22 16:22 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 17 Oct-22 11:51 (p 1 of 3)
 Test Code/ID: 22-0543 / 15-6746-5631

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	07-4384-1018	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4
Analyzed:	13 Oct-22 14:27	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	12-0675-5303	Test Type:	Growth-Survival (7d)	Analyst:	Arturo Orozco
Start Date:	23 Sep-22 15:15	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	30 Sep-22 15:30	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	21-2629-6607	Code:	7EBCB61F	Project:	NT-100056
Sample Date:	23 Sep-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	23 Sep-22 13:20	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	285468	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.3097	<<	0.4	Yes	Passes Criteria
Control Resp	0.6746	0.5	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Biomass-mg Summary

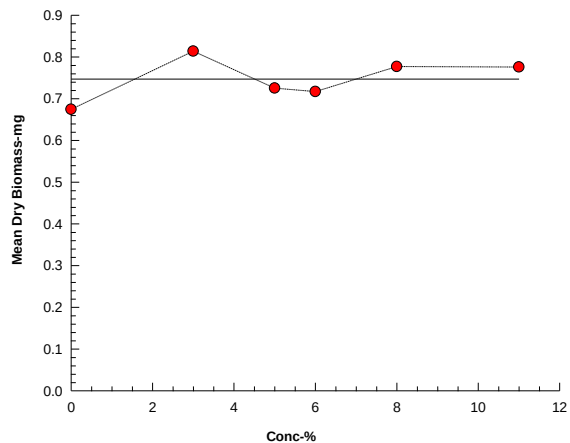
			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	R	5	0.6746	0.304	0.811	0.2089	30.97%	0.0%	0.7474	0.0%
3		5	0.814	0.694	0.925	0.1021	12.54%	-20.66%	0.7474	0.0%
5		5	0.7254	0.615	0.914	0.1207	16.63%	-7.53%	0.7474	0.0%
6		5	0.7172	0.653	0.791	0.05602	7.81%	-6.32%	0.7474	0.0%
8		5	0.7772	0.561	0.955	0.1545	19.88%	-15.21%	0.7474	0.0%
11		5	0.776	0.644	0.866	0.1112	14.33%	-15.03%	0.7474	0.0%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.759	0.761	0.738	0.304	0.811
3		0.694	0.807	0.908	0.736	0.925
5		0.728	0.615	0.625	0.745	0.914
6		0.697	0.687	0.791	0.653	0.758
8		0.955	0.857	0.561	0.827	0.686
11		0.864	0.644	0.666	0.84	0.866

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 07-4384-1018	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 13 Oct-22 14:27	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Oct-22 11:51 (p 3 of 3)
 Test Code/ID: 22-0543 / 15-6746-5631

Inland Silverside 7-d Larval Survival and Growth Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	15-0112-9183	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	13 Oct-22 14:27	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1	
Batch ID:	12-0675-5303	Test Type:	Growth-Survival (7d)	Analyst:	Arturo Orozco	
Start Date:	23 Sep-22 15:15	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	30 Sep-22 15:30	Species:	Menidia beryllina	Brine:	Instant Ocean	
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	NWDLS	Age: 11
Sample ID:	21-2629-6607	Code:	7EBCB61F	Project:	NT-100056	
Sample Date:	23 Sep-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	23 Sep-22 13:20	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1546553	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

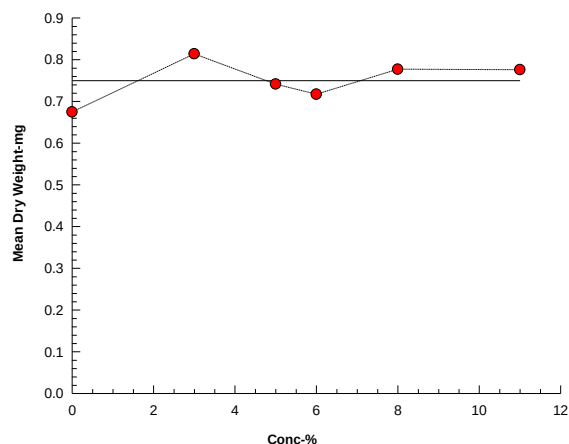
Mean Dry Weight-mg Summary

				Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
0	R	5	0.6746	0.304	0.811	0.2089	30.97%	0.0%		0.7501	0.0%
3		5	0.814	0.694	0.925	0.1021	12.54%	-20.66%		0.7501	0.0%
5		5	0.7416	0.615	0.914	0.1264	17.04%	-9.93%		0.7501	0.0%
6		5	0.7172	0.653	0.791	0.05602	7.81%	-6.32%		0.7501	0.0%
8		5	0.7772	0.561	0.955	0.1545	19.88%	-15.21%		0.7501	0.0%
11		5	0.776	0.644	0.866	0.1112	14.33%	-15.03%		0.7501	0.0%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.759	0.761	0.738	0.304	0.811
3		0.694	0.807	0.908	0.736	0.925
5		0.8089	0.615	0.625	0.745	0.914
6		0.697	0.687	0.791	0.653	0.758
8		0.955	0.857	0.561	0.827	0.686
11		0.864	0.644	0.666	0.84	0.866

Graphics



CETIS Analytical Report

Report Date: 12 Oct-22 17:01 (p 1 of 2)
 Test Code/ID: 22-0543 / 10-4819-6764

Mysidopsis 24-h Acute Survival Test	NWDLS Environ. Toxicol. Lab
--	------------------------------------

Analysis ID: 11-4168-9221	Endpoint: 24h Survival	CETIS Version: CETISv1.9.4	
Analyzed: 12 Oct-22 16:59	Analysis: Nonparametric-Two Sample	Status Level: 1	
Batch ID: 11-1388-0317	Test Type: Survival (1d)	Analyst: Vynna Chitolie	
Start Date: 23 Sep-22 16:30	Protocol: EPA/821/R-02-014 (2002)	Diluent: Laboratory Seawater	
Ending Date: 24 Sep-22 16:30	Species: Mysidopsis bahia	Brine: Instant Ocean	
Test Length: 24h	Taxon: Malacostraca	Source: NWDLS	Age: 5d
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056	
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000	
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC	
Sample Age: 8h	Client: Providence Engineering and Env. Group LL		

Data Transform	Alt Hyp	Comparison Result
Angular (Corrected)	C > T	100% passed 24h survival

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Lab Water		100	27.5	n/a	1	8	Exact	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<1.0E-37	Significant Effect
Error	0	0	8			
Total	0		9			

24h Survival Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

24h Survival Detail

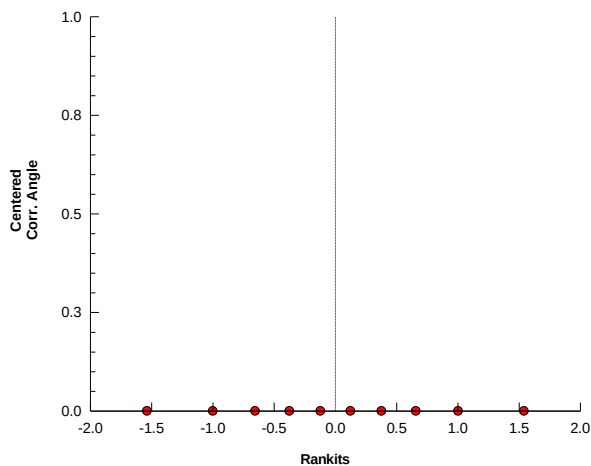
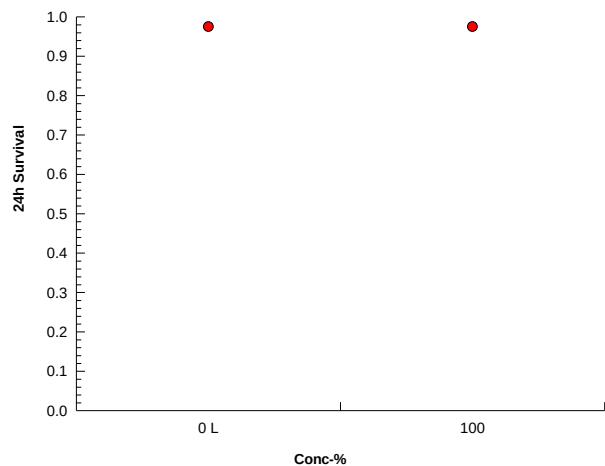
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.412	1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412	1.412

Mysidopsis 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab
Analysis ID:	11-4168-9221	Endpoint:	24h Survival
Analized:	12 Oct-22 16:59	Analysis:	Nonparametric-Two Sample
		CETIS Version:	CETISv1.9.4
		Status Level:	1

Graphics



CETIS Analytical Report

Report Date: 12 Oct-22 17:03 (p 1 of 2)
 Test Code/ID: 22-0543 / 04-5402-0504

Inland Silverside 24-h Acute Survival Test	NWDLS Environ. Toxicol. Lab
---	------------------------------------

Analysis ID: 17-4857-7617	Endpoint: 24h Survival	CETIS Version: CETISv1.9.4	
Analyzed: 12 Oct-22 17:02	Analysis: Nonparametric-Two Sample	Status Level: 1	
Batch ID: 00-8870-6954	Test Type: Survival (1d)	Analyst: Vynna Chitolie	
Start Date: 23 Sep-22 16:40	Protocol: EPA/821/R-02-012 (2002)	Diluent: Laboratory Seawater	
Ending Date: 24 Sep-22 16:40	Species: Menidia beryllina	Brine: Instant Ocean	
Test Length: 24h	Taxon: Actinopterygii	Source: NWDLS	Age: 14d
Sample ID: 21-2629-6607	Code: 7EBCB61F	Project: NT-100056	
Sample Date: 23 Sep-22 08:00	Material: Industrial Effluent	Source: WQ0005143000	
Receipt Date: 23 Sep-22 13:20	CAS (PC):	Station: Natgasoline LLC	
Sample Age: 9h	Client: Providence Engineering and Env. Group LL		

Data Transform	Alt Hyp	Comparison Result
Angular (Corrected)	C > T	100% passed 24h survival

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Lab Water		100	27.5	n/a	1	8	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	1	0.9	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<1.0E-37	Significant Effect
Error	0	0	8			
Total	0		9			

24h Survival Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

24h Survival Detail

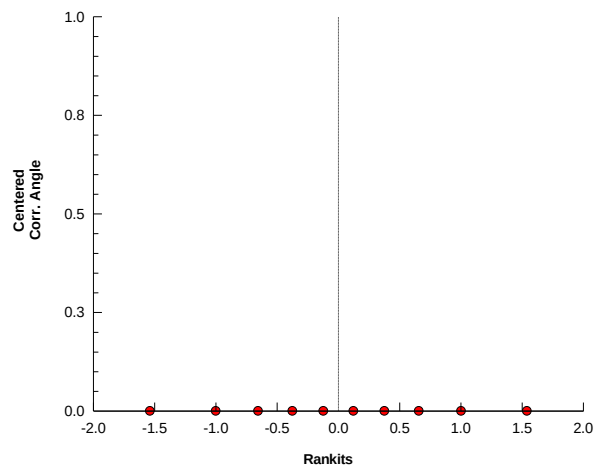
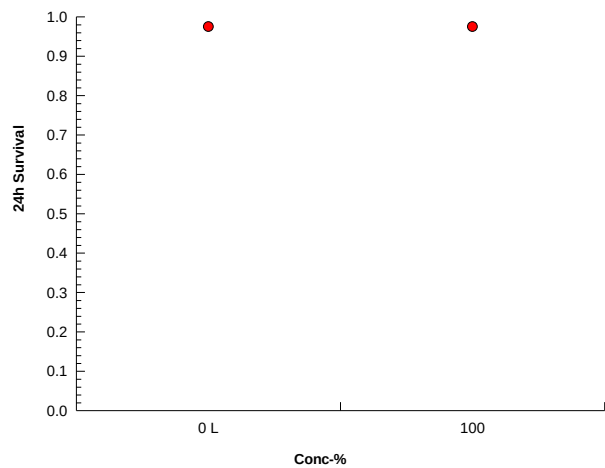
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.412	1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412	1.412

Inland Silverside 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab	
Analysis ID:	17-4857-7617	Endpoint:	24h Survival	CETIS Version: CETISv1.9.4
Analyzed:	12 Oct-22 17:02	Analysis:	Nonparametric-Two Sample	Status Level: 1

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test

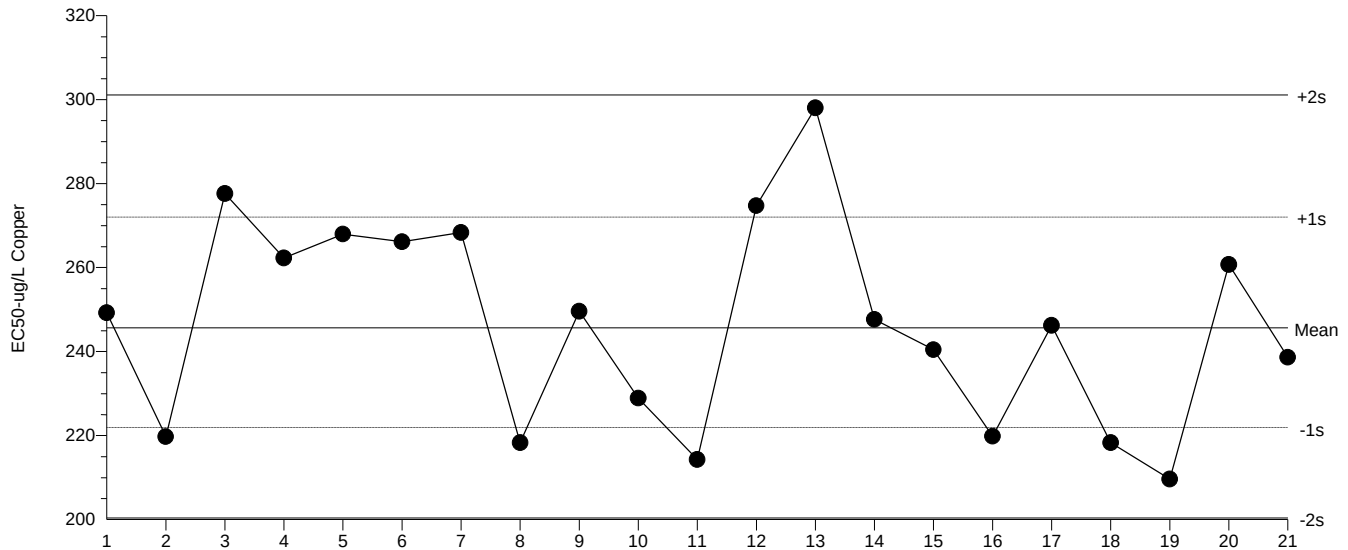
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 245.7

Count: 20

-1s Warning Limit: 221.9

-2s Action Limit: 200.4

Sigma: n/a

CV: 10.20%

+1s Warning Limit: 272

+2s Action Limit: 301.1

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Apr	7	17:00	249.2	3.555	0.1411			19-6064-2436	01-0304-3427	NWDLS Environ. Toxicol.
2		May	20	14:30	219.7	-25.94	-1.096	(-)		14-6201-6744	01-6829-2395	NWDLS Environ. Toxicol.
3		Jun	3	12:00	277.6	31.96	1.201	(+)		16-5190-0226	03-1102-1147	NWDLS Environ. Toxicol.
4		Jul	6	14:36	262.3	16.59	0.6421			02-5459-6353	02-8769-4940	NWDLS Environ. Toxicol.
5		Aug	3	14:00	268	22.3	0.8534			07-4115-5990	16-2172-2342	NWDLS Environ. Toxicol.
6		Sep	7	10:30	266.1	20.47	0.7862			08-0819-8101	12-0660-4206	NWDLS Environ. Toxicol.
7		Oct	1	9:50	268.3	22.68	0.8672			06-6763-0892	02-0293-6999	NWDLS Environ. Toxicol.
8		Nov	17	15:15	218.3	-27.38	-1.161	(-)		02-7564-0424	02-4811-1177	NWDLS Environ. Toxicol.
9		Dec	20	13:15	249.6	3.919	0.1555			12-9085-3704	04-5280-3800	NWDLS Environ. Toxicol.
10	2022	Jan	7	12:00	228.9	-16.77	-0.6947			09-7824-2132	19-5290-7852	NWDLS Environ. Toxicol.
11		Feb	2	14:30	214.3	-31.4	-1.343	(-)		08-7070-1131	04-2971-6813	NWDLS Environ. Toxicol.
12		Mar	3	16:50	274.7	29.07	1.099	(+)		21-2022-6914	10-4405-5946	NWDLS Environ. Toxicol.
13		Apr	1	11:45	298	52.38	1.898	(+)		10-9273-3745	07-1870-5289	NWDLS Environ. Toxicol.
14			20	15:00	247.7	1.985	0.07907			06-4858-7523	10-6642-1452	NWDLS Environ. Toxicol.
15		May	4	14:15	240.4	-5.228	-0.2113			12-1858-3405	16-6015-0969	NWDLS Environ. Toxicol.
16		Jun	15	15:30	219.8	-25.85	-1.092	(-)		03-2445-7793	10-4889-3424	NWDLS Environ. Toxicol.
17		Jul	1	10:00	246.2	0.5495	0.02195			12-3923-1073	01-2993-9074	NWDLS Environ. Toxicol.
18		Aug	5	13:45	218.3	-27.38	-1.161	(-)		10-0343-3624	05-7350-3919	NWDLS Environ. Toxicol.
19		Sep	8	13:00	209.6	-36.05	-1.559	(-)		18-4311-0498	15-0673-3784	NWDLS Environ. Toxicol.
20			22	11:30	260.7	15.03	0.5835			08-7149-7523	10-8268-9600	NWDLS Environ. Toxicol.
21			22	15:30	238.6	-7.038	-0.2855			11-1398-4162	15-7406-5954	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

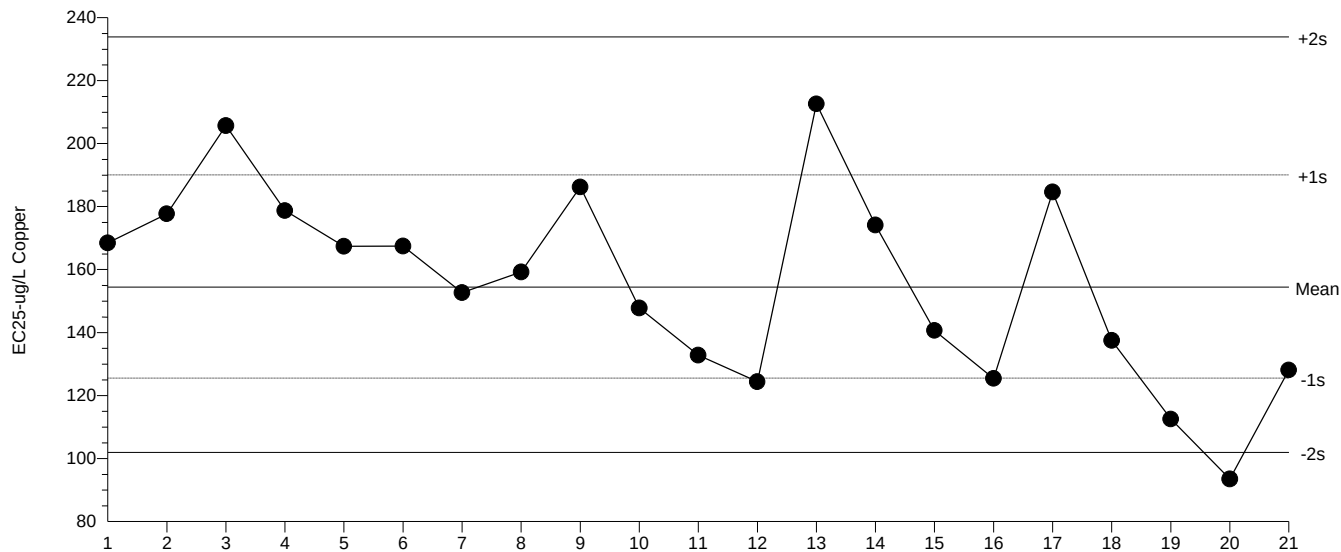
Material: Copper

Protocol: EPA/821/R-02-014 (2002)

Endpoint: Mean Dry Biomass-mg

Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 154.5

Count: 20

-1s Warning Limit: 125.5

-2s Action Limit: 102

Sigma: n/a

CV: 21.00%

+1s Warning Limit: 190.1

+2s Action Limit: 233.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Apr	7	17:00	168.5	13.99	0.418			19-6064-2436	10-6743-6316	NWDLS Environ. Toxicol.
2		May	20	14:30	177.7	23.23	0.6756			14-6201-6744	05-5381-5466	NWDLS Environ. Toxicol.
3		Jun	3	12:00	205.7	51.22	1.381	(+)		16-5190-0226	03-1838-2648	NWDLS Environ. Toxicol.
4		Jul	6	14:36	178.7	24.25	0.7032			02-5459-6353	09-0315-4751	NWDLS Environ. Toxicol.
5		Aug	3	14:00	167.4	12.91	0.387			07-4115-5990	19-7716-0639	NWDLS Environ. Toxicol.
6		Sep	7	10:30	167.4	12.96	0.3885			08-0819-8101	05-4285-4798	NWDLS Environ. Toxicol.
7		Oct	1	9:50	152.7	-1.797	-0.05641			06-6763-0892	00-3098-5433	NWDLS Environ. Toxicol.
8		Nov	17	15:15	159.2	4.767	0.1466			02-7564-0424	06-0870-5824	NWDLS Environ. Toxicol.
9		Dec	20	13:15	186.2	31.74	0.901			12-9085-3704	17-3888-7616	NWDLS Environ. Toxicol.
10	2022	Jan	7	12:00	147.8	-6.678	-0.2131			09-7824-2132	18-9406-9090	NWDLS Environ. Toxicol.
11		Feb	2	14:30	132.8	-21.67	-0.7289			08-7070-1131	16-8447-9830	NWDLS Environ. Toxicol.
12		Mar	3	16:50	124.4	-30.09	-1.045	(-)		21-2022-6914	18-2966-6761	NWDLS Environ. Toxicol.
13		Apr	1	11:45	212.6	58.15	1.541	(+)		10-9273-3745	01-6504-1547	NWDLS Environ. Toxicol.
14			20	15:00	174.1	19.66	0.5776			06-4858-7523	10-7382-1607	NWDLS Environ. Toxicol.
15		May	4	14:15	140.7	-13.81	-0.4515			12-1858-3405	19-6615-1827	NWDLS Environ. Toxicol.
16		Jun	15	15:30	125.4	-29.04	-1.004	(-)		03-2445-7793	20-9600-4502	NWDLS Environ. Toxicol.
17		Jul	1	10:00	184.6	30.15	0.8596			12-3923-1073	17-5505-5702	NWDLS Environ. Toxicol.
18		Aug	5	13:45	137.5	-16.96	-0.5607			10-0343-3624	03-6755-1187	NWDLS Environ. Toxicol.
19		Sep	8	13:00	112.5	-41.94	-1.527	(-)		18-4311-0498	00-1638-2244	NWDLS Environ. Toxicol.
20			22	11:30	93.49	-60.98	-2.421	(-)	(-)	08-7149-7523	17-4251-3151	NWDLS Environ. Toxicol.
21			22	15:30	128.1	-26.37	-0.9025			11-1398-4162	17-2272-6669	NWDLS Environ. Toxicol.

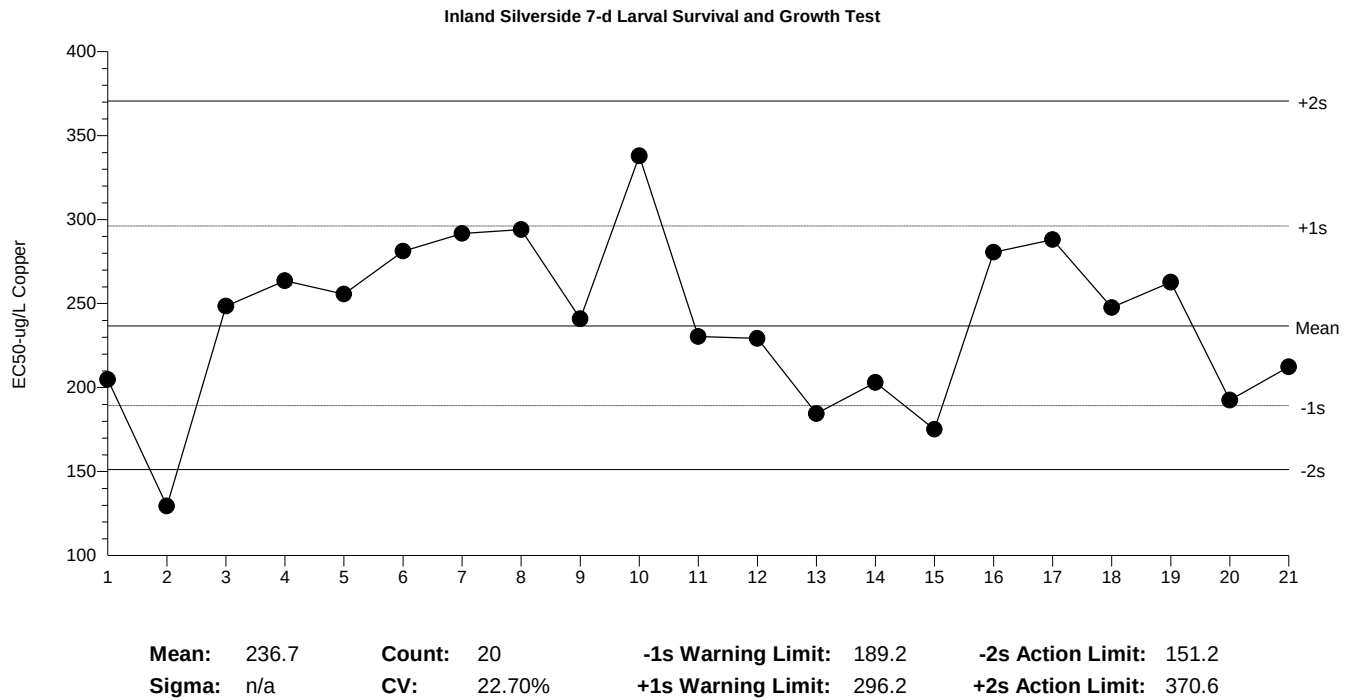
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Jan	7	14:30	204.8	-31.92	-0.6463			11-8669-1134	15-7346-5259	NWDLS Environ. Toxicol.
2		Feb	10	12:00	129.4	-107.3	-2.694	(-)	(-)	19-0426-1634	11-0292-5070	NWDLS Environ. Toxicol.
3		Mar	18	12:00	248.5	11.72	0.2156			19-2942-0562	19-3228-2714	NWDLS Environ. Toxicol.
4		Apr	7	17:00	263.6	26.88	0.4799			09-6023-9668	00-7899-7098	NWDLS Environ. Toxicol.
5		May	20	13:30	255.6	18.87	0.3422			16-8999-3463	08-8634-5597	NWDLS Environ. Toxicol.
6		Jun	3	13:00	281.2	44.46	0.7679			09-4953-8218	06-7574-1585	NWDLS Environ. Toxicol.
7		Jul	6	14:30	291.7	54.99	0.932			06-6487-9714	14-1219-8967	NWDLS Environ. Toxicol.
8		Aug	18	16:00	294.1	57.32	0.9675			15-8347-6079	20-3670-2984	NWDLS Environ. Toxicol.
9		Sep	7	10:30	240.9	4.159	0.0777			01-3526-1514	20-5345-6399	NWDLS Environ. Toxicol.
10		Oct	1	11:45	337.9	101.2	1.588	(+)		19-5909-2091	14-4131-0545	NWDLS Environ. Toxicol.
11		Nov	17	15:30	230.4	-6.343	-0.1212			05-7761-2074	00-5531-0604	NWDLS Environ. Toxicol.
12		Dec	20	13:30	229.2	-7.536	-0.1443			16-9811-7085	01-0812-0412	NWDLS Environ. Toxicol.
13	2022	Jan	4	13:00	184.5	-52.29	-1.114	(-)		19-3164-8761	02-7203-5408	NWDLS Environ. Toxicol.
14		Feb	28	13:30	203	-33.7	-0.6852			21-2117-1383	01-0955-3278	NWDLS Environ. Toxicol.
15		Mar	2	13:30	175.1	-61.6	-1.345	(-)		12-9241-9919	08-0675-1644	NWDLS Environ. Toxicol.
16		Apr	1	11:00	280.6	43.82	0.7578			19-3392-2474	19-5278-6182	NWDLS Environ. Toxicol.
17		May	24	13:30	288.1	51.34	0.8759			13-7048-3575	11-7991-6591	NWDLS Environ. Toxicol.
18		Jun	15	15:30	247.6	10.86	0.2002			21-4687-2843	13-9181-7688	NWDLS Environ. Toxicol.
19		Jul	1	10:30	262.7	25.99	0.4648			13-1145-4445	09-9419-4126	NWDLS Environ. Toxicol.
20		Aug	18	11:00	192.5	-44.23	-0.9228			04-7687-8681	19-5334-6361	NWDLS Environ. Toxicol.
21		Sep	12	11:20	212.4	-24.39	-0.4852			21-1119-9666	05-3481-6958	NWDLS Environ. Toxicol.

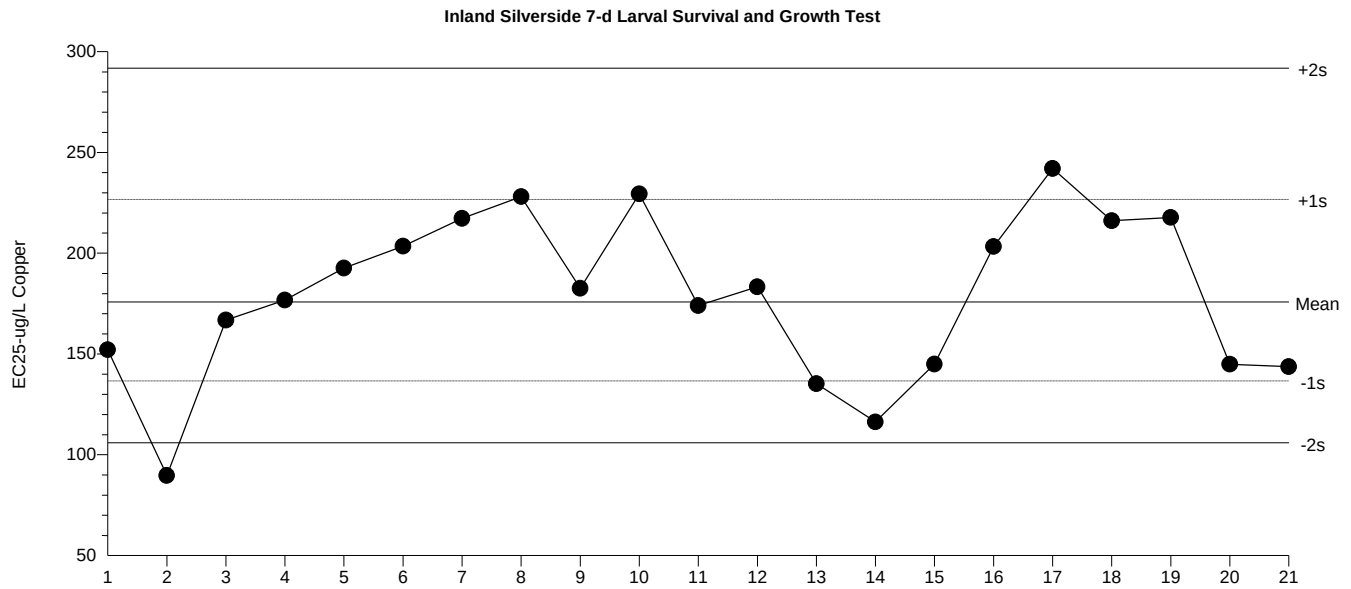
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF



Mean: 175.9

Count: 20

-1s Warning Limit: 136.6

-2s Action Limit: 106

Sigma: n/a

CV: 25.70%

+1s Warning Limit: 226.6

+2s Action Limit: 291.9

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Jan	7	14:30	152.1	-23.81	-0.5744			11-8669-1134	11-6048-4214	NWDLS Environ. Toxicol.
2		Feb	10	12:00	89.72	-86.2	-2.659	(-)	(-)	19-0426-1634	08-1298-5961	NWDLS Environ. Toxicol.
3		Mar	18	12:00	166.8	-9.105	-0.2099			19-2942-0562	07-9357-5238	NWDLS Environ. Toxicol.
4		Apr	7	17:00	176.7	0.7977	0.01787			09-6023-9668	07-2914-9717	NWDLS Environ. Toxicol.
5		May	20	13:30	192.6	16.71	0.3584			16-8999-3463	05-3918-8320	NWDLS Environ. Toxicol.
6		Jun	3	13:00	203.5	27.58	0.5752			09-4953-8218	00-4075-3486	NWDLS Environ. Toxicol.
7		Jul	6	14:30	217.3	41.35	0.8338			06-6487-9714	15-4338-5084	NWDLS Environ. Toxicol.
8		Aug	18	16:00	228.1	52.14	1.025	(+)		15-8347-6079	18-3962-2909	NWDLS Environ. Toxicol.
9		Sep	7	10:30	182.6	6.645	0.1464			01-3526-1514	11-6816-4915	NWDLS Environ. Toxicol.
10		Oct	1	11:45	229.4	53.49	1.049	(+)		19-5909-2091	10-6419-2141	NWDLS Environ. Toxicol.
11		Nov	17	15:30	174	-1.938	-0.04375			05-7761-2074	00-0061-5553	NWDLS Environ. Toxicol.
12		Dec	20	13:30	183.3	7.396	0.1627			16-9811-7085	09-5560-0815	NWDLS Environ. Toxicol.
13	2022	Jan	4	13:00	135.2	-40.69	-1.039	(-)		19-3164-8761	15-9947-7419	NWDLS Environ. Toxicol.
14		Feb	28	13:30	116.3	-59.62	-1.635	(-)		21-2117-1383	02-2853-0020	NWDLS Environ. Toxicol.
15		Mar	2	13:30	145	-30.95	-0.7642			12-9241-9919	11-2717-2616	NWDLS Environ. Toxicol.
16		Apr	1	11:00	203.3	27.38	0.5714			19-3392-2474	00-5366-5950	NWDLS Environ. Toxicol.
17		May	24	13:30	242	66.11	1.26	(+)		13-7048-3575	09-0327-7999	NWDLS Environ. Toxicol.
18		Jun	15	15:30	216.1	40.17	0.8123			21-4687-2843	10-7006-7204	NWDLS Environ. Toxicol.
19		Jul	1	10:30	217.7	41.8	0.842			13-1145-4445	02-9946-3094	NWDLS Environ. Toxicol.
20		Aug	18	11:00	144.9	-31.01	-0.7659			04-7687-8681	07-2832-5636	NWDLS Environ. Toxicol.
21		Sep	12	11:20	143.7	-32.18	-0.7978			21-1119-9666	04-9416-5896	NWDLS Environ. Toxicol.

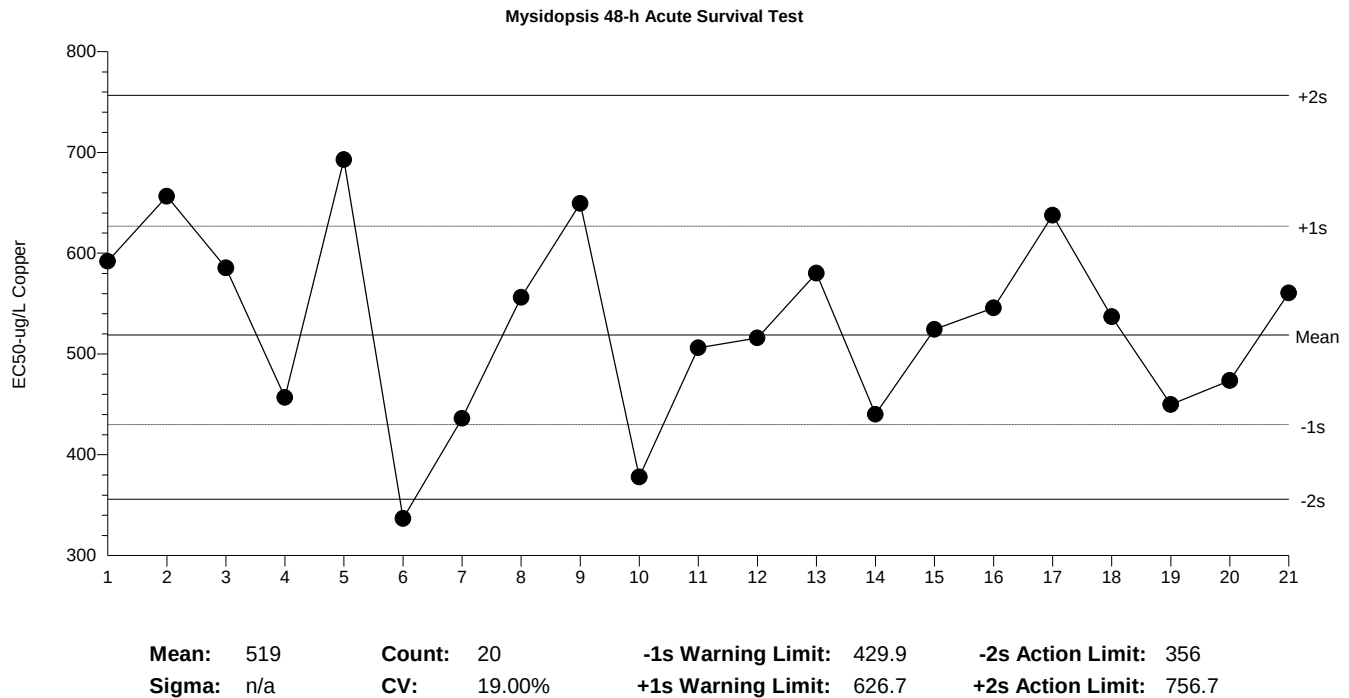
Mysidopsis 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 24h Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Feb	10	11:20	592	72.91	0.6973			07-4566-1012	15-4676-0068	NWDLS Environ. Toxicol.
2		Mar	17	14:45	656.4	137.4	1.246	(+)		18-1331-1255	00-7317-9711	NWDLS Environ. Toxicol.
3		Apr	7	12:30	585.4	66.33	0.638			03-6046-2365	21-0932-1728	NWDLS Environ. Toxicol.
4		May	19	12:00	456.8	-62.22	-0.6774			21-2526-5582	18-1190-0787	NWDLS Environ. Toxicol.
5		Jun	16	14:00	692.8	173.8	1.532	(+)		18-4204-1639	00-7051-9201	NWDLS Environ. Toxicol.
6		Jul	6	10:30	336.8	-182.2	-2.294	(-)	(-)	16-8850-0499	11-3157-5193	NWDLS Environ. Toxicol.
7			14	11:40	436.1	-82.96	-0.9239			18-4022-8710	02-2968-5096	NWDLS Environ. Toxicol.
8		Aug	18	16:30	556.1	37.09	0.3661			09-8714-0571	11-5627-8812	NWDLS Environ. Toxicol.
9		Sep	16	14:20	649.4	130.3	1.189	(+)		00-5356-8850	21-2851-7126	NWDLS Environ. Toxicol.
10		Oct	1	10:00	377.9	-141.2	-1.684	(-)		15-3507-3847	07-3904-5265	NWDLS Environ. Toxicol.
11		Nov	17	10:10	506.1	-12.97	-0.1343			13-5199-3437	14-5824-0094	NWDLS Environ. Toxicol.
12		Dec	20	13:30	515.9	-3.148	-0.03227			03-4349-9991	20-1400-9527	NWDLS Environ. Toxicol.
13	2022	Jan	4	10:00	580.2	61.18	0.5911			07-5397-4255	21-3233-2826	NWDLS Environ. Toxicol.
14		Feb	2	11:00	440.1	-78.94	-0.8752			11-4910-6286	20-0748-0881	NWDLS Environ. Toxicol.
15		Mar	3	12:00	524.5	5.403	0.05494			13-9230-6288	11-4681-8989	NWDLS Environ. Toxicol.
16		Apr	1	12:00	545.7	26.62	0.2654			14-3637-8837	20-0637-4480	NWDLS Environ. Toxicol.
17		May	4	11:40	637.6	118.6	1.091	(+)		14-8660-9054	12-3590-1068	NWDLS Environ. Toxicol.
18		Jun	15	11:10	536.9	17.82	0.1791			16-1640-3746	09-5421-2886	NWDLS Environ. Toxicol.
19		Jul	1	14:30	449.7	-69.3	-0.7603			04-6114-0906	19-3635-7253	NWDLS Environ. Toxicol.
20		Aug	3	14:15	473.6	-45.41	-0.4857			07-3996-3789	10-8016-0900	NWDLS Environ. Toxicol.
21		Sep	7	13:45	560.6	41.51	0.4082			07-0189-7071	17-6167-5178	NWDLS Environ. Toxicol.

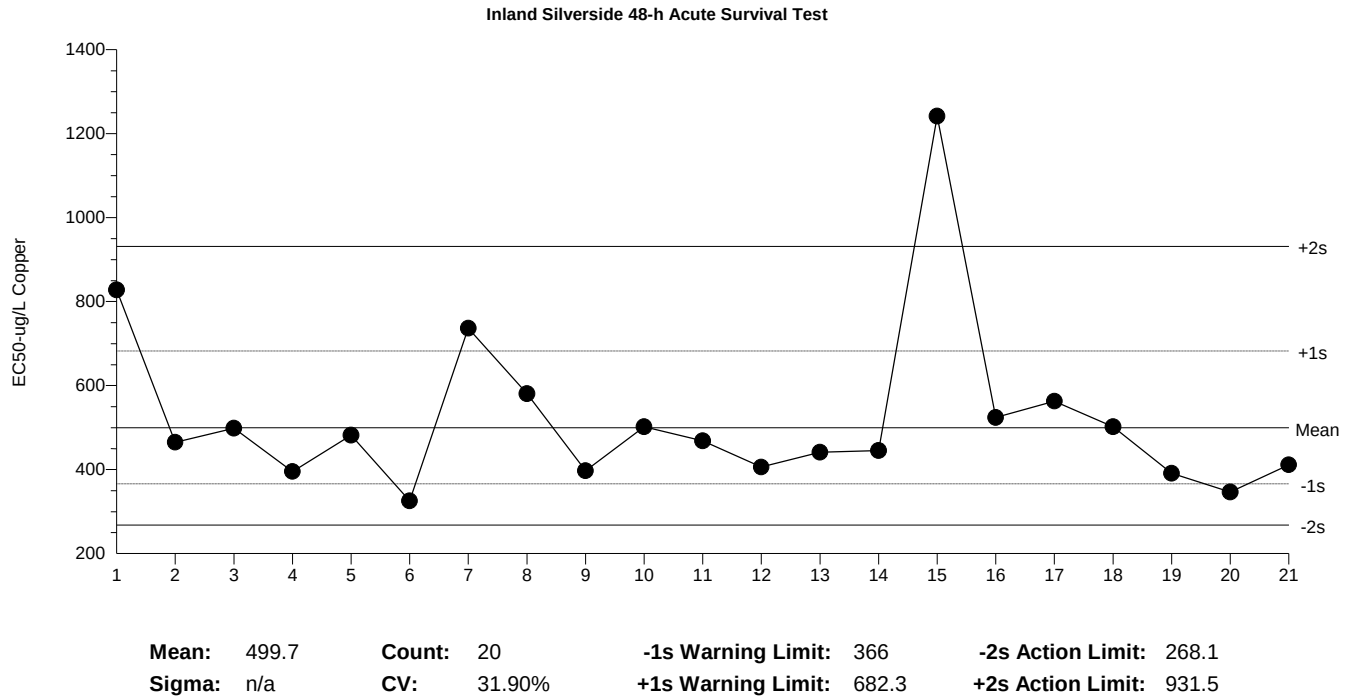
Inland Silverside 48-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Mar	14	12:30	827.7	328	1.621	(+)		08-7079-1152	09-7911-7847	NWDLS Environ. Toxicol.
2		Apr	7	14:00	464.9	-34.75	-0.2315			16-8079-9145	16-8594-2765	NWDLS Environ. Toxicol.
3		May	19	14:15	498.2	-1.476	-0.0095			14-7855-2168	12-8544-1889	NWDLS Environ. Toxicol.
4		Jun	16	16:20	395.3	-104.4	-0.7528			17-6017-6916	05-3206-1990	NWDLS Environ. Toxicol.
5		Jul	6	11:00	481.7	-17.97	-0.1176			14-3117-5634	14-6518-7616	NWDLS Environ. Toxicol.
6		Aug	18	11:35	325.2	-174.5	-1.379	(-)		21-0942-3375	17-5943-5259	NWDLS Environ. Toxicol.
7		Sep	7	13:40	736.7	237	1.246	(+)		11-4858-6608	17-2141-1518	NWDLS Environ. Toxicol.
8		Oct	1	11:00	580.5	80.79	0.4813			20-1412-2999	02-1468-1616	NWDLS Environ. Toxicol.
9		Nov	17	10:45	396.9	-102.8	-0.7395			21-3705-1925	15-2997-3563	NWDLS Environ. Toxicol.
10		Dec	20	14:00	501.9	2.183	0.014			13-9527-6827	03-4522-6833	NWDLS Environ. Toxicol.
11	2022	Jan	4	10:20	468.2	-31.49	-0.209			18-9783-1551	07-5649-3213	NWDLS Environ. Toxicol.
12		Feb	2	11:45	405.8	-93.86	-0.6681			03-3697-0262	04-9245-6423	NWDLS Environ. Toxicol.
13		Mar	1	12:50	441	-58.68	-0.4012			01-0829-9135	16-3183-8146	NWDLS Environ. Toxicol.
14		Apr	1	10:57	445	-54.67	-0.3721			19-0277-8140	06-9849-8716	NWDLS Environ. Toxicol.
15		May	4	12:00	1241	741.7	2.922	(+)	(+)	19-0974-6494	18-5828-7690	NWDLS Environ. Toxicol.
16			25	10:30	523.8	24.12	0.1514			20-9089-2433	09-8052-8637	NWDLS Environ. Toxicol.
17		Jun	2	11:00	562.7	63.05	0.3816			00-7771-2444	11-9878-5295	NWDLS Environ. Toxicol.
18		Jul	1	15:00	501.8	2.099	0.01346			06-8885-7471	04-3491-6439	NWDLS Environ. Toxicol.
19		Aug	3	14:20	391.2	-108.5	-0.7863			07-9794-1757	18-8851-1364	NWDLS Environ. Toxicol.
20		Sep	7	11:25	346.3	-153.4	-1.177	(-)		13-2363-0646	00-6464-2169	NWDLS Environ. Toxicol.
21			22	15:15	411.3	-88.42	-0.6253			18-0676-6783	08-1525-7864	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 09-22-22 0800 TO 09-23-22 0800
NO. 2: FROM 09-24-22 0800 TO 09-25-22 0800
NO. 3: FROM 09-26-22 0800 TO 09-27-22 0800

Test Initiated: 1545 TIME 09-23-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	80	100	100	100	80	100
	B	100	80	100	100	80	100
	C	80	80	80	100	80	100
	D	100	60	80	80	80	100
	E	100	100	80	100	100	80
	F	80	60	100	80	80	100
	G	100	100	80	100	100	60
	H	100	100	100	60	80	100
	I	100	80	100	100	80	100
	J	100	40	60	100	80	80
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	98	98	98	94	100
	7 day	94	80	88	92	84	92
	CV%❶	10.28	26.35	15.89	15.20	10.04	15.20

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.25	0.41	0.26	0.39	0.28	0.32
B	0.28	0.34	0.33	0.35	0.32	0.36
C	0.30	0.27	0.25	0.32	0.30	0.37
D	0.32	0.26	0.19	0.37	0.29	0.41
E	0.31	0.39	0.25	0.35	0.30	0.28
F	0.29	0.17	0.38	0.31	0.29	0.36
G	0.31	0.37	0.34	0.33	0.29	0.34
H	0.35	0.32	0.35	0.23	0.33	0.39
I	0.26	0.31	0.32	0.32	0.29	0.34
J	0.42	0.15	0.20	0.30	0.29	0.29
Mean Dry Weight in Milligrams	0.31	0.30	0.29	0.33	0.30	0.35
CV (%)❶	15.73	29.30	22.41	13.06	5.56	11.70
PMSD	Acceptable Range: 37 or less					18.03

❶ coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites
Collected: NO. 1: FROM 09-22-22 0800 TO 09-23-22 0800
NO. 2: FROM 09-24-22 0800 TO 09-25-22 0800
NO. 3: FROM 09-26-22 0800 TO 09-27-22 0800

Test Initiated: 1515 TIME 09-23-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^❶
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	100	100	100	100	0.00
3%	100	100	100	100	100	100	100	100	0.00
5%	90	100	100	100	100	100	100	98	4.56
6%	100	100	100	100	100	100	100	100	0.00
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

❶ coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^①
	A	B	C	D	E		
0%	0.76	0.76	0.74	0.30	0.81	0.67	30.97
3%	0.69	0.81	0.91	0.74	0.93	0.81	12.54
5%	0.73	0.62	0.63	0.75	0.91	0.73	16.63
6%	0.70	0.69	0.79	0.65	0.76	0.72	7.81
8%	0.96	0.86	0.56	0.83	0.69	0.78	19.88
11%	0.86	0.64	0.67	0.84	0.87	0.78	14.33
PMSD	Acceptable Range: 28 or less					29.71 ^②	

Weights are for: preserved larvae, or X unpreserved larvae

① coefficient of variation = standard deviation x 100/mean

② The PMSD exceeds upper acceptance limit indicating that the test may not be sensitive enough to detect toxicity; however, the IC25 is >8% effluent. Therefore, there is no sublethal toxicity.

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Mysidopsis bahia SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	09-22-22 to 09-23-22
Test Initiated	1630	09-23-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	100
	B	100	100
	C	100	100
	D	100	100
	E	100	100
	MEAN	100	100

1. LC_{50} (*Mysidopsis bahia*) = >100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	09-22-22 to 09-23-22
Test Initiated	1640	09-23-22
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	100
	B	100	100
	C	100	100
	D	100	100
	E	100	100
	MEAN	100	100

2. LC_{50} (*Menidia beryllina*) = >100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

December 02, 2022

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20221202153827MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
12/02/2022 15:38

Work Order Case Narrative

NWDLS Job No: 22K0094, 22K0995, 22K0996 (22-0747)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Groups - Natgasoline LLC
Sample Locations: Outfall 001
Test Description: 4th Quarter 2022, 7-day chronic - [*M.bahia*, *M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed.

For your convenience, below are the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

* A = Accredited, N = Not Accredited or Accreditation not available

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	<i>Mysidopsis bahia</i>	TEST DATE	10-17 Nov 2022
TEST RESULTS	Pass ①		
Parameter	Survival		Sublethal
	Percentage (%)	Coef. of Var. (%)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.20
Control Results	98	6.45	0.31
Critical Dilution (8%)	90	15.71	0.24
DMR REPORTING			Parameter Code
Is the NOEC for survival less than the critical dilution?		No	TLP3E
Report the NOEC % for survival:			TOP3E
Report the LOEC % for survival:			TXP3E
Is the NOEC for growth less than the critical dilution?		No	TWP3E
Report the NOEC % for growth:			TPP3E
Report the LOEC % for growth:			TYP3E
PMSD (Acceptable Range: 37 or less):			20.89
Retest Number 1	Parameter 22415	N/A	Retest Number 2
			Parameter 22416
CHRONIC PERMIT REPORTING - Table 1 attached.			

① Although the standard hypothesis test for sublethal toxicity indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the IC25 dose-response percent effect was >11%. Therefore, there is no sublethal toxicity.

SPECIES	<i>Menidia beryllina</i>	TEST DATE	10-17 Nov 2022
TEST RESULTS	Pass		
Parameter	Survival		Sublethal
	Percentage (%)	Coef. of Var. (%)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.50
Control Results	100	0.00	0.58
Critical Dilution (8%)	98	4.56	0.60
DMR REPORTING			Parameter Code
Is the NOEC for survival less than the critical dilution?		No	TLP6B
Report the NOEC % for survival:			TOP6B
Report the LOEC % for survival:			TXP6B
Is the NOEC for growth less than the critical dilution?		No	TWP6B
Report the NOEC % for growth:			TPP6B
Report the LOEC % for growth:			TYP6B
PMSD (Acceptable Range: 28 or less):			34.56 ②
Retest Number 1	Parameter 22415	N/A	Retest Number 2
			Parameter 22416
CHRONIC PERMIT REPORTING - Table 1 attached.			

② The PMSD exceeds upper acceptance limit indicating that the test may not be sensitive enough to detect toxicity; however, the IC25 is >11% effluent. Therefore, there is no sublethal toxicity.

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
12/02/2022 15:38

Chemical Analyses

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001
Lab Sample ID: 22K0994-01

Sample Matrix: Waste Water
Date Collected: 11/10/2022 10:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	179	mg/L		1	10.0	10.0	BFK1598	11/11/2022 11:47	CST
General Chemistry SM 2510 B	Conductivity	A	2510	umhos/cm @ 25 °C		1	2.00	2.00	BFK1598	11/11/2022 11:47	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	72.0	mg/L		1		10.0	BFK2000	11/15/2022 09:20	SAB
General Chemistry EPA 350.1	Ammonia as N	A	22.0	mg/L		50	1.00	2.50	BFK2136	11/15/2022 17:59	GIW
General Chemistry SM 2520 B	Salinity	N	1.41	Salinity units		1	1.00	1.00	BFK1598	11/11/2022 11:47	CST
Field Hach 10360	DO Field	N	9.10	mg/L		1	1.00	1.00	BFK2016	11/10/2022 13:30	DPD
Field SM 4500-H+ B	pH	A	8.60	pH Units @ 25 °C		1	1.00	1.00	BFK2016	11/10/2022 13:30	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.07	mg/L	U	1	0.25	0.25	BFK2016	11/10/2022 13:30	DPD

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water
Lab Sample ID: 22K0994-02

Sample Matrix: Waste Water
Date Collected: 11/10/2022 10:30
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	56.0	mg/L		1	10.0	10.0	BFK1598	11/11/2022 12:33	CST
General Chemistry SM 2510 B	Conductivity	A	7700	umhos/cm @ 25 °C		1	2.00	2.00	BFK1598	11/11/2022 12:33	CST
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	824	mg/L		1		10.0	BFK2000	11/15/2022 09:20	SAB
General Chemistry EPA 350.1	Ammonia as N	A	0.102	mg/L		1	0.0200	0.0500	BFK2136	11/15/2022 16:48	GIW
General Chemistry SM 2520 B	Salinity	N	4.64	Salinity units		1	1.00	1.00	BFK1598	11/11/2022 12:33	CST
Field Hach 10360	DO Field	N	8.10	mg/L		1	1.00	1.00	BFK2016	11/10/2022 13:30	DPD
Field SM 4500-H+ B	pH	A	8.00	pH Units @ 25 °C		1	1.00	1.00	BFK2016	11/10/2022 13:30	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.03	mg/L	U	1	0.25	0.25	BFK2016	11/10/2022 13:30	DPD

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2
Lab Sample ID: 22K0995-01

Sample Matrix: Waste Water
Date Collected: 11/12/2022 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	165	mg/L		1	10.0	10.0	BFK1905	11/14/2022 12:29	AKA
General Chemistry SM 2510 B	Conductivity	A	2490	umhos/cm @ 25 °C		1	2.00	2.00	BFK1905	11/14/2022 12:29	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	88.0	mg/L		1		10.0	BFK2000	11/15/2022 09:20	SAB
General Chemistry EPA 350.1	Ammonia as N	A	25.8	mg/L		50	1.00	2.50	BFK1946	11/14/2022 15:25	GIW
General Chemistry SM 2520 B	Salinity	N	1.40	Salinity units		1	1.00	1.00	BFK1905	11/14/2022 12:29	AKA
Field Hach 10360	DO Field	N	9.70	mg/L		1	1.00	1.00	BFK2849	11/12/2022 13:40	DPD
Field SM 4500-H+ B	pH	A	7.80	pH Units @ 25 °C		1	1.00	1.00	BFK2849	11/12/2022 13:40	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.02	mg/L	U	1	0.25	0.25	BFK2849	11/12/2022 13:40	DPD

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
12/02/2022 15:38

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3

Lab Sample ID: 22K0996-01

Sample Matrix:

Waste Water

Date Collected:

11/14/2022 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	172	mg/L		1	10.0	10.0	BFK1995	11/15/2022 18:47	AKA
General Chemistry SM 2510 B	Conductivity	A	2520	umhos/cm @ 25 °C		1	2.00	2.00	BFK1995	11/15/2022 18:47	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	102	mg/L		1		10.0	BFK2137	11/16/2022 16:22	SAB
General Chemistry EPA 350.1	Ammonia as N	A	24.6	mg/L		50	1.00	2.50	BFK2135	11/15/2022 17:58	GIW
General Chemistry SM 2520 B	Salinity	N	1.41	Salinity units		1	1.00	1.00	BFK1995	11/15/2022 18:47	AKA
Field Hach 10360	DO Field	N	10.9	mg/L		1	1.00	1.00	BFK3928	11/14/2022 14:15	DPD
Field SM 4500-H+ B	pH	A	8.00	pH Units @ 25 °C		1	1.00	1.00	BFK3928	11/14/2022 14:15	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BFK3928	11/14/2022 14:15	DPD

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-22-36
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
12/02/2022 15:38

Sample Condition Checklist

Work Order: 22K0994

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22K0995

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 22K0996

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
12/02/2022 15:38

Term and Qualifier Definitions

Item	Definition
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 2

22K0994

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22K0994-01	Outfall 001	11/9/22 08:00 - 11/10/22 08:00	11/10/22 10:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>9.1</u> pH Field <u>8.6</u> Total Chlorine <u>0.07</u> Residual WW Field <u>DPD</u>
22K0994-02	Receiving Water	A HDPE 25 B HDPE 25 C HDPE 25 D HDPE 5 E HDPE 5 F HDPE 5 G HDPE 5 H HDPE 5 I HDPE 5 J HDPE 5 K HDPE 5 L HDPE 5 M HDPE 5	11/10/22 10:30	AQ Grab	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>8.1</u> pH Field <u>8.0</u> Total Chlorine <u>0.03</u> Residual WW Field <u>DPD</u>



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36

TCEQ-TOX T104704202-22-17



Page 2 of 2

22K0994

(Continued)

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Field Remarks:		Lab Preservation: (H2SO4) (HNO3) NaOH Other: _____		
		Write ID Below: 2105097 220216		
Sampler (Signature): <i>[Signature]</i>	Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 11/10/22 13:30	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) SPK	Date/Time 11/10/22 1330
Custody Seal : Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact : Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
		Temperature: 2.9 °C		Thermometer ID: 210554862

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22K0995

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 2	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22K0995-01	Outfall 001-2	11/11/22 08:00 11/12/22 08:00	11/12/22 11:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.7 pH Field 7.8 Total Chlorine 0.02 Residual WW Field DPA

Field Remarks:		Lab Preservation: (H2SO4) (HNO3) NaOH Other: _____		
		(Circle and Write ID Below) 2108097 220226		
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 11/12/22 13:40	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) 	Date/Time 11/12/22 1340
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 6.1 °C
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 200767948

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

22K0996

TCEQ T104704238-22-36

TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 3	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
22K0996-01	Outfall 001-3	11/13/22 08:00 11/14/22 08:00	11/14/22 10:45	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 10.9 pH Field 8.0 Total Chlorine 0.05 Residual WW Field 0.0

Field Remarks:		Lab Preservation: (H2SO4) (HNO3) NaOH Other: _____		
(Circle and Write ID Below) 2108097 2202216				
Sampler (Signature) <i>Clinton Wallace</i>	Relinquished By: (Signature) <i>Clinton Wallace</i>	Date/Time 11/14/22 14:15	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>SPL</i>	Date/Time 11/14/22 H15
Custody Seal : Yes / No		COC Labels Agree: Yes / No		Appropriate Volume: Yes / No
Container Intact : Yes / No		Appropriate Containers: Yes / No		Coolers Intact: Yes / No
		Received on Ice: Yes / No		Temperature: 1.1 °C
		Samples Accepted: Yes / No		Thermometer ID: 21055668L

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0747
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	11-10-22	0800	Sample 3 Date/Time:	11-14-22	0800
Sample 2 Date/Time:	11-12-22	0800	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	11-10-22	22-0747 -1	RW111022	BRM	Day 4	11-14-22	22-0747 -2	RW111022	KPI
Day 1	11-11-22	22-0747 -1	RW111022	A03	Day 5	11-15-22	22-0747 -3	RW111022	A03
Day 2	11-12-22	22-0747 -1	RW111022	PPD	Day 6	11-16-22	22-0747 -3	RW111022	A03
Day 3	11-13-22	22-0747 -2	RW111022	KPI					

*LW Batch #: 2212930

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: TDS done: CBR 11-22-22

Data Sheet Preparation : Initials: Dm/VJC Date: 11-3-22

End of Test Review : Initials: CBR Date: 11-17-22

Arturo Ochoa

Final Review (signature)

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters

DATE	11/10/22	11/11/22		11-12-22		11-13-22		11-14-22		11-15-22		11-16-22		11/17/23
TIME	1400	0820	0820	0830	0830	0915	0915	0800	0800	0840	0840	0840	0840	0840
INITIALS	SPD	AOJ KRI	AOJ KRI	SPD KRI	SPD KRI	TRG KRI	TRG KRI	SPD KRI	SPD KRI	BRM AOJ	BRM AOJ	VJC AOJ	VJC AOJ	AOJ DPD
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	7.9	8.1	8.0	7.9	8.1	8.1	8.1	8.2	8.2	7.9	8.2	8.0	8.1	7.6
3	7.9	8.1	8.0	8.0	8.1	8.1	8.1	8.3	8.3	8.0	8.2	8.0	8.1	7.7
5	7.9	8.1	8.0	8.0	8.1	8.1	8.1	8.3	8.3	7.9	8.2	8.0	8.2	7.7
6	7.9	8.0	8.0	8.0	8.1	8.1	8.1	8.3	8.3	7.9	8.2	8.0	8.1	7.7
8	7.9	8.0	8.0	8.0	8.1	8.1	8.1	8.3	8.3	7.9	8.2	8.0	8.1	7.8
11	8.0	8.0	8.0	8.0	8.1	8.1	8.1	8.3	8.3	8.0	8.2	8.0	8.1	7.8
*LW	7.9	7.9	8.2	7.9	8.3	8.1	8.2	8.2	8.3	7.9	8.2	7.9	8.2	7.6
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.3	7.5	8.2	7.5	8.3	8.3	8.3	8.6	8.5	7.5	8.7	8.2	8.5	7.3
3	8.3	7.6	8.2	7.4	8.3	8.7	8.3	8.6	8.6	7.5	8.5	8.2	8.4	7.0
5	8.3	7.6	8.1	7.4	8.3	8.3	8.2	8.5	8.6	7.6	8.5	8.1	8.5	7.0
6	8.3	7.6	8.1	7.4	8.3	8.3	8.2	8.5	8.6	7.1	8.5	8.0	8.5	6.9
8	8.4	7.6	8.1	7.4	8.3	8.3	8.2	8.5	8.6	7.0	8.5	7.9	8.5	6.7
11	8.4	7.5	8.1	7.3	8.3	8.2	8.2	8.5	8.6	7.3	8.5	8.0	8.5	6.7
*LW	8.4	7.5	8.3	7.6	8.3	8.3	8.4	8.6	8.7	7.7	8.7	8.3	8.6	7.7
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0747
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	25	24	25	25	25	25	25
3	25	24	25	25	25	25	25
5	25	24	25	25	25	25	25
6	25	24	25	25	25	25	25
8	25	24	25	25	25	25	25
11	25	24	25	25	25	25	25
*LW	26	26	26	26	25	25	26
Meter No.:	948	948	948	948	948	949	948

Biological Data

Test Organism Data			
Test Organism Batch #	22-1056	DOB	11-3-22
Source	NWDLS	Age	7 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	////	2208346	////	4	2208331	2208331	JKW1
1	2208346	2208346	JKW1	5	2208331	2208331	JKW1/MB
2	2208346	2208346	MMB/KRS	6	2208331	2208331	MMB/MB
3	2208346	2208331	KRS, KRS	7	2208334	////	JKW1

Comments:

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	5	5	5	5	5	5	5	5	8	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	4	4	4	4
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	4	4	4	4
	E	5	5	5	5	4	4	4	4		E	5	5	5	5	4	4	3	3
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	4	4	4
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	6		J	5	5	5	5	5	5	5	5
3	A	5	5	5	5	5	5	5	5	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	4	4
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	4	4	4	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	4	4
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	3	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	4	4	4		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	4	4	4	4		J	5	5	5	5	5	5	5	5
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	5	5	5		C								
	D	5	5	5	5	5	5	5	5		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	4	4	4	4		F								
	G	5	5	5	5	5	4	4	4		G								
	H	5	5	5	5	4	4	4	4		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	4	4		J								
Date	11/10/22	11/11/22	11/12/22	11/13	11/14/22	11/15/22	11/16/22	11/17/22	Comments:										
Time	1500	0915	0900	1245	0850	0945	1030	1530											
Init	SPD	AOJ	DPD	IRL	K-RT	AOJ	AOJ	CBR											

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00443	.00589	6	A	31	.00441	.00610
	B	2	.00467	.00650		B	32	.00456	.00624
	C	3	.00402	.00575		C	33	.00447	.00605
	D	4	.00473	.00601		D	34	.00451	.00594
	E	5	.00437	.00601		E	35	.00457	.00592
	F	6	.00446	.00526		F	36	.00443	.00576
	G	7	.00453	.00637		G	37	.00477	.00574
	H	8	.00442	.00599		H	38	.00440	.00547
	I	9	.00463	.00630		I	39	.00459	.00504
	J	10	.00445	.00608		J	40	.00450	.00543
3	A	11	.00428	.00567	8	A	41	.00445	.00591
	B	12	.00422	.00533		B	42	.00443	.00579
	C	13	.00447	.00614		C	43	.00474	.00578
	D	14	.00462	.00564		D	44	.00436	.00525
	E	15	.00435	.00622		E	45	.00463	.00517
	F	16	.00435	.00603		F	46	.00446	.00565
	G	17	.00443	.00620		G	47	.00462	.00615
	H	18	.00449	.00607		H	48	.00458	.00598
	I	19	.00440	.00564		I	49	.00455	.00529
	J	20	.00435	.00566		J	50	.00438	.00605
5	A	21	.00432	.00587	11	A	51	.00452	.00609
	B	22	.00473	.00638		B	52	.00472	.00645
	C	23	.00425	.00566		C	53	.00436	.00573
	D	24	.00446	.00591		D	54	.00451	.00517
	E	25	.00436	.00574		E	55	.00433	.00586
	F	26	.00450	.00577		F	56	.00443	.00576
	G	27	.00424	.00550		G	57	.00447	.00605
	H	28	.00446	.00567		H	58	.00455	.00567
	I	29	.00431	.00582		I	59	.00469	.00631
	J	30	.00418	.00549		J	60	.00413	.00581

Comments:

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	
*LW	A	61	00484	00639	BALANCE ID#	852
	B	62	00441	00544	OVEN ID#	SW1
	C	63	00444	00560	BALANCE VERIFICATION INITIALS	CBR
	D	64	00500	00618	DATE/ TARE WEIGHT INITIALS	11-04-22 , CBR
	E	65	00491	00635	DATE DRYING INITIATED	11-17-22
	F	66	00478	00602	TIME DRYING INITIATED	1600
	G	67	00471	00607	OVEN TEMP(Act/Corr) (°C)	105 , 105
	H	68	00460	00583	INITIALS	CBR
	I	69	00449	00588		
	J	70	00498	00655		
	A	71			DATE/TIME DRYING TERMINATED	11-18-22 / 1600
	B	72			OVEN TEMP (Act/Corr) (°C)	105 , 105
	C	73			BALANCE VERIFICATION INITIALS	CBR
	D	74			TOTAL WEIGHT DATE/INITIALS	11-18-22 , CBR
	E	75			COMMENTS:	
	F	76				
	G	77				
	H	78				
	I	79				
	J	80				
QA/QC (pans)		7	00452	00639	TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism	
		16	00436	00607		
		29	00434	00583		
		34	00450	00589		
		46	00446	00565		
		58	00452	00570		
		67	00469	00604		

Test Notes

Include Date, Time, and Initials

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0747
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic *Menidia beryllina* Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023

Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	11-10-22	0800	Sample 3 Date/Time:	11-14-22	0800
Sample 2 Date/Time:	11-12-22	0800	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	11-10-22	22-0747-1	RW111022	Blm	Day 4	11-14-22	22-0747 - 2	RW111022	KPI
Day 1	11-11-22	22-0747 - 1	RW111022	AOS	Day 5	11-15-22	22-0747 - 3	RW111022	AOS
Day 2	11-12-22	22-0747 - 1	RW111022	PPD	Day 6	11-16-22	22-0747 - 3	RW111022	AOS
Day 3	11-13-22	22-0747 - 2	RW111022	KPI					

*LW Batch #: 2212930

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

TDS done; CBR 11-22-22

Data Sheet Preparation : Initials: PPD/VJC Date: 11-3-22

End of Test Review : Initials: CBR Date: 11-17-22 Final Review (signature)

Arturo Orozco

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0747
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	22-10SS	DOB	10-30-22
Source	NWDLS	Age	11 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2208346		4	2208331	2208331	SKW / AB
1	2208346	2208346	SKW / AB	5	2208331	2208331	SKW / mmb
2	2208346	2208346	mmb / KPO	6	2208331	2208331	mmb / mmb
3	2208346	2208331	KPO / KPO	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	9	9	9	9	9	9	9
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	10	10	10	10	10	*LW	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	10		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	10	10	10	10	10	10	10		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	11/10/22	11/11/22	11/12/22	11/13/22	11/14/22	11/15/22	11/16/22	11/17/22	Comments:										
Time	1400	0940	0930	1300	1010	1020	1120	1400											
Initials	PPA AOS	AOS	DRD	ML	KRS	AOS	AOS	CBR											

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1	.00639	.01252	*LW	A	31	.00657	.01580
	B	2	.00643	.01035		B	32	.00624	.01564
	C	3	.00642	.01185		C	33	.00621	.01424
	D	4	.00627	.01232		D	34	.00638	.01298
	E	5	.00655	.01385		E	35	.00658	.01482
3	A	6	.00638	.01089	QA/QC (pans)		6	.00634	.01090
	B	7	.00621	.01379			20	.00637	.01492
	C	8	.00624	.01361			30	.00654	.01623
	D	9	.00630	.01350			34	.00634	.01294
	E	10	.00657	.01333					
5	A	11	.00667	.01309	BALANCE ID# 852				
	B	12	.00619	.01132	OVEN ID# SW1				
	C	13	.00650	.01396	BALANCE VERIFICATION INITIALS CBR				
	D	14	.00648	.01238	DATE / TARE WEIGHT INITIALS 11-04-22, CBR				
	E	15	.00663	.01210	DATE DRYING INITIATED 11-17-22				
6	A	16	.00618	.01324	TIME DRYING INITIATED 1430				
	B	17	.00645	.01320	OVEN TEMPERATURE (°C) (Actual/Corrected) 105 / 105				
	C	18	.00635	.01215	INITIALS CBR				
	D	19	.00663	.01208	DATE / TIME DRYING TERMINATED 11-18-22, 1430				
	E	20	.00637	.01495	OVEN TEMPERATURE (°C) (Actual/Corrected) 105, 105				
8	A	21	.00634	.01084	BALANCE VERIFICATION INITIALS CBR				
	B	22	.00637	.01508	TOTAL WEIGHT DATE / INITIALS 11-18-22, CBR				
	C	23	.00662	.01188	COMMENTS:				
	D	24	.00631	.01160					
	E	25	.00651	.01298					
11	A	26	.00672	.01527	CONT = Control CONC = Concentration REP = Replicate Wt. = Weight ORG. = Organism				
	B	27	.00638	.01210					
	C	28	.00633	.01579					
	D	29	.00624	.01499					
	E	30	.00650	.01620					

Water Quality Parameters

DATE	11-10-22	11-11-22		11-12-22		11-13-22		11-14-22		11-15-22		11-16-22		11-17-22
TIME	1400	0820	0820	0830	0830	0915	0915	0800	0800	0840	0840	0840	0840	0840
INITIALS	DPD DPD	AOS KPI	AOS KPI	DPD KPI	DPD KPI	TRG KPI	TRG KPI	DPD KPI	DPD KPI	Bem AOS	Bem AOS	VIC AOS	VIC AOS	AOS DPD
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	7.9	8.0	8.0	8.1	8.1	8.1	8.1	8.2	8.3	8.0	8.2	8.0	8.1	7.9
3	7.9	8.1	8.0	8.2	8.1	8.1	8.1	8.3	8.3	8.0	8.2	8.1	8.1	8.0
5	7.9	8.1	8.0	8.2	8.1	8.1	8.1	8.3	8.3	8.1	8.2	8.1	8.2	8.0
6	7.9	8.1	8.0	8.2	8.1	8.1	8.1	8.3	8.3	8.1	8.2	8.1	8.1	8.0
8	7.9	8.1	8.0	8.2	8.1	8.1	8.1	8.3	8.3	8.1	8.2	8.1	8.1	8.0
11	8.0	8.1	8.0	8.2	8.1	8.1	8.1	8.3	8.3	8.1	8.2	8.0	8.1	8.0
*LW	7.9	8.0	8.2	8.1	8.3	8.0	8.2	8.2	8.3	7.9	8.2	7.9	8.2	7.8
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.3	7.6	8.2	7.7	8.3	8.1	8.3	8.1	8.5	7.5	8.7	7.6	8.5	7.4
3	8.3	7.6	8.2	7.7	8.3	8.1	8.3	8.1	8.6	7.5	8.5	7.7	8.4	7.4
5	8.3	7.6	8.1	7.8	8.3	8.1	8.2	8.1	8.6	7.5	8.5	7.8	8.5	7.4
6	8.3	7.7	8.1	7.8	8.3	8.1	8.2	8.1	8.6	7.5	8.5	7.7	8.5	7.4
8	8.4	7.7	8.1	7.8	8.3	8.1	8.2	8.1	8.6	7.5	8.5	7.7	8.5	7.3
11	8.4	7.7	8.1	7.8	8.3	8.0	8.2	8.0	8.6	7.5	8.5	7.6	8.5	7.2
*LW	8.4	7.8	8.3	7.7	8.3	8.2	8.4	8.2	8.7	7.7	8.7	7.6	8.6	7.8
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6	25	25	25	25	25	25	25	25	25	25	25	25	25	25
8	25	25	25	25	25	25	25	25	25	25	25	25	25	25
11	25	25	25	25	25	25	25	25	25	25	25	25	25	25
*LW	25	25	25	25	25	25	25	25	25	25	25	25	25	25
THERM No.	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118	T-118
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Client:	SGS - Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	22-0747
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	25	24	25	25	25	25	25
3	25	24	25	25	25	25	25
5	25	24	25	25	25	25	25
6	25	24	25	25	25	25	25
8	25	24	25	25	25	25	25
11	25	24	25	25	25	25	25
*LW	26	26	26	26	25	25	26
Meter No.:	948	948	948	948	948	948	948

Comments:

Test Notes

Include Date, Time, and Initials

CETIS Analytical Report

Report Date: 29 Nov-22 13:06 (p 1 of 6)
 Test Code/ID: 22-0747 / 13-2053-8261

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 20-2332-9132	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 13-0402-8877	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 15:30	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	10.44%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	110	75	1	18	Asymp	0.9223	Non-Significant Effect
		5	95	75	2	18	Asymp	0.5278	Non-Significant Effect
		6	90	75	2	18	Asymp	0.3541	Non-Significant Effect
		8	89.5	75	2	18	Asymp	0.3378	Non-Significant Effect
		11	105	75	2	18	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06454	<<	0.4	Yes	Passes Criteria
Control Resp	0.98	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.107492	0.0214985	5	1.933	0.1039	Non-Significant Effect
Error	0.600518	0.0111207	54			
Total	0.70801		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	268.9	15.09	1.5E-07	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8479	0.9459	2.6E-06	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.04%
5		10	0.9400	0.8709	1.0000	1.0000	0.8000	1.0000	0.0306	10.28%	4.08%
6		10	0.9200	0.8461	0.9939	1.0000	0.8000	1.0000	0.0327	11.23%	6.12%
8		10	0.9000	0.7988	1.0000	1.0000	0.6000	1.0000	0.0447	15.71%	8.16%
11		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%
3		10	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-1.80%
5		10	1.274	1.192	1.356	1.345	1.107	1.345	0.03638	9.03%	3.60%
6		10	1.25	1.162	1.338	1.345	1.107	1.345	0.03889	9.84%	5.41%
8		10	1.228	1.11	1.346	1.345	0.8861	1.345	0.05199	13.39%	7.08%
11		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 20-2332-9132 Endpoint: 7d Survival Rate
Analyzed: 29 Nov-22 13:06 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

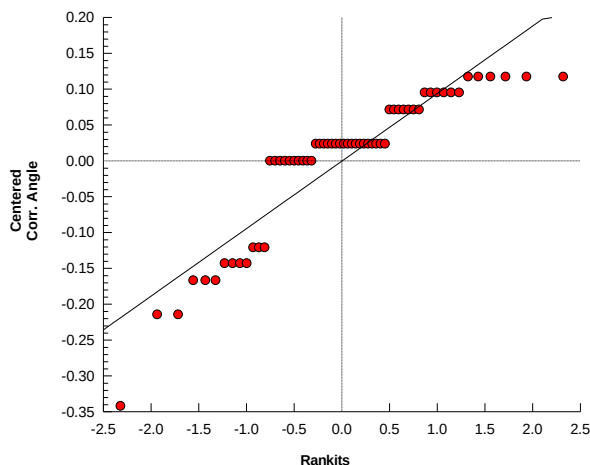
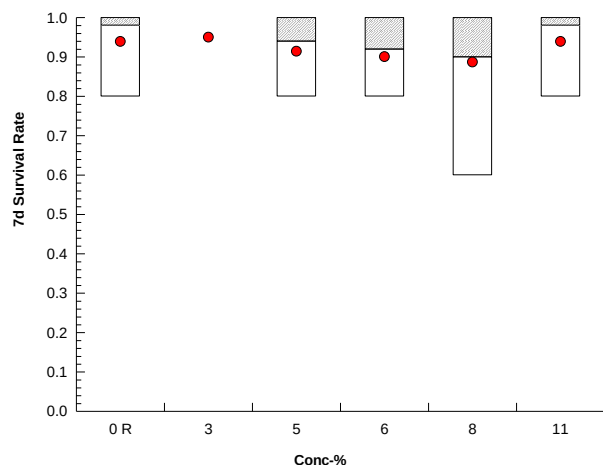
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	0.8000
6		1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	0.8000	0.8000	1.0000	0.8000
8		1.0000	1.0000	0.8000	0.8000	0.6000	1.0000	1.0000	0.8000	1.0000	1.0000
11		1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345
3		1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345
5		1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.107
6		1.345	1.345	1.345	1.345	1.345	1.107	1.107	1.107	1.345	1.107
8		1.345	1.345	1.107	1.107	0.8861	1.345	1.345	1.107	1.345	1.345
11		1.345	1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:07 (p 3 of 6)
 Test Code/ID: 22-0747 / 13-2053-8261

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 09-7102-0743	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 13-0402-8877	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 15:30	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	20.89%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	96.5	75	1	18	Asymp	0.5806	Non-Significant Effect
		5	78	75	0	18	Asymp	0.0771	Non-Significant Effect
		6	82	75	0	18	Asymp	0.1407	Non-Significant Effect
		8*	74	75	2	18	Asymp	0.0384	Significant Effect
		11	89.5	75	1	18	Asymp	0.3378	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.2009	<<	0.4	Yes	Passes Criteria
Control Resp	0.309	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0377429	0.0075486	5	1.899	0.1097	Non-Significant Effect
Error	0.214625	0.0039745	54			
Total	0.252368		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.364	15.09	0.1373	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9442	0.9459	0.0084	Non-Normal Distribution

Mean Dry Biomass-mg Summary

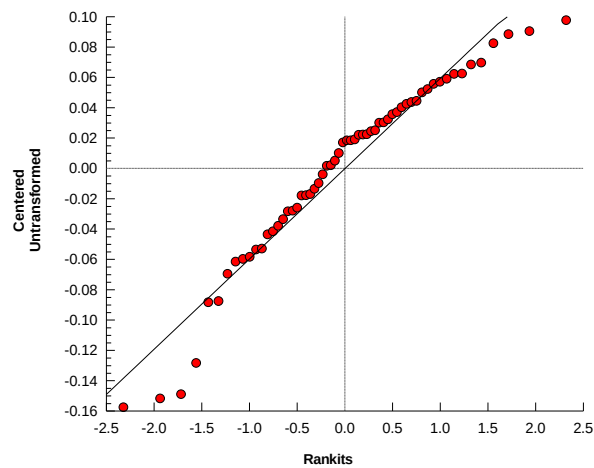
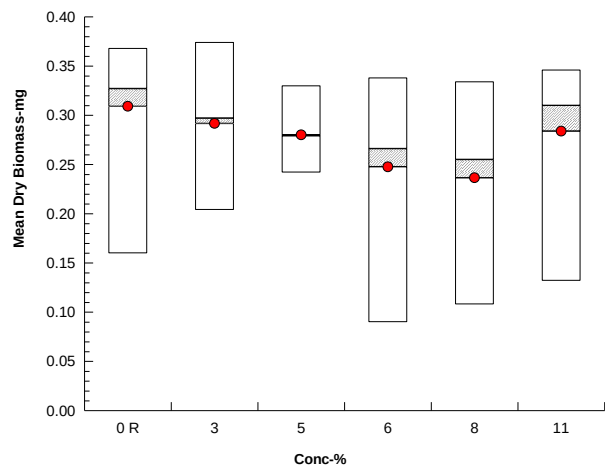
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.309	0.2646	0.3534	0.327	0.16	0.368	0.01963	20.09%	0.00%
3		10	0.2916	0.2494	0.3338	0.297	0.204	0.374	0.01867	20.25%	5.63%
5		10	0.28	0.2597	0.3003	0.279	0.242	0.33	0.008964	10.12%	9.39%
6		10	0.2476	0.1919	0.3033	0.266	0.09	0.338	0.0246	31.42%	19.87%
8		10	0.2364	0.1835	0.2893	0.255	0.108	0.334	0.02337	31.26%	23.50%
11		10	0.2838	0.2375	0.3301	0.31	0.132	0.346	0.02046	22.80%	8.16%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.292	0.366	0.346	0.256	0.328	0.16	0.368	0.314	0.334	0.326
3		0.278	0.222	0.334	0.204	0.374	0.336	0.354	0.316	0.248	0.25
5		0.31	0.33	0.282	0.29	0.276	0.254	0.252	0.242	0.302	0.262
6		0.338	0.336	0.316	0.266	0.27	0.266	0.194	0.214	0.09	0.186
8		0.292	0.272	0.208	0.178	0.108	0.238	0.306	0.28	0.148	0.334
11		0.314	0.346	0.274	0.132	0.306	0.266	0.316	0.224	0.324	0.336

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 09-7102-0743	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 29 Nov-22 13:06	Analysis: Nonparametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:07 (p 5 of 6)
 Test Code/ID: 22-0747 / 13-2053-8261

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 02-6539-4123	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:06	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 13-0402-8877	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 15:30	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	19.93%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.927	2.289	0.063	18	CDF	0.4499	Non-Significant Effect
		5	0.6102	2.289	0.063	18	CDF	0.5966	Non-Significant Effect
		6	1.742	2.289	0.063	18	CDF	0.1465	Non-Significant Effect
		8	2.062	2.289	0.063	18	CDF	0.0804	Non-Significant Effect
		11	1.09	2.289	0.063	18	CDF	0.3766	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0214525	0.0042905	5	1.125	0.3582	Non-Significant Effect
Error	0.205907	0.0038131	54			
Total	0.227359		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	3.519	15.09	0.6205	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9529	0.9459	0.0214	Normal Distribution

Mean Dry Weight-mg Summary

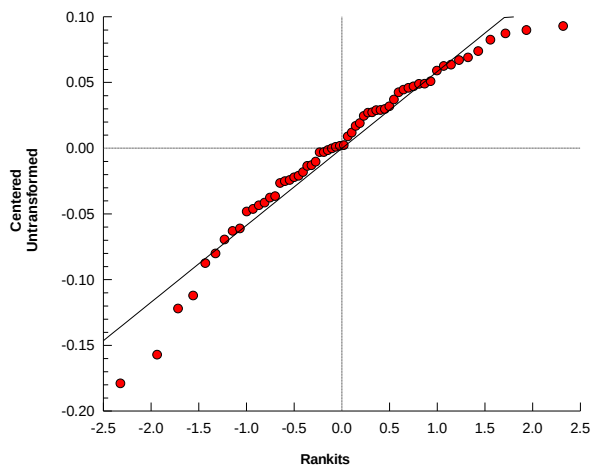
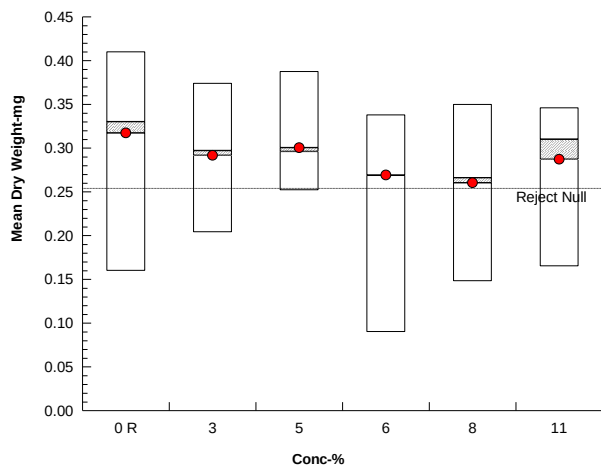
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3172	0.2673	0.3671	0.33	0.16	0.41	0.02208	22.01%	0.00%
3		10	0.2916	0.2494	0.3338	0.297	0.204	0.374	0.01867	20.25%	8.07%
5		10	0.3003	0.2714	0.3293	0.296	0.252	0.3875	0.0128	13.47%	5.31%
6		10	0.2691	0.216	0.3222	0.2687	0.09	0.338	0.02347	27.58%	15.16%
8		10	0.2603	0.214	0.3065	0.266	0.148	0.35	0.02047	24.87%	17.95%
11		10	0.2871	0.2467	0.3275	0.31	0.165	0.346	0.01784	19.65%	9.49%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.292	0.366	0.346	0.256	0.41	0.16	0.368	0.314	0.334	0.326
3		0.278	0.222	0.334	0.204	0.374	0.336	0.354	0.316	0.248	0.25
5		0.3875	0.33	0.282	0.29	0.276	0.254	0.252	0.3025	0.302	0.3275
6		0.338	0.336	0.316	0.266	0.27	0.3325	0.2425	0.2675	0.09	0.2325
8		0.292	0.272	0.26	0.2225	0.18	0.238	0.306	0.35	0.148	0.334
11		0.314	0.346	0.274	0.165	0.306	0.266	0.316	0.224	0.324	0.336

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab	
Analysis ID: 02-6539-4123	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4		
Analyzed: 29 Nov-22 13:06	Analysis: Parametric-Control vs Treatments	Status Level: 1		

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:19 (p 1 of 3)
 Test Code/ID: 22-0747 / 13-2053-8261

Mysidopsis 7-d Survival, Growth and Fecundity Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	05-4200-9756	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4
Analyzed:	29 Nov-22 13:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	13-0402-8877	Test Type:	Growth-Survival-Fec (7d)	Analyst:	Chyxia Broussard
Start Date:	10 Nov-22 15:00	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	17 Nov-22 15:30	Species:	Mysidopsis bahia	Brine:	Instant Ocean
Test Length:	7d 1h	Taxon:	Malacostraca	Source:	NWDLS
				Age:	7d
Sample ID:	20-3142-7449	Code:	79151F79	Project:	NT-100056
Sample Date:	10 Nov-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	10 Nov-22 13:30	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1997628	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits		Overlap	Decision
Attribute	Test Stat	Lower	Upper		
Control CV	0.2009	<<	0.4	Yes	Passes Criteria
Control Resp	0.309	0.2	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Biomass-mg Summary

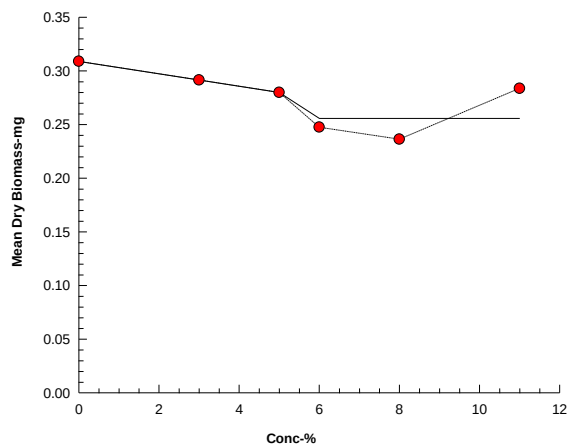
			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	R	10	0.309	0.16	0.368	0.06209	20.09%	0.0%	0.309	0.0%
3		10	0.2916	0.204	0.374	0.05905	20.25%	5.63%	0.2916	5.63%
5		10	0.28	0.242	0.33	0.02835	10.12%	9.39%	0.28	9.39%
6		10	0.2476	0.09	0.338	0.0778	31.42%	19.87%	0.2559	17.17%
8		10	0.2364	0.108	0.334	0.0739	31.26%	23.5%	0.2559	17.17%
11		10	0.2838	0.132	0.346	0.06471	22.80%	8.16%	0.2559	17.17%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.292	0.366	0.346	0.256	0.328	0.16	0.368	0.314	0.334	0.326
3		0.278	0.222	0.334	0.204	0.374	0.336	0.354	0.316	0.248	0.25
5		0.31	0.33	0.282	0.29	0.276	0.254	0.252	0.242	0.302	0.262
6		0.338	0.336	0.316	0.266	0.27	0.266	0.194	0.214	0.09	0.186
8		0.292	0.272	0.208	0.178	0.108	0.238	0.306	0.28	0.148	0.334
11		0.314	0.346	0.274	0.132	0.306	0.266	0.316	0.224	0.324	0.336

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 05-4200-9756	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 29 Nov-22 13:18	Analysis: Linear Interpolation (ICPIN)	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:19 (p 3 of 3)
Test Code/ID: 22-0747 / 13-2053-8261

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 13-6601-8695	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:18	Analysis: Linear Interpolation (ICPIN)	Status Level: 1
Batch ID: 13-0402-8877	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 15:30	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	526737	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

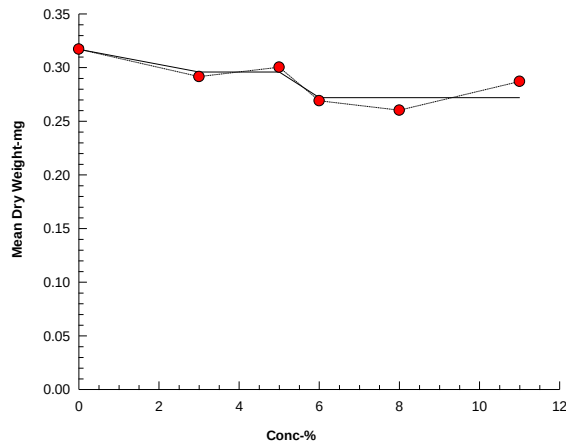
Mean Dry Weight-mg Summary

			Calculated Variate							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
0	R	10	0.3172	0.16	0.41	0.06981	22.01%	0.0%		0.3172	0.0%
3		10	0.2916	0.204	0.374	0.05905	20.25%	8.07%		0.296	6.69%
5		10	0.3003	0.252	0.3875	0.04047	13.47%	5.31%		0.296	6.69%
6		10	0.2691	0.09	0.338	0.07422	27.58%	15.16%		0.2722	14.2%
8		10	0.2603	0.148	0.35	0.06472	24.87%	17.95%		0.2722	14.2%
11		10	0.2871	0.165	0.346	0.05642	19.65%	9.49%		0.2722	14.2%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.292	0.366	0.346	0.256	0.41	0.16	0.368	0.314	0.334	0.326
3		0.278	0.222	0.334	0.204	0.374	0.336	0.354	0.316	0.248	0.25
5		0.3875	0.33	0.282	0.29	0.276	0.254	0.252	0.3025	0.302	0.3275
6		0.338	0.336	0.316	0.266	0.27	0.3325	0.2425	0.2675	0.09	0.2325
8		0.292	0.272	0.26	0.2225	0.18	0.238	0.306	0.35	0.148	0.334
11		0.314	0.346	0.274	0.165	0.306	0.266	0.316	0.224	0.324	0.336

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:11 (p 1 of 6)
 Test Code/ID: 22-0747 / 20-5072-1105

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 14-4626-2033	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:09	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 11-0164-6149	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 14:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 14:00	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 6h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.07%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		5	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		6	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		8	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		11	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0	<<	0.4	Yes	Passes Criteria
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0044266	0.0008853	5	1	0.4389	Non-Significant Effect
Error	0.0212475	0.0008853	24			
Total	0.025674		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	7.111	3.895	3.3E-04	Unequal Variances
Variances	Mod Levene Equality of Variance Test	1	4.248	0.4457	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4063	0.9031	6.2E-10	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
8		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
3		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
5		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
8		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
11		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 14-4626-2033 Endpoint: 7d Survival Rate
Analyzed: 29 Nov-22 13:09 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

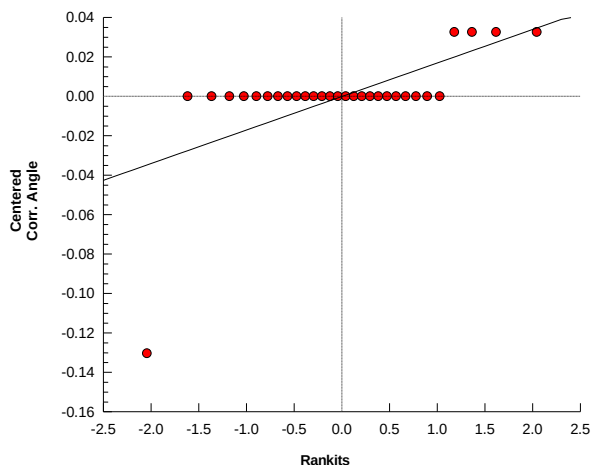
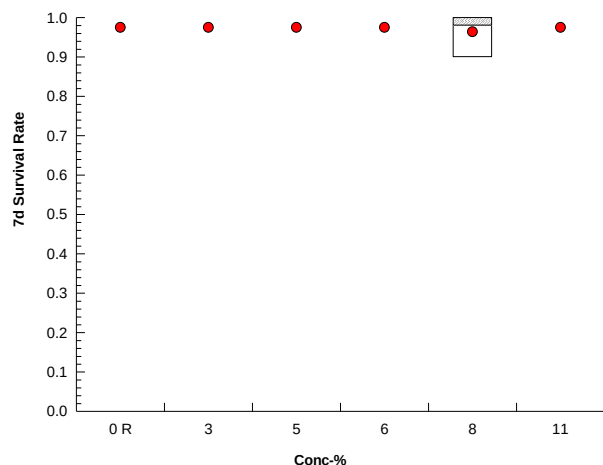
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000
8		0.9000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.412
3		1.412	1.412	1.412	1.412	1.412
5		1.412	1.412	1.412	1.412	1.412
6		1.412	1.412	1.412	1.412	1.412
8		1.249	1.412	1.412	1.412	1.412
11		1.412	1.412	1.412	1.412	1.412

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:11 (p 3 of 6)
 Test Code/ID: 22-0747 / 20-5072-1105

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 17-7332-9922	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:09	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 11-0164-6149	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 14:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 14:00	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 6h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	34.56%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-1.088	2.362	0.199	8	CDF	0.9870	Non-Significant Effect
		5	-0.3674	2.362	0.199	8	CDF	0.9193	Non-Significant Effect
		6	-1.14	2.362	0.199	8	CDF	0.9888	Non-Significant Effect
		8	-0.3319	2.362	0.199	8	CDF	0.9129	Non-Significant Effect
		11	-3.165	2.362	0.199	8	CDF	1.0000	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits			Decision
		Lower	Upper	Overlap	
Control CV	0.2139	<<	0.4	Yes	Passes Criteria
Control Resp	0.5766	0.5	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.233415	0.046683	5	2.623	0.0498	Significant Effect
Error	0.427113	0.0177964	24			
Total	0.660528		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	1.581	15.09	0.9035	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9878	0.9031	0.9748	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.5766	0.4234	0.7298	0.605	0.392	0.73	0.05517	21.39%	0.00%
3		5	0.6684	0.5129	0.8239	0.72	0.451	0.758	0.056	18.73%	-15.92%
5		5	0.6076	0.4944	0.7208	0.59	0.513	0.746	0.04079	15.01%	-5.38%
6		5	0.6728	0.5203	0.8253	0.675	0.545	0.858	0.05493	18.26%	-16.68%
8		5	0.6046	0.4	0.8092	0.529	0.45	0.871	0.07368	27.25%	-4.86%
11		5	0.8436	0.646	1.041	0.875	0.572	0.97	0.07118	18.87%	-46.31%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.613	0.392	0.543	0.605	0.73
3		0.451	0.758	0.737	0.72	0.676
5		0.642	0.513	0.746	0.59	0.547
6		0.706	0.675	0.58	0.545	0.858
8		0.45	0.871	0.526	0.529	0.647
11		0.855	0.572	0.946	0.875	0.97

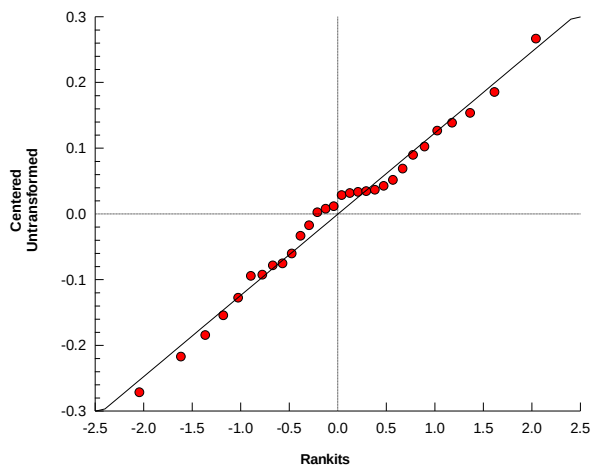
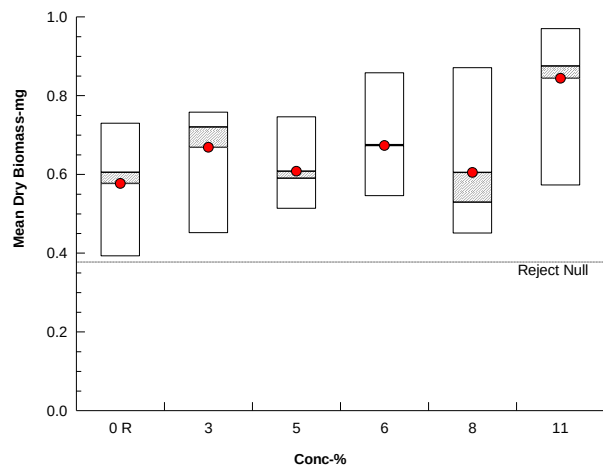
Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 17-7332-9922 Endpoint: Mean Dry Biomass-mg
Analyzed: 29 Nov-22 13:09 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 07-7244-5849	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 29 Nov-22 13:09	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 11-0164-6149	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 10 Nov-22 14:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 17 Nov-22 14:00	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 20-3142-7449	Code: 79151F79	Project: NT-100056
Sample Date: 10 Nov-22 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 10 Nov-22 13:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 6h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	34.01%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-1.106	2.362	0.196	8	CDF	0.9876	Non-Significant Effect
		5	-0.3734	2.362	0.196	8	CDF	0.9204	Non-Significant Effect
		6	-1.159	2.362	0.196	8	CDF	0.9894	Non-Significant Effect
		8	-0.4577	2.362	0.196	8	CDF	0.9340	Non-Significant Effect
		11	-3.216	2.362	0.196	8	CDF	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.228065	0.045613	5	2.646	0.0483	Significant Effect
Error	0.413653	0.0172355	24			
Total	0.641718		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	1.363	15.09	0.9283	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9859	0.9031	0.9509	Normal Distribution

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.5766	0.4234	0.7298	0.605	0.392	0.73	0.05517	21.39%	0.00%
3		5	0.6684	0.5129	0.8239	0.72	0.451	0.758	0.056	18.73%	-15.92%
5		5	0.6076	0.4944	0.7208	0.59	0.513	0.746	0.04079	15.01%	-5.38%
6		5	0.6728	0.5203	0.8253	0.675	0.545	0.858	0.05493	18.26%	-16.68%
8		5	0.6146	0.4231	0.8061	0.529	0.5	0.871	0.06896	25.09%	-6.59%
11		5	0.8436	0.646	1.041	0.875	0.572	0.97	0.07118	18.87%	-46.31%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.613	0.392	0.543	0.605	0.73
3		0.451	0.758	0.737	0.72	0.676
5		0.642	0.513	0.746	0.59	0.547
6		0.706	0.675	0.58	0.545	0.858
8		0.5	0.871	0.526	0.529	0.647
11		0.855	0.572	0.946	0.875	0.97

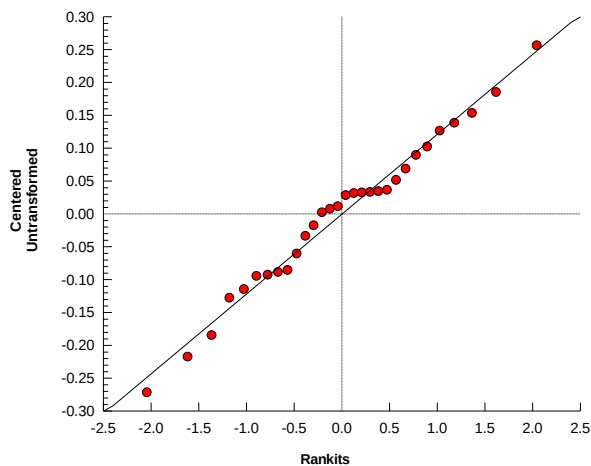
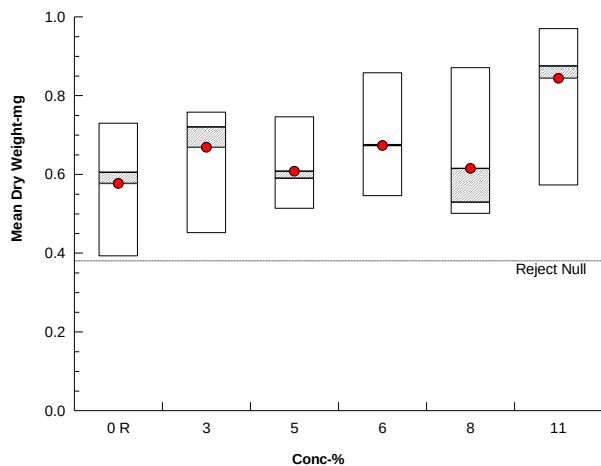
Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 07-7244-5849 Endpoint: Mean Dry Weight-mg
Analyzed: 29 Nov-22 13:09 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:14 (p 1 of 3)
 Test Code/ID: 22-0747 / 20-5072-1105

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	05-5096-1933	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4
Analyzed:	29 Nov-22 13:13	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	11-0164-6149	Test Type:	Growth-Survival (7d)	Analyst:	Chyxia Broussard
Start Date:	10 Nov-22 14:00	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water
Ending Date:	17 Nov-22 14:00	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	NWDLS
					Age: 11d
Sample ID:	20-3142-7449	Code:	79151F79	Project:	NT-100056
Sample Date:	10 Nov-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	10 Nov-22 13:30	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	6h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1155953	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits		Overlap	Decision
Attribute	Test Stat	Lower	Upper		
Control CV	0.2139	<<	0.4	Yes	Passes Criteria
Control Resp	0.5766	0.5	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

Mean Dry Biomass-mg Summary

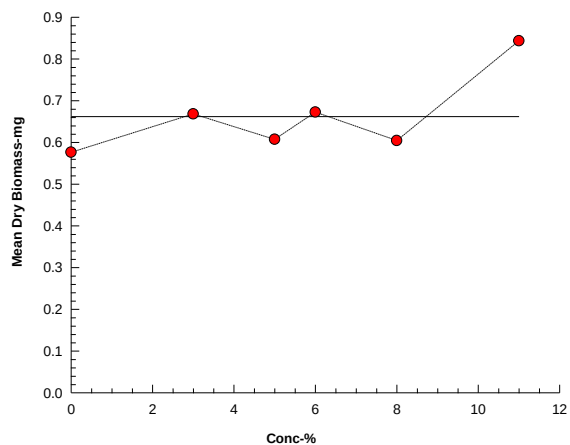
			Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	R	5	0.5766	0.392	0.73	0.1234	21.39%	0.0%	0.6623	0.0%
3		5	0.6684	0.451	0.758	0.1252	18.73%	-15.92%	0.6623	0.0%
5		5	0.6076	0.513	0.746	0.0912	15.01%	-5.38%	0.6623	0.0%
6		5	0.6728	0.545	0.858	0.1228	18.26%	-16.68%	0.6623	0.0%
8		5	0.6046	0.45	0.871	0.1647	27.25%	-4.86%	0.6623	0.0%
11		5	0.8436	0.572	0.97	0.1592	18.87%	-46.31%	0.6623	0.0%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.613	0.392	0.543	0.605	0.73
3		0.451	0.758	0.737	0.72	0.676
5		0.642	0.513	0.746	0.59	0.547
6		0.706	0.675	0.58	0.545	0.858
8		0.45	0.871	0.526	0.529	0.647
11		0.855	0.572	0.946	0.875	0.97

Inland Silverside 7-d Larval Survival and Growth Test				NWDLS Environ. Toxicol. Lab
Analysis ID:	05-5096-1933	Endpoint:	Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed:	29 Nov-22 13:13	Analysis:	Linear Interpolation (ICPIN)	Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 29 Nov-22 13:14 (p 3 of 3)
 Test Code/ID: 22-0747 / 20-5072-1105

Inland Silverside 7-d Larval Survival and Growth Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	09-2857-4759	Endpoint:	Mean Dry Weight-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	29 Nov-22 13:13	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1	
Batch ID:	11-0164-6149	Test Type:	Growth-Survival (7d)	Analyst:	Chyxia Broussard	
Start Date:	10 Nov-22 14:00	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	17 Nov-22 14:00	Species:	Menidia beryllina	Brine:	Instant Ocean	
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	NWDLS	Age: 11d
Sample ID:	20-3142-7449	Code:	79151F79	Project:	NT-100056	
Sample Date:	10 Nov-22 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	10 Nov-22 13:30	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	6h	Client:	Providence Engineering and Env. Group LL			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1979718	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>11	n/a	n/a	<9.091	n/a	n/a

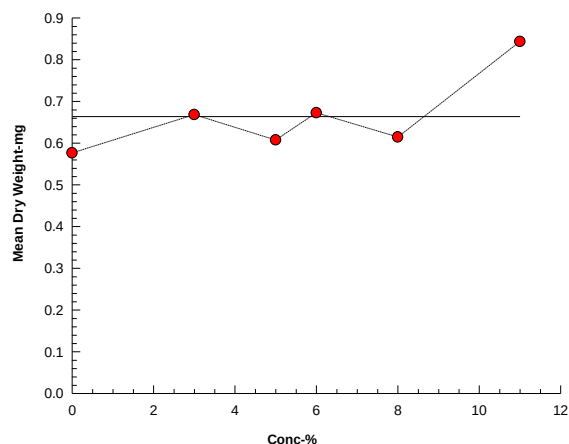
Mean Dry Weight-mg Summary

				Calculated Variate						Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect		Mean	%Effect
0	R	5	0.5766	0.392	0.73	0.1234	21.39%	0.0%		0.6639	0.0%
3		5	0.6684	0.451	0.758	0.1252	18.73%	-15.92%		0.6639	0.0%
5		5	0.6076	0.513	0.746	0.0912	15.01%	-5.38%		0.6639	0.0%
6		5	0.6728	0.545	0.858	0.1228	18.26%	-16.68%		0.6639	0.0%
8		5	0.6146	0.5	0.871	0.1542	25.09%	-6.59%		0.6639	0.0%
11		5	0.8436	0.572	0.97	0.1592	18.87%	-46.31%		0.6639	0.0%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.613	0.392	0.543	0.605	0.73
3		0.451	0.758	0.737	0.72	0.676
5		0.642	0.513	0.746	0.59	0.547
6		0.706	0.675	0.58	0.545	0.858
8		0.5	0.871	0.526	0.529	0.647
11		0.855	0.572	0.946	0.875	0.97

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test

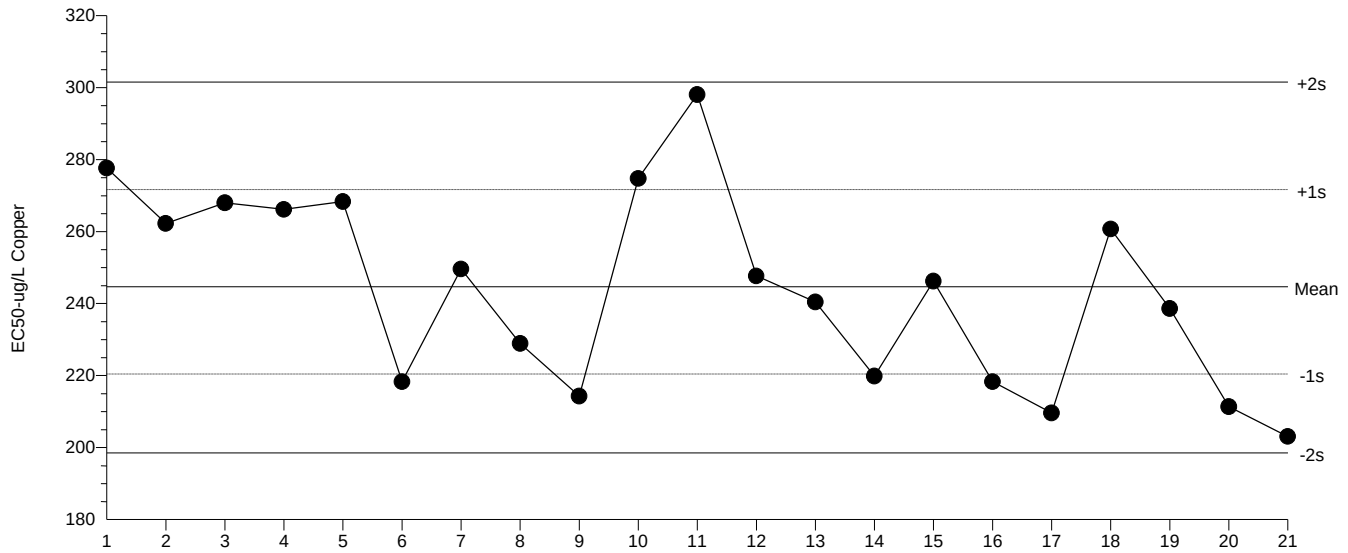
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 244.7

Count: 20

-1s Warning Limit: 220.4

-2s Action Limit: 198.5

Sigma: n/a

CV: 10.50%

+1s Warning Limit: 271.6

+2s Action Limit: 301.6

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Jun	3	12:00	277.6	32.94	1.209	(+)		16-5190-0226	03-1102-1147	NWDLS Environ. Toxicol.
2		Jul	6	14:36	262.3	17.58	0.6638			02-5459-6353	02-8769-4940	NWDLS Environ. Toxicol.
3		Aug	3	14:00	268	23.28	0.8696			07-4115-5990	16-2172-2342	NWDLS Environ. Toxicol.
4		Sep	7	10:30	266.1	21.45	0.8042			08-0819-8101	12-0660-4206	NWDLS Environ. Toxicol.
5		Oct	1	9:50	268.3	23.66	0.8831			06-6763-0892	02-0293-6999	NWDLS Environ. Toxicol.
6		Nov	17	15:15	218.3	-26.4	-1.093	(-)		02-7564-0424	02-4811-1177	NWDLS Environ. Toxicol.
7		Dec	20	13:15	249.6	4.9	0.1897			12-9085-3704	04-5280-3800	NWDLS Environ. Toxicol.
8	2022	Jan	7	12:00	228.9	-15.79	-0.6385			09-7824-2132	19-5290-7852	NWDLS Environ. Toxicol.
9		Feb	2	14:30	214.3	-30.42	-1.27	(-)		08-7070-1131	04-2971-6813	NWDLS Environ. Toxicol.
10		Mar	3	16:50	274.7	30.05	1.109	(+)		21-2022-6914	10-4405-5946	NWDLS Environ. Toxicol.
11		Apr	1	11:45	298	53.36	1.888	(+)		10-9273-3745	07-1870-5289	NWDLS Environ. Toxicol.
12			20	15:00	247.7	2.966	0.1153			06-4858-7523	10-6642-1452	NWDLS Environ. Toxicol.
13		May	4	14:15	240.4	-4.248	-0.1676			12-1858-3405	16-6015-0969	NWDLS Environ. Toxicol.
14		Jun	15	15:30	219.8	-24.87	-1.026	(-)		03-2445-7793	10-4889-3424	NWDLS Environ. Toxicol.
15		Jul	1	10:00	246.2	1.53	0.05966			12-3923-1073	01-2993-9074	NWDLS Environ. Toxicol.
16		Aug	5	13:45	218.3	-26.4	-1.092	(-)		10-0343-3624	05-7350-3919	NWDLS Environ. Toxicol.
17		Sep	8	13:00	209.6	-35.07	-1.481	(-)		18-4311-0498	15-0673-3784	NWDLS Environ. Toxicol.
18			22	11:30	260.7	16.02	0.6067			08-7149-7523	10-8268-9600	NWDLS Environ. Toxicol.
19			22	15:30	238.6	-6.057	-0.2399			11-1398-4162	15-7406-5954	NWDLS Environ. Toxicol.
20		Oct	5	11:20	211.3	-33.35	-1.402	(-)		08-8647-6629	19-8728-2086	NWDLS Environ. Toxicol.
21		Nov	2	12:45	203.1	-41.62	-1.784	(-)		07-6385-1758	07-5238-0200	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

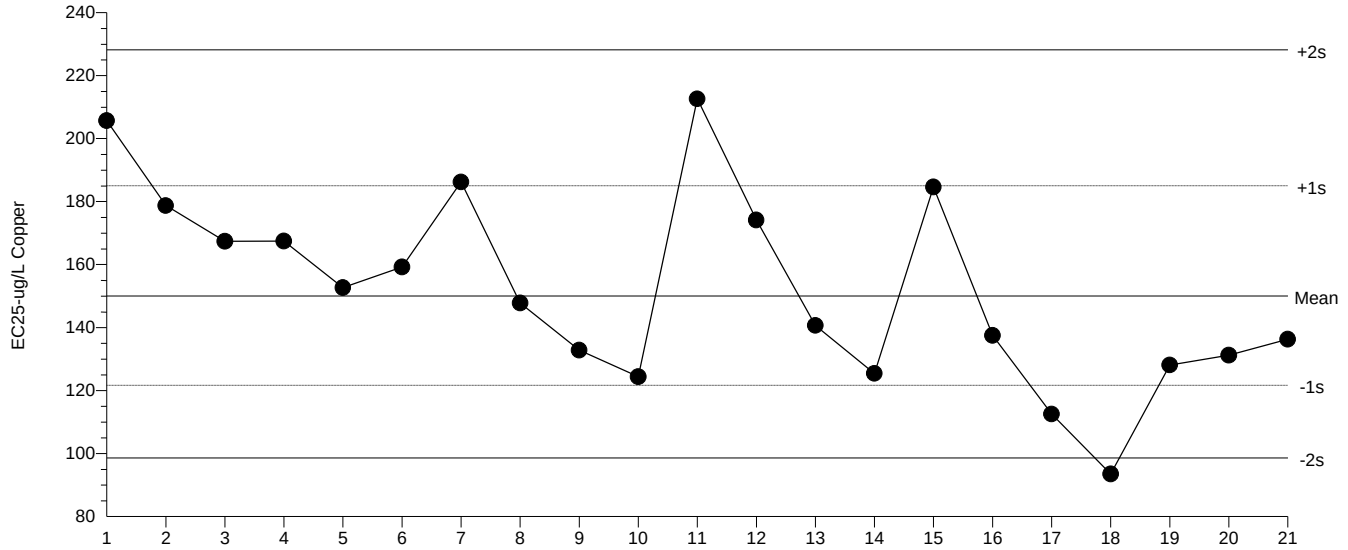
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 150.1 Count: 20 -1s Warning Limit: 121.7 -2s Action Limit: 98.67
 Sigma: n/a CV: 21.20% +1s Warning Limit: 185 +2s Action Limit: 228.2

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Jun	3	12:00	205.7	55.63	1.505	(+)		16-5190-0226	03-1838-2648	NWDLS Environ. Toxicol.
2		Jul	6	14:36	178.7	28.67	0.8342			02-5459-6353	09-0315-4751	NWDLS Environ. Toxicol.
3		Aug	3	14:00	167.4	17.33	0.5213			07-4115-5990	19-7716-0639	NWDLS Environ. Toxicol.
4		Sep	7	10:30	167.4	17.38	0.5228			08-0819-8101	05-4285-4798	NWDLS Environ. Toxicol.
5		Oct	1	9:50	152.7	2.619	0.08254			06-6763-0892	00-3098-5433	NWDLS Environ. Toxicol.
6		Nov	17	15:15	159.2	9.183	0.2834			02-7564-0424	06-0870-5824	NWDLS Environ. Toxicol.
7		Dec	20	13:15	186.2	36.15	1.03	(+)		12-9085-3704	17-3888-7616	NWDLS Environ. Toxicol.
8	2022	Jan	7	12:00	147.8	-2.263	-0.07249			09-7824-2132	18-9406-9090	NWDLS Environ. Toxicol.
9		Feb	2	14:30	132.8	-17.26	-0.5828			08-7070-1131	16-8447-9830	NWDLS Environ. Toxicol.
10		Mar	3	16:50	124.4	-25.68	-0.8954			21-2022-6914	18-2966-6761	NWDLS Environ. Toxicol.
11		Apr	1	11:45	212.6	62.56	1.663	(+)		10-9273-3745	01-6504-1547	NWDLS Environ. Toxicol.
12			20	15:00	174.1	24.08	0.7099			06-4858-7523	10-7382-1607	NWDLS Environ. Toxicol.
13		May	4	14:15	140.7	-9.391	-0.3084			12-1858-3405	19-6615-1827	NWDLS Environ. Toxicol.
14		Jun	15	15:30	125.4	-24.63	-0.8554			03-2445-7793	20-9600-4502	NWDLS Environ. Toxicol.
15		Jul	1	10:00	184.6	34.56	0.989			12-3923-1073	17-5505-5702	NWDLS Environ. Toxicol.
16		Aug	5	13:45	137.5	-12.54	-0.4165			10-0343-3624	03-6755-1187	NWDLS Environ. Toxicol.
17		Sep	8	13:00	112.5	-37.53	-1.373	(-)		18-4311-0498	00-1638-2244	NWDLS Environ. Toxicol.
18			22	11:30	93.49	-56.57	-2.258	(-)	(-)	08-7149-7523	17-4251-3151	NWDLS Environ. Toxicol.
19			22	15:30	128.1	-21.95	-0.7547			11-1398-4162	17-2272-6669	NWDLS Environ. Toxicol.
20		Oct	5	11:20	131.2	-18.84	-0.6402			08-8647-6629	12-6235-3885	NWDLS Environ. Toxicol.
21		Nov	2	12:45	136.3	-13.75	-0.4584			07-6385-1758	16-3053-6395	NWDLS Environ. Toxicol.

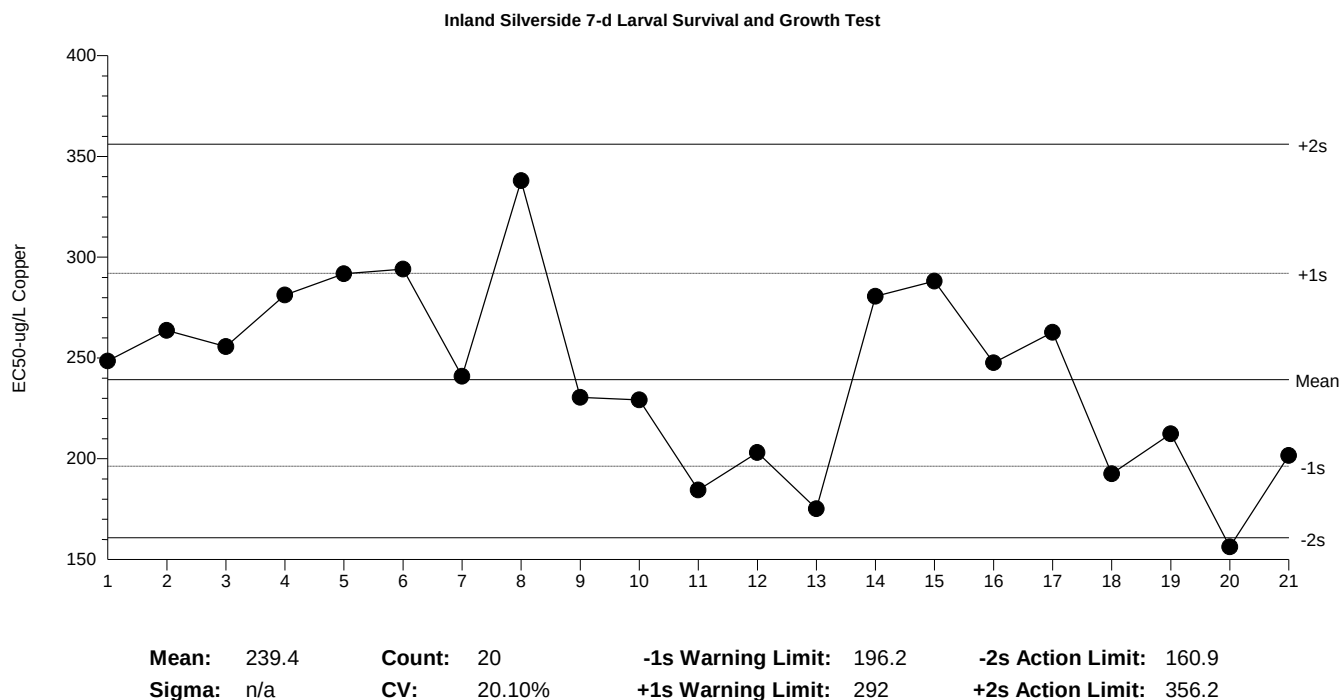
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Mar	18	12:00	248.5	9.102	0.1878			19-2942-0562	19-3228-2714	NWDLS Environ. Toxicol.
2		Apr	7	17:00	263.6	24.26	0.4859			09-6023-9668	00-7899-7098	NWDLS Environ. Toxicol.
3		May	20	13:30	255.6	16.25	0.3306			16-8999-3463	08-8634-5597	NWDLS Environ. Toxicol.
4		Jun	3	13:00	281.2	41.84	0.8107			09-4953-8218	06-7574-1585	NWDLS Environ. Toxicol.
5		Jul	6	14:30	291.7	52.37	0.9957			06-6487-9714	14-1219-8967	NWDLS Environ. Toxicol.
6		Aug	18	16:00	294.1	54.71	1.036	(+)		15-8347-6079	20-3670-2984	NWDLS Environ. Toxicol.
7		Sep	7	10:30	240.9	1.54	0.03227			01-3526-1514	20-5345-6399	NWDLS Environ. Toxicol.
8		Oct	1	11:45	337.9	98.58	1.736	(+)		19-5909-2091	14-4131-0545	NWDLS Environ. Toxicol.
9		Nov	17	15:30	230.4	-8.962	-0.192			05-7761-2074	00-5531-0604	NWDLS Environ. Toxicol.
10		Dec	20	13:30	229.2	-10.15	-0.2182			16-9811-7085	01-0812-0412	NWDLS Environ. Toxicol.
11	2022	Jan	4	13:00	184.5	-54.91	-1.311	(-)		19-3164-8761	02-7203-5408	NWDLS Environ. Toxicol.
12		Feb	28	13:30	203	-36.32	-0.8282			21-2117-1383	01-0955-3278	NWDLS Environ. Toxicol.
13		Mar	2	13:30	175.1	-64.22	-1.572	(-)		12-9241-9919	08-0675-1644	NWDLS Environ. Toxicol.
14		Apr	1	11:00	280.6	41.2	0.7993			19-3392-2474	19-5278-6182	NWDLS Environ. Toxicol.
15		May	24	13:30	288.1	48.73	0.9325			13-7048-3575	11-7991-6591	NWDLS Environ. Toxicol.
16		Jun	15	15:30	247.6	8.243	0.1704			21-4687-2843	13-9181-7688	NWDLS Environ. Toxicol.
17		Jul	1	10:30	262.7	23.37	0.4688			13-1145-4445	09-9419-4126	NWDLS Environ. Toxicol.
18		Aug	18	11:00	192.5	-46.85	-1.096	(-)		04-7687-8681	19-5334-6361	NWDLS Environ. Toxicol.
19		Sep	12	11:20	212.4	-27.01	-0.6026			21-1119-9666	05-3481-6958	NWDLS Environ. Toxicol.
20		Oct	5	11:30	156.2	-83.12	-2.147	(-)	(-)	17-2564-1954	20-3141-0815	NWDLS Environ. Toxicol.
21		Nov	2	12:30	201.6	-37.78	-0.8644			16-9144-0079	14-4003-4337	NWDLS Environ. Toxicol.

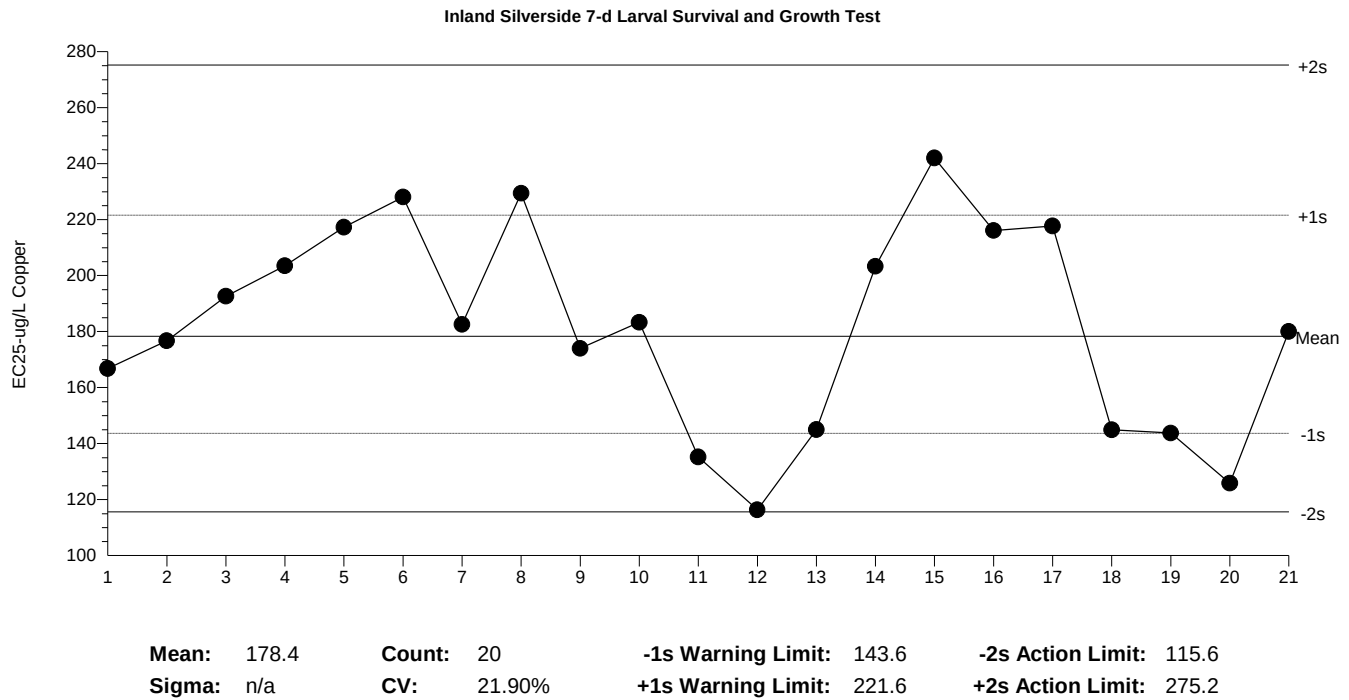
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Copper
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2021	Mar	18	12:00	166.8	-11.59	-0.3097			19-2942-0562	07-9357-5238	NWDLS Environ. Toxicol.
2		Apr	7	17:00	176.7	-1.682	-0.04371			09-6023-9668	07-2914-9717	NWDLS Environ. Toxicol.
3		May	20	13:30	192.6	14.23	0.3539			16-8999-3463	05-3918-8320	NWDLS Environ. Toxicol.
4		Jun	3	13:00	203.5	25.1	0.6072			09-4953-8218	00-4075-3486	NWDLS Environ. Toxicol.
5		Jul	6	14:30	217.3	38.87	0.9092			06-6487-9714	15-4338-5084	NWDLS Environ. Toxicol.
6		Aug	18	16:00	228.1	49.66	1.133	(+)		15-8347-6079	18-3962-2909	NWDLS Environ. Toxicol.
7		Sep	7	10:30	182.6	4.164	0.1064			01-3526-1514	11-6816-4915	NWDLS Environ. Toxicol.
8		Oct	1	11:45	229.4	51.01	1.16	(+)		19-5909-2091	10-6419-2141	NWDLS Environ. Toxicol.
9		Nov	17	15:30	174	-4.418	-0.1157			05-7761-2074	00-0061-5553	NWDLS Environ. Toxicol.
10		Dec	20	13:30	183.3	4.916	0.1254			16-9811-7085	09-5560-0815	NWDLS Environ. Toxicol.
11	2022	Jan	4	13:00	135.2	-43.17	-1.278	(-)		19-3164-8761	15-9947-7419	NWDLS Environ. Toxicol.
12		Feb	28	13:30	116.3	-62.1	-1.974	(-)		21-2117-1383	02-2853-0020	NWDLS Environ. Toxicol.
13		Mar	2	13:30	145	-33.43	-0.9571			12-9241-9919	11-2717-2616	NWDLS Environ. Toxicol.
14		Apr	1	11:00	203.3	24.9	0.6027			19-3392-2474	00-5366-5950	NWDLS Environ. Toxicol.
15		May	24	13:30	242	63.63	1.407	(+)		13-7048-3575	09-0327-7999	NWDLS Environ. Toxicol.
16		Jun	15	15:30	216.1	37.69	0.8841			21-4687-2843	10-7006-7204	NWDLS Environ. Toxicol.
17		Jul	1	10:30	217.7	39.32	0.9188			13-1145-4445	02-9946-3094	NWDLS Environ. Toxicol.
18		Aug	18	11:00	144.9	-33.49	-0.9591			04-7687-8681	07-2832-5636	NWDLS Environ. Toxicol.
19		Sep	12	11:20	143.7	-34.66	-0.9964			21-1119-9666	04-9416-5896	NWDLS Environ. Toxicol.
20		Oct	5	11:30	125.8	-52.57	-1.61	(-)		17-2564-1954	00-0393-0527	NWDLS Environ. Toxicol.
21		Nov	2	12:30	180	1.611	0.04146			16-9144-0079	04-8214-1016	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 11-09-22 0800 TO 11-10-22 0800
NO. 2: FROM 11-11-22 0800 TO 11-12-22 0800
NO. 3: FROM 11-13-22 0800 TO 11-14-22 0800

Test Initiated: 1500 TIME 11-10-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	100	80	100	100	100
	B	100	100	100	100	100	100
	C	100	100	100	100	80	100
	D	100	100	100	100	80	80
	E	80	100	100	100	60	100
	F	100	100	100	80	100	100
	G	100	100	100	80	100	100
	H	100	100	80	80	80	100
	I	100	100	100	100	100	100
	J	100	100	80	80	100	100
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	100	100	100	100	100
	7 day	98	100	94	92	90	98
	CV%❶	6.45	0.00	10.28	11.23	15.71	6.45

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH ②
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.29	0.28	0.31	0.34	0.29	0.31
B	0.37	0.22	0.33	0.34	0.27	0.35
C	0.35	0.33	0.28	0.32	0.21	0.27
D	0.26	0.20	0.29	0.27	0.18	0.13
E	0.33	0.37	0.28	0.27	0.11	0.31
F	0.16	0.34	0.25	0.27	0.24	0.27
G	0.37	0.35	0.25	0.19	0.31	0.32
H	0.31	0.32	0.24	0.21	0.28	0.22
I	0.33	0.25	0.30	0.09	0.15	0.32
J	0.33	0.25	0.26	0.19	0.33	0.34
Mean Dry Weight in Milligrams	0.31	0.29	0.28	0.25	0.24	0.28
CV (%)①	20.09	20.25	10.12	31.42	31.26	22.80
PMDS	Acceptable Range: 37 or less					20.89

① coefficient of variation = standard deviation x 100/mean

② Although the standard hypothesis test for sublethal toxicity indicated a statistically significant difference between the control response and that of the effluent at or below the critical dilution, the IC25 dose-response percent effect was >11%. Therefore, there is no sublethal toxicity.

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 11-09-22 0800 TO 11-10-22 0800
NO. 2: FROM 11-11-22 0800 TO 11-12-22 0800
NO. 3: FROM 11-13-22 0800 TO 11-14-22 0800

Test Initiated: 1400 TIME 11-10-22 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^①
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	100	100	100	100	0.00
3%	100	100	100	100	100	100	100	100	0.00
5%	100	100	100	100	100	100	100	100	0.00
6%	100	100	100	100	100	100	100	100	0.00
8%	90	100	100	100	100	100	100	98	4.56
11%	100	100	100	100	100	100	100	100	0.00

① coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^①
	A	B	C	D	E		
0%	0.61	0.39	0.54	0.61	0.73	0.58	21.39
3%	0.45	0.76	0.74	0.72	0.68	0.67	18.73
5%	0.64	0.51	0.75	0.59	0.55	0.61	15.01
6%	0.71	0.68	0.58	0.55	0.86	0.67	18.26
8%	0.45	0.87	0.53	0.53	0.65	0.60	27.25
11%	0.86	0.57	0.95	0.88	0.97	0.84	18.87
PMSD	Acceptable Range: 28 or less					34.56 ^②	

Weights are for: preserved larvae, or X unpreserved larvae

① coefficient of variation = standard deviation x 100/mean

② The PMSD exceeds upper acceptance limit indicating that the test may not be sensitive enough to detect toxicity; however, the IC25 is >11% effluent. Therefore, there is no sublethal toxicity.

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-38
TCEQ-TOX T104704202-22-17

March 31, 2023

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20230331160344MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-38
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
03/31/2023 16:03

Work Order Case Narrative

NWDLS Job No: 23C0358, 23C0359, 23C0360 (23-0232)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 1Q'23 (chronic) + 1S'23 (acute) - [*M. bahia*, *M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in the chronic tests, nor in the acute *Mysidopsis bahia*.

However, the 24-hour acute *Menidia beryllina* did exhibit toxicity. Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001			
TPDES PERMIT NO.	WQ0005143000			

SPECIES	Mysidopsis bahia	TEST DATE	6-13 Mar 2023	
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40
Control Results	96	8.78	0.42	20.03
Critical Dilution (8%)	100	0.00	0.40	14.02
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0
Report the NOEC % for survival:			TOP3E	11
Report the LOEC % for survival:			TXP3E	>11
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0
Report the NOEC % for growth:			TPP3E	11
Report the LOEC % for growth:			TYP3E	>11
PMSD (Acceptable Range: 37 or less):				16.18
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416
CHRONIC PERMIT REPORTING - Table 1 attached.				

SPECIES	Menidia beryllina	TEST DATE	6-13 Mar 2023	
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.50	≤ 40
Control Results	100	0.00	1.60	9.44
Critical Dilution (8%)	98	4.56	1.48	9.76
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP6B	0
Report the NOEC % for survival:			TOP6B	11
Report the LOEC % for survival:			TXP6B	>11
Is the NOEC for growth less than the critical dilution?		No	TWP6B	0
Report the NOEC % for growth:			TPP6B	11
Report the LOEC % for growth:			TYP6B	>11
PMSD (Acceptable Range: 28 or less):				24.77
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416
CHRONIC PERMIT REPORTING - Table 1 attached.				

NWDLS ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001
TPDES PERMIT NO.	WQ0005143000

SPECIES	Mysidopsis bahia	TEST DATE	7-8 Mar 2023
TEST RESULTS	Pass		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE3E = 0		
ACUTE PERMIT REPORTING - Table 2 attached.			

SPECIES	Menidia beryllina	TEST DATE	7-8 Mar 2023
TEST RESULTS	Fail		
Is the mean survival > 50% in the 100% effluent concentration?			No
DMR Parameter Code:	TIE6B = 1		
ACUTE PERMIT REPORTING - Table 2 attached.			

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
03/31/2023 16:03

Chemical Analyses

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Outfall 001-1

Lab Sample ID: 23C0358-01

Sample Matrix:

Waste Water

Date Collected:

03/06/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	188	mg/L		1	10.0	10.0	BGC0831	03/07/2023 11:41	AKA
General Chemistry SM 2510 B	Conductivity	A	3030	umhos/cm @ 25 °C		1	2.00	2.00	BGC0831	03/07/2023 11:41	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	112	mg/L		1		50.0	BGC2238	03/15/2023 16:03	TBB
General Chemistry EPA 350.1	Ammonia as N	A	30.2	mg/L		50	1.00	2.50	BGC0921	03/07/2023 16:57	DLK
General Chemistry SM 2520 B	Salinity	N	1.72	Salinity units		1	1.00	1.00	BGC0831	03/07/2023 11:41	AKA
Field Hach 10360	DO Field	N	9.10	mg/L		1	1.00	1.00	BGC0873	03/06/2023 10:15	DPD
Field SM 4500-H+ B	pH	A	7.70	pH Units @ 25 °C		1	1.00	1.00	BGC0873	03/06/2023 10:15	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.14	mg/L	U	1	0.25	0.25	BGC0873	03/06/2023 10:15	DPD

Natgasoline - WET Quarterly Sample 1 w/ Acutes

Client Sample ID: Receiving Water

Lab Sample ID: 23C0358-02

Sample Matrix:

Waste Water

Date Collected:

03/06/2023 10:35

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	27.0	mg/L		1	10.0	10.0	BGC0956	03/07/2023 16:59	AKA
General Chemistry SM 2510 B	Conductivity	A	484	umhos/cm @ 25 °C		1	2.00	2.00	BGC0956	03/07/2023 16:59	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	66.0	mg/L		1		50.0	BGC2238	03/15/2023 16:03	TBB
General Chemistry EPA 350.1	Ammonia as N	A	0.135	mg/L		1	0.0200	0.0500	BGC0921	03/07/2023 14:23	DLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BGC0956	03/07/2023 16:59	AKA
Field Hach 10360	DO Field	N	8.00	mg/L		1	1.00	1.00	BGC0873	03/06/2023 10:35	DPD
Field SM 4500-H+ B	pH	A	6.30	pH Units @ 25 °C		1	1.00	1.00	BGC0873	03/06/2023 10:35	DPD
Field SM 4500-Cl G	Total Residual Chlorine	A	0.13	mg/L	U	1	0.25	0.25	BGC0873	03/06/2023 10:35	DPD

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2

Lab Sample ID: 23C0359-01

Sample Matrix:

Waste Water

Date Collected:

03/08/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	154	mg/L		1	10.0	10.0	BGC1216	03/09/2023 10:10	AKA
General Chemistry SM 2510 B	Conductivity	A	2180	umhos/cm @ 25 °C		1	2.00	2.00	BGC1216	03/09/2023 10:10	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	124	mg/L		1		50.0	BGC2840	03/17/2023 16:50	NAZ
General Chemistry EPA 350.1	Ammonia as N	A	21.0	mg/L		50	1.00	2.50	BGC1203	03/10/2023 12:39	DLK
General Chemistry SM 2520 B	Salinity	N	1.21	Salinity units		1	1.00	1.00	BGC1216	03/09/2023 10:10	AKA
Field Hach 10360	DO Field	N	10.0	mg/L		1	1.00	1.00	BGC2285	03/08/2023 08:00	SRI
Field SM 4500-H+ B	pH	A	6.40	pH Units @ 25 °C		1	1.00	1.00	BGC2285	03/08/2023 08:00	SRI
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BGC2285	03/08/2023 08:00	SRI

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-38
TCEQ-TOX T104704202-22-17

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
03/31/2023 16:03

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3

Lab Sample ID: 23C0360-01

Sample Matrix:

Waste Water

Date Collected:

03/10/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	145	mg/L		1	10.0	10.0	BGC1693	03/13/2023 09:50	AKA
General Chemistry SM 2510 B	Conductivity	A	1940	umhos/cm @ 25 °C		1	2.00	2.00	BGC1693	03/13/2023 09:50	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	122	mg/L		1		50.0	BGC3071	03/20/2023 15:51	NAZ
General Chemistry EPA 350.1	Ammonia as N	A	16.0	mg/L		20	0.400	1.00	BGC1975	03/14/2023 11:00	GIW
General Chemistry SM 2520 B	Salinity	N	1.07	Salinity units		1	1.00	1.00	BGC1693	03/13/2023 09:50	AKA
Field Hach 10360	DO Field	N	10.3	mg/L		1	1.00	1.00	BGC2283	03/10/2023 08:00	SRI
Field SM 4500-H+ B	pH	A	6.70	pH Units @ 25 °C		1	1.00	1.00	BGC2283	03/10/2023 08:00	SRI
Field SM 4500-Cl G	Total Residual Chlorine	A	0.06	mg/L	U	1	0.25	0.25	BGC2283	03/10/2023 08:00	SRI

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
03/31/2023 16:03

Sample Condition Checklist

Work Order: 23C0358

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23C0359

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23C0360

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
03/31/2023 16:03

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 2

23C0358

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin <i>END</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C0358-01	Outfall 001-1	3/5/23 08:00 3/6/23 08:00	3/6/23 10:15	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 1DL-2007.0 4°C MB 1DL-2006.0 4°C AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.1 pH Field 7.4 Total Chlorine 0.14 Residual WW Field DFD
23C0358-02	Receiving Water		3/6/23 10:35	AQ Grab	A HDPE 250mL B HDPE 250mL H2SO4 C HDPE 250mL HNO3 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.0 pH Field 6.3 Total Chlorine 0.13 Residual WW Field DFD



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 2 of 2

23C0358

(Continued)

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1 w/ Acutes		Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:		

Field Remarks:		Lab Preservation: H2SO4 (Circle and Write ID Below) 2108097 HNO3 2202216 NaOH Other: _____		
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 3/6/23 13:50	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) 	Date/Time 03/6/23 1350
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 16.6 °C
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210556082

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

23C0359

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 2	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin <i>-End</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C0359-01	Outfall 001-2	3/7/23 08:00 — 3/8/23 08:00	3/8/23 10:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 10.0 pH Field 6.4 Total Chlorine 0.05 Residual WW Field SP4

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other: _____ (Circle and Write ID Below) 2108097 2202214	
Sampler (Signature) <i>[Signature]</i>	Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 3/8/23 13:55	Received By: (Signature)
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>SK</i>
Custody Seal : Yes / No		Temperature: 6-7 °C	
COC Labels Agree: Yes / No		Thermometer ID: 21055662	
Appropriate Volume: Yes / No		Samples Accepted: Yes / No	
Container Intact : Yes / No		Coolers Intact: Yes / No	
Received on Ice: Yes / No			

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

23C0360

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 3	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin <i>END</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C0360-01	Outfall 001-3	3/9/23 08:00 3/10/23 08:00	3/10/23 11:45	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 10.3 pH Field 6.7 Total Chlorine 0.06 Residual WW Field SH

Field Remarks:		Lab Preservation: H2SO4 (Circle and Write ID Below) 2108097 2202216		HNO3		NaOH		Other:	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time 3/10/23 11:50	Received By: (Signature)		Date/Time				
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)		Date/Time				
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature)		Date/Time 3/10/23 14:50				
Custody Seal : Yes / No		COC Labels Agree: Yes / No		Appropriate Volume: Yes / No		Received on Ice: Yes / No		Temperature: 1.4 °C	
Container Intact: Yes / No		Appropriate Containers: Yes / No		Coolers Intact: Yes / No		Samples Accepted: Yes / No		Thermometer ID: 210556862	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-6-23	0800	Sample 3 Date/Time:	3-10-23	0900
Sample 2 Date/Time:	3-8-23	1030	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-6-23	23-0232 -1	RW030623	A0J	Day 4	3-10-23	23-0232 -2	RW030623	A0J
Day 1	3-7-23	23-0232 -1	RW030623	A0J	Day 5	3-11-23	23-0232 -3	RW030623	CBR
Day 2	3-8-23	23-0232 -1	RW030623	TRG	Day 6	3-12-23	23-0232 -3	RW030623	CBR
Day 3	3-9-23	23-0232 -2	RW030623	A0J					

*LW Batch #: 2303586

This test was conducted in accordance with the method standard or according to the exception(s) as noted:
--

Comments:

One CBR 3-10-23 [Corro]

TDS entry: DPD 3-16-23

Data Sheet Preparation : Initials: CBR/A0J Date: 3/6/23

End of Test Review : Initials: CBR Date: 3-13-23

Final Review (signature)

Arturo Ornelas Jr

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters

DATE	3/6/23	3-7-23	3-8-23	3-9-23	3-10-23	3-11-23	3-12-23	3-13/23						
TIME	1400	0830	0830	0830	0815	0815	0830	0830	0830	0830	0850	0850	0750	
INITIALS	SPD CR	AOJ KRI	AOJ KRI	AOJ CR	AOJ CR	AOJ DPD	AOJ DPD	KRI CR	KRI CR	KRI CR	KRI CR	CR KRI	CR KRI	AOJ KRI
DAY	0	1	2	3	4	5	6	7						
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.2	8.1	8.2	8.0	8.2	7.9	8.1	7.9	8.2	7.9	8.2	8.1	8.2	8.1
3	8.2	8.1	8.2	8.0	8.2	7.9	8.1	7.9	8.2	8.0	8.2	8.1	8.2	8.1
5	8.2	8.1	8.2	8.0	8.2	7.9	8.0	7.9	8.2	8.0	8.2	8.1	8.2	8.1
6	8.2	8.1	8.2	8.1	8.2	7.9	8.1	7.9	8.1	8.0	8.2	8.1	8.2	8.1
8	8.2	8.1	8.2	8.1	8.2	7.9	8.1	7.9	8.1	8.0	8.2	8.1	8.2	8.1
11	8.2	8.1	8.2	8.1	8.2	7.8	8.1	7.9	8.1	8.0	8.2	8.1	8.2	8.1
*LW	8.2	8.1	8.2	8.0	8.0	7.9	8.0	7.9	8.1	7.9	8.1	8.1	8.2	8.1
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.1	7.7	8.1	7.8	8.1	7.7	7.9	6.7	7.7	7.0	8.1	7.4	8.0	7.8
3	8.1	7.6	8.0	7.8	8.1	7.5	8.0	6.8	7.6	7.0	8.0	7.3	7.9	7.7
5	8.1	7.5	8.0	7.9	8.1	7.3	8.0	6.8	7.6	7.0	8.1	7.2	8.0	7.7
6	8.1	7.5	8.0	7.9	8.1	7.2	8.0	6.9	7.6	7.0	8.1	7.3	8.0	7.5
8	8.1	7.4	8.1	7.9	8.1	7.2	8.0	6.9	7.6	7.1	8.1	7.3	8.0	7.5
11	8.1	7.4	8.1	7.9	8.1	7.1	8.0	6.8	7.6	7.0	8.1	7.2	8.0	7.3
*LW	7.9	7.8	8.0	7.9	8.2	7.8	8.3	7.0	7.9	7.1	8.2	7.6	8.0	7.7
METER No.	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25.4	24.5	24.8	24.2	24.9	24.5	24.8	24.1	24.6	24.4	23.8	24.8	24.7	24.3
3	25.4	24.4	25.1	24.1	24.8	24.5	24.9	23.7	24.6	24.3	23.7	24.8	24.6	24.3
5	25.5	24.4	25.2	24.0	24.7	24.5	24.9	24.1	24.7	24.3	23.6	24.7	24.5	24.2
6	25.6	24.4	25.3	24.2	24.7	24.5	24.8	24.1	24.7	24.3	23.6	24.7	25.0	24.2
8	25.6	24.4	25.3	24.1	24.6	24.5	24.9	24.2	24.8	24.3	23.6	24.7	24.5	24.2
11	25.5	24.5	25.1	24.2	24.7	24.5	24.9	24.3	24.7	24.3	23.7	24.1	24.7	24.3
*LW	25.3	24.5	25.5	24.3	25.6	24.5	24.9	24.1	24.7	24.5	24.1	24.9	24.7	24.3
THERM No.	737	737	737	737	737	737	737	737	737	737	737	737	737	737
Offset (±°C)	6	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	25.8	25.2	25.3	25.7	25.8	25.0	25.4
3	25.8	25.8	25.9	25.9	26.2	25.2	25.2
5	25.8	25.6	25.7	25.8	26.2	25.0	25.0
6	25.8	25.7	25.8	25.8	26.3	25.0	25.0
8	25.8	25.6	25.8	25.8	26.1	25.0	25.1
11	25.7	25.6	25.9	25.8	26.3	25.0	25.1
*LW	24.9	24.5	24.4	26.0	24.7	25.9	25.8
Meter No.:	948	948	948	948	948	948	948

Biological Data

Test Organism Data			
Test Organism Batch #	23-0238	DOB	2/27/23
Source	NWDLS	Age	7d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	///	2216069	KRI	4	2216100	2216100	ML / AD
1	2216069	2216069	ML / ML	5	2216100	2216100	ML / ML
2	2216069	2216069	AD / SKW	6	2216100	2216100	KRI / ML
3	2216100	2216100	ML / AD	7	2216100	///	AD / ///

Comments:

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organisms

RW										8										
Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7	
	A	5	5	5	5	5	5	5	5		A	5	5	5	5	5	5	5	5	
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5	
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5	
	D	5	5	5	5	5	5	5	4		D	5	5	5	5	5	5	5	5	
	E	5	5	5	5	5	5	5	6		E	5	5	5	5	5	5	5	5	
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5	
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5	
	H	5	5	5	5	5	5	4	4		H	5	5	5	5	5	5	5	5	
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5	
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5	5
3	A	5	5	5	5	5	5	4	4	11	A	5	5	5	5	5	5	5	5	
	B	5	5	4	4	4	4	4	4		B	5	5	5	5	5	5	4	4	
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5	
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5	
	E	5	5	5	5	4	4	4	4		E	5	5	5	5	5	5	5	5	
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5	
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5	
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5	
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	4	4	4	4	
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	4	4	4	
	B	5	5	4	4	4	4	4	4		B	5	5	5	5	5	5	5	5	
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5	
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5	
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5	
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5	
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5	
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5	
	I	5	5	5	5	5	5	5	5		I	5	5	5	4	4	4	4	4	
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5	5
6	A	5	5	5	5	5	4	4	4		A									
	B	5	5	5	5	5	5	5	5		B									
	C	5	5	5	5	5	5	5	5		C									
	D	5	5	5	5	5	5	5	5		D									
	E	5	5	5	5	5	5	5	5		E									
	F	5	5	4	4	4	4	4	4		F									
	G	5	5	5	5	5	5	5	5		G									
	H	5	5	5	5	5	5	5	5		H									
	I	5	5	4	4	4	4	4	4		I									
	J	5	5	4	4	4	4	4	4		J									
Date	3/6/23	3/7/23	3/8/23	3/9/23	3/10/23	3/11/23	3/12/23	3/13/23	Comments:											
Time	1500	1045	1000	1030	0835	1400	1100	1600												
Init	CBA	ARM	CBR	AOJ	AOJ	KRS	CBR	CBR												

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00446	.00598	6	A	31	.00462	.00641
	B	2	.00443	.00657		B	32	.00470	.00715
	C	3	.00403	.00659		C	33	.00428	.00629
	D	4	.00445	.00614		D	34	.00479	.00663
	E	5	.00438	.00687		E	35	.00461	.00694
	F	6	.00471	.00713		F	36	.00436	.00664
	G	7	.00394	.00619		G	37	.00454	.00660
	H	8	.00438	.00578		H	38	.00462	.00709
	I	9	.00424	.00658		I	39	.00435	.00632
	J	10	.00439	.00678		J	40	.00478	.00666
3	A	11	.00425	.00600	8	A	41	.00463	.00675
	B	12	.00443	.00664		B	42	.00432	.00607
	C	13	.00447	.00656		C	43	.00443	.00677
	D	14	.00459	.00718		D	44	.00444	.00659
	E	15	.00458	.00624		E	45	.00454	.00677
	F	16	.00428	.00612		F	46	.00442	.00622
	G	17	.00496	.00679		G	47	.00425	.00648
	H	18	.00438	.00651		H	48	.00439	.00634
	I	19	.00411	.00605		I	49	.00451	.00645
	J	20	.00450	.00637		J	50	.00460	.00602
5	A	21	.00443	.00662	11	A	51	.00439	.00593
	B	22	.00442	.00626		B	52	.00430	.00519
	C	23	.00444	.00650		C	53	.00461	.00666
	D	24	.00472	.00654		D	54	.00451	.00682
	E	25	.00437	.00674		E	55	.00431	.00656
	F	26	.00470	.00675		F	56	.00423	.00584
	G	27	.00458	.00654		G	57	.00421	.00667
	H	28	.00453	.00696		H	58	.00476	.00682
	I	29	.00481	.00726		I	59	.00441	.00625
	J	30	.00465	.00701		J	60	.00454	.00671

Comments:

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	OVEN ID#	BALANCE VERIFICATION INITIALS	DATE/ TARE WEIGHT INITIALS	DATE DRYING INITIATED	TIME DRYING INITIATED	OVEN TEMP(Act/Corr) (°C)	INITIALS
*LW	A	61	.00459	.00678								
	B	62	.00497	.00719								
	C	63	.00423	.00619								
	D	64	.00452	.00668								
	E	65	.00500	.00735								
	F	66	.00452	.00699								
	G	67	.00477	.00656								
	H	68	.00493	.00655								
	I	69	.00493	.00688								
	J	70 *	.00504	.00717								
	A	71										
	B	72										
	C	73										
	D	74										
	E	75										
	F	76										
	G	77										
	H	78										
	I	79										
	J	80										
QA/QC (pans)	10		.00434	.00678								
	20		.00447	.00634								
	30		.00460	.00701								
	40		.00474	.00662								
	50		.00459	.00602								
	60		.00457	.00671								
	70		.00500	.00712								
					DATE/TIME DRYING TERMINATED <u>3-14-23 1200</u> OVEN TEMP (Act/Corr) (°C) <u>105</u> / <u>105</u> BALANCE VERIFICATION INITIALS <u>CBR</u> TOTAL WEIGHT DATE/INITIALS <u>3-15-23</u> / <u>CBR</u> COMMENTS: TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism							

Test Notes

Include Date, Time, and Initials

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	3-6-23	0800	Sample 3 Date/Time:	3-10-23	0900
Sample 2 Date/Time:	3-8-23	1030 ⁰	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	3-6-23	23-0232 -1	RW030623	AOS	Day 4	3-10-23	23-0232 -2	RW030623	AOS
Day 1	3-7-23	23-0232 -1	RW030623	AOS	Day 5	3-11-23	23-0232 -3	RW030623	CBR
Day 2	3-8-23	23-0232 -1	RW030623	TRG	Day 6	3-12-23	23-0232 -3	RW030623	CBR
Day 3	3-9-23	23-0232 -2	RW030623	AOS					

*LW Batch #: 2303586

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

① IL CBR 3-10-23 → [0800]

TDS entry: DRD 3-16-23

Data Sheet Preparation : Initials: CBR/AOS Date: 3/7/23

End of Test Review : Initials: ABR Date: 3-13-23 Final Review (signature)

Arturo Orosquez Jr

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	23-0242	DOB	2-24-23
Source	NWDLS	Age	10 days

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2216069	KRI	4	2216100	2216100	ML 1 M
1	2216069	2216069	ML 1 M	5	2216100	2216100	ML 1 M
2	2216069	2216069	ML 1 M	6	2216100	2216100	KRI 1 B
3	2216100	2216100	ML 1 M	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	10	10	10	10	10	10	10	10	8	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	9
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
3	A	10	10	10	10	10	10	10	10	11	A	10	10	10	10	10	10	10	4
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	9	8
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	9		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
5	A	10	10	10	10	10	10	10	10	*LW	A	10	10	10	10	10	10	10	9
	B	10	10	10	10	10	10	10	10		B	10	10	10	10	10	10	10	7
	C	10	10	10	10	10	10	10	10		C	10	10	10	10	10	10	10	6
	D	10	10	10	10	10	10	10	10		D	10	10	10	10	10	10	10	10
	E	10	10	10	10	10	10	10	10		E	10	10	10	10	10	10	10	10
6	A	10	10	10	10	10	10	10	9		A								
	B	10	10	10	10	10	10	10	10		B								
	C	10	10	10	10	10	10	10	10		C								
	D	10	10	10	10	10	10	10	10		D								
	E	10	10	10	10	10	10	10	10		E								
Date	3/6/23	3/7/23	3/8/23	3/9/23	3/10/23	3/11/23	3/12/23	3/13/23	Comments: ① IE KRI 3-11-23-7E14503										
Time	1530	1110	1045	1055	0900	1550	1220	1530											
Initials	KRI PFO	ABR	ABR	ABR	ABR	KRI	ABR	ABR											

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1	.00608	.02054	*LW	A	31	.00616	.02330
	B	2	.00657	.02204		B	32	.00664	.01712
	C	3	.00686	.02460		C	33	.00491	.01538
	D	4	.00645	.02137		D	34	.00677	.02372
	E	5	.00678	.02430		E	35 *	.00685	.01858
3	A	6	.00643	.02149	QA/QC (pans)		10	.00690	.02577
	B	7	.00664	.02094			20	.00712	.02011
	C	8	.00675	.01988			30	.00689	.01975
	D	9	.00688	.01885			35	.00681	.01857
	E	10 *	.00691	.02577					
5	A	11	.00686	.02402	BALANCE ID#	852			
	B	12	.00654	.02234	OVEN ID#	SW-1			
	C	13	.00679	.02085	BALANCE VERIFICATION INITIALS	CBR			
	D	14	.00631	.02285	DATE / TARE WEIGHT INITIALS	3-13-23, CBR			
	E	15	.00646	.02263	DATE DRYING INITIATED	3-13-23			
6	A	16	.00698	.01868	TIME DRYING INITIATED	1636			
	B	17	.00683	.02440	OVEN TEMPERATURE (°C) (Actual/Corrected)	105, 105			
	C	18	.00667	.02115	INITIALS	CBR			
	D	19	.00641	.02034	DATE / TIME DRYING TERMINATED	3-14-23, 1200			
	E	20 *	.00704	.02014	OVEN TEMPERATURE (°C) (Actual/Corrected)	105, 105			
8	A	21	.00672	.02349	BALANCE VERIFICATION INITIALS	CBR			
	B	22	.00632	.02067	TOTAL WEIGHT DATE / INITIALS	3-15-23, 1 CBR			
	C	23	.00660	.02252	COMMENTS:				
	D	24	.00701	.02095					
	E	25	.00683	.02010					
11	A	26	.00683	.02153	CONT = Control	CONC = Concentration	REP = Replicate		
	B	27	.00689	.01178	Wt. = Weight	ORG. = Organism			
	C	28	.00669	.02007					
	D	29	.00683	.02540					
	E	30 *	.00693	.01976					

Codes: IE-Incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters

DATE	3/10/23	3-7-23	3-8-23	3-9-23	3-10-23	3-11-23	3-12-23	3/13/23						
TIME	1400	0830	0830	0830	0815	0815	0830	0830	0830	0830	0850	0850	0750	
INITIALS	DPD CBR	AOS KRZ	AOS KRZ	AOS CBR	AOS CBR	AOS DPD	AOS KRZ	KPS CBR	KPS CBR	KPS CBR	KPS CBR	CBR KRZ	CBR KRZ	AOS KRZ
DAY	0	1	2	3	4	5	6	7						
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	8.2	8.0	8.2	8.0	8.2	7.8	8.1	7.8	8.2	7.9	8.2	8.0	8.2	8.0
3	8.2	8.1	8.2	8.0	8.2	7.9	8.1	7.9	8.2	7.9	8.2	8.0	8.2	8.0
5	8.2	8.1	8.2	8.0	8.2	7.9	8.0	7.9	8.2	7.9	8.2	8.0	8.2	8.0
6	8.2	8.1	8.2	8.0	8.2	7.9	8.1	7.9	8.1	7.9	8.2	8.0	8.2	8.0
8	8.2	8.1	8.2	8.0	8.2	7.9	8.1	7.9	8.1	7.9	8.2	8.0	8.2	8.0
11	8.2	8.1	8.2	8.1	8.2	7.9	8.1	7.9	8.1	7.9	8.2	8.0	8.2	8.0
*LW	8.2	8.0	8.2	7.9	8.0	8.0	8.0	7.8	8.1	7.9	8.1	8.0	8.2	7.9
METER No	737	737	737	737	737	737	737	737	737	737	737	737	737	737
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	8.1	7.3	8.1	7.5	8.1	7.2	7.9	6.5	7.7	6.3	8.1	6.8	8.0	7.3
3	8.1	7.3	8.0	7.5	8.1	7.2	8.0	6.2	7.6	6.3	8.0	6.7	7.9	7.3
5	8.1	7.2	8.0	7.3	8.1	7.1	8.0	6.1	7.6	6.4	8.1	6.7	8.0	7.2
6	8.1	7.1	8.0	7.2	8.1	7.2	8.0	6.2	7.6	6.3	8.1	6.7	8.0	6.9
8	8.1	7.1	8.1	7.2	8.1	7.2	8.0	6.1	7.6	6.3	8.1	6.6	8.0	6.8
11	8.1	7.0	8.1	7.2	8.1	7.2	8.0	6.1	7.6	6.2	8.1	6.6	8.0	6.8
*LW	7.9	7.6	8.0	7.7	8.2	7.4	8.3	6.8	7.9	6.7	8.2	7.2	8.0	7.6
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25.4	24.5	24.8	24.3	24.9	24.0	24.8	23.7	24.6	24.1	23.8	23.5	24.7	24.2
3	25.4	24.4	25.1	24.3	24.8	24.0	24.9	23.5	24.6	24.1	23.7	23.9	24.6	24.1
5	25.5	24.4	25.2	24.2	24.7	24.0	24.9	23.0	24.7	24.1	23.6	23.5	24.5	24.1
6	25.6	24.5	25.3	24.2	24.7	24.0	24.8	23.1	24.7	24.2	23.6	23.5	25.0	24.1
8	25.6	24.5	25.3	24.3	24.6	24.0	24.9	24.1	24.8	24.1	23.6	23.5	24.5	24.1
11	25.3	24.6	25.1	24.4	24.7	24.0	24.9	24.1	24.8	24.3	23.7	23.6	24.7	24.1
*LW	25.3	24.6	25.5	24.4	25.6	24.1	24.9	24.1	24.7	24.2	24.1	23.5	24.7	24.3
THERM No.	737	737	737	737	737	737	737	737	737	737	737	737	737	737
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0232
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	25.8	25.2	25.3	25.7	25.8	25.0	25.4
3	25.8	25.8	25.9	25.9	26.2	25.2	25.2
5	25.8	25.6	25.7	25.8	26.2	25.0	25.0
6	25.8	25.7	25.8	25.8	26.3	25.0	25.0
8	25.8	25.6	25.8	25.8	26.1	25.0	25.1
11	25.7	25.6	25.9	26.0 (D)	26.3	25.0	25.1
*LW	24.9	24.5	26.4	26.0	24.7	25.9	25.8
Meter No.:	948	948	948	948	948	948	948

Comments:

① IE DED 3-9-23 → [25.8]

Test Notes

Include Date, Time, and Initials



Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-10
--------	-------------------	----	-----	-------	---------	---------------	-------

BGC0941

24 h Acute *Mysidopsis bahia* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2007.0; NWDLS SOP No. 4017

Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	1-5 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	Once daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time Requirements:	Holding time must not exceed 36 h

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	23-0248	DOB	3-2-23
Source	NWDLS	Age (days)	5d

Sample Date/Time:	3-6-23	0800
-------------------	--------	------

Test Initiation Date/Time:	3-7-23	1000	Test Initiation Initials:	AOS / VJC
Test Termination Date/Time:	3-8-23	10:5	Test Termination Initials:	AOS

1st Feed Date/Time/Initials:	3-7-23	1530	REG	2nd Feed Date/Time/Initials:	3-8-23	0820	AM
------------------------------	--------	------	-----	------------------------------	--------	------	----

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: TDS Entry: VJC 3-8-23

Vynna Chitolic
Final Review Signature

Data Sheet Preparation - Initials: VJC/AOS Date: 3-7-23

End of Test First Review - Initials: AOS Date: 3-8-23

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Mysidopsis bahia*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24 hr			0 hr	24 hr
Control	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
100	A	10	7		A		
	B	10	7		B		
	C	10	8		C		
	D	10	9		D		
	E	10	10		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Mysidopsis bahia*

Conc. (%)	pH	
	0 hr	24 hr
Cont.	8.1	7.9
100	8.0	8.0
Meter No.	737	737
Time	0950	0935
Initials	A0J /VJC	A0J /VJC

Conc. (%)	Temp. °C (Actual) Offset: 0 (±°C)	
	0 hr	24 hr
Cont.	25.2	24.0
100	25.2	24.0
Therm. No.	YS17	YS17
Time	0950	0935
Initials	A0J /VJC	A0J /VJC

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24 hr
Cont.	8.4	7.6
100	8.7	7.6
Meter No.	YS17	YS17
Time	0950	0935
Initials	A0J /VJC	A0J /VJC

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25.7
100	26.0
Meter No.	948
Time	0950
Initials	A0J /VJC

Comments:



Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-10
--------	-------------------	----	-----	-------	---------	---------------	-------

BGC0943

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-----------	--------------	------------------------	-----

Test Organism Batch #	23-0246	DOB	2-22-23
Source	NWDLS	Age (days)	13d

Sample 1 Date/Time:	3-6-23	0800
---------------------	--------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-7-23	1005	A03 / VJC
Test Termination	3-8-23	1026	A03

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: TDS Entry: 3-8-23

Vynna Chitolic

Final Review Signature

Data Sheet Preparation - Initials: VJC/A03 Date: 3-7-23

End of Test First Review - Initials: A03 Date: 3-8-23

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	9		A		
	B	10	10		B		
	C	10	8		C		
	D	10	10		D		
	E	10	9		E		
100	A	10	6		A		
	B	10	2		B		
	C	10	6		C		
	D	10	4		D		
	E	10	1		E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		
	A				A		
	B				B		
	C				C		
	D				D		
	E				E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	23-0232	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.1	7.9
100	8.0	7.9
Meter No.	737	737
Time	0950	0935
Initials	A03/VJC	A03/VJC

Conc. (%)	Temp. °C (Actual) Offset: 0 (±°C)	
	0 hr	24 hr
Cont.	25.2	24.0
100	25.2	24.0
Therm. No.	YS17	YS17
Time	0950	0935
Initials	A03/VJC	A03/VJC

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.4	8.2
100	8.7	8.1
Meter No.	YS17	YS17
Time	0950	0935
Initials	A03/VJC	A03/VJC

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25.7
100	26.0
Meter No.	948
Time	0950
Initials	A03/VJC

Comments:

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 10-0590-9379	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:38	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 09-0395-7216	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	9.49%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	100	75	2	18	Asymp	0.6974	Non-Significant Effect
		5	110	75	2	18	Asymp	0.9223	Non-Significant Effect
		6	95	75	2	18	Asymp	0.5278	Non-Significant Effect
		8	115	75	1	18	Asymp	0.9697	Non-Significant Effect
		11	105	75	2	18	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.08784	<<	0.4	Yes	Passes Criteria
Control Resp	0.96	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0567079	0.0113416	5	1.256	0.2964	Non-Significant Effect
Error	0.487688	0.0090313	54			
Total	0.544396		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	261.7	15.09	1.8E-07	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.7764	0.9459	3.7E-08	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
3		10	0.9400	0.8709	1.0000	1.0000	0.8000	1.0000	0.0306	10.28%	2.08%
5		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	-2.08%
6		10	0.9200	0.8461	0.9939	1.0000	0.8000	1.0000	0.0327	11.23%	4.17%
8		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-4.17%
11		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
3		10	1.274	1.192	1.356	1.345	1.107	1.345	0.03638	9.03%	1.84%
5		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	-1.84%
6		10	1.25	1.162	1.338	1.345	1.107	1.345	0.03889	9.84%	3.67%
8		10	1.345	1.345	1.345	1.345	1.345	1.345	0	0.00%	-3.67%
11		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%

Mysidopsis 7-d Survival, Growth and Fecundity Test						NWDLS Environ. Toxicol. Lab					
Analysis ID:	10-0590-9379	Endpoint:	7d Survival Rate	CETIS Version:	CETISv1.9.4						
Analyzed:	17 Mar-23 15:38	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1						

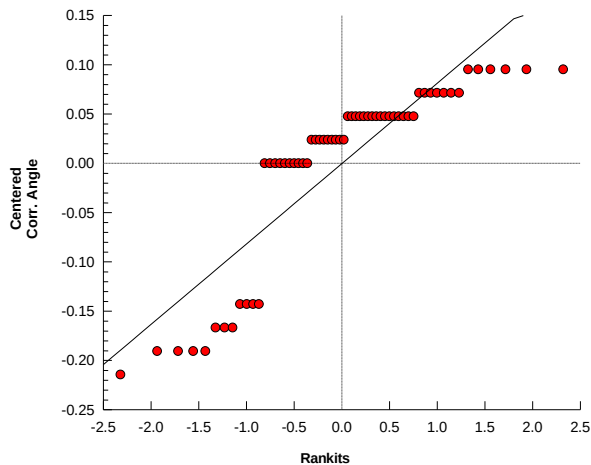
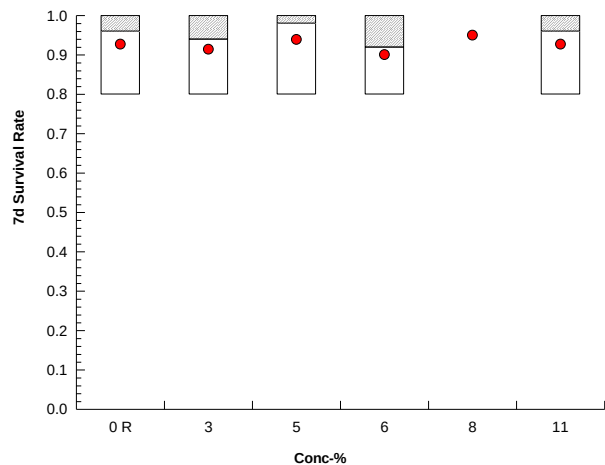
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000
3		0.8000	0.8000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6		0.8000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	0.8000	0.8000
8		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.107	1.345	1.345	1.345	1.107	1.345	1.345
3		1.107	1.107	1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345
5		1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345
6		1.107	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.107	1.107
8		1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345
11		1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.345

Graphics



CETIS Analytical Report

Report Date: 17 Mar-23 15:39 (p 3 of 6)
 Test Code/ID: 23-0232 / 20-9332-4319

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 06-6699-1678	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:38	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 09-0395-7216	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	16.18%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.8612	2.289	0.069	18	CDF	0.4803	Non-Significant Effect
		5	-0.2203	2.289	0.069	18	CDF	0.8906	Non-Significant Effect
		6	0.08011	2.289	0.069	18	CDF	0.8084	Non-Significant Effect
		8	0.8478	2.289	0.069	18	CDF	0.4865	Non-Significant Effect
		11	1.349	2.289	0.069	18	CDF	0.2708	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.2003	<<	0.4	Yes	Passes Criteria
Control Resp	0.424	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0171915	0.0034383	5	0.7662	0.5782	Non-Significant Effect
Error	0.242337	0.0044877	54			
Total	0.259529		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	7.302	15.09	0.1992	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9634	0.9459	0.0688	Normal Distribution

Mean Dry Biomass-mg Summary

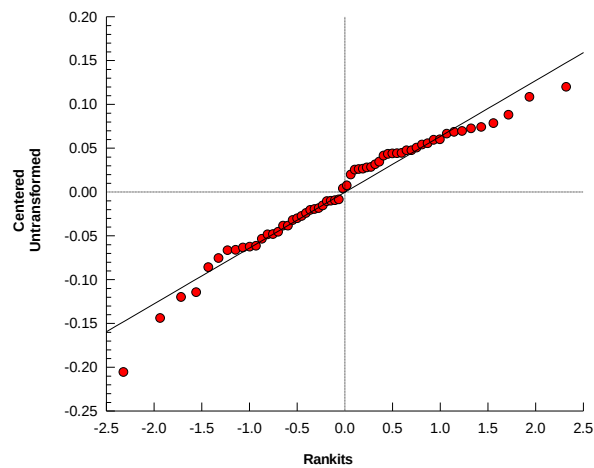
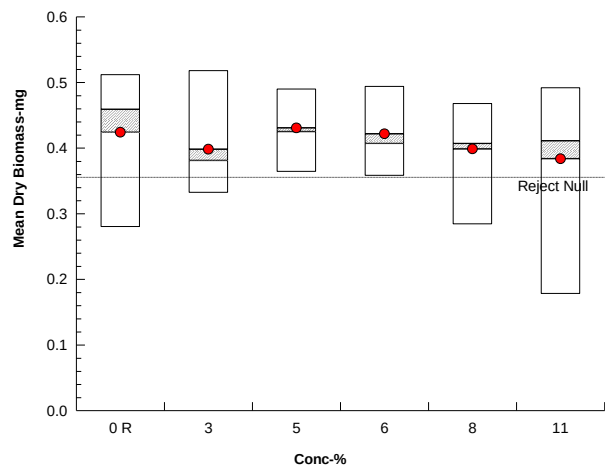
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.424	0.3633	0.4847	0.459	0.28	0.512	0.02685	20.03%	0.00%
3		10	0.3982	0.3592	0.4372	0.381	0.332	0.518	0.01725	13.70%	6.08%
5		10	0.4306	0.3962	0.465	0.425	0.364	0.49	0.01523	11.18%	-1.56%
6		10	0.4216	0.3852	0.458	0.407	0.358	0.494	0.01609	12.07%	0.57%
8		10	0.3986	0.3586	0.4386	0.407	0.284	0.468	0.01767	14.02%	5.99%
11		10	0.3836	0.3168	0.4504	0.411	0.178	0.492	0.02951	24.33%	9.53%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.304	0.428	0.512	0.338	0.498	0.484	0.45	0.28	0.468	0.478
3		0.35	0.442	0.418	0.518	0.332	0.368	0.366	0.426	0.388	0.374
5		0.438	0.368	0.412	0.364	0.474	0.41	0.392	0.486	0.49	0.472
6		0.358	0.49	0.402	0.368	0.466	0.456	0.412	0.494	0.394	0.376
8		0.424	0.35	0.468	0.43	0.446	0.36	0.446	0.39	0.388	0.284
11		0.308	0.178	0.41	0.462	0.45	0.322	0.492	0.412	0.368	0.434

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 06-6699-1678	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-23 15:38	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 18-3820-2234	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:38	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 09-0395-7216	Test Type: Growth-Survival-Fec (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 7h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	14.74%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.4647	2.289	0.065	18	CDF	0.6613	Non-Significant Effect
		5	-0.01237	2.289	0.065	18	CDF	0.8370	Non-Significant Effect
		6	-0.7686	2.289	0.065	18	CDF	0.9699	Non-Significant Effect
		8	1.443	2.289	0.065	18	CDF	0.2364	Non-Significant Effect
		11	1.491	2.289	0.065	18	CDF	0.2201	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0318054	0.0063611	5	1.589	0.1790	Non-Significant Effect
Error	0.216235	0.0040043	54			
Total	0.24804		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	4.31	15.09	0.5057	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9809	0.9459	0.4684	Normal Distribution

Mean Dry Weight-mg Summary

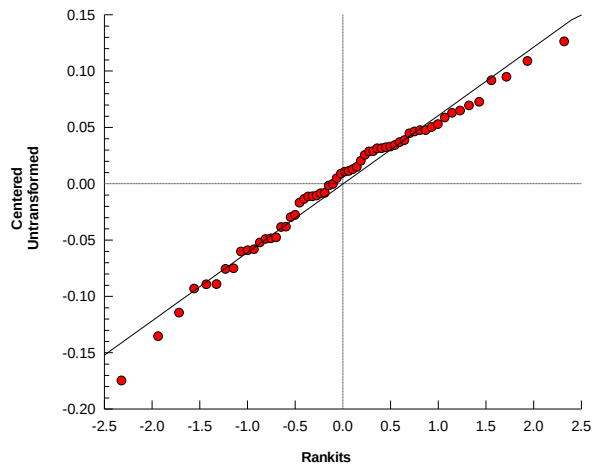
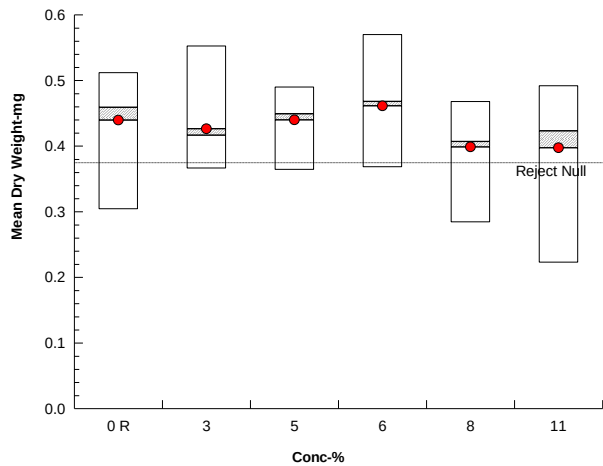
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.4395	0.3918	0.4871	0.459	0.304	0.512	0.02104	15.14%	0.00%
3		10	0.4263	0.3811	0.4715	0.4165	0.366	0.5525	0.01997	14.81%	2.99%
5		10	0.4398	0.4087	0.4709	0.449	0.364	0.49	0.01373	9.87%	-0.08%
6		10	0.4612	0.4202	0.5022	0.468	0.368	0.57	0.01814	12.44%	-4.95%
8		10	0.3986	0.3586	0.4386	0.407	0.284	0.468	0.01767	14.02%	9.30%
11		10	0.3972	0.3361	0.4584	0.423	0.2225	0.492	0.02704	21.52%	9.60%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.304	0.428	0.512	0.4225	0.498	0.484	0.45	0.35	0.468	0.478
3		0.4375	0.5525	0.418	0.518	0.415	0.368	0.366	0.426	0.388	0.374
5		0.438	0.46	0.412	0.364	0.474	0.41	0.392	0.486	0.49	0.472
6		0.4475	0.49	0.402	0.368	0.466	0.57	0.412	0.494	0.4925	0.47
8		0.424	0.35	0.468	0.43	0.446	0.36	0.446	0.39	0.388	0.284
11		0.308	0.2225	0.41	0.462	0.45	0.322	0.492	0.412	0.46	0.434

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 18-3820-2234	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-23 15:38	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 17 Mar-23 15:52 (p 1 of 6)
 Test Code/ID: 23-0232 / 12-3867-0423

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 14-7778-3403	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:50	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 17-9867-8861	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:30	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	12.97%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		5	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		6	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		8	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		11	22.5	16	1	8	Asymp	0.3937	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0	<<	0.4	Yes	Passes Criteria
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.151886	0.0303772	5	1.543	0.2142	Non-Significant Effect
Error	0.472575	0.0196906	24			
Total	0.624461		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	8.124	3.895	1.3E-04	Unequal Variances
Variances	Mod Levene Equality of Variance Test	1.646	4.248	0.1988	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.7	0.9031	1.6E-06	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
8		5	0.9800	0.9245	1.0000	1.0000	0.9000	1.0000	0.0200	4.56%	2.00%
11		5	0.8400	0.5162	1.0000	1.0000	0.4000	1.0000	0.1166	31.04%	16.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
3		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
5		5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
8		5	1.379	1.289	1.47	1.412	1.249	1.412	0.03259	5.28%	2.31%
11		5	1.206	0.8086	1.603	1.412	0.6847	1.412	0.143	26.52%	14.62%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 14-7778-3403 Endpoint: 7d Survival Rate
Analyzed: 17 Mar-23 15:50 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

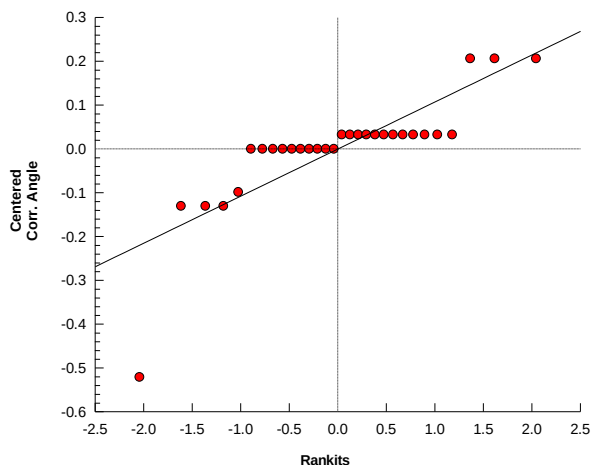
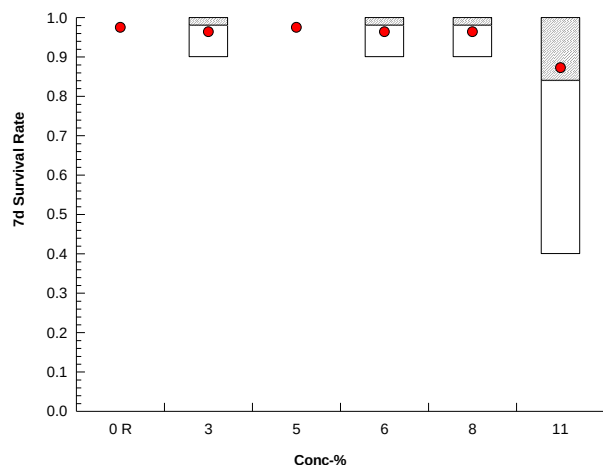
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	0.9000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		0.9000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	0.9000	1.0000
11		0.4000	0.8000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.412	1.412	1.412	1.412	1.412
3		1.412	1.412	1.412	1.249	1.412
5		1.412	1.412	1.412	1.412	1.412
6		1.249	1.412	1.412	1.412	1.412
8		1.412	1.412	1.412	1.249	1.412
11		0.6847	1.107	1.412	1.412	1.412

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 18-7729-6055	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:50	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 17-9867-8861	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:30	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	24.77%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.808	2.362	0.397	8	CDF	0.5072	Non-Significant Effect
		5	0.03808	2.362	0.397	8	CDF	0.8218	Non-Significant Effect
		6	1.114	2.362	0.397	8	CDF	0.3702	Non-Significant Effect
		8	0.6974	2.362	0.397	8	CDF	0.5582	Non-Significant Effect
		11	1.873	2.362	0.397	8	CDF	0.1241	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits				
Attribute	Test Stat	Lower	Upper	Overlap	Decision	
Control CV	0.09442	<<	0.4	Yes	Passes Criteria	
Control Resp	1.602	0.5	>>	Yes	Passes Criteria	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.348698	0.0697397	5	0.9876	0.4458	Non-Significant Effect
Error	1.69474	0.0706142	24			
Total	2.04344		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	11.36	15.09	0.0447	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.92	0.9031	0.0269	Normal Distribution

Mean Dry Biomass-mg Summary

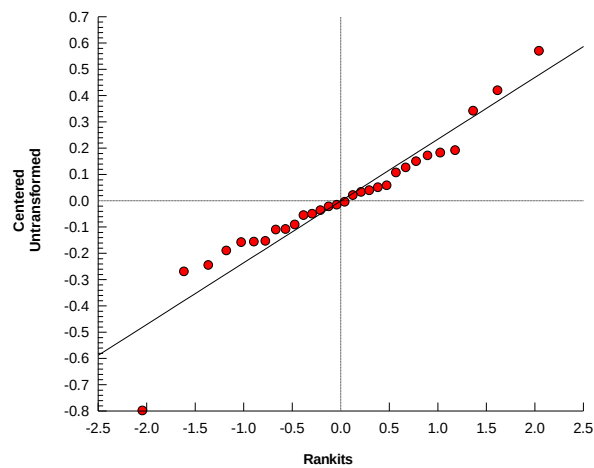
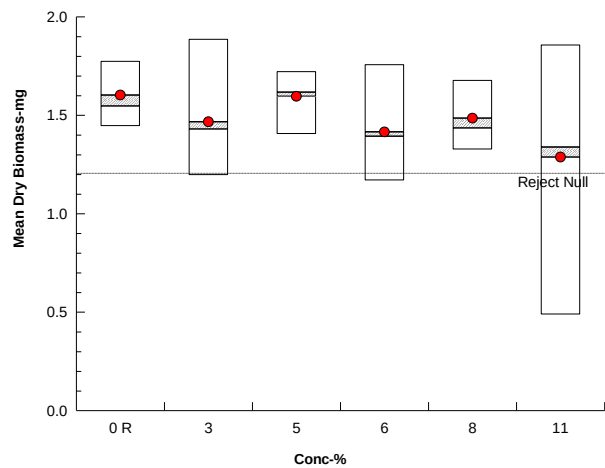
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.602	1.414	1.79	1.547	1.446	1.774	0.06766	9.44%	0.00%
3		5	1.466	1.141	1.792	1.43	1.197	1.886	0.1173	17.88%	8.48%
5		5	1.596	1.449	1.743	1.617	1.406	1.722	0.05293	7.42%	0.40%
6		5	1.415	1.144	1.686	1.393	1.17	1.757	0.09753	15.41%	11.68%
8		5	1.485	1.305	1.665	1.435	1.327	1.677	0.06483	9.76%	7.31%
11		5	1.287	0.6672	1.908	1.338	0.489	1.857	0.2234	38.80%	19.65%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.446	1.547	1.774	1.492	1.752
3		1.506	1.43	1.313	1.197	1.886
5		1.722	1.58	1.406	1.654	1.617
6		1.17	1.757	1.448	1.393	1.307
8		1.677	1.435	1.592	1.394	1.327
11		1.47	0.489	1.338	1.857	1.283

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 18-7729-6055	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-23 15:50	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 11-6406-7240	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 17 Mar-23 15:50	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 17-9867-8861	Test Type: Growth-Survival (7d)	Analyst: Chyxia Broussard
Start Date: 06 Mar-23 15:30	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 13 Mar-23 15:30	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 10
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	46.54%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	22	16	0	8	Asymp	0.3476	Non-Significant Effect
		5	27	16	0	8	Asymp	0.8003	Non-Significant Effect
		6	20	16	0	8	Asymp	0.1899	Non-Significant Effect
		8	24	16	0	8	Asymp	0.5394	Non-Significant Effect
		11	25	16	0	8	Asymp	0.6353	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.302819	0.0605638	5	0.243	0.9393	Non-Significant Effect
Error	5.98186	0.249244	24			
Total	6.28468		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	35.17	15.09	1.4E-06	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.7027	0.9031	1.7E-06	Non-Normal Distribution

Mean Dry Weight-mg Summary

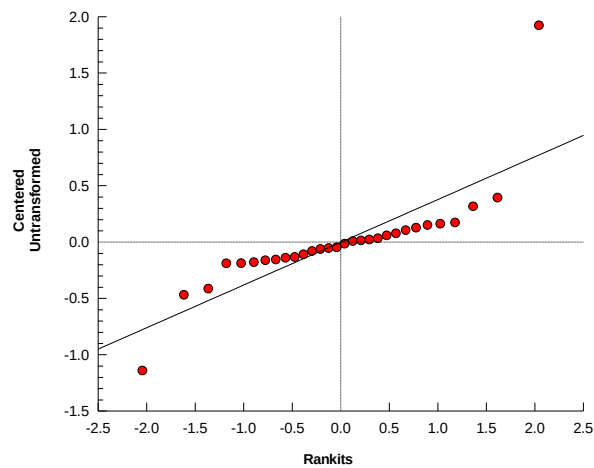
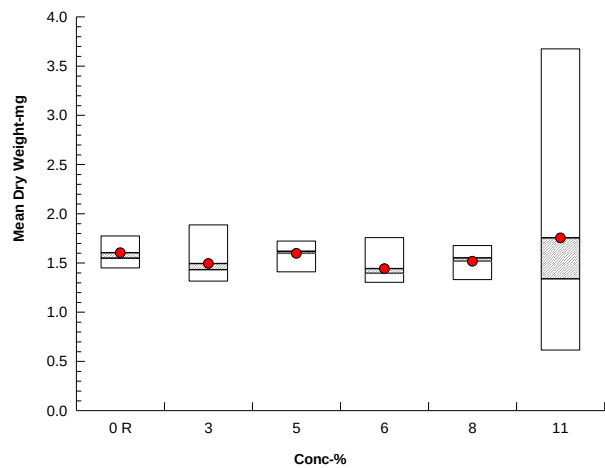
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.602	1.414	1.79	1.547	1.446	1.774	0.06766	9.44%	0.00%
3		5	1.493	1.203	1.783	1.43	1.313	1.886	0.1043	15.62%	6.82%
5		5	1.596	1.449	1.743	1.617	1.406	1.722	0.05293	7.42%	0.40%
6		5	1.441	1.209	1.673	1.393	1.3	1.757	0.08368	12.98%	10.06%
8		5	1.516	1.346	1.686	1.549	1.327	1.677	0.06126	9.04%	5.38%
11		5	1.753	0.31	3.196	1.338	0.6112	3.675	0.5197	66.30%	-9.40%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.446	1.547	1.774	1.492	1.752
3		1.506	1.43	1.313	1.33	1.886
5		1.722	1.58	1.406	1.654	1.617
6		1.3	1.757	1.448	1.393	1.307
8		1.677	1.435	1.592	1.549	1.327
11		3.675	0.6112	1.338	1.857	1.283

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 11-6406-7240	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 17 Mar-23 15:50	Analysis: Nonparametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 30 Mar-23 08:14 (p 1 of 2)
 Test Code/ID: 23-0232 / 16-5893-8394

Mysidopsis 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	10-2762-2465	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	30 Mar-23 8:13	Analysis:	No Statistical Comparisons Run	Status Level:	1
Batch ID:	09-7565-6680	Test Type:	Survival (1d)	Analyst:	Arturo Orozco
Start Date:	07 Mar-23 10:00	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Laboratory Seawater
Ending Date:	08 Mar-23 10:15	Species:	Mysidopsis bahia	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Malacostraca	Source:	NWDLS
					Age: 5d
Sample ID:	12-3101-0319	Code:	495FBA0F	Project:	NT-100056
Sample Date:	06 Mar-23 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	06 Mar-23 13:50	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	26h	Client:	Providence Engineering and Env. Group LL		

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α :5%)
Between	0.171494	0.171494	1	10.49	0.0119	Significant Effect
Error	0.130761	0.0163451	8			
Total	0.302255		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α :1%)
Variances	Levene Equality of Variance Test	15.67	11.26	0.0042	Unequal Variances
Variances	Mod Levene Equality of Variance Test	13.93	13.75	0.0097	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8608	0.7411	0.0780	Normal Distribution

24h Survival Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		5	0.8200	0.6581	0.9819	0.8000	0.7000	1.0000	0.0583	15.90%	18.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		5	1.15	0.9256	1.375	1.107	0.9912	1.412	0.08086	15.72%	18.55%

24h Survival Detail

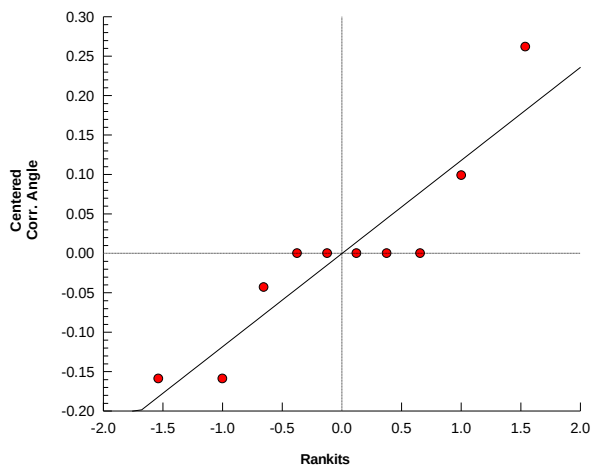
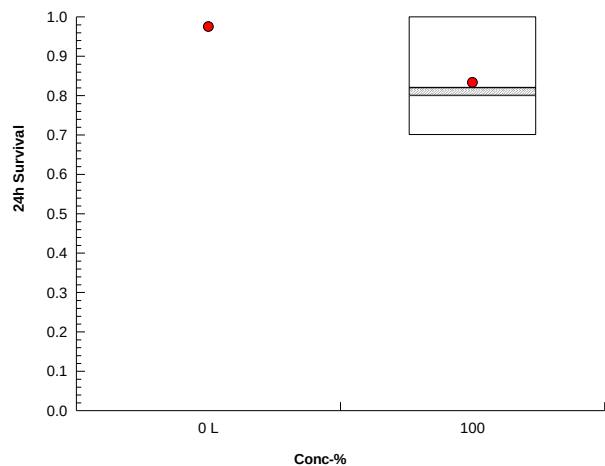
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
100		0.7000	0.7000	0.8000	0.9000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.412	1.412	1.412	1.412	1.412
100		0.9912	0.9912	1.107	1.249	1.412

Mysidopsis 24-h Acute Survival Test			NWDLS Environ. Toxicol. Lab	
Analysis ID:	10-2762-2465	Endpoint:	24h Survival	CETIS Version: CETISv1.9.4
Analyzed:	30 Mar-23 8:13	Analysis:	No Statistical Comparisons Run	Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 31 Mar-23 15:24 (p 1 of 2)
 Test Code/ID: 23-0232 / 17-1027-7804

Inland Silverside 24-h Acute Survival Test	NWDLS Environ. Toxicol. Lab
---	------------------------------------

Analysis ID: 02-1120-1076	Endpoint: 24h Survival	CETIS Version: CETISv1.9.4	
Analyzed: 30 Mar-23 8:15	Analysis: Parametric-Two Sample	Status Level: 1	
Batch ID: 14-5064-6793	Test Type: Survival (1d)	Analyst: Arturo Orozco	
Start Date: 07 Mar-23 10:05	Protocol: EPA/821/R-02-012 (2002)	Diluent: Laboratory Seawater	
Ending Date: 08 Mar-23 10:20	Species: Menidia beryllina	Brine: Instant Ocean	
Test Length: 24h	Taxon: Actinopterygii	Source: NWDLS	Age: 13d
Sample ID: 12-3101-0319	Code: 495FBA0F	Project: NT-100056	
Sample Date: 06 Mar-23 08:00	Material: Industrial Effluent	Source: WQ0005143000	
Receipt Date: 06 Mar-23 13:50	CAS (PC):	Station: Natgasoline LLC	
Sample Age: 26h	Client: Providence Engineering and Env. Group LL		

Data Transform	Alt Hyp	Comparison Result	PMSD
Angular (Corrected)	C > T	100% failed 24h survival	18.21%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Lab Water		100*	5.026	1.86	0.236	8	CDF	5.1E-04	Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control Resp	0.92	0.9	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.0157	1.0157	1	25.27	0.0010	Significant Effect
Error	0.321612	0.0402015	8			
Total	1.33731		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.838	23.15	0.2210	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9441	0.7411	0.5990	Normal Distribution

24h Survival Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	0.9200	0.8161	1.0000	0.9000	0.8000	1.0000	0.0374	9.09%	0.00%
100		5	0.3800	0.0969	0.6631	0.4000	0.1000	0.6000	0.1020	60.01%	58.70%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	L	5	1.286	1.126	1.446	1.249	1.107	1.412	0.05765	10.03%	0.00%
100		5	0.6485	0.3349	0.962	0.6847	0.3218	0.8861	0.1129	38.95%	49.57%

24h Survival Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.9000	1.0000	0.8000	1.0000	0.9000
100		0.6000	0.2000	0.6000	0.4000	0.1000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.249	1.412	1.107	1.412	1.249
100		0.8861	0.4636	0.8861	0.6847	0.3218

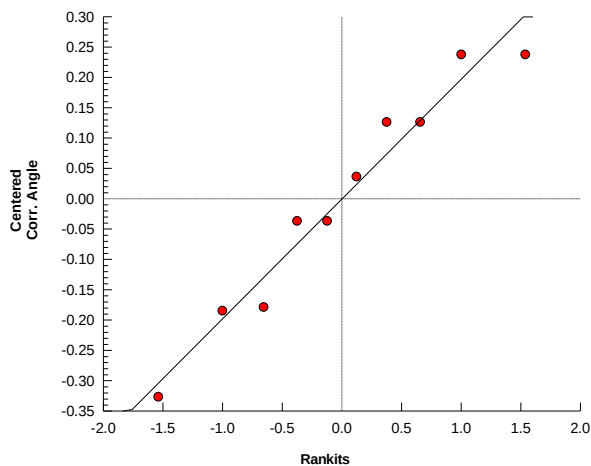
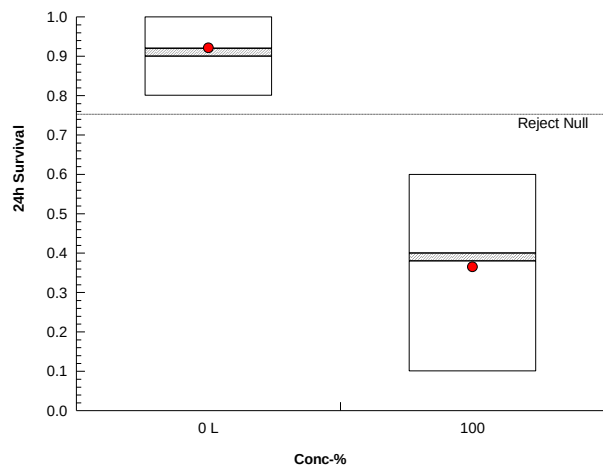
Inland Silverside 24-h Acute Survival Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 02-1120-1076 Endpoint: 24h Survival
Analyzed: 30 Mar-23 8:15 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

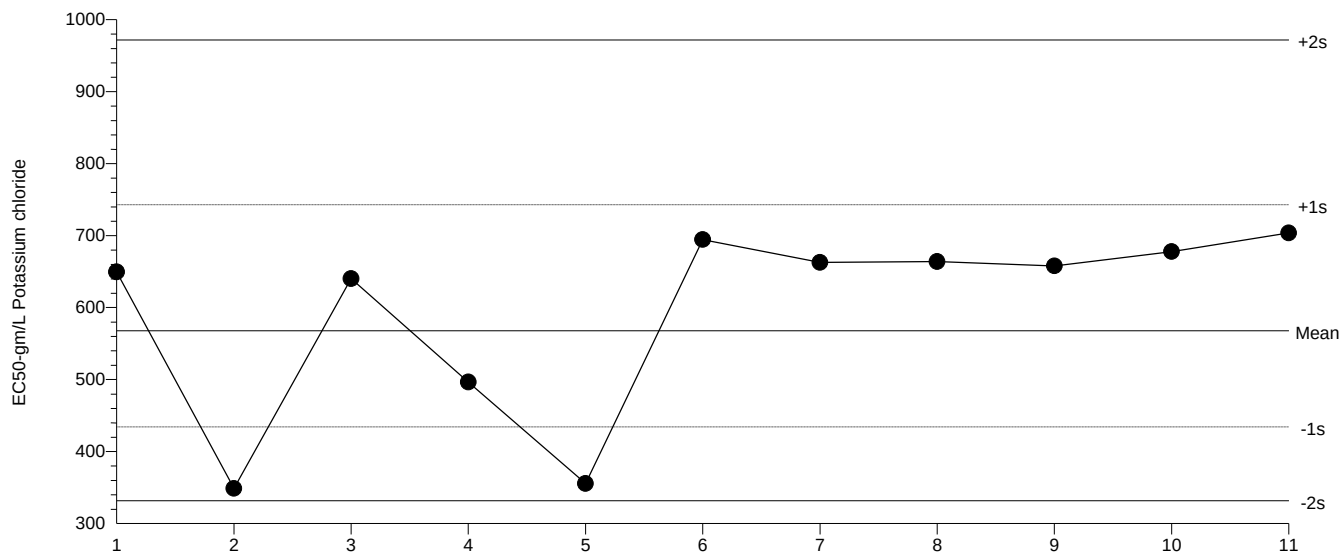
Material: Potassium chloride

Protocol: EPA/821/R-02-014 (2002)

Endpoint: 7d Survival Rate

Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 567.9

Count: 10

-1s Warning Limit: 434.2

-2s Action Limit: 331.9

Sigma: n/a

CV: 27.40%

+1s Warning Limit: 742.9

+2s Action Limit: 971.8

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	649.6	81.64	0.5			01-6211-0221	11-5901-8122	NWDLS Environ. Toxicol.
2			22	16:00	348.7	-219.2	-1.816	(-)		09-3616-1421	00-9150-0822	NWDLS Environ. Toxicol.
3		Jul	20	14:40	640.2	72.24	0.4458			11-8307-1033	20-9270-2210	NWDLS Environ. Toxicol.
4		Aug	31	10:45	496.5	-71.46	-0.5006			18-6777-7018	18-1763-7164	NWDLS Environ. Toxicol.
5		Sep	21	13:15	355.5	-212.5	-1.744	(-)		13-6667-4200	15-5979-0136	NWDLS Environ. Toxicol.
6		Oct	19	12:00	694.4	126.5	0.7487			09-3115-0814	15-7275-3360	NWDLS Environ. Toxicol.
7		Nov	3	13:45	662.7	94.79	0.5747			19-3160-7260	04-3340-0504	NWDLS Environ. Toxicol.
8		Dec	12	13:00	663.9	95.95	0.5812			06-4905-6652	20-1321-0134	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	657.9	89.92	0.5472			05-5770-2114	18-8602-2070	NWDLS Environ. Toxicol.
10		Feb	2	10:30	677.7	109.8	0.658			08-8071-4725	11-7916-4212	NWDLS Environ. Toxicol.
11		Mar	9	13:30	703.7	135.8	0.7982			09-8373-8162	02-6662-5658	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

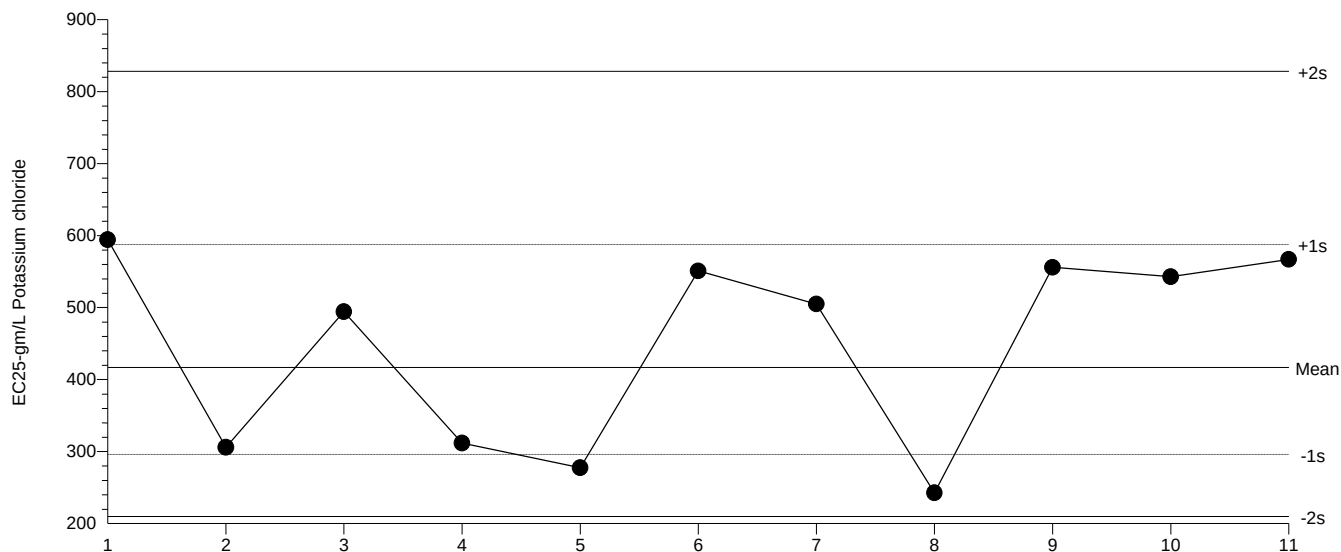
Material: Potassium chloride

Protocol: EPA/821/R-02-014 (2002)

Endpoint: Mean Dry Biomass-mg

Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 417

Count: 10

-1s Warning Limit: 295.8

-2s Action Limit: 209.9

Sigma: n/a

CV: 35.40%

+1s Warning Limit: 587.7

+2s Action Limit: 828.3

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	594.3	177.3	1.032	(+)		01-6211-0221	06-7581-2449	NWDLS Environ. Toxicol.
2			22	16:00	305.9	-111.1	-0.9024			09-3616-1421	03-4116-2000	NWDLS Environ. Toxicol.
3		Jul	20	14:40	494.2	77.24	0.4952			11-8307-1033	07-3382-9498	NWDLS Environ. Toxicol.
4		Aug	31	10:45	311.8	-105.2	-0.8472			18-6777-7018	09-8654-5792	NWDLS Environ. Toxicol.
5		Sep	21	13:15	277.5	-139.4	-1.186	(-)		13-6667-4200	10-8885-9716	NWDLS Environ. Toxicol.
6		Oct	19	12:00	550.9	133.9	0.8116			09-3115-0814	01-6337-8754	NWDLS Environ. Toxicol.
7		Nov	3	13:45	504.9	87.92	0.5575			19-3160-7260	19-5328-5189	NWDLS Environ. Toxicol.
8		Dec	12	13:00	242.7	-174.2	-1.577	(-)		06-4905-6652	20-7921-9787	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	555.9	138.9	0.8378			05-5770-2114	18-4604-0045	NWDLS Environ. Toxicol.
10		Feb	2	10:30	542.8	125.9	0.7687			08-8071-4725	02-7679-2403	NWDLS Environ. Toxicol.
11		Mar	9	13:30	566.9	150	0.8953			09-8373-8162	01-5567-8537	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

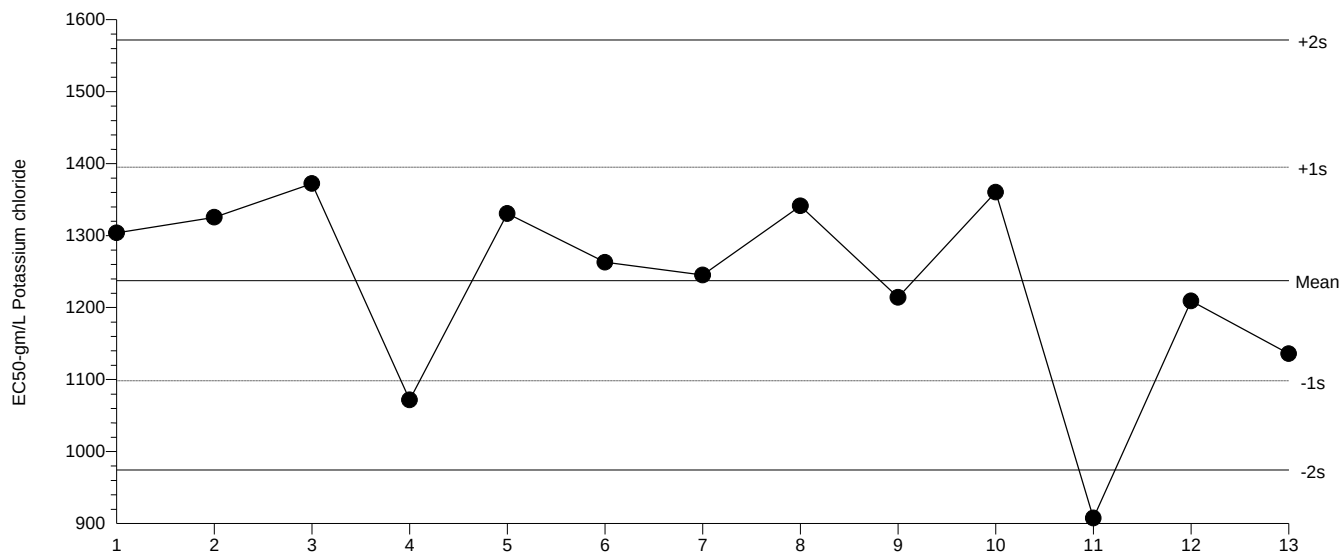
All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF

Inland Silverside 7-d Larval Survival and Growth Test



Mean: 1238

Count: 12

-1s Warning Limit: 1098

-2s Action Limit: 974.6

Sigma: n/a

CV: 12.00%

+1s Warning Limit: 1395

+2s Action Limit: 1572

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1304	66.1	0.4354			21-0733-6817	12-9756-8876	NWDLS Environ. Toxicol.
2			22	16:30	1325	87.76	0.5732			06-9820-7448	08-3343-3400	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1372	134.5	0.8635			04-3327-2237	09-2136-3057	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1072	-165.9	-1.204	(-)		00-7357-5399	04-3638-1725	NWDLS Environ. Toxicol.
5		Sep	21	13:10	1331	92.97	0.6061			19-5010-2951	10-6041-0723	NWDLS Environ. Toxicol.
6		Oct	19	12:30	1263	25.21	0.1687			14-8758-8127	09-2601-9551	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1245	7.468	0.05034			19-0042-2283	06-4677-3049	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1341	103.5	0.6721			12-9423-8120	19-6787-9140	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	1214	-23.49	-0.1604			08-4361-7466	16-1040-9564	NWDLS Environ. Toxicol.
10			18	11:50	1360	122.6	0.7905			07-9240-7672	14-5325-7119	NWDLS Environ. Toxicol.
11		Feb	2	10:30	907.5	-330.2	-2.597	(-)	(-)	07-7481-5869	00-3563-2871	NWDLS Environ. Toxicol.
12			16	13:00	1209	-28.6	-0.1956			16-5741-0843	00-9267-7337	NWDLS Environ. Toxicol.
13		Mar	7	14:30	1136	-101.8	-0.7182			13-2753-6799	19-5347-3562	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

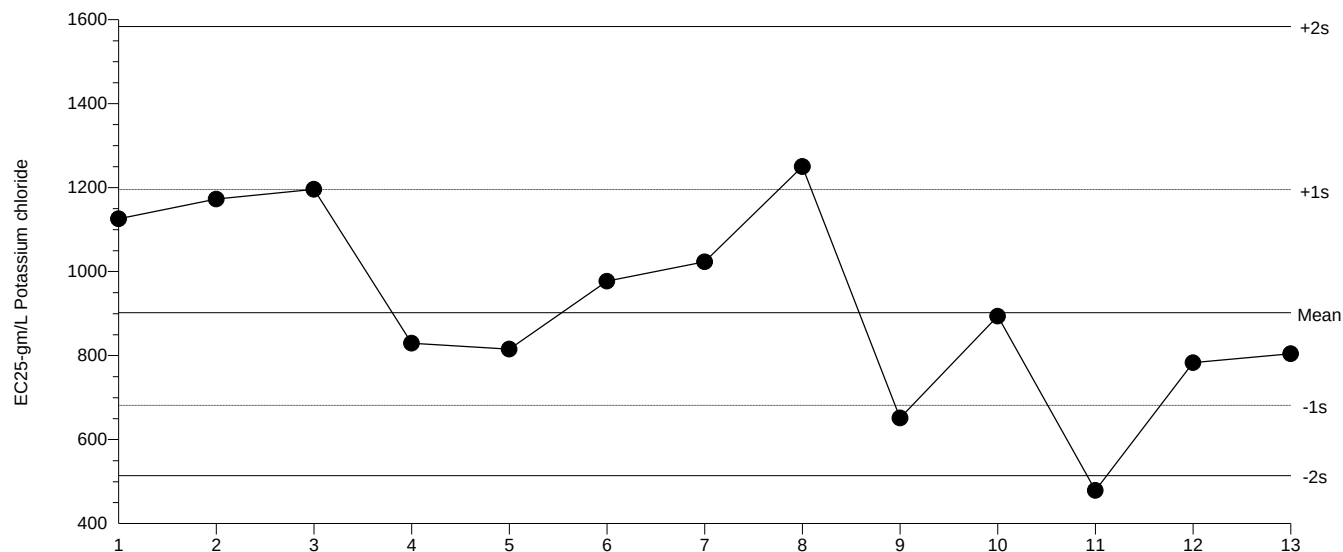
All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Potassium chloride
Source: Reference Toxicant-REF

Inland Silverside 7-d Larval Survival and Growth Test



Mean: 902.3

Count: 12

-1s Warning Limit: 681.1

-2s Action Limit: 514.1

Sigma: n/a

CV: 28.70%

+1s Warning Limit: 1195

+2s Action Limit: 1584

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1126	223.2	0.7857			21-0733-6817	17-3189-9270	NWDLS Environ. Toxicol.
2			22	16:30	1173	270.2	0.9311			06-9820-7448	18-1516-3722	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1196	293.3	1	(+)		04-3327-2237	10-2833-6233	NWDLS Environ. Toxicol.
4		Aug	31	14:00	829.3	-73.01	-0.2999			00-7357-5399	13-8104-1347	NWDLS Environ. Toxicol.
5		Sep	21	13:10	815.3	-87.01	-0.3605			19-5010-2951	12-8093-9078	NWDLS Environ. Toxicol.
6		Oct	19	12:30	976.9	74.6	0.2824			14-8758-8127	02-0371-2541	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1023	120.7	0.4463			19-0042-2283	13-9374-3918	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1250	347.7	1.159	(+)		12-9423-8120	13-4506-3415	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	651.3	-251	-1.159	(-)		08-4361-7466	04-2200-5192	NWDLS Environ. Toxicol.
10			18	11:50	893.7	-8.679	-0.03436			07-9240-7672	21-0019-2346	NWDLS Environ. Toxicol.
11		Feb	2	10:30	478.9	-423.5	-2.252	(-)	(-)	07-7481-5869	09-5599-2356	NWDLS Environ. Toxicol.
12			16	13:00	782.9	-119.4	-0.5048			16-5741-0843	06-2226-5122	NWDLS Environ. Toxicol.
13		Mar	7	14:30	804.1	-98.27	-0.4099			13-2753-6799	16-7456-6142	NWDLS Environ. Toxicol.

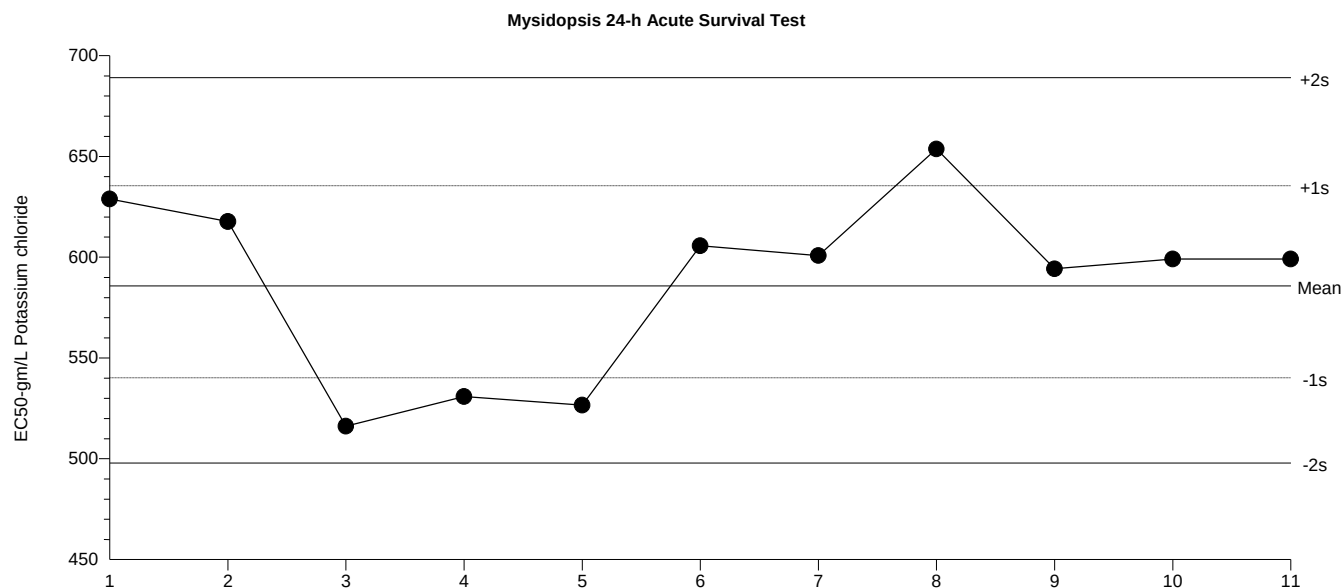
Mysidopsis 24-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: 24h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Mean: 585.8

Count: 10

-1s Warning Limit: 540.1

-2s Action Limit: 498

Sigma: n/a

CV: 8.14%

+1s Warning Limit: 635.4

+2s Action Limit: 689.2

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	8	10:40	628.8	43.03	0.8727			11-4029-7877	15-0506-3732	NWDLS Environ. Toxicol.
2			22	11:00	617.7	31.87	0.6521			17-1255-3679	15-8886-0711	NWDLS Environ. Toxicol.
3		Jul	20	12:00	516.1	-69.67	-1.559	(-)		00-3428-8131	08-7707-5523	NWDLS Environ. Toxicol.
4		Aug	31	15:30	530.9	-54.94	-1.212	(-)		04-2380-2666	00-9166-0602	NWDLS Environ. Toxicol.
5		Sep	21	14:45	526.6	-59.23	-1.312	(-)		02-5545-6554	07-1042-0825	NWDLS Environ. Toxicol.
6		Oct	19	14:50	605.7	19.87	0.4106			01-7881-8764	19-7571-4134	NWDLS Environ. Toxicol.
7		Nov	3	15:00	600.8	14.98	0.3108			21-1147-5418	20-1743-7139	NWDLS Environ. Toxicol.
8		Dec	2	13:00	653.7	67.86	1.349	(+)		01-4642-6338	08-1618-3788	NWDLS Environ. Toxicol.
9	2023	Jan	3	11:45	594.2	8.413	0.1755			13-2485-9186	09-9514-7200	NWDLS Environ. Toxicol.
10		Feb	1	13:15	599.1	13.25	0.2754			20-3680-6494	02-5340-1059	NWDLS Environ. Toxicol.
11		Mar	7	12:00	599.1	13.25	0.2754			17-4425-6122	20-8287-8844	NWDLS Environ. Toxicol.

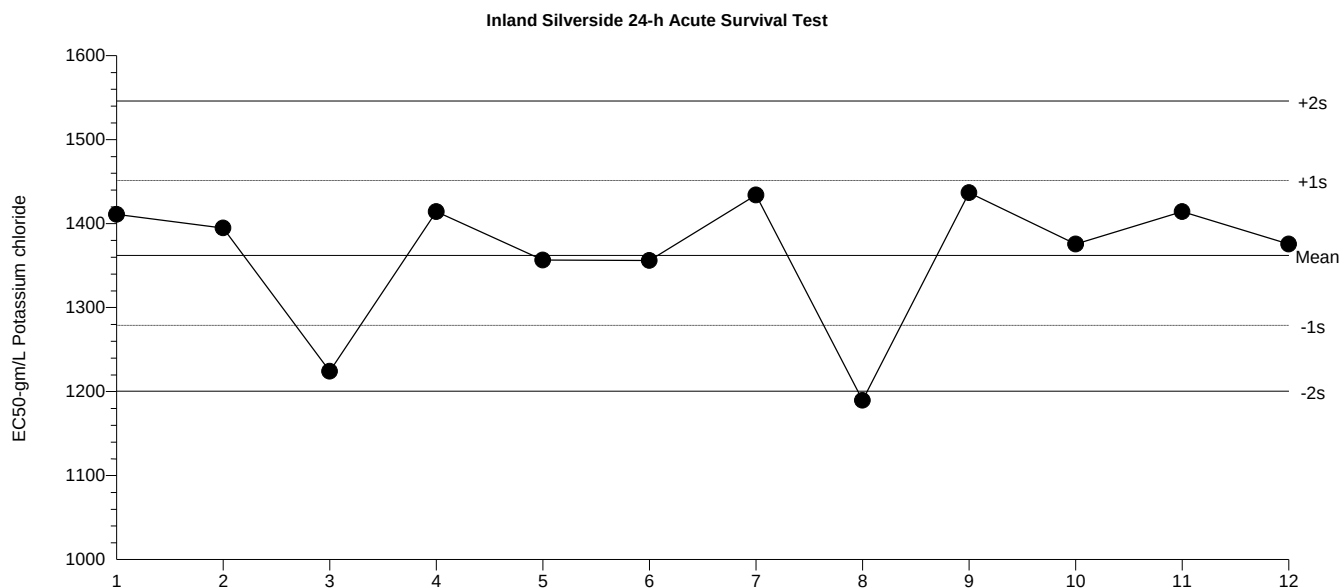
Inland Silverside 24-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Mean: 1362

Count: 11

-1s Warning Limit: 1279

-2s Action Limit: 1200

Sigma: n/a

CV: 6.33%

+1s Warning Limit: 1451

+2s Action Limit: 1546

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	9	16:10	1411	48.53	0.5532			04-3275-7888	05-1109-6618	NWDLS Environ. Toxicol.
2			22	11:00	1395	32.35	0.3709			12-4097-1025	13-6466-3804	NWDLS Environ. Toxicol.
3		Jul	20	15:00	1224	-138.3	-1.692	(-)		10-1884-1848	19-4876-4595	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1414	51.82	0.59			04-2375-3170	20-9595-7661	NWDLS Environ. Toxicol.
5		Sep	29	11:45	1357	-5.792	-0.06733			07-2961-8069	10-4588-4698	NWDLS Environ. Toxicol.
6		Oct	19	15:00	1356	-6.361	-0.07397			16-3498-3233	21-2876-1044	NWDLS Environ. Toxicol.
7		Nov	3	14:30	1434	71.56	0.8091			14-5579-2549	15-3302-0659	NWDLS Environ. Toxicol.
8		Dec	2	14:35	1189	-173	-2.146	(-)	(-)	04-4620-7648	18-8996-7419	NWDLS Environ. Toxicol.
9			19	14:30	1437	74.38	0.8401			12-5189-8631	21-0418-6472	NWDLS Environ. Toxicol.
10	2023	Jan	3	11:45	1376	13.15	0.1518			13-5136-7337	20-9366-9655	NWDLS Environ. Toxicol.
11		Feb	2	12:10	1414	51.82	0.59			00-2123-6358	14-6779-9214	NWDLS Environ. Toxicol.
12		Mar	17	13:30	1376	13.15	0.1518			02-5753-5274	06-0182-7706	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 03-05-23 0800 TO 03-06-23 0800
NO. 2: FROM 03-07-23 0800 TO 03-08-23 0800
NO. 3: FROM 03-09-23 0800 TO 03-10-23 0800

Test Initiated: 1500 TIME 03-06-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	80	100	80	100	100
	B	100	80	80	100	100	80
	C	100	100	100	100	100	100
	D	80	100	100	100	100	100
	E	100	80	100	100	100	100
	F	100	100	100	80	100	100
	G	100	100	100	100	100	100
	H	80	100	100	100	100	100
	I	100	100	100	80	100	80
	J	100	100	100	80	100	100
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	98	98	94	100	100
	7 day	96	94	98	92	100	96
	CV%❶	8.78	10.28	6.45	11.23	0.00	8.78

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.30	0.35	0.44	0.36	0.42	0.31
B	0.43	0.44	0.37	0.49	0.35	0.18
C	0.51	0.42	0.41	0.40	0.47	0.41
D	0.34	0.52	0.36	0.37	0.43	0.46
E	0.50	0.33	0.47	0.47	0.45	0.45
F	0.48	0.37	0.41	0.46	0.36	0.32
G	0.45	0.37	0.39	0.41	0.45	0.49
H	0.28	0.43	0.49	0.49	0.39	0.41
I	0.47	0.39	0.49	0.39	0.39	0.37
J	0.48	0.37	0.47	0.38	0.28	0.43
Mean Dry Weight in Milligrams	0.42	0.40	0.43	0.42	0.40	0.38
CV (%)❶	20.03	13.70	11.18	12.07	14.02	24.33
PMSD	Acceptable Range: 37 or less					16.18

❶ coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites
Collected: NO. 1: FROM 03-05-23 0800 TO 03-06-23 0800
NO. 2: FROM 03-07-23 0800 TO 03-08-23 0800
NO. 3: FROM 03-09-23 0800 TO 03-10-23 0800

Test Initiated: 1530 TIME 03-06-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^❶
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	100	100	100	100	0.00
3%	100	100	100	90	100	100	100	98	4.56
5%	100	100	100	100	100	100	100	100	0.00
6%	90	100	100	100	100	100	100	98	4.56
8%	100	100	100	90	100	100	100	98	4.56
11%	40	80	100	100	100	100	100	84	31.04

❶ coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^❶
	A	B	C	D	E		
0%	1.45	1.55	1.77	1.49	1.75	1.60	9.44
3%	1.51	1.43	1.31	1.20	1.89	1.47	17.88
5%	1.72	1.58	1.41	1.65	1.62	1.60	7.42
6%	1.17	1.76	1.45	1.39	1.31	1.42	15.41
8%	1.68	1.44	1.59	1.39	1.33	1.48	9.76
11%	1.47	0.49	1.34	1.86	1.28	1.29	38.80
PMSD	Acceptable Range: 28 or less					24.77	

Weights are for: preserved larvae, or X unpreserved larvae

❶ coefficient of variation = standard deviation x 100/mean

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Mysidopsis bahia SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-05-23 to 03-06-23
Test Initiated	1000	03-07-23
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	100	70
	B	100	70
	C	100	80
	D	100	90
	E	100	100
	MEAN	100	82

1. LC_{50} (*Mysidopsis bahia*) = >100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
 TPDES Permit No.: WQ0005143000
 Outfall No.: 001

GENERAL INFORMATION

Composite Sample Collected	Time (hours)	Date
	0800 to 0800	03-05-23 to 03-06-23
Test Initiated	1005	03-07-23
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)	
		0%	100%
24h	A	90	60
	B	100	20
	C	80	60
	D	100	40
	E	90	10
	MEAN	92	38

2. LC_{50} (*Menidia beryllina*) = <100 % effluent
 95% Confidence Limits: N/A
 Method of LC_{50} Calculation: Inspection

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-39

April 17, 2023

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20230417184644MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Work Order Case Narrative

NWDLS Job No: 23C3870 (23-0263)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 1S'23 (acute) Retest #1 - [*M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in this acute test event.

Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. One more retest is required.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

NWDLS
ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001		
TPDES PERMIT NO.	WQ0005143000		
SPECIES	<i>Menidia beryllina</i>	TEST DATE	24-25 Mar 2023
TEST RESULTS	Pass*		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE6B = 0		
Retest Number 1	Parameter 22415	0	
Retest Number 2	Parameter 22416	N/A	
ACUTE PERMIT REPORTING - Table 2 attached.			

* Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. One more retest is required.

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Chemical Analyses

Natgasoline - WET Non Scheduled Retest

Client Sample ID: Outfall 001

Lab Sample ID: 23C3870-01

Sample Matrix:

Waste Water

Date Collected:

03/24/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	155	mg/L		1	10.0	10.0	BGC4131	03/27/2023 15:21	AKA
General Chemistry SM 2510 B	Conductivity	A	1640	umhos/cm @ 25 °C		1	2.00	2.00	BGC4131	03/27/2023 15:21	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	132	mg/L		1		50.0	BGD2014	04/13/2023 19:37	NAZ
General Chemistry EPA 350.1	Ammonia as N	A	10.9	mg/L		20	0.400	1.00	BGC4008	03/27/2023 13:22	DLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BGC4131	03/27/2023 15:21	AKA
Field Hach 10360	DO Field	N	8.20	mg/L		1	1.00	1.00	BGD0399	03/24/2023 09:15	VJC
Field SM 4500-H+ B	pH	A	7.80	pH Units @ 25 °C		1	1.00	1.00	BGD0399	03/24/2023 09:15	VJC
Field SM 4500-Cl G	Total Residual Chlorine	A	0.03	mg/L	U	1	0.25	0.25	BGD0399	03/24/2023 09:15	VJC

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Sample Condition Checklist

Work Order: 23C3870

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Term and Qualifier Definitions

Item	Definition
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17



Page 1 of 1

23C3870

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Non Scheduled Retest	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments: Deliver kits to: Clinton Wallace 1624 W. 25th St. Unit B Houston, TX 77008	

Sample ID	Collection Point	Date/Time Begin <i>(END)</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C3870-01	Outfall 001	3/23/23 08:00 3/24/23 08:00	3/24/23 09:15	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	MB 1DD-2006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>8.2</u> pH Field <u>7.8</u> Total Chlorine <u>0.03</u> Residual WW Field <u>VJC</u> <u>4-4-23</u>

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other: _____		
(Circle and Write ID Below) 2108097 2202216				
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 3/24/23 14:05	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) ROR	Date/Time 3.24.23 1405
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 4.7 °C
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210556882

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-1000
--------	-------------------	----	-----	-------	---------	---------------	---------

BGC4041

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 6, 13, 25, 50, 100	<u>DECHLOR - NO</u>	Critical Dilution (%):	100
---------------------------------	--------------------------	---------------------	------------------------	-----

Test Organism Batch #	23-0331	DOB	3-14-23
Source	NWDLS	Age (days)	10d

Sample 1 Date/Time:	3-24-23	0800
---------------------	---------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-24-23	1505	VJC / AGJ
Test Termination	3-25-23	1510	DPD

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: TDS Entry: VJC 3-28-23

Vynna Chitolie

Final Review Signature

Data Sheet Preparation - Initials: VJC / AGJ Date: 3-18-23

End of Test First Review - Initials: DPD Date: 3-25-23

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	9	50	A	10	10
	B	10	9		B	10	8
	C	10	10		C	10	10
	D	10	10		D	10	10
	E	10	9		E	10	9
6	A	10	10	100	A	10	10
	B	10	9		B	10	9
	C	10	9		C	10	9
	D	10	10		D	10	9
	E	10	10		E	10	10
13	A	10	10		A		
	B	10	8		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
25	A	10	10		A		
	B	10	10		B		
	C	10	9		C		
	D	10	10		D		
	E	10	10		E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.0	7-7
6	8.1	7-8
13	8.1	7-9
25	8.1	7-9
50	8.0	7-9
100	8.0	8.0
Meter No.	737	737
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Temp. °C (Actual) Offset: 0 (±0C)	
	0 hr	24 hr
Cont.	25.8	24.7
6	25.8	24.6
13	26.0	24.6
25	26.0	24.6
50	26.3	24.6
100	26.6	24.7
Therm. No.	YSI6	YSI6
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.0	8.2
6	8.0	8.1
13	8.0	8.1
25	7.9	8.0
50	7.9	8.0
100	7.9	7.8
Meter No.	YSI6	YSI6
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25.4
6	25.3
13	25.5
25	25.6
50	25.0
100	25.5
Meter No.	2647
Time	1500
Initials	ADJ/VJC

Comments:

CETIS Analytical Report

Report Date: 13 Apr-23 10:41 (p 1 of 1)
 Test Code/ID: 23-0263 / 15-5612-7767

Inland Silverside 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	19-5594-3666	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	13 Apr-23 10:41	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	10-4000-7366	Test Type:	Survival (1d)	Analyst:	Dane DeGuzman
Start Date:	24 Mar-23 15:05	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	25 Mar-23 15:10	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	12-7532-3868	Code:	4C03E5DC	Project:	NT-100056
Sample Date:	24 Mar-23 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	24 Mar-23 14:05	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	953694	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.94	0.9	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	n/a	n/a	<1	n/a	n/a

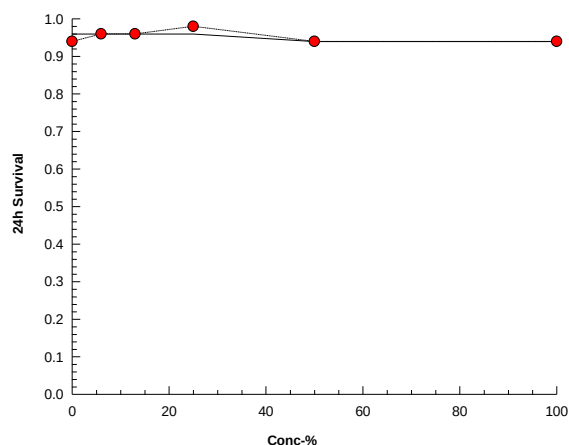
24h Survival Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	L	5	0.9400	0.9000	1.0000	0.0548	5.83%	0.0%	47/50	0.96	0.0%
6		5	0.9600	0.9000	1.0000	0.0548	5.71%	-2.13%	48/50	0.96	0.0%
13		5	0.9600	0.8000	1.0000	0.0894	9.32%	-2.13%	48/50	0.96	0.0%
25		5	0.9800	0.9000	1.0000	0.0447	4.56%	-4.26%	49/50	0.96	0.0%
50		5	0.9400	0.8000	1.0000	0.0894	9.52%	0.0%	47/50	0.94	2.08%
100		5	0.9400	0.9000	1.0000	0.0548	5.83%	0.0%	47/50	0.94	2.08%

24h Survival Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.9000	0.9000	1.0000	1.0000	0.9000
6		1.0000	0.9000	0.9000	1.0000	1.0000
13		1.0000	0.8000	1.0000	1.0000	1.0000
25		1.0000	1.0000	0.9000	1.0000	1.0000
50		1.0000	0.8000	1.0000	1.0000	0.9000
100		1.0000	0.9000	0.9000	0.9000	1.0000

Graphics



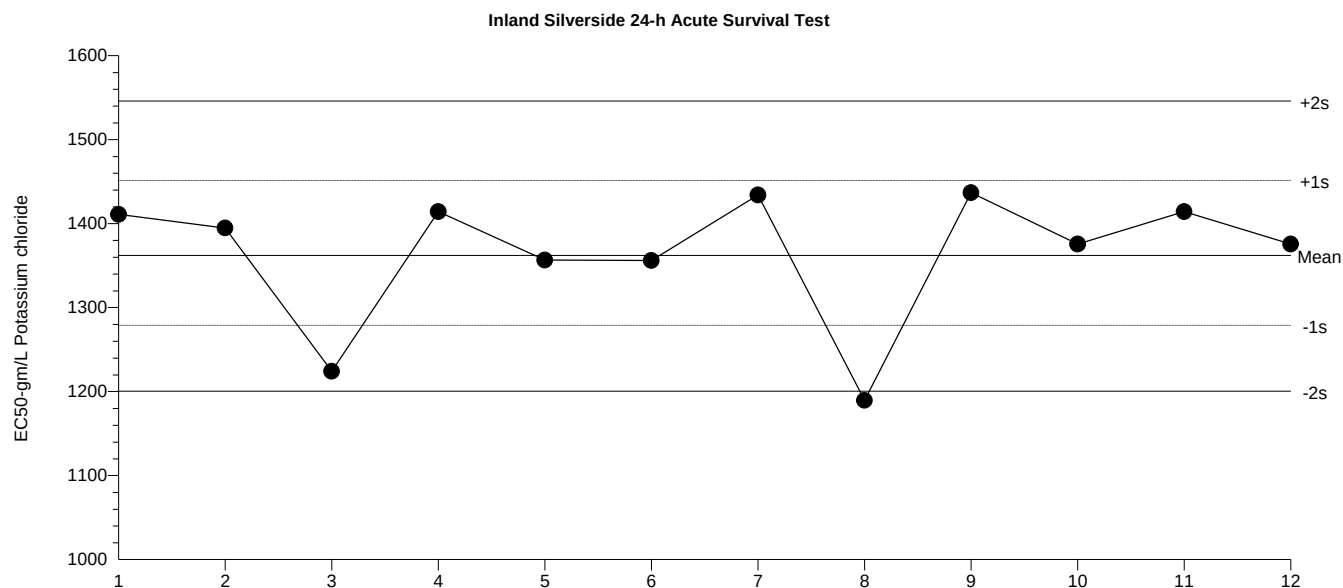
Inland Silverside 24-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Mean: 1362

Count: 11

-1s Warning Limit: 1279

-2s Action Limit: 1200

Sigma: n/a

CV: 6.33%

+1s Warning Limit: 1451

+2s Action Limit: 1546

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	9	16:10	1411	48.53	0.5532			04-3275-7888	05-1109-6618	NWDLS Environ. Toxicol.
2			22	11:00	1395	32.35	0.3709			12-4097-1025	13-6466-3804	NWDLS Environ. Toxicol.
3		Jul	20	15:00	1224	-138.3	-1.692	(-)		10-1884-1848	19-4876-4595	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1414	51.82	0.59			04-2375-3170	20-9595-7661	NWDLS Environ. Toxicol.
5		Sep	29	11:45	1357	-5.792	-0.06733			07-2961-8069	10-4588-4698	NWDLS Environ. Toxicol.
6		Oct	19	15:00	1356	-6.361	-0.07397			16-3498-3233	21-2876-1044	NWDLS Environ. Toxicol.
7		Nov	3	14:30	1434	71.56	0.8091			14-5579-2549	15-3302-0659	NWDLS Environ. Toxicol.
8		Dec	2	14:35	1189	-173	-2.146	(-)	(-)	04-4620-7648	18-8996-7419	NWDLS Environ. Toxicol.
9			19	14:30	1437	74.38	0.8401			12-5189-8631	21-0418-6472	NWDLS Environ. Toxicol.
10	2023	Jan	3	11:45	1376	13.15	0.1518			13-5136-7337	20-9366-9655	NWDLS Environ. Toxicol.
11		Feb	2	12:10	1414	51.82	0.59			00-2123-6358	14-6779-9214	NWDLS Environ. Toxicol.
12		Mar	17	13:30	1376	13.15	0.1518			02-5753-5274	06-0182-7706	NWDLS Environ. Toxicol.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GENERAL INFORMATION

	TIME	DATE
Composite Sample Collected	0800 to 0800	03-23-23 to 03-24-23
Test Initiated	1505	03-24-23
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A	90	100	100	100	100	100
	B	90	90	80	100	80	90
	C	100	90	100	90	100	90
	D	100	100	100	100	100	90
	E	90	100	100	100	90	100
	MEAN	94	96	96	98	94	94

1. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ (*Menidia beryllina*) = >100 % effluent

95% Confidence Limits: N/A

Method of LC₅₀ Calculation: ICPIN

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-39

April 17, 2023

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20230417190048MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 19:00

Work Order Case Narrative

NWDLS Job No: 23C4032 (23-0265)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 1S'23 (acute) Retest #2 - [*M. bahia*, *M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in this acute test event.

Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the second additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. The facility may return to the testing frequency established by the permit.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

NWDLS
ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001		
TPDES PERMIT NO.	WQ0005143000		
SPECIES	<i>Menidia beryllina</i>	TEST DATE	27-28 Mar 2023
TEST RESULTS	<i>Pass*</i>		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE6B = 0		
Retest Number 1	Parameter 22415	N/A	
Retest Number 2	Parameter 22416	0	
ACUTE PERMIT REPORTING - Table 2 attached.			

** Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the second additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. The facility may return to the testing frequency established by the permit.*

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 19:00

Chemical Analyses

Natgasoline - WET Non Scheduled Retest

Client Sample ID: Outfall 001

Lab Sample ID: 23C4032-01

Sample Matrix:

Waste Water

Date Collected:

03/27/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	165	mg/L		1	10.0	10.0	BGC4304	03/29/2023 09:48	AKA
General Chemistry SM 2510 B	Conductivity	A	3180	umhos/cm @ 25 °C		1	2.00	2.00	BGC4304	03/29/2023 09:48	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	120	mg/L		1		50.0	BGD2014	04/13/2023 19:37	NAZ
General Chemistry SM 2520 B	Salinity	N	1.81	Salinity units		1	1.00	1.00	BGC4304	03/29/2023 09:48	AKA
Field Hach 10360	DO Field	N	8.10	mg/L		1	1.00	1.00	BGD0398	03/27/2023 08:00	VJC
Field SM 4500-H+ B	pH	A	8.00	pH Units @ 25 °C		1	1.00	1.00	BGD0398	03/27/2023 08:00	VJC
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BGD0398	03/27/2023 08:00	VJC

Natgasoline - WET Non Scheduled Retest

Client Sample ID: Outfall 001

Lab Sample ID: 23C4032-01RE1

Sample Matrix:

Waste Water

Date Collected:

03/27/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry EPA 350.1	Ammonia as N (Rerun)	A	34.7	mg/L		50	1.00	2.50	BGC4566	03/29/2023 13:54	DLK

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 19:00

Sample Condition Checklist

Work Order: 23C4032

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 19:00

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17



Page 1 of 1

23C4032

Page 8 of 15

Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Non Scheduled Retest		Schedule Comments:
	Project Comments: Deliver kits to: Clinton Wallace 1624 W. 25th St. Unit B Houston, TX 77008		

Sample ID	Collection Point	Date/Time Begin/END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C4032-01	Outfall 001	3/26/23 08:00 3/27/23 08:00	3/27/23 10:40	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	MB 1DD-2006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 8.1 pH Field 8.0 Total Chlorine 0.0 Residual WW Field VSC 4-4-23

Field Remarks:		Preservation: (Circle and Write ID) H2SO4 HNO3 NaOH Other:	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time: 3/27/23 14:15	Received By: (Signature)
Print Name: Clinton Wallace	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)
Affiliation: Providence	Relinquished To Lab By: (Signature)	Date/Time:	Received for Laboratory By: (Signature)
Custody Seal: Yes / No		COC Labels Agree: Yes / No	Appropriate Volume: Yes / No
Container Intact: Yes / No		Appropriate Containers: Yes / No	Coolers Intact: Yes / No
Received on Ice: Yes / No		Samples Accepted: Yes / No	Temperature: 7.7 °C
Thermometer ID: 210556062			

Tox Weekly Kits - Deliver

wko_NWDLS_COC_noDate_LS version 4: 02/22/2021



Client	PE&EG-Natgasoline	OF	001	Login	23-0265	NWDLS Job No.	NT-100
--------	-------------------	----	-----	-------	---------	---------------	--------

BGC4341

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 6,13, 25, 50, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	-------------------------	--------------	------------------------	-----

Test Organism Batch #	23-0333	DOB	3-13-23
Source	NWDLS	Age (days)	14 days

Sample 1 Date/Time:	3-27-23	0800
---------------------	---------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-27-23	1510	A0J/B2m
Test Termination	3-28-23	1515	VJC

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: TDS Entry: VJC 3-29-23

Vynna Chitolie

Final Review Signature

Data Sheet Preparation - Initials: *VJC* Date: 3-23-23

End of Test First Review - Initials: *VJC* Date: 3-28-23

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	23-0265	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	10	50	A	10	10
	B	10	10		B	10	10
	C	10	10		C	10	10
	D	10	10		D	10	10
	E	10	10		E	10	10
6	A	10	10	100	A	10	10
	B	10	10		B	10	10
	C	10	10		C	10	8
	D	10	10		D	10	10
	E	10	10		E	10	10
13	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
25	A	10	10		A		
	B	10	10		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	23-0265	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	7.9	7.9
6	8.0	7.9
13	8.0	7.9
25	8.0	7.9
50	8.0	8.0
100	8.0	8.0
Meter No.	737	737
Time	1500	0920
Initials	ADJ / SR1	VJC

Conc. (%)	Temp. °C (Actual) Offset: ☐ (±°C)	
	0 hr	24 hr
Cont.	25.8	24.6
6	25.7	24.5
13	25.8	24.5
25	25.9	24.5
50	25.9	24.5
100	25.8	24.6
Therm. No.	YS16	YS16
Time	1500	0920
Initials	ADJ / SR1	VJC

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.1	8.0
6	8.1	8.1
13	8.1	8.0
25	8.0	8.0
50	8.0	7.8
100	8.1	7.9
Meter No.	YS16	YS16
Time	1500	0920
Initials	ADJ / SR1	VJC

Conc. (%)	Salinity (‰)	
	0 hr	
Cont.	25.3	
6	25.5	
13	25.5	
25	25.1	
50	25.3	
100	25.2	
Meter No.	2647	
Time	1500	
Initials	ADJ / SR1	

Comments:

CETIS Analytical Report

Report Date: 17 Apr-23 18:53 (p 1 of 1)
 Test Code/ID: 23-0265 / 08-4490-1165

Inland Silverside 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	03-9339-2099	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	13 Apr-23 11:59	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	09-8076-5166	Test Type:	Survival (1d)	Analyst:	Vynna Chitolie
Start Date:	27 Mar-23 15:10	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	28 Mar-23 15:15	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	10-2322-1543	Code:	3CFD1F27	Project:	NT-100056
Sample Date:	27 Mar-23 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	27 Mar-23 14:15	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	411215	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.9	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	n/a	n/a	<1	n/a	n/a

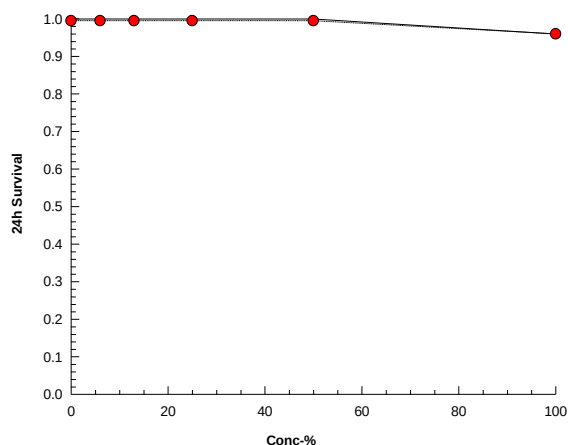
24h Survival Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	L	5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
6		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
13		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
25		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
50		5	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	50/50	1	0.0%
100		5	0.9600	0.8000	1.0000	0.0894	9.32%	4.0%	48/50	0.96	4.0%

24h Survival Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000
13		1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	0.8000	1.0000	1.0000

Graphics



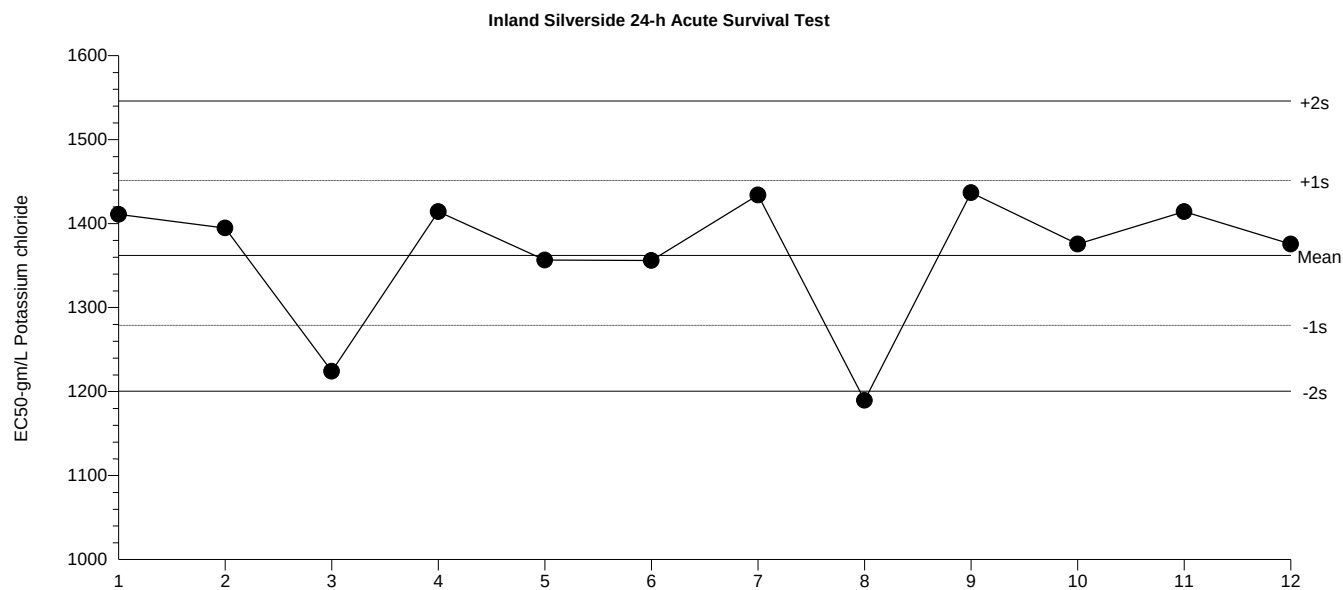
Inland Silverside 24-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Mean: 1362

Count: 11

-1s Warning Limit: 1279

-2s Action Limit: 1200

Sigma: n/a

CV: 6.33%

+1s Warning Limit: 1451

+2s Action Limit: 1546

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	9	16:10	1411	48.53	0.5532			04-3275-7888	05-1109-6618	NWDLS Environ. Toxicol.
2			22	11:00	1395	32.35	0.3709			12-4097-1025	13-6466-3804	NWDLS Environ. Toxicol.
3		Jul	20	15:00	1224	-138.3	-1.692	(-)		10-1884-1848	19-4876-4595	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1414	51.82	0.59			04-2375-3170	20-9595-7661	NWDLS Environ. Toxicol.
5		Sep	29	11:45	1357	-5.792	-0.06733			07-2961-8069	10-4588-4698	NWDLS Environ. Toxicol.
6		Oct	19	15:00	1356	-6.361	-0.07397			16-3498-3233	21-2876-1044	NWDLS Environ. Toxicol.
7		Nov	3	14:30	1434	71.56	0.8091			14-5579-2549	15-3302-0659	NWDLS Environ. Toxicol.
8		Dec	2	14:35	1189	-173	-2.146	(-)	(-)	04-4620-7648	18-8996-7419	NWDLS Environ. Toxicol.
9			19	14:30	1437	74.38	0.8401			12-5189-8631	21-0418-6472	NWDLS Environ. Toxicol.
10	2023	Jan	3	11:45	1376	13.15	0.1518			13-5136-7337	20-9366-9655	NWDLS Environ. Toxicol.
11		Feb	2	12:10	1414	51.82	0.59			00-2123-6358	14-6779-9214	NWDLS Environ. Toxicol.
12		Mar	17	13:30	1376	13.15	0.1518			02-5753-5274	06-0182-7706	NWDLS Environ. Toxicol.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GENERAL INFORMATION

	TIME	DATE
Composite Sample Collected	0800 to 0800	03-26-23 to 03-27-23
Test Initiated	1510	03-27-23
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A	100	100	100	100	100	100
	B	100	100	100	100	100	100
	C	100	100	100	100	100	80
	D	100	100	100	100	100	100
	E	100	100	100	100	100	100
	MEAN	100	100	100	100	100	96

1. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ (*Menidia beryllina*) = >100 % effluent

95% Confidence Limits: N/A

Method of LC₅₀ Calculation: ICPIN

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-39

April 17, 2023

LABORATORY REPORT

Clinton Wallace, GIT
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20230417184644MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Work Order Case Narrative

NWDLS Job No: 23C3870 (23-0263)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 1S'23 (acute) Retest #1 - [*M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in this acute test event.

Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. One more retest is required.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

NWDLS
ENVIRONMENTAL TOXICOLOGY LABORATORY

24-HOUR ACUTE RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001		
TPDES PERMIT NO.	WQ0005143000		
SPECIES	<i>Menidia beryllina</i>	TEST DATE	24-25 Mar 2023
TEST RESULTS	Pass*		
Is the mean survival > 50% in the 100% effluent concentration?			Yes
DMR Parameter Code:	TIE6B = 0		
Retest Number 1	Parameter 22415	0	
Retest Number 2	Parameter 22416	N/A	
ACUTE PERMIT REPORTING - Table 2 attached.			

* Please be aware that your permit contains lethal retest language which requires you to perform two additional weekly biomonitoring tests. This test completes the first additional biomonitoring requirement triggered by lethal toxicity in the early March 2023 compliance test. One more retest is required.

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Chemical Analyses

Natgasoline - WET Non Scheduled Retest

Client Sample ID: Outfall 001
Lab Sample ID: 23C3870-01

Sample Matrix: Waste Water
Date Collected: 03/24/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	155	mg/L		1	10.0	10.0	BGC4131	03/27/2023 15:21	AKA
General Chemistry SM 2510 B	Conductivity	A	1640	umhos/cm @ 25 °C		1	2.00	2.00	BGC4131	03/27/2023 15:21	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	132	mg/L		1		50.0	BGD2014	04/13/2023 19:37	NAZ
General Chemistry EPA 350.1	Ammonia as N	A	10.9	mg/L		20	0.400	1.00	BGC4008	03/27/2023 13:22	DLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BGC4131	03/27/2023 15:21	AKA
Field Hach 10360	DO Field	N	8.20	mg/L		1	1.00	1.00	BGD0399	03/24/2023 09:15	VJC
Field SM 4500-H+ B	pH	A	7.80	pH Units @ 25 °C		1	1.00	1.00	BGD0399	03/24/2023 09:15	VJC
Field SM 4500-Cl G	Total Residual Chlorine	A	0.03	mg/L	U	1	0.25	0.25	BGD0399	03/24/2023 09:15	VJC

* A = Accredited, N = Not Accredited or Accreditation not available



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
www: NWDLS.com
TCEQ T104704238-23-39

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Sample Condition Checklist

Work Order: 23C3870

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
04/17/2023 18:46

Term and Qualifier Definitions

Item	Definition
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-22-36 TCEQ-TOX T104704202-22-17



Page 1 of 1

23C3870

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Non Scheduled Retest	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments: Deliver kits to: Clinton Wallace 1624 W. 25th St. Unit B Houston, TX 77008	

Sample ID	Collection Point	Date/Time Begin <i>(End)</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23C3870-01	Outfall 001	3/23/23 08:00 3/24/23 08:00	3/24/23 09:15	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	MB 1DD-2006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>8.2</u> pH Field <u>7.8</u> Total Chlorine <u>0.03</u> Residual WW Field <u>VJC</u> <u>4-4-23</u>

Field Remarks:		Lab Preservation: H2SO4 HNO3 NaOH Other: _____ (Circle and Write ID Below) 2108097 2202216		
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 3/24/23 14:05	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) ROR	Date/Time 3.24.23 1405
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 4.7 °C
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210556882

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-1000
--------	-------------------	----	-----	-------	---------	---------------	---------

BGC4041

24h Acute *Menidia beryllina* Toxicity Test Condition Summary
Test Method EPA-821-R-02-012-2006.0; NWDLS SOP No. 4018

Test Organism:	<i>Menidia beryllina</i>	Age Class:	9-14 d old
Test Type:	Acute Static	Test Duration:	24 h
Temperature:	20 ± 1, or 25 ± 1	Photoperiod:	16:8 h; ambient light; 50-100 ft-c
Test Chamber size:	300 mL cups	Cleaning:	None
No. of Replicates:	5	No. organisms per Replicate:	10
Test Solution Volume	200 mL (minimum)	Dilution Water:	LAB-W
Renewal of test solution:	None	Aeration:	None
Feeding:	None	Food Type:	None
Acceptability Criteria	≥ 90% survival in control	Sample Holding Time:	Holding time must not exceed 36 h.

Permit Test Concentrations (%):	Cont, 6, 13, 25, 50, 100	DECHLOR - NO	Critical Dilution (%):	100
---------------------------------	--------------------------	--------------	------------------------	-----

Test Organism Batch #	23-0331	DOB	3-14-23
Source	NWDLS	Age (days)	10d

Sample 1 Date/Time:	3-24-23	0800
---------------------	---------	------

	Date	Time	Responsible Technician (Initials)
Test Initiation	3-24-23	1505	VJC / AGJ
Test Termination	3-25-23	1510	DPD

This test was conducted in accordance with the method standards or according to the exception(s) as noted:

Comments: TDS Entry: VJC 3-28-23

Vynna Chitolie

Final Review Signature

Data Sheet Preparation - Initials: VJC / AGJ Date: 3-18-23

End of Test First Review - Initials: DPD Date: 3-25-23

Codes: IE-incorrect entry; IL-illegible; WC- wrong column; WR-wrong row; TN-transposed number; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Acute Toxicity Test with *Menidia beryllina*

Conc. (%)	Rep.	No. of Surviving Organisms		Conc. (%)	Rep.	No. of Surviving Organisms	
		0 hr	24h			0 hr	24h
Control	A	10	9	50	A	10	10
	B	10	9		B	10	8
	C	10	10		C	10	10
	D	10	10		D	10	10
	E	10	9		E	10	9
6	A	10	10	100	A	10	10
	B	10	9		B	10	9
	C	10	9		C	10	9
	D	10	10		D	10	9
	E	10	10		E	10	10
13	A	10	10		A		
	B	10	8		B		
	C	10	10		C		
	D	10	10		D		
	E	10	10		E		
25	A	10	10		A		
	B	10	10		B		
	C	10	9		C		
	D	10	10		D		
	E	10	10		E		

Comments:

Client	PE&EG-Natgasoline	OF	001	Login	23-0263	NWDLS Job No.	NT-100056.02
--------	-------------------	----	-----	-------	---------	---------------	--------------

Water Quality Parameters - *Menidia beryllina*

Conc. (%)	pH	
	0 hr	24h
Cont.	8.0	7-7
6	8.1	7-8
13	8.1	7-9
25	8.1	7-9
50	8.0	7-9
100	8.0	8.0
Meter No.	737	737
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Dissolved Oxygen (mg/L)	
	0 hr	24h
Cont.	8.0	8-2
6	8.0	8-1
13	8.0	8-1
25	7.9	8-0
50	7.9	8-0
100	7.9	7-8
Meter No.	YS16	YS16
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Temp. °C (Actual) Offset: 0 (±0C)	
	0 hr	24 hr
Cont.	25.8	24.7
6	25.8	24.6
13	26.0	24.6
25	26.0	24.6
50	26.3	24.6
100	26.6	24.7
Therm. No.	YS16	YS16
Time	1500	1500
Initials	ADJ/VJC	DPD

Conc. (%)	Salinity (‰)
	0 hr
Cont.	25.4
6	25.3
13	25.5
25	25.6
50	25.0
100	25.5
Meter No.	2647
Time	1500
Initials	ADJ/VJC

Comments:

CETIS Analytical Report

Report Date: 13 Apr-23 10:41 (p 1 of 1)
 Test Code/ID: 23-0263 / 15-5612-7767

Inland Silverside 24-h Acute Survival Test				NWDLS Environ. Toxicol. Lab	
Analysis ID:	19-5594-3666	Endpoint:	24h Survival	CETIS Version:	CETISv1.9.4
Analyzed:	13 Apr-23 10:41	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Batch ID:	10-4000-7366	Test Type:	Survival (1d)	Analyst:	Dane DeGuzman
Start Date:	24 Mar-23 15:05	Protocol:	EPA/821/R-02-012 (2002)	Diluent:	Laboratory Seawater
Ending Date:	25 Mar-23 15:10	Species:	Menidia beryllina	Brine:	Instant Ocean
Test Length:	24h	Taxon:	Actinopterygii	Source:	NWDLS
Sample ID:	12-7532-3868	Code:	4C03E5DC	Project:	NT-100056
Sample Date:	24 Mar-23 08:00	Material:	Industrial Effluent	Source:	WQ0005143000
Receipt Date:	24 Mar-23 14:05	CAS (PC):		Station:	Natgasoline LLC
Sample Age:	7h	Client:	Providence Engineering and Env. Group LL		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	953694	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.94	0.9	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC50	>100	n/a	n/a	<1	n/a	n/a

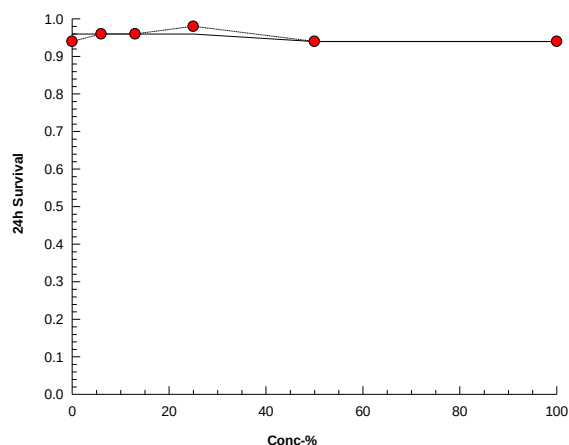
24h Survival Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	L	5	0.9400	0.9000	1.0000	0.0548	5.83%	0.0%	47/50	0.96	0.0%
6		5	0.9600	0.9000	1.0000	0.0548	5.71%	-2.13%	48/50	0.96	0.0%
13		5	0.9600	0.8000	1.0000	0.0894	9.32%	-2.13%	48/50	0.96	0.0%
25		5	0.9800	0.9000	1.0000	0.0447	4.56%	-4.26%	49/50	0.96	0.0%
50		5	0.9400	0.8000	1.0000	0.0894	9.52%	0.0%	47/50	0.94	2.08%
100		5	0.9400	0.9000	1.0000	0.0548	5.83%	0.0%	47/50	0.94	2.08%

24h Survival Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	L	0.9000	0.9000	1.0000	1.0000	0.9000
6		1.0000	0.9000	0.9000	1.0000	1.0000
13		1.0000	0.8000	1.0000	1.0000	1.0000
25		1.0000	1.0000	0.9000	1.0000	1.0000
50		1.0000	0.8000	1.0000	1.0000	0.9000
100		1.0000	0.9000	0.9000	0.9000	1.0000

Graphics



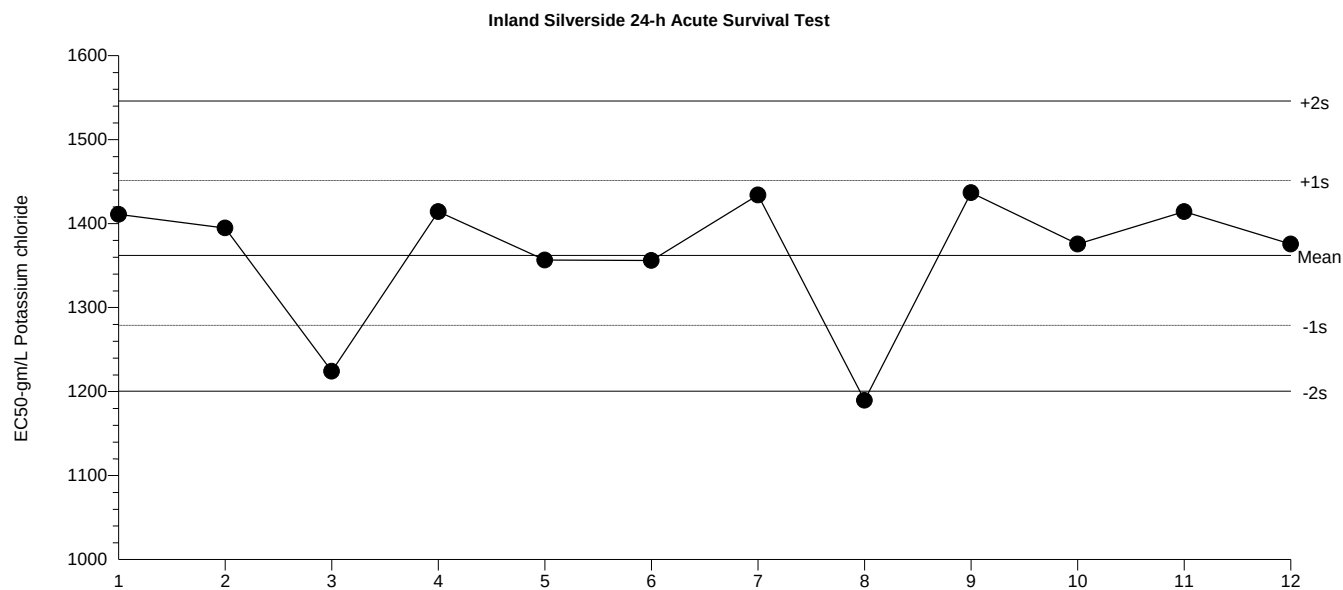
Inland Silverside 24-h Acute Survival Test

All Matching Labs

Test Type: Survival (48h)
Protocol: EPA/821/R-02-012 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 24h Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Mean: 1362

Count: 11

-1s Warning Limit: 1279

-2s Action Limit: 1200

Sigma: n/a

CV: 6.33%

+1s Warning Limit: 1451

+2s Action Limit: 1546

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	9	16:10	1411	48.53	0.5532			04-3275-7888	05-1109-6618	NWDLS Environ. Toxicol.
2			22	11:00	1395	32.35	0.3709			12-4097-1025	13-6466-3804	NWDLS Environ. Toxicol.
3		Jul	20	15:00	1224	-138.3	-1.692	(-)		10-1884-1848	19-4876-4595	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1414	51.82	0.59			04-2375-3170	20-9595-7661	NWDLS Environ. Toxicol.
5		Sep	29	11:45	1357	-5.792	-0.06733			07-2961-8069	10-4588-4698	NWDLS Environ. Toxicol.
6		Oct	19	15:00	1356	-6.361	-0.07397			16-3498-3233	21-2876-1044	NWDLS Environ. Toxicol.
7		Nov	3	14:30	1434	71.56	0.8091			14-5579-2549	15-3302-0659	NWDLS Environ. Toxicol.
8		Dec	2	14:35	1189	-173	-2.146	(-)	(-)	04-4620-7648	18-8996-7419	NWDLS Environ. Toxicol.
9			19	14:30	1437	74.38	0.8401			12-5189-8631	21-0418-6472	NWDLS Environ. Toxicol.
10	2023	Jan	3	11:45	1376	13.15	0.1518			13-5136-7337	20-9366-9655	NWDLS Environ. Toxicol.
11		Feb	2	12:10	1414	51.82	0.59			00-2123-6358	14-6779-9214	NWDLS Environ. Toxicol.
12		Mar	17	13:30	1376	13.15	0.1518			02-5753-5274	06-0182-7706	NWDLS Environ. Toxicol.

TABLE 2
Menidia beryllina SURVIVAL

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GENERAL INFORMATION

	TIME	DATE
Composite Sample Collected	0800 to 0800	03-23-23 to 03-24-23
Test Initiated	1505	03-24-23
Dilution Water	Reconstituted seawater	

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A	90	100	100	100	100	100
	B	90	90	80	100	80	90
	C	100	90	100	90	100	90
	D	100	100	100	100	100	90
	E	90	100	100	100	90	100
	MEAN	94	96	96	98	94	94

1. Enter percent effluent corresponding to the LC₅₀ below:

LC₅₀ (*Menidia beryllina*) = >100 % effluent

95% Confidence Limits: N/A

Method of LC₅₀ Calculation: ICPIN

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-39

June 29, 2023

LABORATORY REPORT

Clinton Wallace, PG
Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20230629125619MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
06/29/2023 12:56

Work Order Case Narrative

NWDLS Job No: 23F0489, 23F0492, 23F0495 (23-0439)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 2Q'23 (chronic) - [*M. bahia*, *M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in these tests.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001			
TPDES PERMIT NO.	WQ0005143000			
SPECIES	<i>Mysidopsis bahia</i>		TEST DATE	5-12 Jun 2023
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40
Control Results	96	8.78	0.35	27.41
Critical Dilution (8%)	90	15.71	0.34	18.44
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0
Report the NOEC % for survival:			TOP3E	11
Report the LOEC % for survival:			TXP3E	>11
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0
Report the NOEC % for growth:			TPP3E	11
Report the LOEC % for growth:			TYP3E	>11
PMSD (Acceptable Range: 37 or less):				20.49
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

SPECIES	<i>Menidia beryllina</i>		TEST DATE	5-12 Jun 2023
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.50	≤ 40
Control Results	98	5.73	1.06	12.16
Critical Dilution (8%)	100	0.00	1.04	13.25
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP6B	0
Report the NOEC % for survival:			TOP6B	11
Report the LOEC % for survival:			TXP6B	>11
Is the NOEC for growth less than the critical dilution?		No	TWP6B	0
Report the NOEC % for growth:			TPP6B	11
Report the LOEC % for growth:			TYP6B	>11
PMSD (Acceptable Range: 28 or less):				15.65
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
06/29/2023 12:56

Chemical Analyses

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001
Lab Sample ID: 23F0489-01

Sample Matrix: Waste Water
Date Collected: 06/05/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	204	mg/L		1	10.0	10.0	BGF0716	06/06/2023 12:17	AKA
General Chemistry SM 2510 B	Conductivity	A	3310	umhos/cm @ 25 °C		1	2.00	2.00	BGF0716	06/06/2023 12:17	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	148	mg/L		1		50.0	BGF2255	06/14/2023 16:04	MLB
General Chemistry SM 2520 B	Salinity	N	1.73	Salinity units		1	1.00	1.00	BGF0716	06/06/2023 12:17	AKA
Field Hach 10360	DO Field	N	9.44	mg/L		1	1.00	1.00	BGF0734	06/05/2023 08:00	AOJ
Field SM 4500-H+ B	pH	A	7.93	pH Units @ 25 °C		1	1.00	1.00	BGF0734	06/05/2023 08:00	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BGF0734	06/05/2023 08:00	AOJ

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001
Lab Sample ID: 23F0489-01RE1

Sample Matrix: Waste Water
Date Collected: 06/05/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry EPA 350.1	Ammonia as N (Rerun)	A	21.9	mg/L		50	1.00	2.50	BGF1090	06/08/2023 12:08	DLK

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water
Lab Sample ID: 23F0489-02

Sample Matrix: Waste Water
Date Collected: 06/05/2023 10:30
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	34.1	mg/L		1	10.0	10.0	BGF0716	06/06/2023 12:08	AKA
General Chemistry SM 2510 B	Conductivity	A	779	umhos/cm @ 25 °C		1	2.00	2.00	BGF0716	06/06/2023 12:08	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	112	mg/L		1		50.0	BGF1854	06/12/2023 14:17	MLB
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BGF0716	06/06/2023 12:08	AKA
Field Hach 10360	DO Field	N	7.30	mg/L		1	1.00	1.00	BGF0734	06/05/2023 10:30	AOJ
Field SM 4500-H+ B	pH	A	7.40	pH Units @ 25 °C		1	1.00	1.00	BGF0734	06/05/2023 10:30	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.05	mg/L	U	1	0.25	0.25	BGF0734	06/05/2023 10:30	AOJ

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water
Lab Sample ID: 23F0489-02RE1

Sample Matrix: Waste Water
Date Collected: 06/05/2023 10:30
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry EPA 350.1	Ammonia as N (Rerun)	A	0.742	mg/L		1	0.0200	0.0500	BGF1090	06/08/2023 10:13	DLK

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2
Lab Sample ID: 23F0492-01

Sample Matrix: Waste Water
Date Collected: 06/07/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	127	mg/L		1	10.0	10.0	BGF1125	06/08/2023 10:51	AKA

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
06/29/2023 12:56

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2 (Continued)

Lab Sample ID: 23F0492-01

Sample Matrix:

Waste Water

Date Collected:

06/07/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2510 B	Conductivity	A	795	umhos/cm @ 25 °C		1	2.00	2.00	BGF1125	06/08/2023 10:51	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	142	mg/L		1		50.0	BGF1854	06/12/2023 14:17	MLB
General Chemistry EPA 350.1	Ammonia as N	A	0.432	mg/L		1	0.0200	0.0500	BGF1278	06/08/2023 13:22	DLK
General Chemistry SM 2520 B	Salinity	N	<1.00	Salinity units	U	1	1.00	1.00	BGF1125	06/08/2023 10:51	AKA
Field Hach 10360	DO Field	N	10.4	mg/L		1	1.00	1.00	BGF1824	06/07/2023 08:00	VJC
Field SM 4500-H+ B	pH	A	8.43	pH Units @ 25 °C		1	1.00	1.00	BGF1824	06/07/2023 08:00	VJC
Field SM 4500-Cl G	Total Residual Chlorine	A	0.03	mg/L	U	1	0.25	0.25	BGF1824	06/07/2023 08:00	VJC

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3

Lab Sample ID: 23F0495-01

Sample Matrix:

Waste Water

Date Collected:

06/09/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO ₃	A	181	mg/L		1	10.0	10.0	BGF1793	06/12/2023 15:30	AKA
General Chemistry SM 2510 B	Conductivity	A	2620	umhos/cm @ 25 °C		1	2.00	2.00	BGF1793	06/12/2023 15:30	AKA
General Chemistry SM 2340 C	Total hardness as CaCO ₃	N	118	mg/L		1		50.0	BGF1854	06/12/2023 14:17	MLB
General Chemistry EPA 350.1	Ammonia as N	A	19.3	mg/L		20	0.400	1.00	BGF1611	06/12/2023 14:33	GJG
General Chemistry SM 2520 B	Salinity	N	1.36	Salinity units		1	1.00	1.00	BGF1793	06/12/2023 15:30	AKA
Field Hach 10360	DO Field	N	9.86	mg/L		1	1.00	1.00	BGF1991	06/09/2023 08:00	AOJ
Field SM 4500-H+ B	pH	A	8.08	pH Units @ 25 °C		1	1.00	1.00	BGF1991	06/09/2023 08:00	AOJ
Field SM 4500-Cl G	Total Residual Chlorine	A	0.02	mg/L	U	1	0.25	0.25	BGF1991	06/09/2023 08:00	AOJ

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
06/29/2023 12:56

Sample Condition Checklist

Work Order: 23F0489

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23F0492

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23F0495

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Providence Engineering and Environmental Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
06/29/2023 12:56

Term and Qualifier Definitions

Item	Definition
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 2

23F0489

TCEQ T104704238-23-39

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GR PG 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23F0489-01	Outfall 001	6/4/23 08:00 6/5/23 08:00	6/5/23 10:15	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.44 pH Field 7.93 Total Chlorine 0 Residual WW Field -A0J 6/6/23
23F0489-02	Receiving Water		6/5/23 10:30	AQ Grab	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 7.30 pH Field 7.40 Total Chlorine .05 Residual WW Field -A0J 6/6/23



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 2 of 2

23F0489

(Continued)

TCEQ T104704238-23-39

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, CH PG 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Field Remarks: One five-gallon bucket leaked in transport of receiving water.		Lab Preservation: H2SO4 HNO3 NaOH Other: _____		
(Circle and Write ID Below) 21080977 2202216				
Sampler (Signature) <i>Clinton Wallace</i>	Relinquished By: (Signature) <i>Clinton Wallace</i>	Date/Time 6/5/23 14:51	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>For</i>	Date/Time 1451 6-5-23
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 5.4 °C
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210556882

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

23F0492

TCEQ T104704238-23-39

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 2	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, GIT 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23F0492-01	Outfall 001-2	6/6/23 08:00 6/7/23 08:00	6/7/23 12:30	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	DR - AB 7DD-1007.0 4°C DR - MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 10.38 pH Field 8.64 Total Chlorine 0.03 Residual WW Field VJC 6-9-23

① IE VJC 6-9-23 → [8.43]

Field Remarks:		Lab Preservation: H2SO4 (HNO3) NaOH Other:	
		(Circle and Write ID Below) 2105897 2202216	
Sampler (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Print Name	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature)
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
		Temperature: 3.1 °C	Thermometer ID: 21055688

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

23F0495

TCEQ T104704238-23-39

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 3	Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, <i>CLT PG</i> 1201 Main Street Baton Rouge, LA 70802	Project Comments:	

Sample ID	Collection Point	Date/Time Begin	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23F0495-01	Outfall 001-3	<i>08:00 6/8/23 - 08:00 6/9/23</i>	<i>6/9/23 10:45</i>	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	DR - AB 7DD-1007.0 4°C DR - MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <i>9.86</i> pH Field <i>8.88</i> Total Chlorine <i>.02</i> Residual WW Field <i>-407</i> <i>6-13-23</i>

Field Remarks:		Lab Preservation: H2SO4 ☒ HNO3 ☒ NaOH ☐ Other:	
		(Circle and Write ID Below) <i>23F0495 2202216</i>	
Sampler (Signature) <i>CLT</i>	Relinquished By: (Signature) <i>CLT</i>	Date/Time <i>6/9/23 14:25</i>	Received By: (Signature)
Print Name <i>Clinton Wallace</i>	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation <i>Providence</i>	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>RWK</i>
		Date/Time <i>6-9-23 14:25</i>	
Custody Seal : Yes / ☒ No	COC Labels Agree: ☒ Yes / No	Appropriate Volume: ☒ Yes / No	Received on Ice: ☒ Yes / No
Container Intact: ☒ Yes / No	Appropriate Containers: ☒ Yes / No	Coolers Intact: ☒ Yes / No	Samples Accepted: ☒ Yes / No
		Temperature: <i>5.8</i> °C	Thermometer ID: <i>210556882</i>

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login
---------	-------------------	-----------	--------------	------------	-----	-------



Chronic *Mysidopsis bahia* Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020

BGF1588

Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥.20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.

Test Concentrations (%):	Control (RW), 3, 5, 6, 8, 11, *LW	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	-----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	06/05/23	101501	Sample 3 Date/Time:	06/09/23	104501
Sample 2 Date/Time:	06/07/23	173001	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	6-5-23	23-0439 -1	RW060523	A0J	Day 4	6-9-23	23-0439 -2	RW060523	KPI
Day 1	6-6-23	23-0439 -1	RW060523	CBR	Day 5	6-10-23	23-0439 -3	RW060523	CBR
Day 2	6-7-23	23-0439 -1	RW060523	CBR	Day 6	6-11-23	23-0439 -3	RW060523	BRH
Day 3	6-8-23	23-0439 -2	RW060523	A0J					

*LW Batch #: 2309720

This test was conducted in accordance with the method standard or according to the exception(s) as noted:
--

Comments: ① FELBU 6-15-23 → [0800]

Data Sheet Preparation : Initials: CBR/A0J Date: 5/24/23

End of Test Review : Initials: KPI/A0J Date: 6/12/23 Final Review (signature): Joan Bui

TDS A0J 6/16/23

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Water Quality Parameters

DATE	6/5/23	6/6/23	6-7-23	6-8-23	6-9-23	6-10-23	6-11-23	6/14/23						
TIME	1520	0850	0850	0830	0830	0840	0840	0830	0830	0845	0845	0900	0900	0815
INITIALS	KRT CBR	AO KRT	AO KRT	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR	AO CBR
DAY	0	1	2	3	4	5	6	7						
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
RW	7.99	7.97	8.01	7.90	8.07	7.81	8.08	7.71	8.05	7.85	8.09	8.04	8.13	8.02
3	8.00	7.97	8.01	7.97	8.06	7.84	8.07	7.81	8.05	7.93	8.09	8.00	8.12	8.02
5	8.00	7.95	8.01	7.89	8.06	7.82	8.10	7.84	8.07	7.94	8.08	8.02	8.12	8.04
6	7.99	8.00	8.00	7.89	8.05	7.84	8.08	7.92	8.06	7.91	8.07	8.02	8.11	8.07
8	7.99	8.00	8.00	7.89	8.04	7.41	8.07	7.84	8.06	7.92	8.07	8.04	8.10	8.05
11	7.99	8.01	8.02	7.76	8.04	7.92	8.07	7.87	8.06	7.89	8.06	8.04	8.09	8.01
*LW	8.12	7.88	8.10	7.54	8.13	7.80	8.11	7.71	8.18	7.83	8.14	8.04	8.19	8.01
METER No	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
RW	7.13	7.21	7.84	6.30	7.83	6.73	7.86	6.85	8.01	7.00	7.86	7.47	7.87	7.25
3	7.69	7.28	7.77	6.70	7.69	6.56	7.84	6.83	7.95	6.90	7.82	7.25	7.84	7.15
5	7.66	7.26	7.78	6.55	7.68	6.37	7.84	7.05	7.95	7.02	7.84	7.09	7.83	7.09
6	7.64	7.35	7.77	6.55	7.67	6.26	7.86	7.18	7.97	6.95	7.84	7.06	7.82	7.15
8	7.64	7.38	7.78	6.51	7.66	6.49	7.77	7.28	8.05	6.95	7.84	7.01	7.80	7.04
11	7.69	7.37	7.93	6.05	7.68	6.50	7.77	7.05	8.05	7.70	7.83	7.11	7.77	6.91
*LW	7.74	7.25	8.07	5.38	7.96	7.05	7.95	6.95	8.03	7.29	7.91	7.73	7.89	7.45
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
RW	25.7	24.5	25.4	24.9	25.3	25.0	25.4	23.9	24.5	24.7	24.9	24.9	25.3	25.0
3	25.9	24.5	25.3	25.0	25.1	25.0	25.4	23.8	24.3	24.8	24.7	24.9	25.1	25.0
5	26.1	24.4	25.2	25.0	24.9	24.9	25.1	23.7	24.1	24.8	24.5	25.0	25.0	25.1
6	26.0	24.4	25.2	25.9	24.8	24.7	25.2	23.8	24.1	24.7	24.5	24.9	25.0	25.0
8	25.6	24.4	25.2	24.8	24.8	24.9	25.4	23.8	24.0	24.7	24.6	24.9	25.0	25.0
11	25.9	24.5	25.0	24.9	25.0	24.8	24.3	23.9	24.0	24.8	24.6	24.9	25.2	25.1
*LW	26.0	24.5	25.8	24.0	25.1	25.0	25.9	23.8	25.8	24.8	25.9	24.9	25.7	25.1
THERM No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments: ① IE BEM 6/8/23 → [6.49]
 ② IE BEM 6/8/23 → [7.81]
 ③ IE CBR 6/10/23 → [7.07]

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0439
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	24.5	25.2	25.5	24.3	23.8	24.5	24.8
3	25.2	24.9	25.4	24.1	24.3	24.5	24.2
5	25.1	25.2	25.4	24.3	24.5	24.4	24.4
6	25.2	25.2	25.3	24.2	24.5	24.4	24.4 ^①
8	25.1	25.2	25.3	24.4	24.3	24.4	24.6
11	25.2	25.1	25.0	24.4	24.6	24.4	24.4
*LW	26.1	25.8	25.8	24.0	24.0	24.0	23.9
Meter No.:	2647	2647	2647	2647	2647	2647	2647

Biological Data

Test Organism Data			
Test Organism Batch #	23-0552	DOB	5-29-23
Source	NWDLS	Age	7d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	////	2216143	/// AJ	4	2216143	2216143	CRB 1 SKW
1	2216143	2216143	AD, AN	5	2216144	2216144	CRB 1 CRB
2	2216143	2216143	AN, AS	6	2216144	2216144	CRB 1 CRB
3	2216143	2216143	SKW, AN	7	2216144	////	SKW, //

Comments: ① IE Bern 4.11.23 # [24.2]

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
8	A	5	5	5	5	5	5	5	4	8	A	5	5	5	4	4	4	4	4
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	40	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	4
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	4	4	4
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	4	40	4	4	4		J	5	5	5	5	4	4	3	3
11	A	5	5	5	5	4	4	4	3	11	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	4	4	4		D	5	5	5	5	5	5	5	5
	E	5	5	5	4	4	4	4	4		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	4	3	3	3		F	5	5	5	5	4	4	4	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	4
5	A	5	5	5	5	5	5	5	5	*LW	A	5	5	5	5	5	5	5	5
	B	5	5	5	5	5	4	4	3		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	4	4		F	5	5	5	5	4	4	4	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	4	4	4
	I	5	5	5	5	4	4	4	4		I	5	5	5	5	5	5	5	5
	J	5	5	5	4	4	3	3	3		J	5	5	5	5	4	3	3	3
6	A	5	5	5	5	5	5	5	5		A								
	B	5	5	5	5	5	5	5	5		B								
	C	5	5	5	5	5	4	4	4		C								
	D	5	5	5	4	4	4	4	4		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	5	5	5	5		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	5	4	3	3	3		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	4	3	3		J								
Date	6/9/23	6/9/23	6/10/23	6/10/23	6/9/23	6/9/23	6/10/23	6/11/23	6/12/23	Comments: 01E KRI 6-9-23 -> E53 01E KRI 6-9-23 -> E43									
Time	1550	0950	0900	0955	0850	1015	1050	1550											
Init	CBR	KRI	CBR	CBR	KRI	CBR	CBR	KRI	CBR										

Codes: IE-incorrec entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT (g)
RW	A	1	.00462	.00591	6	A	31	.00457	.00667
	B	2	.00486	.00674		B	32	.00487	.00643
	C	3	.00452	.00647		C	33	.00462	.00600
	D	4	.00465	.00633		D	34	.00450	.00598
	E	5	.00447	.00689		E	35	.00459	.00685
	F	6	.00451	.00622		F	36	.00451	.00614
	G	7	.00481	.00669		G	37	.00466	.00658
	H	8	.00421	.00640		H	38	.00434	.00595
	I	9	.00463	.00653		I	39	.00454	.00648
	J	10	.00502	.00622①		J	40	.00435	.00566
3	A	11	.00479	.00601	8	A	41	.00432	.00585
	B	12	.00482	.00643		B	42	.00436	.00589
	C	13	.00437	.00592		C	43	.00452	.00642
	D	14	.00428	.00605		D	44	.00427	.00610
	E	15	.00457	.00637		E	45	.00468	.00677
	F	16	.00418	.00535		F	46	.00438	.00594
	G	17	.00464	.00674		G	47	.00463	.00598
	H	18	.00467	.00672		H	48	.00436	.00647
	I	19	.00467	.00643		I	49	.00449	.00632
	J	20	.00437	.00607		J	50	.00450	.00567
5	A	21	.00487	.00661	11	A	51	.00462	.00639
	B	22	.00431	.00555		B	52	.00438	.00620
	C	23	.00442	.00631		C	53	.00449	.00632
	D	24	.00451	.00650		D	54	.00430	.00642
	E	25	.00454	.00694		E	55	.00445	.00645
	F	26	.00427	.00593		F	56	.00433	.00547
	G	27	.00467	.00692		G	57	.00410	.00614
	H	28	.00477	.00670		H	58	.00446	.00607
	I	29	.00445	.00593		I	59	.00436	.00640
	J	30	.00444	.00585		J	60	.00435	.00592

Comments: ① IE ABH 6-14-23-5 [00675]

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0439
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	BALANCE ID#	OVEN ID#	BALANCE VERIFICATION INITIALS	DATE/ TARE WEIGHT INITIALS	DATE DRYING INITIATED	TIME DRYING INITIATED	OVEN TEMP(Act/Corr) (°C)	INITIALS
*LW	A	61	.00458	.00594	852	SW-1	CBR	6-3-23	6/12/23	1400	105	KLO/ABJ
	B	62	.00410	.00583								
	C	63	.00440	.00679								
	D	64	.00472	.00658								
	E	65	.00451	.00611								
	F	66	.00454	.00602								
	G	67	.00442	.00654								
	H	68	.00420	.00544								
	I	69	.00419	.00575								
	J	70	.00463	.00567								
	A	71							6-13-23	0900	105	ABH
	B	72										
	C	73										
	D	74										
	E	75										
	F	76										
	G	77										
	H	78										
	I	79										
	J	80										
QA/QC (pans)	1		.00463	.00596								
	11		.00477	.00597								
	21		.00483	.00657								
	31		.00456	.00663								
	41		.00432	.00590								
	51		.00459	.00640								
	61		.00457	.00593								
Ensure QA/QC ± 0.00005												
					COMMENTS: ① IE ABJ 6/16/23 → [1620]							
					TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism							

Test Notes

Include Date, Time, and Initials

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Logir	
Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0 ; NWDLS SOP No. 4023							
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old	BGF1587			
Test Type:	Static-renewal	Test Duration:	7 d				
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c				
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal				
No. of Replicates:	5	No. Organisms per Replicate:	10				
Test Solution Volume:	500 mL	Dilution Water:	RW				
Renewal of Test Solution:	Daily	Aeration :	None, unless DO < 4.0 mg/L				
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>				
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use				
Test Concentrations (%):		Control (RW), 3, 5, 6, 8, 11, *LW		DECHLOR:	NO	Critical Dilution (%):	8

Sample Receipt					
Sample 1 Date/Time:	6/5/23	1045②	Sample 3 Date/Time:	06-09-23	1045②
Sample 2 Date/Time:	06-07-23	1230②	Sample 4 Date/Time:		

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	6-5-23	23-0439 -1	RW060523	AOJ	Day 4	6-9-23	23-0439 -2	23-0205①	KPI
Day 1	6-6-23	23-0439 -1	RW060523	CBR/AOJ	Day 5	6-10-23	23-0439 -3	RW060523	CBR
Day 2	6-7-23	23-0439 -1	RW060523	CBR	Day 6	6-11-23	23-0439 -3	RW060523	BRM
Day 3	6-8-23	23-0439 -2	RW060523	AOJ					

*LW Batch #: 2309720

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments:

① IE CBR 6-9-23 → [RW060523]

② IE BW 6-15-23 → [0800]

Data Sheet Preparation : Initials: CBR/AOJ Date: 5/24/23

End of Test Review : Initials: BRM Date: 4/12/23 Final Review (signature)

TDS

AOJ

6/16/23

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0439
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Test Organism Data

Test Organism Data			
Test Organism Batch #	23-0550	DOB	5-26-23
Source	NWDLS	Age	10 d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2216143	AoJ	4	2216143	2216143	CRB 1 SKW
1	2216143	2216143	M 1 AD	5	2216144	2216144	CRB 1 CRB
2	2216143	2216143	M 1 AD	6	2216144	2216144	CRB 1 CRB
3	2216143	2216143	SKW 1 M	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)								
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
RW	A	8	8	8	7	7	7	7	7	8	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8		D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8		E	8	8	8	8	8	8	8	8
3	A	8	8	8	8	8	8	8	8	11	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8		D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8		E	8	8	8	8	8	8	8	8
5	A	8	8	8	8	8	8	8	8	*LW	A	8	8	8	8	8	8	8	8
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8
	D	8	8	8	8	8	8	8	8		D	8	8	8	8	8	8	8	8
	E	8	8	8	8	8	8	8	8		E	8	8	8	8	8	8	8	8
6	A	8	8	8	8	8	8	8	8		A								
	B	8	8	8	8	8	8	8	8		B								
	C	8	8	8	8	8	8	8	8		C								
	D	8	8	8	8	8	8	8	8		D								
	E	8	8	8	8	8	8	8	8		E								
Date	6/5/23	6/6/23	6/7/23	6/8/23	6/9/23	6/10/23	6/11/23	6/12/23		Comments:									
Time	1550	1130	1345	0900	0950	1045	1140	1650											
Initials	KRZ	KRZ	KRZ	KRZ	KRZ	KRZ	KRZ	KRZ											

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
RW	A	1 *	.00668	.01410	*LW	A	31 *	.00606	.01328
	B	2	.00660	.01660		B	32	.00728	.01628
	C	3	.00686	.01457		C	33	.00698	.01441
	D	4	.00661	.01554		D	34	.00688	.01487
	E	5	.00679	.01512		E	35	.00638	.01393
					Ensure QA/QC ± 0.00005				
3	A	6	.00690	.01429	QA/QC (pans)		1	.00670	.01410
	B	7	.00673	.01506			15	.00657	.01526
	C	8	.00687	.01509			30	.00691	.01463
	D	9	.00678	.01493			31	.00605	.01324
		E	10	.00694	.01421				
					BALANCE ID# <u>852</u> OVEN ID# <u>SW1</u>				
5	A	11	.00671	.01443	BALANCE VERIFICATION INITIALS <u>5-25-23 / JPD</u>				
	B	12	.00689	.01441	DATE / TARE WEIGHT INITIALS <u> </u>				
	C	13	.00709	.01530	DATE DRYING INITIATED <u>6/12/23</u>				
	D	14	.00676	.01517	TIME DRYING INITIATED <u>1720</u>				
	E	15 *	.00656	.01531	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105 ' 105</u>				
6	A	16	.00669	.01513	INITIALS <u>BRM</u>				
	B	17	.00677	.01384	DATE / TIME DRYING TERMINATED <u>6-13-23 0900</u>				
	C	18	.00694	.01676	OVEN TEMPERATURE (°C) (Actual/Corrected) <u>105 ' 105</u>				
	D	19	.00660	.01417	BALANCE VERIFICATION INITIALS <u>ABH</u>				
	E	20	.00668	.01640	TOTAL WEIGHT DATE / INITIALS <u>6-13-23 ABH</u>				
8	A	21	.00649	.01439	COMMENTS:				
	B	22	.00659	.01523					
	C	23	.00656	.01650					
	D	24	.00679	.01502					
	E	25	.00671	.01363					
11	A	26	.00661	.01561	CONT = Control CONC = Concentration REP = Replicate Wt. = Weight ORG. = Organism				
	B	27	.00664	.01368					
	C	28	.00666	.01448					
	D	29	.00623	.01436					
	E	30 *	.00693	.01463					

Water Quality Parameters

DATE	6/5/23	6/6/23	6-7-23	6-8-23	6-9-23	6-10-23	6-11-23	6/12/23
TIME	1520	0850	0850	0830	0830	0830	0830	0815
INITIALS	KRS CBR	ADJ KRI	KRI	KAO CBR	KAO CBR	KAO CBR	KAO CBR	KAO CBR
DAY	0	1	2	3	4	5	6	7
Solution	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION							
RW	7.99	8.02	8.01	7.98	8.07	8.01	8.08	7.94
3	8.00	8.03	8.01	7.93	8.06	8.00	8.07	7.95
5	8.00	8.04	8.01	7.97	8.06	7.99	8.10	7.97
6	7.99	8.04	8.00	7.96	8.05	8.00	8.08	7.97
8	7.99	8.04	8.00	7.98	8.04	8.00	8.07	7.98
11	7.99	8.04	8.02	7.94	8.04	8.03	8.07	7.98
*LW	8.12	8.00	8.10	7.92	8.13	7.96	8.11	7.90
METER No	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07	AM-07
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION							
RW	7.73	7.65	7.84	6.86	7.83	6.96	7.86	7.31
3	7.69	7.63	7.77	6.75	7.69	6.93	7.84	7.18
5	7.66	7.58	7.78	6.70	7.68	6.80	7.84	7.22
6	7.64	7.63	7.77	6.72	7.67	6.79	7.81	7.37
8	7.64	7.63	7.78	6.75	7.66	6.85	7.77	7.39
11	7.69	7.60	7.93	6.52	7.68	6.04	7.76	7.35
*LW	7.74	7.83	8.07	6.85	7.96	6.93	7.95	7.45
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)							
RW	25.7	24.2	25.4	24.5	25.3	24.6	25.4	23.5
3	25.9	24.1	25.3	24.5	25.1	24.6	25.4	23.6
5	26.1	24.1	25.2	24.4	24.9	24.6	25.1	23.5
6	26.0	24.0	25.2	24.4	24.8	24.3	25.2	23.3
8	25.6	24.0	25.2	24.5	24.8	24.6	25.4	23.4
11	25.9	24.1	25.0	24.5	25.0	24.6	24.3	23.6
*LW	26.0	24.4	25.8	25.6	25.1	24.7	25.9	23.6
THERM No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
Offset (+°C)	0	0	0	0	0	0	0	0

Comments: (1) IE Bcm 6.8.23 → [AO]

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0439
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Conc (%)	Salinity (‰)						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
RW	24.5	25.2	25.5	24.3	23.8	24.5	24.8
3	25.2	24.9	25.4	24.1	24.3	24.5	24.2
5	25.1	25.2	25.4	24.3	24.5	24.4	24.4
6	25.2	25.2	25.3	24.2	24.5	24.4	24.2
8	25.1	25.2	25.3	24.4	24.3	24.4	24.6
11	25.2	25.1	25.0	24.0 ①	24.6	24.4	24.4
*LW	26.1	25.8	25.8	24.0	24.0	24.0	23.9
Meter No.:	2647	2647	2647	2647	2647	2647	2647

Comments: ① IE BRM 4-8-23 → [24.4]

Test Notes

Include Date, Time, and Initials

Codes: IE-Incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 13-9745-5104	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:10	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 18-7594-9572	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 15:50	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	14.72%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	88	75	2	18	Asymp	0.2908	Non-Significant Effect
		5	93	75	2	18	Asymp	0.4569	Non-Significant Effect
		6	93	75	2	18	Asymp	0.4569	Non-Significant Effect
		8	94	75	2	18	Asymp	0.4923	Non-Significant Effect
		11	105	75	2	18	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.08784	<<	0.4	Yes	Passes Criteria
Control Resp	0.96	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.124062	0.0248124	5	0.9361	0.4651	Non-Significant Effect
Error	1.43126	0.0265049	54			
Total	1.55533		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	7.688	15.09	0.1743	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8451	0.9459	2.2E-06	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%
3		10	0.8600	0.7422	0.9778	0.9000	0.6000	1.0000	0.0521	19.15%	10.42%
5		10	0.8800	0.7594	1.0000	1.0000	0.6000	1.0000	0.0533	19.17%	8.33%
6		10	0.8800	0.7594	1.0000	1.0000	0.6000	1.0000	0.0533	19.17%	8.33%
8		10	0.9000	0.7988	1.0000	1.0000	0.6000	1.0000	0.0447	15.71%	6.25%
11		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%
3		10	1.182	1.046	1.318	1.226	0.8861	1.345	0.06012	16.08%	8.91%
5		10	1.206	1.067	1.345	1.345	0.8861	1.345	0.06152	16.13%	7.08%
6		10	1.206	1.067	1.345	1.345	0.8861	1.345	0.06152	16.13%	7.08%
8		10	1.228	1.11	1.346	1.345	0.8861	1.345	0.05199	13.39%	5.37%
11		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	0.00%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 13-9745-5104

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 26 Jun-23 10:10

Analysis: Nonparametric-Control vs Treatments

Status Level: 1

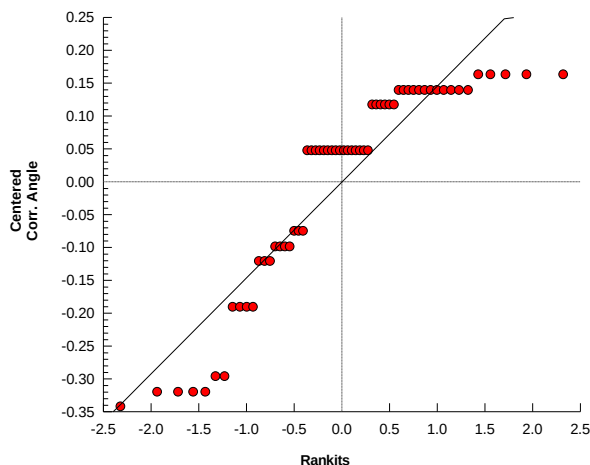
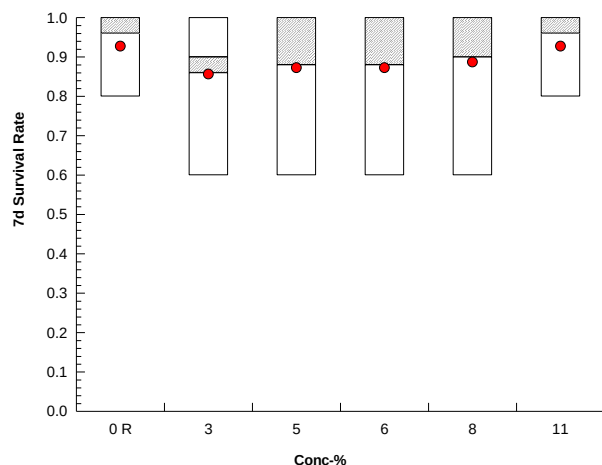
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000
3		0.6000	1.0000	0.8000	0.8000	0.8000	0.6000	1.0000	1.0000	1.0000	1.0000
5		1.0000	0.6000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	0.8000	0.6000
6		1.0000	1.0000	0.8000	0.8000	1.0000	1.0000	1.0000	0.6000	1.0000	0.6000
8		0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	0.8000	1.0000	0.6000
11		1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	0.8000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.107
3		0.8861	1.345	1.107	1.107	1.107	0.8861	1.345	1.345	1.345	1.345
5		1.345	0.8861	1.345	1.345	1.345	1.107	1.345	1.345	1.107	0.8861
6		1.345	1.345	1.107	1.107	1.345	1.345	1.345	0.8861	1.345	0.8861
8		1.107	1.345	1.345	1.345	1.345	1.345	1.107	1.107	1.345	0.8861
11		1.345	1.345	1.345	1.345	1.345	1.107	1.345	1.345	1.345	1.107

Graphics



CETIS Analytical Report

Report Date: 29 Jun-23 11:36 (p 3 of 6)
 Test Code/ID: 23-0439 / 05-5566-8631

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 01-5888-7902	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:10	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 18-7594-9572	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 15:50	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	20.49%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.5582	2.289	0.072	18	CDF	0.6201	Non-Significant Effect
		5	-0.08246	2.289	0.072	18	CDF	0.8567	Non-Significant Effect
		6	0.2664	2.289	0.072	18	CDF	0.7424	Non-Significant Effect
		8	0.4504	2.289	0.072	18	CDF	0.6675	Non-Significant Effect
		11	-0.2093	2.289	0.072	18	CDF	0.8881	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits		Overlap	Decision
		Lower	Upper		
Control CV	0.2741	<<	0.4	Yes	Passes Criteria
Control Resp	0.3522	0.2	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0047211	0.0009442	5	0.1899	0.9652	Non-Significant Effect
Error	0.268435	0.0049710	54			
Total	0.273156		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	3.383	15.09	0.6411	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9799	0.9459	0.4223	Normal Distribution

Mean Dry Biomass-mg Summary

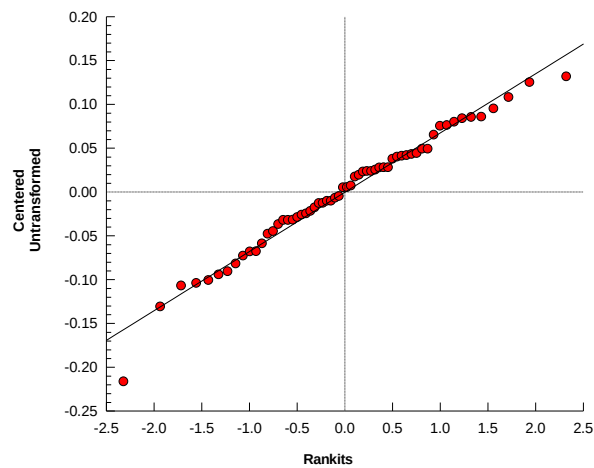
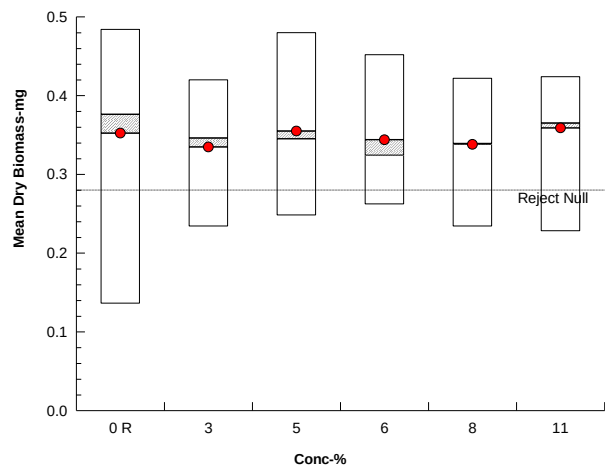
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3522	0.2831	0.4213	0.376	0.136	0.484	0.03053	27.41%	0.00%
3		10	0.3346	0.291	0.3782	0.346	0.234	0.42	0.01927	18.21%	5.00%
5		10	0.3548	0.3024	0.4072	0.345	0.248	0.48	0.02318	20.66%	-0.74%
6		10	0.3438	0.2983	0.3893	0.324	0.262	0.452	0.02013	18.51%	2.39%
8		10	0.338	0.2934	0.3826	0.339	0.234	0.422	0.01971	18.44%	4.03%
11		10	0.3588	0.3166	0.401	0.365	0.228	0.424	0.01867	16.45%	-1.87%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.258	0.376	0.39	0.136	0.484	0.342	0.376	0.438	0.38	0.342
3		0.244	0.322	0.31	0.354	0.36	0.234	0.42	0.41	0.352	0.34
5		0.348	0.248	0.378	0.398	0.48	0.342	0.45	0.326	0.296	0.282
6		0.42	0.312	0.276	0.296	0.452	0.326	0.384	0.322	0.388	0.262
8		0.306	0.306	0.38	0.366	0.418	0.312	0.27	0.422	0.366	0.234
11		0.354	0.364	0.366	0.424	0.4	0.228	0.408	0.322	0.408	0.314

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 01-5888-7902	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 26 Jun-23 10:10	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 09-8957-9272	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:10	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 18-7594-9572	Test Type: Growth-Survival-Fec (7d)	Analyst: Arturo Orozco
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 15:50	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	17.50%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-0.8858	2.289	0.064	18	CDF	0.9782	Non-Significant Effect
		5	-1.385	2.289	0.064	18	CDF	0.9953	Non-Significant Effect
		6	-1.063	2.289	0.064	18	CDF	0.9870	Non-Significant Effect
		8	-0.4043	2.289	0.064	18	CDF	0.9263	Non-Significant Effect
		11	-0.1835	2.289	0.064	18	CDF	0.8821	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0115591	0.0023118	5	0.5867	0.7100	Non-Significant Effect
Error	0.212773	0.0039402	54			
Total	0.224332		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.232	15.09	0.1439	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9491	0.9459	0.0141	Normal Distribution

Mean Dry Weight-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.3672	0.3001	0.4343	0.378	0.136	0.484	0.02967	25.55%	0.00%
3		10	0.3921	0.3615	0.4227	0.3983	0.322	0.45	0.01353	10.91%	-6.77%
5		10	0.4061	0.3692	0.443	0.4057	0.326	0.48	0.01631	12.70%	-10.59%
6		10	0.397	0.349	0.4451	0.386	0.312	0.5367	0.02123	16.91%	-8.12%
8		10	0.3785	0.3336	0.4235	0.373	0.306	0.5275	0.01988	16.61%	-3.09%
11		10	0.3724	0.3413	0.4034	0.3793	0.285	0.424	0.01374	11.67%	-1.40%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.3225	0.376	0.39	0.136	0.484	0.342	0.376	0.438	0.38	0.4275
3		0.4067	0.322	0.3875	0.4425	0.45	0.39	0.42	0.41	0.352	0.34
5		0.348	0.4133	0.378	0.398	0.48	0.4275	0.45	0.326	0.37	0.47
6		0.42	0.312	0.345	0.37	0.452	0.326	0.384	0.5367	0.388	0.4367
8		0.3825	0.306	0.38	0.366	0.418	0.312	0.3375	0.5275	0.366	0.39
11		0.354	0.364	0.366	0.424	0.4	0.285	0.408	0.322	0.408	0.3925

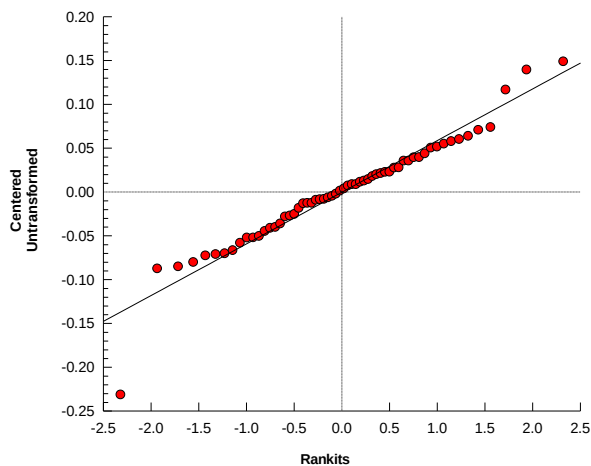
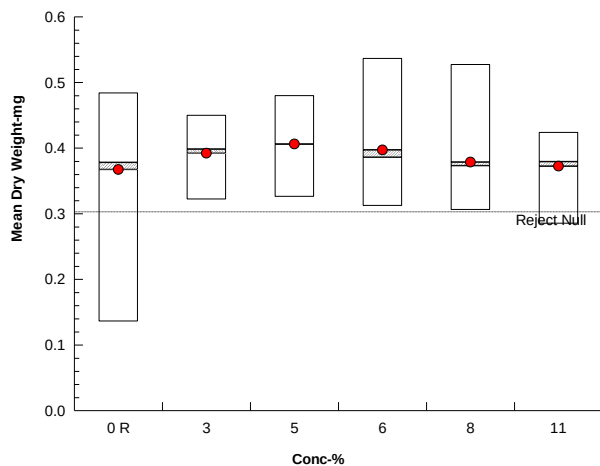
Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 09-8957-9272 Endpoint: Mean Dry Weight-mg
Analyzed: 26 Jun-23 10:10 Analysis: Parametric-Control vs Treatments

CETIS Version: CETISv1.9.4
Status Level: 1

Graphics



CETIS Analytical Report

Report Date: 29 Jun-23 11:37 (p 1 of 6)
 Test Code/ID: 23-0439 / 16-2469-0222

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 06-4064-1384	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:12	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4001-8679	Test Type: Growth-Survival (7d)	Analyst: Brianna Milam
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 16:50	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Actinopterygii	Source: NWDLS Age: 10d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	4.45%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		5	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		6	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		8	30	16	1	8	Asymp	0.9446	Non-Significant Effect
		11	30	16	1	8	Asymp	0.9446	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.05734	<<	0.4	Yes	Passes Criteria
Control Resp	0.975	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0056216	0.0011243	5	1	0.4389	Non-Significant Effect
Error	0.0269838	0.0011243	24			
Total	0.0326054		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	543.4	15.09	2.9E-07	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4063	0.9031	6.2E-10	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	0.9750	0.9056	1.0000	1.0000	0.8750	1.0000	0.0250	5.73%	0.00%
3		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%
6		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-2.56%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.356	1.254	1.458	1.393	1.209	1.393	0.03673	6.06%	0.00%
3		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	-2.71%
5		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	-2.71%
6		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	-2.71%
8		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	-2.71%
11		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	-2.71%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 06-4064-1384 Endpoint: 7d Survival Rate
Analyzed: 26 Jun-23 10:12 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

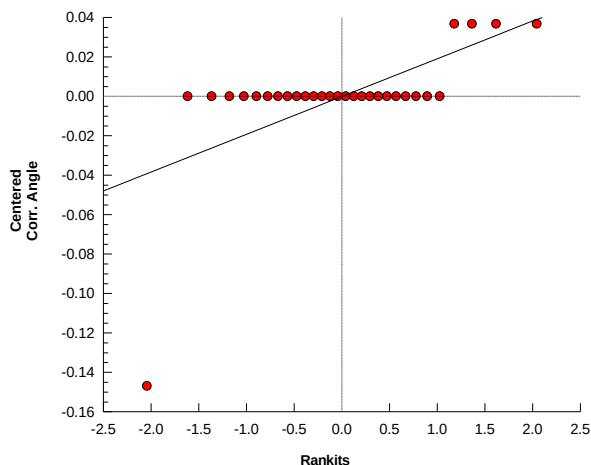
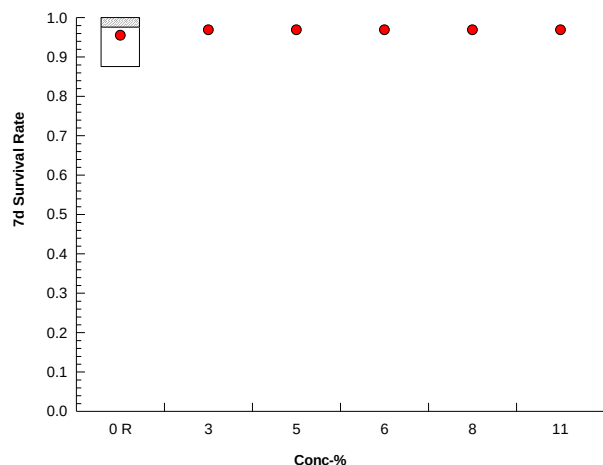
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.8750	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	1.0000
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.209	1.393	1.393	1.393	1.393
3		1.393	1.393	1.393	1.393	1.393
5		1.393	1.393	1.393	1.393	1.393
6		1.393	1.393	1.393	1.393	1.393
8		1.393	1.393	1.393	1.393	1.393
11		1.393	1.393	1.393	1.393	1.393

Graphics



CETIS Analytical Report

Report Date: 29 Jun-23 11:37 (p 3 of 6)
 Test Code/ID: 23-0439 / 16-2469-0222

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 06-0152-6497	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:12	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4001-8679	Test Type: Growth-Survival (7d)	Analyst: Brianna Milam
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 16:50	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Actinopterygii	Source: NWDLS Age: 10d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	15.65%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	1.079	2.362	0.166	8	CDF	0.3853	Non-Significant Effect
		5	0.6337	2.362	0.166	8	CDF	0.5873	Non-Significant Effect
		6	-0.08189	2.362	0.166	8	CDF	0.8564	Non-Significant Effect
		8	0.2706	2.362	0.166	8	CDF	0.7413	Non-Significant Effect
		11	0.8759	2.362	0.166	8	CDF	0.4761	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	TAC Limits			Decision
		Lower	Upper	Overlap	
Control CV	0.1216	<<	0.4	Yes	Passes Criteria
Control Resp	1.06	0.5	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0277856	0.0055571	5	0.4508	0.8085	Non-Significant Effect
Error	0.295828	0.0123262	24			
Total	0.323614		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	5.586	15.09	0.3486	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9752	0.9031	0.6888	Normal Distribution

Mean Dry Biomass-mg Summary

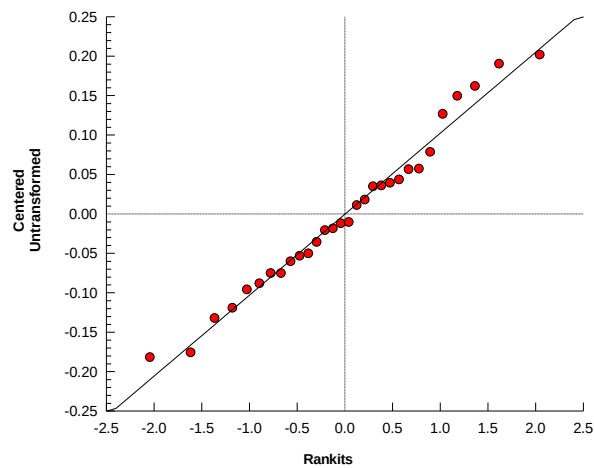
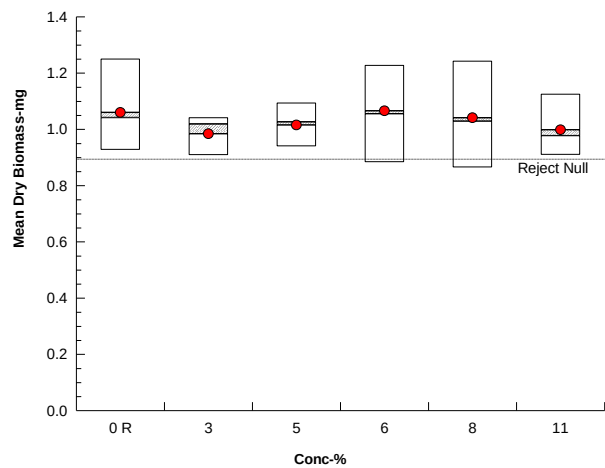
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.06	0.8997	1.22	1.041	0.9275	1.25	0.05763	12.16%	0.00%
3		5	0.984	0.9063	1.062	1.019	0.9087	1.041	0.02799	6.36%	7.15%
5		5	1.015	0.9373	1.093	1.026	0.94	1.094	0.02808	6.18%	4.20%
6		5	1.065	0.8732	1.258	1.055	0.8838	1.227	0.06927	14.54%	-0.54%
8		5	1.041	0.8695	1.212	1.029	0.865	1.243	0.06169	13.25%	1.79%
11		5	0.9982	0.8984	1.098	0.9775	0.91	1.125	0.03598	8.06%	5.80%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	0.9275	1.25	0.9637	1.116	1.041
3		0.9237	1.041	1.028	1.019	0.9087
5		0.965	0.94	1.026	1.051	1.094
6		1.055	0.8838	1.227	0.9463	1.215
8		0.9875	1.08	1.243	1.029	0.865
11		1.125	0.91	0.9775	1.016	0.9625

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 06-0152-6497	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 26 Jun-23 10:12	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 20-7611-2427	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 26 Jun-23 10:12	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 04-4001-8679	Test Type: Growth-Survival (7d)	Analyst: Brianna Milam
Start Date: 05 Jun-23 15:50	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 12 Jun-23 16:50	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 1h	Taxon: Actinopterygii	Source: NWDLS Age: 10d
Sample ID: 05-4996-7137	Code: 20C7D521	Project: NT-100056
Sample Date: 05 Jun-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 05 Jun-23 14:51	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	14.71%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	1.511	2.362	0.16	8	CDF	0.2205	Non-Significant Effect
		5	1.049	2.362	0.16	8	CDF	0.3982	Non-Significant Effect
		6	0.3066	2.362	0.16	8	CDF	0.7273	Non-Significant Effect
		8	0.6723	2.362	0.16	8	CDF	0.5697	Non-Significant Effect
		11	1.3	2.362	0.16	8	CDF	0.2947	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0393242	0.0078648	5	0.6868	0.6381	Non-Significant Effect
Error	0.274827	0.0114511	24			
Total	0.314151		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	5.361	15.09	0.3734	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9745	0.9031	0.6668	Normal Distribution

Mean Dry Weight-mg Summary

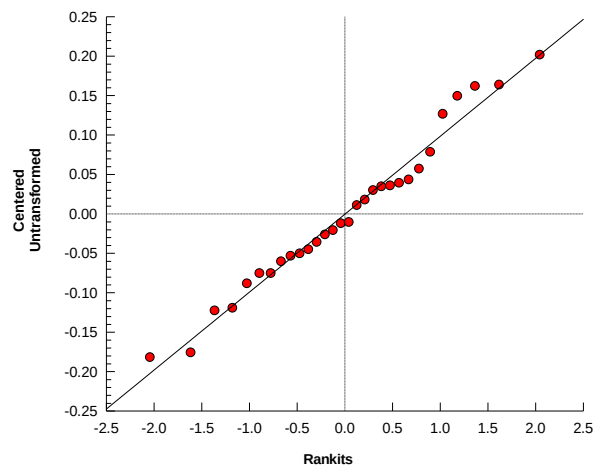
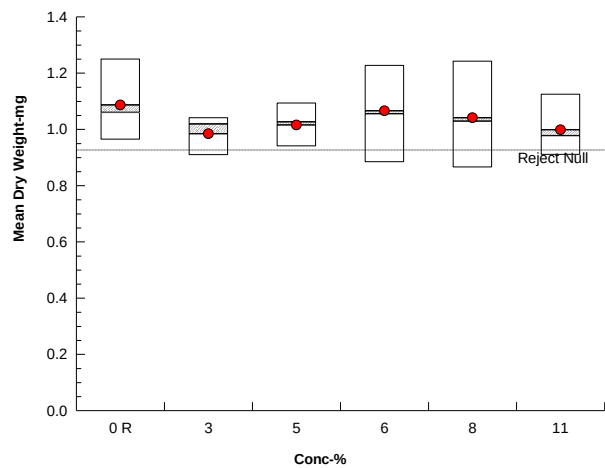
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.086	0.9539	1.219	1.06	0.9637	1.25	0.04766	9.81%	0.00%
3		5	0.984	0.9063	1.062	1.019	0.9087	1.041	0.02799	6.36%	9.41%
5		5	1.015	0.9373	1.093	1.026	0.94	1.094	0.02808	6.18%	6.54%
6		5	1.065	0.8732	1.258	1.055	0.8838	1.227	0.06927	14.54%	1.91%
8		5	1.041	0.8695	1.212	1.029	0.865	1.243	0.06169	13.25%	4.19%
11		5	0.9982	0.8984	1.098	0.9775	0.91	1.125	0.03598	8.06%	8.10%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.06	1.25	0.9637	1.116	1.041
3		0.9237	1.041	1.028	1.019	0.9087
5		0.965	0.94	1.026	1.051	1.094
6		1.055	0.8838	1.227	0.9463	1.215
8		0.9875	1.08	1.243	1.029	0.865
11		1.125	0.91	0.9775	1.016	0.9625

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 20-7611-2427	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 26 Jun-23 10:12	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test

All Matching Labs

Test Type: Growth-Survival-Fec (7d)

Organism: Mysidopsis bahia (Atlantic Mysid)

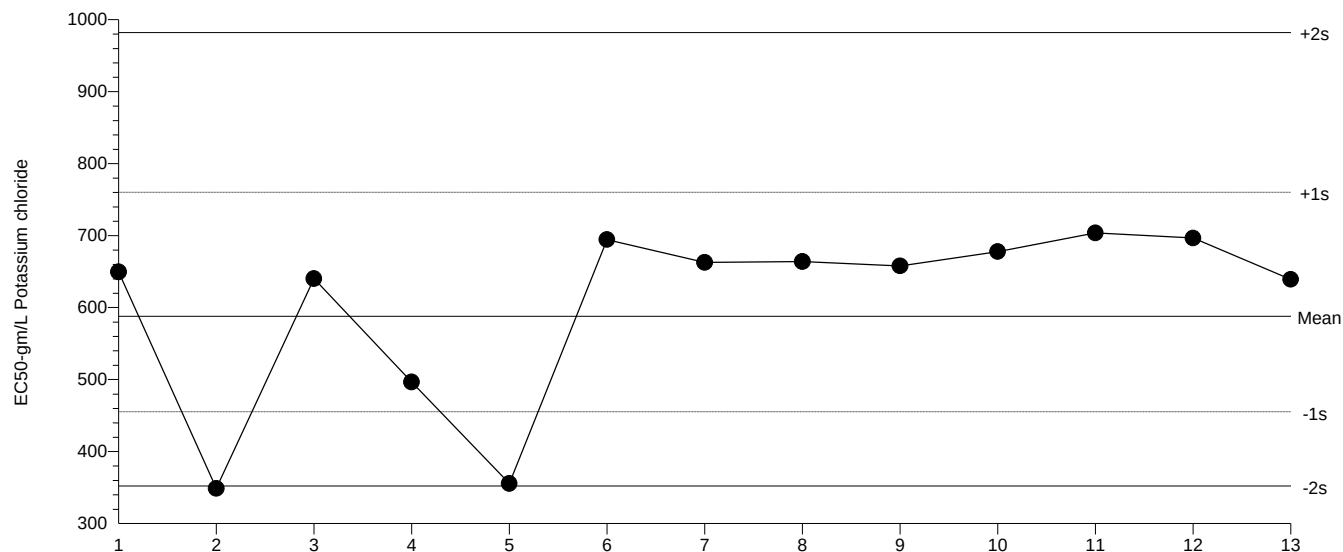
Material: Potassium chloride

Protocol: EPA/821/R-02-014 (2002)

Endpoint: 7d Survival Rate

Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 588.2

Count: 12

-1s Warning Limit: 455.2

-2s Action Limit: 352.3

Sigma: n/a

CV: 26.10%

+1s Warning Limit: 760

+2s Action Limit: 982

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	649.6	61.41	0.3875			01-6211-0221	11-5901-8122	NWDLS Environ. Toxicol.
2			22	16:00	348.7	-239.5	-2.04	(-)	(-)	09-3616-1421	00-9150-0822	NWDLS Environ. Toxicol.
3		Jul	20	14:40	640.2	52.01	0.3306			11-8307-1033	20-9270-2210	NWDLS Environ. Toxicol.
4		Aug	31	10:45	496.5	-91.68	-0.6612			18-6777-7018	18-1763-7164	NWDLS Environ. Toxicol.
5		Sep	21	13:15	355.5	-232.7	-1.965	(-)		13-6667-4200	15-5979-0136	NWDLS Environ. Toxicol.
6		Oct	19	12:00	694.4	106.3	0.648			09-3115-0814	15-7275-3360	NWDLS Environ. Toxicol.
7		Nov	3	13:45	662.7	74.56	0.4657			19-3160-7260	04-3340-0504	NWDLS Environ. Toxicol.
8		Dec	12	13:00	663.9	75.72	0.4725			06-4905-6652	20-1321-0134	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	657.9	69.69	0.4369			05-5770-2114	18-8602-2070	NWDLS Environ. Toxicol.
10		Feb	2	10:30	677.7	89.57	0.553			08-8071-4725	11-7916-4212	NWDLS Environ. Toxicol.
11		Mar	9	13:30	703.7	115.6	0.7			09-8373-8162	02-6662-5658	NWDLS Environ. Toxicol.
12		Apr	5	10:10	696.5	108.4	0.6598			12-5221-0131	20-7551-8253	NWDLS Environ. Toxicol.
13		May	4	15:30	639.1	50.96	0.3242			20-0824-9269	19-4652-2693	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

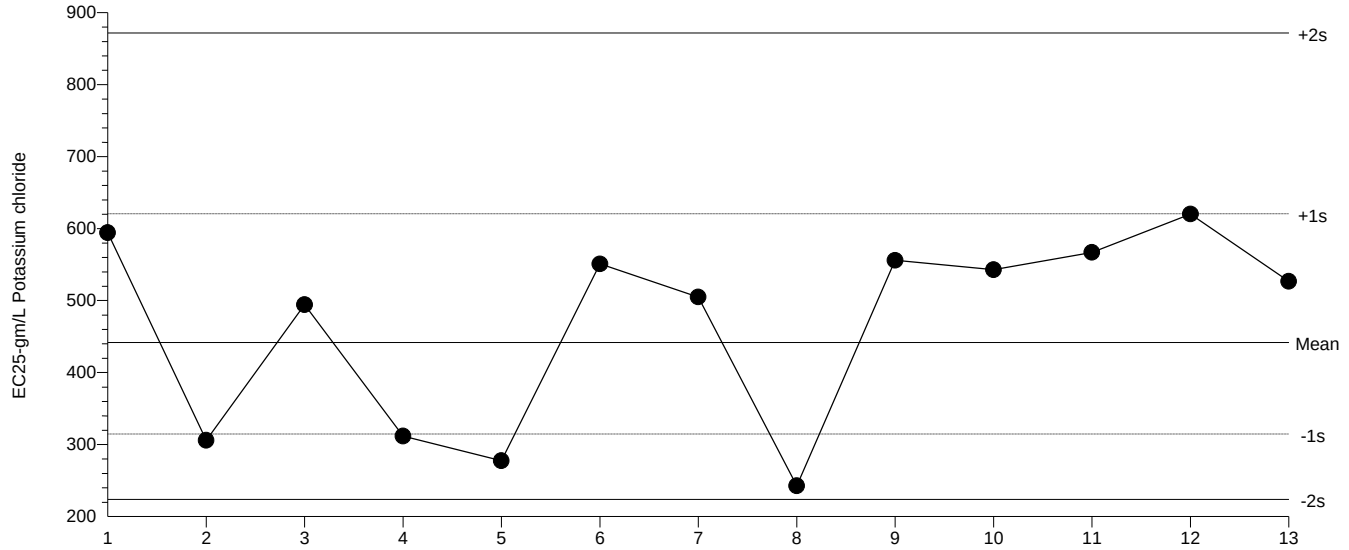
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: Mean Dry Biomass-mg

Material: Potassium chloride
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Mean: 441.9

Count: 12

-1s Warning Limit: 314.5

-2s Action Limit: 223.9

Sigma: n/a

CV: 35.00%

+1s Warning Limit: 620.7

+2s Action Limit: 872

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	594.3	152.4	0.8719			01-6211-0221	06-7581-2449	NWDLS Environ. Toxicol.
2			22	16:00	305.9	-136	-1.082	(-)		09-3616-1421	03-4116-2000	NWDLS Environ. Toxicol.
3		Jul	20	14:40	494.2	52.34	0.3294			11-8307-1033	07-3382-9498	NWDLS Environ. Toxicol.
4		Aug	31	10:45	311.8	-130.1	-1.026	(-)		18-6777-7018	09-8654-5792	NWDLS Environ. Toxicol.
5		Sep	21	13:15	277.5	-164.3	-1.368	(-)		13-6667-4200	10-8885-9716	NWDLS Environ. Toxicol.
6		Oct	19	12:00	550.9	109	0.6488			09-3115-0814	01-6337-8754	NWDLS Environ. Toxicol.
7		Nov	3	13:45	504.9	63.02	0.3923			19-3160-7260	19-5328-5189	NWDLS Environ. Toxicol.
8		Dec	12	13:00	242.7	-199.1	-1.762	(-)		06-4905-6652	20-7921-9787	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	555.9	114	0.6753			05-5770-2114	18-4604-0045	NWDLS Environ. Toxicol.
10		Feb	2	10:30	542.8	101	0.6055			08-8071-4725	02-7679-2403	NWDLS Environ. Toxicol.
11		Mar	9	13:30	566.9	125.1	0.7333			09-8373-8162	01-5567-8537	NWDLS Environ. Toxicol.
12		Apr	5	10:10	620.2	178.3	0.9973			12-5221-0131	14-8696-9525	NWDLS Environ. Toxicol.
13		May	4	15:30	526.6	84.78	0.5164			20-0824-9269	02-7703-6644	NWDLS Environ. Toxicol.

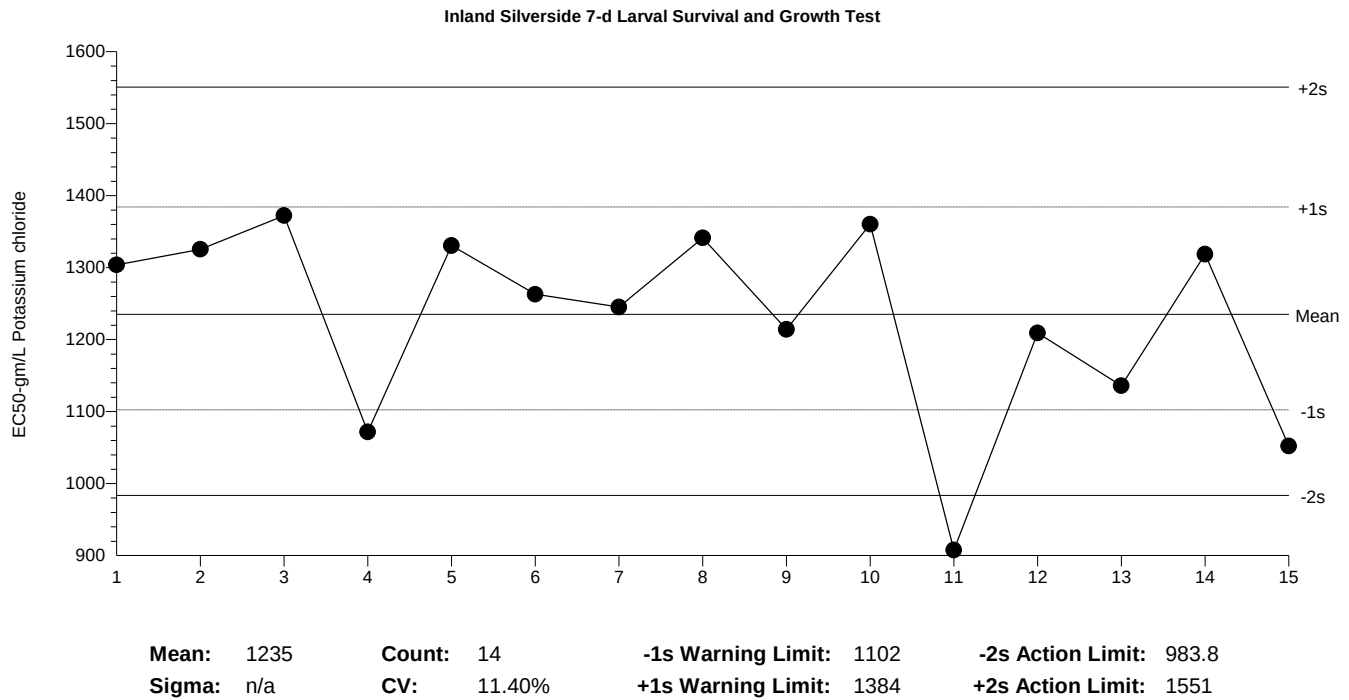
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1304	68.58	0.4748			21-0733-6817	12-9756-8876	NWDLS Environ. Toxicol.
2			22	16:30	1325	90.23	0.6195			06-9820-7448	08-3343-3400	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1372	137	0.9244			04-3327-2237	09-2136-3057	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1072	-163.4	-1.247	(-)		00-7357-5399	04-3638-1725	NWDLS Environ. Toxicol.
5		Sep	21	13:10	1331	95.44	0.654			19-5010-2951	10-6041-0723	NWDLS Environ. Toxicol.
6		Oct	19	12:30	1263	27.68	0.1947			14-8758-8127	09-2601-9551	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1245	9.941	0.07044			19-0042-2283	06-4677-3049	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1341	106	0.7234			12-9423-8120	19-6787-9140	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	1214	-21.02	-0.1508			08-4361-7466	16-1040-9564	NWDLS Environ. Toxicol.
10			18	11:50	1360	125.1	0.8477			07-9240-7672	14-5325-7119	NWDLS Environ. Toxicol.
11		Feb	2	10:30	907.5	-327.7	-2.709	(-)	(-)	07-7481-5869	00-3563-2871	NWDLS Environ. Toxicol.
12			16	13:00	1209	-26.12	-0.1878			16-5741-0843	00-9267-7337	NWDLS Environ. Toxicol.
13		Mar	7	14:30	1136	-99.32	-0.7366			13-2753-6799	19-5347-3562	NWDLS Environ. Toxicol.
14		Apr	20	14:00	1319	83.37	0.5739			01-2157-4433	01-5171-6245	NWDLS Environ. Toxicol.
15		May	4	12:30	1052	-183.1	-1.41	(-)		17-5216-4390	09-5481-0405	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

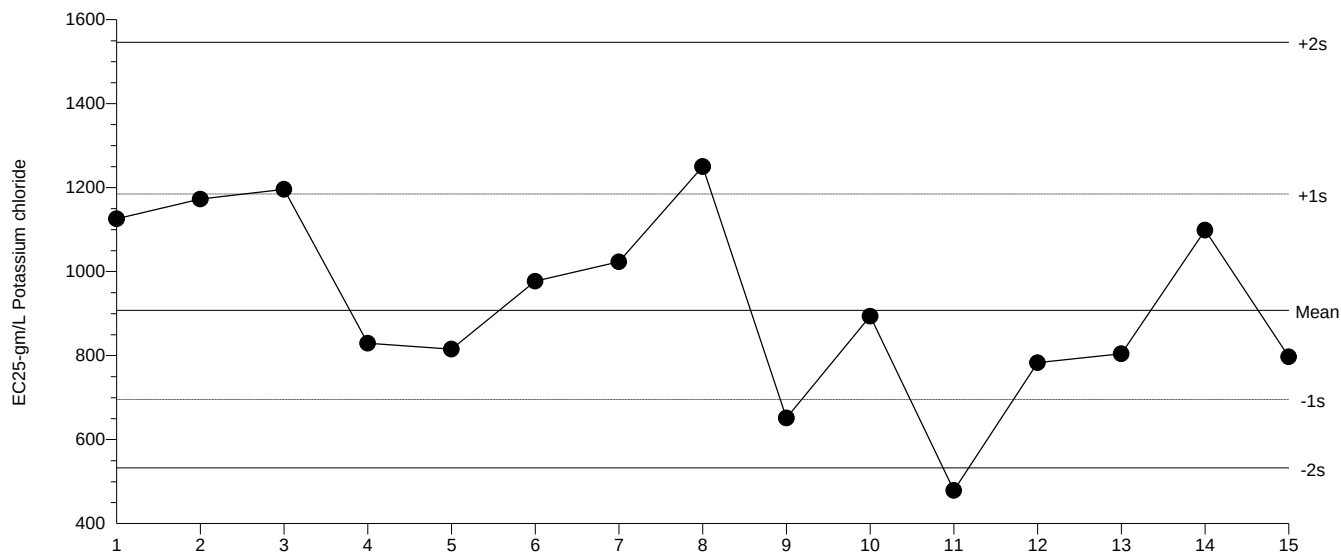
All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Potassium chloride
Source: Reference Toxicant-REF

Inland Silverside 7-d Larval Survival and Growth Test



Mean: 907.8

Count: 14

-1s Warning Limit: 695.5

-2s Action Limit: 532.9

Sigma: n/a

CV: 27.10%

+1s Warning Limit: 1185

+2s Action Limit: 1546

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1126	217.8	0.8074			21-0733-6817	17-3189-9270	NWDLS Environ. Toxicol.
2			22	16:30	1173	264.7	0.961			06-9820-7448	18-1516-3722	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1196	287.8	1.034	(+)		04-3327-2237	10-2833-6233	NWDLS Environ. Toxicol.
4		Aug	31	14:00	829.3	-78.44	-0.3394			00-7357-5399	13-8104-1347	NWDLS Environ. Toxicol.
5		Sep	21	13:10	815.3	-92.44	-0.4033			19-5010-2951	12-8093-9078	NWDLS Environ. Toxicol.
6		Oct	19	12:30	976.9	69.17	0.2758			14-8758-8127	02-0371-2541	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1023	115.3	0.4489			19-0042-2283	13-9374-3918	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1250	342.2	1.201	(+)		12-9423-8120	13-4506-3415	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	651.3	-256.5	-1.247	(-)		08-4361-7466	04-2200-5192	NWDLS Environ. Toxicol.
10			18	11:50	893.7	-14.11	-0.05883			07-9240-7672	21-0019-2346	NWDLS Environ. Toxicol.
11		Feb	2	10:30	478.9	-428.9	-2.402	(-)	(-)	07-7481-5869	09-5599-2356	NWDLS Environ. Toxicol.
12			16	13:00	782.9	-124.9	-0.5557			16-5741-0843	06-2226-5122	NWDLS Environ. Toxicol.
13		Mar	7	14:30	804.1	-103.7	-0.4555			13-2753-6799	16-7456-6142	NWDLS Environ. Toxicol.
14		Apr	20	14:00	1099	190.9	0.7167			01-2157-4433	05-2206-1484	NWDLS Environ. Toxicol.
15		May	4	12:30	796.9	-110.9	-0.4892			17-5216-4390	02-4604-4670	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 06-04-23 0800 TO 06-05-23 0800
NO. 2: FROM 06-06-23 0800 TO 06-07-23 0800
NO. 3: FROM 06-08-23 0800 TO 06-09-23 0800

Test Initiated: 1550 TIME 06-05-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	80	60	100	100	80	100
	B	100	100	60	100	100	100
	C	100	80	100	80	100	100
	D	100	80	100	80	100	100
	E	100	80	100	100	100	100
	F	100	60	80	100	100	80
	G	100	100	100	100	80	100
	H	100	100	100	60	80	100
	I	100	100	80	100	100	100
	J	80	100	60	60	60	80
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	100	100	100	100	100
	7 day	96	86	88	88	90	96
	CV%❶	8.78	19.15	19.17	19.17	15.71	8.78

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.26	0.24	0.35	0.42	0.31	0.35
B	0.38	0.32	0.25	0.31	0.31	0.36
C	0.39	0.31	0.38	0.28	0.38	0.37
D	0.14	0.35	0.40	0.30	0.37	0.42
E	0.48	0.36	0.48	0.45	0.42	0.40
F	0.34	0.23	0.34	0.33	0.31	0.23
G	0.38	0.42	0.45	0.38	0.27	0.41
H	0.44	0.41	0.33	0.32	0.42	0.32
I	0.38	0.35	0.30	0.39	0.37	0.41
J	0.34	0.34	0.28	0.26	0.23	0.31
Mean Dry Weight in Milligrams	0.35	0.33	0.35	0.34	0.34	0.36
CV (%)❶	27.41	18.21	20.66	18.51	18.44	16.45
PMDS	Acceptable Range: 37 or less					20.49

❶ coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 06-04-23 0800 TO 06-05-23 0800
NO. 2: FROM 06-06-23 0800 TO 06-07-23 0800
NO. 3: FROM 06-08-23 0800 TO 06-09-23 0800

Test Initiated: 1550 TIME 06-05-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^①
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	88	100	100	100	100	100	100	98	5.73
3%	100	100	100	100	100	100	100	100	0.00
5%	100	100	100	100	100	100	100	100	0.00
6%	100	100	100	100	100	100	100	100	0.00
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

① coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^❶
	A	B	C	D	E		
0%	0.93	1.25	0.96	1.12	1.04	1.06	12.16
3%	0.92	1.04	1.03	1.02	0.91	0.98	6.36
5%	0.96	0.94	1.03	1.05	1.09	1.02	6.18
6%	1.06	0.88	1.23	0.95	1.22	1.06	14.54
8%	0.99	1.08	1.24	1.03	0.86	1.04	13.25
11%	1.12	0.91	0.98	1.02	0.96	1.00	8.06
PMSD	Acceptable Range: 28 or less					15.65	

Weights are for: preserved larvae, or X unpreserved larvae

❶ coefficient of variation = standard deviation x 100/mean

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



130 S. Trade Center Parkway, Conroe TX 77385
Tel: (936) 321-6060
Email: lab@nwdls.com
[www. NWDLS.com](http://www.NWDLS.com)
TCEQ T104704238-23-39

October 06, 2023

LABORATORY REPORT

Clinton Wallace, PG
Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Report ID: 20231006084646MAM

The following test results meet all NELAP requirements for analytes for which certification is available. Any deviations from our quality system will be noted in the case narrative. All analyses performed by North Water District Laboratory Services, Inc. unless noted.

For questions regarding this report, contact Monica Martin at 936-321-6060.

Sincerely,

Matt Matthews
NPDES Project Manager



Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/06/2023 08:46

Work Order Case Narrative

NWDLS Job No: 23I0696, 23I0698, 23I0699 (23-0648)
TPDES Permit No: WQ0005143000
Project: Providence Engineering & Env. Group - Natgasoline LLC
Sample Locations: Outfall #001
Test Description: 3Q'23 (chronic) - [*M. bahia*, *M. beryllina*]

Enclosed is the NWDLS report and supporting records for toxicity testing. Toxicity was not observed in these tests.

For your convenience, we have included the appropriate Tables as required by your permit and/or DMR parameter codes for reporting to the agency.

Work Order Case Narrative

Work Order Case Narrative

CHRONIC RESULT SUMMARY

PERMITTEE	Natgasoline LLC Outfall 001			
TPDES PERMIT NO.	WQ0005143000			
SPECIES	<i>Mysidopsis bahia</i>		TEST DATE	11-18 Sep 2023
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.20	≤ 40
Control Results	98	6.45	0.42	10.21
Critical Dilution (8%)	94	14.36	0.39	17.55
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP3E	0
Report the NOEC % for survival:			TOP3E	11
Report the LOEC % for survival:			TXP3E	>11
Is the NOEC for growth less than the critical dilution?		No	TWP3E	0
Report the NOEC % for growth:			TPP3E	11
Report the LOEC % for growth:			TYP3E	>11
PMSD (Acceptable Range: 37 or less):				14.87
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

SPECIES	<i>Menidia beryllina</i>		TEST DATE	11-18 Sep 2023
TEST RESULTS	Pass			
Parameter	Survival		Sublethal	
	Percentage (%)	Coef. of Var. (%)	Growth (mg)	Coef. of Var. (%)
Control Acceptability	≥80	≤ 40	≥0.50	≤ 40
Control Results	100	0.00	1.26	19.80
Critical Dilution (8%)	100	0.00	1.34	12.41
DMR REPORTING			Parameter Code	
Is the NOEC for survival less than the critical dilution?		No	TLP6B	0
Report the NOEC % for survival:			TOP6B	11
Report the LOEC % for survival:			TXP6B	>11
Is the NOEC for growth less than the critical dilution?		No	TWP6B	0
Report the NOEC % for growth:			TPP6B	11
Report the LOEC % for growth:			TYP6B	>11
PMSD (Acceptable Range: 28 or less):				21.22
Retest Number 1	Parameter 22415	N/A	Retest Number 2	Parameter 22416 N/A
CHRONIC PERMIT REPORTING - Table 1 attached.				

**NORTH WATER DISTRICT
LABORATORY SERVICES**

ATTACHMENTS

Chemical Analyses

Sample Custody Record(s)

Data Sheets

Statistical Analyses

Reference Toxicants

Agency Table(s), as needed



Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/06/2023 08:46

Chemical Analyses

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001

Lab Sample ID: 23I0696-01

Sample Matrix:

Waste Water

Date Collected:

09/11/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	780	mg/L		1	10.0	10.0	BGI1558	09/12/2023 10:45	AKA
General Chemistry SM 2510 B	Conductivity	A	9270	umhos/cm @ 25 °C		1	2.00	2.00	BGI1558	09/12/2023 10:45	AKA
General Chemistry EPA 350.1	Ammonia as N	A	20.9	mg/L		50	1.00	2.50	BGI1966	09/13/2023 19:09	GJG
General Chemistry SM 2520 B	Salinity	N	5.20	Salinity units		1	1.00	1.00	BGI1558	09/12/2023 10:45	AKA
Field Hach 10360	DO Field	N	9.25	mg/L		1	1.00	1.00	BGI1945	09/11/2023 08:00	KAO
Field SM 4500-H+ B	pH	A	8.90	pH Units @ 25 °C		1	1.00	1.00	BGI1945	09/11/2023 08:00	KAO
Field SM 4500-Cl G	Total Residual Chlorine	A	0.00	mg/L	U	1	0.25	0.25	BGI1945	09/11/2023 08:00	KAO

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Outfall 001

Lab Sample ID: 23I0696-01RE1

Sample Matrix:

Waste Water

Date Collected:

09/11/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2340 C	Total hardness as CaCO3 (Rerun)	N	114	mg/L		1		50.0	BGI2516	09/15/2023 16:21	MLB

Natgasoline - WET Quarterly Sample 1

Client Sample ID: Receiving Water

Lab Sample ID: 23I0696-02

Sample Matrix:

Waste Water

Date Collected:

09/11/2023 11:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	78.9	mg/L		1	10.0	10.0	BGI1558	09/12/2023 11:44	AKA
General Chemistry SM 2510 B	Conductivity	A	21800	umhos/cm @ 25 °C		1	2.00	2.00	BGI1558	09/12/2023 11:44	AKA
General Chemistry SM 2340 C	Total hardness as CaCO3	N	2520	mg/L		1		1000	BGI1680	09/12/2023 13:09	MLB
General Chemistry EPA 350.1	Ammonia as N	A	0.370	mg/L		1	0.0200	0.0500	BGI1744	09/13/2023 10:52	GJG
General Chemistry SM 2520 B	Salinity	N	13.1	Salinity units		1	1.00	1.00	BGI1558	09/12/2023 11:44	AKA
Field Hach 10360	DO Field	N	7.53	mg/L		1	1.00	1.00	BGI1945	09/11/2023 11:00	KAO
Field SM 4500-H+ B	pH	A	7.79	pH Units @ 25 °C		1	1.00	1.00	BGI1945	09/11/2023 11:00	KAO
Field SM 4500-Cl G	Total Residual Chlorine	A	0.02	mg/L	U	1	0.25	0.25	BGI1945	09/11/2023 11:00	KAO

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2

Lab Sample ID: 23I0698-01

Sample Matrix:

Waste Water

Date Collected:

09/13/2023 8:00

Collected by:

Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	755	mg/L		1	10.0	10.0	BGI2038	09/14/2023 10:48	TBB
General Chemistry SM 2510 B	Conductivity	A	9460	umhos/cm @ 25 °C		1	2.00	2.00	BGI2038	09/14/2023 10:48	TBB
General Chemistry EPA 350.1	Ammonia as N	A	17.6	mg/L	BB	50	1.00	2.50	BGI2204	09/15/2023 14:03	GJG
General Chemistry SM 2520 B	Salinity	N	5.32	Salinity units		1	1.00	1.00	BGI2038	09/14/2023 10:48	TBB
Field Hach 10360	DO Field	N	9.15	mg/L		1	1.00	1.00	BGI2209	09/13/2023 08:00	KAO

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/06/2023 08:46

Chemical Analyses
(Continued)

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2 (Continued)
Lab Sample ID: 23I0698-01

Sample Matrix: Waste Water
Date Collected: 09/13/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
Field SM 4500-H+ B	pH	A	8.93	pH Units @ 25 °C		1	1.00	1.00	BGI2209	09/13/2023 08:00	KAO
Field SM 4500-Cl G	Total Residual Chlorine	A	0.02	mg/L	U	1	0.25	0.25	BGI2209	09/13/2023 08:00	KAO

Natgasoline - WET Quarterly Sample 2

Client Sample ID: Outfall 001-2
Lab Sample ID: 23I0698-01RE1

Sample Matrix: Waste Water
Date Collected: 09/13/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2340 C	Total hardness as CaCO3 (Rerun)	N	116	mg/L		1		50.0	BGI2891	09/19/2023 12:59	MLB

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3
Lab Sample ID: 23I0699-01

Sample Matrix: Waste Water
Date Collected: 09/15/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2320 B	Alkalinity as CaCO3	A	582	mg/L		1	10.0	10.0	BGI2602	09/18/2023 11:28	AKA
General Chemistry SM 2510 B	Conductivity	A	7360	umhos/cm @ 25 °C		1	2.00	2.00	BGI2602	09/18/2023 11:28	AKA
General Chemistry EPA 350.1	Ammonia as N	A	13.6	mg/L		50	1.00	2.50	BGI2676	09/19/2023 12:50	GJG
General Chemistry SM 2520 B	Salinity	N	4.06	Salinity units		1	1.00	1.00	BGI2602	09/18/2023 11:28	AKA
Field Hach 10360	DO Field	N	7.84	mg/L		1	1.00	1.00	BGI2679	09/15/2023 08:00	VJC
Field SM 4500-H+ B	pH	A	8.84	pH Units @ 25 °C		1	1.00	1.00	BGI2679	09/15/2023 08:00	VJC
Field SM 4500-Cl G	Total Residual Chlorine	A	0.04	mg/L	U	1	0.25	0.25	BGI2679	09/15/2023 08:00	VJC

Natgasoline - WET Quarterly Sample 3

Client Sample ID: Outfall 001-3
Lab Sample ID: 23I0699-01RE1

Sample Matrix: Waste Water
Date Collected: 09/15/2023 8:00
Collected by: Clinton Wallace

Method	Analyte	*	Results	Units	Q	DF	SDL	LRL	Batch	Analyzed	Analyst
General Chemistry SM 2340 C	Total hardness as CaCO3 (Rerun)	N	90.0	mg/L		1		50.0	BGI2891	09/19/2023 12:59	MLB

* A = Accredited, N = Not Accredited or Accreditation not available



Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/06/2023 08:46

Sample Condition Checklist

Work Order: 23I0696

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23I0698

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted

Work Order: 23I0699

Check Points

No	Custody Seals
Yes	Containers Intact
Yes	COC/Labels Agree
Yes	Received On Ice
Yes	Appropriate Containers
Yes	Appropriate Sample Volume
Yes	Coolers Intact
Yes	Samples Accepted



Providence Eng and Env Group LLC
1201 Main Street
Baton Rouge, LA 70802

Reported:
10/06/2023 08:46

Term and Qualifier Definitions

Item	Definition
BB	The sample was received unpreserved. Sample was preserved at time of receipt or at time of sample preparation
J1	Estimated value - The reported value is outside the established quality control criteria for accuracy and/or precision.
U	Non-detected compound.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated
*	A = Accredited, N = Not Accredited or Accreditation not available
DF	Dilution Factor - the factor applied to the reported data due to sample preparation, dilution, or moisture content
MDL	Method Detection Limit - The minimum concentration of a substance (or analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Based on standard deviation of replicate spiked samples take through all steps of the analytical procedure following 40 CFR Part 136 Appendix B.
SDL	Sample Detection Limit - The minimum concentration of a substance (analyte) that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The SDL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MDL = SDL.
MRL	Method Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The MRL is at or above the lowest calibration standard.
LRL	Laboratory Reporting Limit - Analyte concentration that corresponds to the lowest level lab reports with confidence in accuracy of quantitation and without qualification (i.e. J-flagged). The LRL is an adjusted limit thus sample specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments. If there are no sample specific parameters, the MRL = LRL.

* A = Accredited, N = Not Accredited or Accreditation not available

CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-23-39



Page 1 of 2

23I0696

Lab PM : Matt Matthews Providence Engineering and Environmental Group LLC Clinton Wallace, PG 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 1 Project Comments:	Schedule Comments:
---	--	---------------------------

Sample ID	Collection Point	Date/Time Begin/ <i>END</i>	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23I0696-01	Outfall 001	9/10/23 08:00 9/11/23 08:00	9/11/23 10:45	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	AB 7DD-1007.0 4°C MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>9.25</u> pH Field <u>8.90</u> Total Chlorine <u>.00</u> Residual WW Field <u>KAO</u>
23I0696-02	Receiving Water		9/11/23 11:00	AQ Grab	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Bucket 5 Gal E HDPE Bucket 5 Gal F HDPE Bucket 5 Gal G HDPE Bucket 5 Gal H HDPE Bucket 5 Gal I HDPE Bucket 5 Gal J HDPE Bucket 5 Gal K HDPE Bucket 5 Gal L HDPE Bucket 5 Gal M HDPE Bucket 5 Gal	RW AB 7DD-1007.0 4°C RW MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>7.53</u> pH Field <u>7.79</u> Total Chlorine <u>.02</u> Residual WW Field <u>KAO</u>



CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com

TCEQ T104704238-23-39



Page 2 of 2

23I0696

(Continued)

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 1		Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, PG 1201 Main Street Baton Rouge, LA 70802	Project Comments:		

Field Remarks:		Lab Preservation: H ₂ SO ₄ HNO ₃ NaOH Other: _____			
		(Circle and Write ID Below) 2108097 2308876			
Sampler (Signature) <i>[Signature]</i>	Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 9/11/23 14:30	Received By: (Signature)	Date/Time	
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time	
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>[Signature]</i>	Date/Time 1430 9.11.23	
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No	Temperature: 5.8 °C	
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No	Thermometer ID: 210556882	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

CHAIN OF CUSTODY RECORD

North Water District Laboratory Services
130 S. Trade Center Pkwy, Conroe Tx 77385
(936) 321-6060 - lab@nwdls.com



Page 1 of 1

23I0698

TCEQ T104704238-23-39

Lab PM : Matt Matthews	Project Name : Natgasoline - WET Quarterly Sample 2		Schedule Comments:
Providence Engineering and Environmental Group LLC Clinton Wallace, PG 1201 Main Street Baton Rouge, LA 70802	Project Comments:		

Sample ID	Collection Point	Date/Time Begin/End	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23I0698-01	Outfall 001-2	9/12/23 08:00 9/13/23 08:00	9/13/23 12:00	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	DR - AB 7DD-1007.0 4°C DR - MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field 9.15 pH Field 8.93 Total Chlorine .02 Residual WW Field KAO

Field Remarks: Low flow due to outage.		Lab Preservation: H2SO4 HNO3 NaOH Other: _____	
Sampler (Signature): <i>[Signature]</i>		(Circle and Write ID Below) 2108097 2308076	
Relinquished By: (Signature) <i>[Signature]</i>	Date/Time 9/13/23 15:35	Received By: (Signature)	Date/Time
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) <i>[Signature]</i>
			Date/Time 9.13.23 1535
Custody Seal : Yes / No	COC Labels Agree: Yes / No	Appropriate Volume: Yes / No	Received on Ice: Yes / No
Container Intact : Yes / No	Appropriate Containers: Yes / No	Coolers Intact: Yes / No	Samples Accepted: Yes / No
		Temperature: 5.2 °C	Thermometer ID: 210556882

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

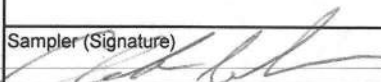
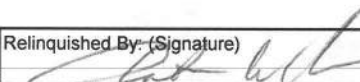


23I0699

TCEQ T104704238-23-39

Lab PM : Matt Matthews Providence Engineering and Environmental Group LLC Clinton Wallace, PG 1201 Main Street Baton Rouge, LA 70802	Project Name : Natgasoline - WET Quarterly Sample 3 Project Comments:	Schedule Comments:
---	--	---------------------------

Sample ID	Collection Point	Date/Time Begin / END	Date/Time Sampled	Sample Type	Container	Analysis/Preservation	Field Results
23I0699-01	Outfall 001-3	08:00 9/14/23 08:00 9/15/23	11:45 9/15/23	AQ Composite	A HDPE 250mL B HDPE 250mL HNO3 C HDPE 250mL H2SO4 D HDPE Cube 10L	DR - AB 7DD-1007.0 4°C DR - MB 7DD-1006.0 4°C Alkalinity-2320 4°C Conductivity-2510 4°C Hardness T-2340 C HNO3 NH3-N SEAL-350.1 H2SO4 4°C Salinity-2520 4°C	DO Field <u>7.84</u> pH Field <u>8.84</u> Total Chlorine <u>0.04</u> Residual WW Field <u>VJC</u> <u>9-15-23</u>

Field Remarks:		Lab Preservation: H2SO4 (circled) HNO3 (circled) NaOH Other: _____ (Circle and Write ID Below) <u>2108097</u> <u>2308876</u>			
Sampler (Signature) 	Relinquished By: (Signature) 	Date/Time 9/15/23 15:00	Received By: (Signature)	Date/Time	
Print Name Clinton Wallace	Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time	
Affiliation Providence	Relinquished To Lab By: (Signature)	Date/Time	Received for Laboratory By: (Signature) 	Date/Time 9-15-23 1500	
Custody Seal : Yes / No		COC Labels Agree: Yes / No		Appropriate Volume: Yes / No	
Container Intact : Yes / No		Appropriate Containers: Yes / No		Coolers Intact: Yes / No	
		Received on Ice: Yes / No		Temperature: <u>5.4</u> °C	
		Samples Accepted: Yes / No		Thermometer ID: <u>210556832</u>	

Tox Weekly Kits - Deliver

wko_NWDLS_COC_LS Revision 4.1 Effective: 2/17/2022

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0468
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Mysidopsis bahia</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1007.0 ; NWDLS SOP No. 4020			
Test Organism:	<i>Mysidopsis bahia</i>	Age Class:	7 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	26 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	12 oz plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	10	No. Organisms per Replicate:	5
Test Solution Volume:	250 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration:	None, unless DO < 4.0 mg/L
Feeding:	One drop; twice daily	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥80% survival in control; ≥20 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use.



BGI1546

Test Concentrations (%):	LW, Control (RW), 3, 5, 6, 8, 11	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	9-11-23	1045	Sample 3 Date/Time:	9-15-23	0800
Sample 2 Date/Time:	9-13-23	0800	Sample 4 Date/Time:		

Test Calendar & Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	9-11-23	23-0468 -1	RW091123	AOS	Day 4	9-15-23	23-0468 -2	RW091123	KAO
Day 1	9-12-23	23-0468 -1	RW091123	AOS	Day 5	9-16-23	23-0468 -3	RW091123	CBR
Day 2	9-13-23	23-0468 -1	RW091123	KAO	Day 6	9-17-23	23-0468 -3	RW091123	KPI
Day 3	9-14-23	23-0468 -2	RW091123	AOS					

*LW Batch #: 2318573

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: ① IE AOS 9-12-23 → [23-0648] ② IE AOS 10/6/23 → [0800]
 TDS Entry: KAO 9/19/23

Data Sheet Preparation : Initials: ABH/AOS Date: 9/6/23 *Arturo Orosio*
 End of Test Review : Initials: KAO Date: 9/19/23 Final Review (signature)

Codes: IE=incorrect entry; IL=illegible; ONV=organism not visible; SC=spilled cup; PB=pathogenic bacteria

2

Water Quality Parameters

DATE	9/11/23	9/12/23	9/13/23	9-14-23	9-15-23	9-16-23	9-17-23	9-18-23
TIME	1500	0820	0820	0850	0850	0830	0830	0815
INITIALS	KAO KPI	ABH AOJ	ABH AOJ	ABH KAO	ABH KAO	KAO KPI	KAO KPI	KAO KPI
DAY	0	1	2	3	4	5	6	7
Solution	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION							
LW	7.95	7.92	8.00	7.61	8.02	7.76	8.02	7.63
RW	7.99	7.95	7.64	7.70	8.03	7.78	7.83	7.69
3	8.00	7.95	7.98	7.74	8.03	7.78	7.99	7.96
5	8.02	7.96	8.01	7.73	8.05	7.90	8.07	7.80
6	8.09	7.96	8.01	7.83	8.05	7.86	7.96	7.80
8	8.05	8.00	8.02	7.67	8.06	7.86	7.95	7.94
11	8.06	8.00	8.03	7.98	8.06	7.91	7.95	8.16
METER No	509	509	509	509	509	509	509	509
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION							
LW	7.93	7.95	7.74	6.46	7.93	7.53	7.93	6.81
RW	7.54	7.89	7.63	6.33	7.64	7.24	7.90	6.41
3	7.55	7.87	7.32	6.32	7.53	7.12	7.51	6.48
5	7.49	7.83	7.46	6.27	7.45	7.30	7.54	6.28
6	7.46	7.77	7.34	6.19	7.33	7.17	7.58	6.02
8	7.50	7.81	7.31	6.23	7.28	7.12	7.59	6.43
11	7.46	7.87	7.37	6.92	7.34	7.23	7.62	6.67
METER No	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)							
LW	26.0	24.0	26.2	24.2	25.5	23.9	26.0	24.4
RW	24.1	23.9	25.7	23.9	25.1	24.0	24.2	24.3
3	24.5	24.1	25.8	24.1	25.0	24.1	24.3	24.5
5	24.2	24.2	25.6	24.2	24.9	24.0	24.2	24.5
6	24.0	24.1	25.7	24.1	24.9	23.9	24.3	24.5
8	24.2	24.2	25.7	24.1	25.0	23.9	24.3	24.4
11	24.6	24.2	25.6	24.2	25.0	23.9	24.4	24.5
THERM No	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6	YSI6
Offset (+°C)	0	0	0	0	0	0	0	0

Comments:

① IE KPI 9-16-23 [7.81]

② IE AOJ 9/18/23 [23-0648]

Water Quality Parameters (Cont'd.)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
LW	26.1	26.5	24.6	26.5	26.4	26.7	26.8
RW	24.6	24.1	24.0	24.7	24.5	25.0	24.9
3	24.4	24.7	24.2	25.3	24.9	25.3	24.5
5	24.5	24.5	24.0	25.1	24.8	25.3	25.2
6	24.5	24.5	24.5	25.1	24.7	25.3	25.2
8	24.4	24.5	24.4	24.9	24.9	25.3	25.2
11	24.4	24.5	24.5	25.2	25.0	25.3	25.3
Meter No.:	2647	2647	2647	2647	2647	2647	2647

Biological Data

Test Organism Data			
Test Organism Batch #	23-0849	DOB	9-4-23
Source	NWDL5	Age	7d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0	////	2216129	KP2	4	2216137	2216137	SKW / SKW
1	2216129	2216129	AD / AD	5	2216137	2216135	CRB / CRB
2	2216129	2216129	AD / CRB	6	2216135	2216135	AD / AD
3	2216137	2216137	AD / SKW	7	2216135	////	AD / //

Comments:

① IE A03 9/12/23 → [23-0648]

Test Organisms

Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)								Conc (%)	Rep	NUMBER OF SURVIVING ORGANISMS (DAY)							
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7
LW	A	5	5	5	5	4	4	4	4	6	A	5	5	5	5	5	5	4	5
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	4	4	4	4	4		E	5	5	5	5	4	4	4	4
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	4
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	4	2
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
RW	A	5	5	5	5	5	5	5	5	8	A	5	5	5	4	4	4	4	4
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	5	5	5	5		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	5	5
	E	5	5	5	5	5	5	5	5		E	5	5	4	4	4	4	4	3
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	4	4		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
3	A	5	5	5	5	5	5	5	5	11	A	5	5	4	4	4	4	4	4
	B	5	5	5	5	5	5	5	5		B	5	5	5	5	5	5	5	5
	C	5	5	5	5	4	4	4	4		C	5	5	5	5	5	5	5	5
	D	5	5	5	5	5	5	5	5		D	5	5	5	5	5	5	4	4
	E	5	5	5	5	5	5	5	5		E	5	5	5	5	5	5	5	5
	F	5	5	5	5	5	5	5	5		F	5	5	5	5	5	5	5	5
	G	5	5	5	5	5	5	5	5		G	5	5	5	5	5	5	5	5
	H	5	5	5	5	5	5	5	5		H	5	5	5	5	5	5	5	5
	I	5	5	5	5	5	5	5	5		I	5	5	5	5	5	5	5	5
	J	5	5	5	5	5	5	5	5		J	5	5	5	5	5	5	5	5
5	A	5	5	5	5	5	5	5	4		A								
	B	5	5	5	5	4	4	4	4		B								
	C	5	5	5	5	5	5	5	5		C								
	D	5	5	5	5	5	5	5	5		D								
	E	5	5	5	5	5	5	5	5		E								
	F	5	5	5	5	5	5	5	5		F								
	G	5	5	5	5	5	5	5	5		G								
	H	5	5	5	5	5	5	5	5		H								
	I	5	5	5	5	5	5	5	5		I								
	J	5	5	5	5	5	5	5	5		J								
Date	9/11/23	9/12/23	9/13/23	9/14/23	9/15/23	9/16/23	9/17/23	9/18/23	Comments: ① IE KR2 9-17-23 → [5] ② IE AOS 9/18/23 → [23-0648]										
Time	1600	1030	0950	0925	0840	0950	1230	1600											
Init	AOS/KH	AO	AO	AOS	KR2	CR2	KR2	KA0											

Dry Tissue Weight

CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)	CONC (%)	REP	PAN NO.	TARE WT (g)	TOTAL WT. (g)
LW	A	1	.00442	.00610	5	A	31	.00467	.00628
	B	2	.00409	.00539		B	32	.00484	.00654
	C	3	.00382	.00577		C	33	.00474	.00641
	D	4	.00408	.00607		D	34	.00465	.00638
	E	5	.00425	.00583		E	35	.00453	.00681
	F	6	.00446	.00664		F	36	.00482	.00687
	G	7	.00417	.00582		G	37	.00446	.00687
	H	8	.00438	.00627		H	38	.00455	.00678
	I	9	.00432	.00640		I	39	.00437	.00674
	J	10*	.00446	.00623		J	40*	.00433	.00656
RW	A	11	.00420	.00630	6	A	41	.00433	.00685
	B	12	.00444	.00656		B	42	.00475	.00694
	C	13	.00432	.00655		C	43	.00459	.00625
	D	14	.00449	.00665		D	44	.00495	.00652
	E	15	.00385	.00608		E	45	.00454	.00670②
	F	16	.00450	.00637		F	46	.00476	.00684
	G	17	.00451	.00693		G	47	.00445	.00652
	H	18	.00450	.00676		H	48	.00462	.00578
	I	19	.00413	.00581		I	49	.00439	.00648
	J	20*	.00445	.00641		J	50*	.00453	.00688
3	A	21	.00458	.00633	8	A	51	.00475	.00615
	B	22	.00408	.00644		B	52	.00479	.00701
	C	23	.00411	.00573		C	53	.00483	.00691
	D	24	.00452	.00652		D	54	.00455	.00641
	E	25	.00423	.00660		E	55	.00449	.00583
	F	26	.00439	.00664		F	56	.00474	.00670
	G	27	.00429	.00642		G	57	.00470	.00667
	H	28	.00463	.00716		H	58	.00459	.00683
	I	29	.00427	.00640		I	59	.00435	.00657
	J	30*	.00480	.00718		J	60*	.00481	.00713

Comments:

① IE A0J9/18123 → [23-0648]

② IE ABH 9-19-23 → [00684]

Dry Tissue Weight (cont'd)

CONC (%)	REP	PAN NO.	TARE WT. (g)	TOTAL WT. (g)	
11	A	61	.00449	.00627	BALANCE ID# <u>852</u>
	B	62	.00457	.00657	OVEN ID# <u>SW1</u>
	C	63	.00485	.00725	BALANCE VERIFICATION INITIALS <u>ABH</u>
	D	64	.00467	.00672	DATE/ TARE WEIGHT INITIALS <u>9-8-23 , ABH</u>
	E	65	.00471	.00647	
	F	66	.00432	.00628	DATE DRYING INITIATED <u>9/18/23</u>
	G	67	.00462	.00669	TIME DRYING INITIATED <u>1630</u>
	H	68	.00463	.00672	OVEN TEMP (Act/Corr) (°C) <u>105, 105</u>
	I	69	.00475	.00699	INITIALS <u>KAC</u>
	J	70*	.00459	.00675	
	A	71			DATE/TIME DRYING TERMINATED <u>9-19-23 / 0830</u>
	B	72			OVEN TEMP (Act/Corr) (°C) <u>105 , 105</u>
	C	73			BALANCE VERIFICATION INITIALS <u>ABH</u>
	D	74			TOTAL WEIGHT DATE/INITIALS <u>9-19-23 , ABH</u>
	E	75			
	F	76			
	G	77			
	H	78			
	I	79			
	J	80			
QA/QC (pans)		10	.00450	.00618	COMMENTS: <u>① IE AOS 9/18/23 → [23-0648]</u>
		20	.00442	.00637	
		30	.00483	.00718	
		40	.00434	.00656	
		50	.00456	.00683	
		60	.00477	.00710	
		70	.00455	.00679	
Ensure QA/QC ± 0.00005					TREAT = Treatment REP = Replicate CONT = Control No. = Number ORG. = Organism

Test Notes

Include Date, Time, and Initials

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0648
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Chronic <i>Menidia beryllina</i> Test Condition Summary - EPA-821-R-02-014 Test Method 1006.0; NWDLS SOP No. 4023			
Test Organism:	<i>Menidia beryllina</i>	Age Class:	7-11 d old
Test Type:	Static-renewal	Test Duration:	7 d
Temperature:	25 ± 1	Photoperiod:	16:8 h; ambient light, 50-100 ft-c
Test Chamber Size:	600 mL-1 L plastic disposable cups	Cleaning:	daily during test renewal
No. of Replicates:	5	No. Organisms per Replicate:	10
Test Solution Volume:	500 mL	Dilution Water:	RW
Renewal of Test Solution:	Daily	Aeration:	None, unless DO < 4.0 mg/L
Feeding:	Once on day 0, twice on days 1-6	Food Type:	<i>Artemia nauplii</i>
Acceptability Criteria:	≥ 80% survival in control; ≥ .50 mg average dry weight in control	Sample Holding Time Requirements:	36 h maximum for first use; 72 h maximum for subsequent use

BGI1545

Test Concentrations (%):	LW, Control (RW), 3, 5, 6, 8, 11	DECHLOR:	NO	Critical Dilution (%):	8
--------------------------	----------------------------------	----------	----	------------------------	---

Sample Receipt					
Sample 1 Date/Time:	9-11-23	+045 ①	Sample 3 Date/Time:	9-15-23	0800
Sample 2 Date/Time:	9-13-23	-0800 ①	Sample 4 Date/Time:	—	—

Sample Preparation/Use									
Day #	Date:	Sample ID	Diluent ID	Initials	Day #	Date:	Sample ID	Diluent ID	Initials
Day 0	9-11-23	23-0648 -1	RW091123	AOS	Day 4	9-15-23	23-0648 -2	RW091123	KA0
Day 1	9-12-23	23-0648 -1	RW091123	AOS	Day 5	9-16-23	23-0648 -3	RW091123	CBR
Day 2	9-13-23	23-0648 -1	RW091123	KA0	Day 6	9-17-23	23-0648 -3	RW091123	KPI
Day 3	9-14-23	23-0648 -2	RW091123	AOS					

*LW Batch #: 2318573

This test was conducted in accordance with the method standard or according to the exception(s) as noted:

Comments: DIL W/C 9-15-23 → [0800]
TDS Entry: KA0 9/19/23

Data Sheet Preparation : Initials: ABH/AOS Date: 9/6/23

End of Test Review : Initials: KA0 Date: 9/18/23 Final Review (signature)

Codes: IE-incorrect entry; IL-illegible; ONV-organism not visible; SC-spilled cup; PB-pathogenic bacteria

Test Organism Data

Test Organism Data			
Test Organism Batch #	23-0896	DOB	8-31-23
Source	NWOLLS	Age	11d

Feeding							
Day	AM Batch #	PM Batch #	Initials	Day	AM Batch #	PM Batch #	Initials
0		2216129	KRI	4	2216137	2216137	SKW / SKW
1	2216129	2216129	AB / AB	5	2216137	2216135	CRB / CRB
2	2216129	2216129	AB / CRB	6	2216135	2216135	AB / AB
3	2216137	2216137	AB / SKW	7			

CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)										CONC (%)	NUMBER OF SURVIVING ORGANISMS (DAY)									
		0	1	2	3	4	5	6	7			0	1	2	3	4	5	6	7		
LW	A	8	8	8	8	8	8	8	8	6	A	8	8	8	8	8	8	8	8		
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8		
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8		
	D	8	8	8	8	8	8	8	8		D	8	8	8	8	8	8	8	8		
	E	8	8	8	8	8	8	8	8		E	8	8	8	8	8	8	7	7		
RW	A	8	8	8	8	8	8	8	8	8	A	8	8	8	8	8	8	8	8		
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8		
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8		
	D	8	8	8	8	8	8	8	8		D	8	8	8	8	8	8	8	8		
	E	8	8	8	8	8	8	8	8		E	8	8	8	8	8	8	8	8		
3	A	8	8	8	8	8	8	8	8	11	A	8	8	8	8	8	8	8	8		
	B	8	8	8	8	8	8	8	8		B	8	8	8	8	8	8	8	8		
	C	8	8	8	8	8	8	8	8		C	8	8	8	8	8	8	8	8		
	D	8	8	8	8	8	8	8	7		D	8	8	8	8	8	8	8	8		
	E	8	8	8	8	8	7	8	7		E	8	8	8	8	8	8	8	8		
5	A	8	8	8	8	8	8	8	8		A										
	B	8	8	8	8	8	8	8	8		B										
	C	8	8	8	8	8	8	8	8		C										
	D	8	8	8	8	8	8	8	8		D										
	E	8	8	8	8	8	8	8	8		E										
Date	9/11/23	9/12/23	9/13/23	9/14/23	9/15/23	9/16/23	9/17/23	9/18/23	Comments: ① IEKRI 9-17-23 → [7]												
Time	1620	1210	1130	0950	0950	1020	1315	1640													
Initials	ABH	ABH	ABH	ABH	ABH	ABH	ABH	ABH													

Dry Tissue Weight

CONC.	REP	PAN NO.	TARE	TOTAL	CONC.	REP	PAN NO.	TARE	TOTAL
LW	A	1	.00682	.01738	11	A	31	.00752	.01883
	B	2	.00708	.01898		B	32	.00734	.01964
	C	3	.00717	.01812		C	33	.00670	.01576
	D	4	.00590	.01525		D	34	.00687	.01601
	E	5	.00721	.01852		E	35 *	.00714	.01676
					Ensure QA/QC $\pm$ 0.00005				
RW	A	6	.00734	.01875	QA/QC (pans)		10	.00750	.01572
	B	7	.00710	.01981			20	.00746	.01876
	C	8	.00765	.01575			30	.00683	.01856
	D	9	.00666	.01651			35	.00712	.01674
	E	10 *	.00748	.01576					
3	A	11	.00737	.01539	BALANCE ID# <u>852</u>				
	B	12	.00632	.01640	OVEN ID# <u>SW-1</u>				
	C	13	.00706	.01688	BALANCE VERIFICATION INITIALS <u>CBP</u>				
	D	14	.00599	.01315	DATE / TARE WEIGHT INITIALS <u>9-9-23, CBP</u>				
	E	15	.00676	.01760	DATE DRYING INITIATED <u>9/18/23</u>				
5	A	16	.00750	.01883	TIME DRYING INITIATED <u>1710</u>				
	B	17	.00709	.01755	OVEN TEMPERATURE (°C) <u>105, 105</u>				
	C	18	.00709	.01980	(Actual/Corrected)				
	D	19	.00632	.01722	INITIALS <u>KA0</u>				
	E	20 *	.00744	.01876	DATE / TIME DRYING TERMINATED <u>9-19-23, 0830</u>				
6	A	21	.00707	.01861	OVEN TEMPERATURE (°C) <u>105, 105</u>				
	B	22	.00683	.01775	(Actual/Corrected)				
	C	23	.00719	.01630 ^②	BALANCE VERIFICATION INITIALS <u>ABH</u>				
	D	24	.00679	.01590	TOTAL WEIGHT DATE / INITIALS <u>9-19-23, ABH</u>				
	E	25	.00648	.01651 ^③	COMMENTS: ① IE ABH 9-19-23 → [01839]				
8	A	26	.00700	.01664	② IE ABH 9-19-23 → [01651]				
	B	27	.00706	.01724	③ IE ABH 9-19-23 → [01503]				
	C	28	.00722	.01667	CONT = Control CONC = Concentration REP = Replicate				
	D	29	.00693	.01939	Wt. = Weight ORG. = Organism				
	E	30 *	.00684	.01853					

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0648
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters

DATE	9/1/23	9/12/23		9/13/23		9-14-23		9-15-23		9-16-23		9-17-23		9-18-23
TIME	1500	0820	0820	0820	0850	0830	0830	0800	0800	0820	0820	0830	0930	0915
INITIALS	KAO KPI	ABH AOJ	ABH AOJ	ABH KAO	ABH KAO	AJO KAO	AJO KAO	AJO KPI	AJO KPI	KPI CBR	KPI CBR	KPI CBR	KPI CBR	AJO ABH
DAY	0	1		2		3		4		5		6		7
Solution	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old	New	Old
CONC. (%)	pH OLD/NEW SOLUTION													
LW	7.95	7.87	8.00	7.77	8.02	7.92	8.02	7.80	8.04	7.80	8.05	7.81	8.06	7.70
RW	7.99	7.93	7.64	7.92	8.03	7.93	8.02	7.88	8.06	7.88	8.00	7.82	8.00	7.79
3	8.00	7.95	7.98	7.94	8.03	7.96	8.04	8.04	8.11	7.94	8.04	7.88	8.01	7.85
5	8.02	7.95	8.01	7.95	8.05	7.97	8.13	7.92	8.12	7.95	8.05	7.92	8.07	7.86
6	8.04	7.95	8.01	7.94	8.05	7.98	8.11	7.97	8.12	7.96	8.06	7.95	8.07	7.86
8	8.05	7.96	8.02	7.93	8.05	7.99	8.11	8.01	8.13	7.97	8.07	7.98	8.08	7.95
11	8.06	7.96	8.03	7.93	8.06	7.97	8.13	8.04	8.16	8.00	8.09	8.03	8.10	7.98
METER No	509	509	509	509	509	509	509	509	509	509	509	509	509	509
CONC. (%)	DISSOLVED OXYGEN (mg/L) OLD/NEW SOLUTION													
LW	7.93	7.88	7.74	7.24	7.93	7.63	7.93	6.74	8.15	7.16	7.65	7.04	8.06	6.83
RW	7.54	7.69	7.63	6.92	7.64	7.33	7.66	6.42	7.97	6.99	7.92	7.05	8.15	6.60
3	7.55	7.65	7.32	7.09	7.53	7.30	7.40	7.41	7.88	7.05	7.82	6.90	8.07	6.45
5	7.49	7.65	7.46	7.35	7.45	7.32	7.50	6.87	7.96	7.01	7.81	6.99	8.05	6.56
6	7.46	7.54	7.34	7.09	7.32	7.34	7.52	6.57	7.89	6.98	7.81	6.74	8.06	6.39
8	7.50	7.46	7.31	6.95	7.28	7.32	7.52	6.60	7.86	6.99	7.82	6.70	8.05	6.43
11	7.46	7.55	7.37	6.83	7.34	7.19	7.57	6.50	7.89	6.87	7.86	6.82	8.04	6.40
METER No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
CONC. (%)	TEMPERATURE (C) OLD/NEW SOLUTION (Actual)													
LW	26.0	23.7	26.2	24.1	25.5	23.4	26.0	24.3	25.9	23.7	26.2	24.6	25.5	24.3
RW	24.1	23.7	25.7	24.0	25.1	23.9	24.2	24.3	24.2	23.5	24.6	24.7	24.3	24.5
3	24.5	23.7	25.8	24.2	25.0	23.7	24.1	24.0	24.1	23.9	24.4	24.6	24.3	24.4
5	24.2	23.6	25.6	24.0	24.9	23.7	24.1	24.2	24.0	23.4	24.4	24.3	24.4	24.3
6	24.0	23.3	25.7	23.9	24.9	23.7	24.2	24.3	24.0	23.2	24.4	24.4	24.3	23.9
8	24.2	23.6	25.7	23.8	25.0	23.6	24.1	24.0	24.1	23.0	24.3	24.6	24.3	24.2
11	24.6	23.6	25.6	24.0	25.0	23.9	24.2	24.2	24.2	23.2	24.2	24.7	24.4	23.9
THERM No.	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16	YS16
Offset (±°C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

Client:	PE&EG-Natgasoline	Permit #:	WQ0005143000	Outfall #:	001	Login #:	23-0648
---------	-------------------	-----------	--------------	------------	-----	----------	---------

Water Quality Parameters (continued)

Salinity (‰)							
Conc (%)	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
LW	26.1	26.8	26.6	26.5	26.4	26.7	26.8
RW	24.6	24.1	24.0	24.8	24.5	25.0	24.9
3	24.4	24.7	24.2	24.8	24.9	25.3	24.5
5	24.5	24.5	24.0	24.7	24.8	25.3	25.2
6	24.5	24.5	24.5	24.8	24.7	25.3	25.2
8	24.4	24.5	24.4	24.6	24.9	25.3	25.2
11	24.4	24.5	24.5	24.6	25.0	25.3	25.3
Meter No.:	2647	2647	2647	2647	2647	21047	2647

Comments:

Test Notes

Include Date, Time, and Initials

CETIS Analytical Report

Report Date: 05 Oct-23 16:32 (p 1 of 6)
 Test Code/ID: 23-0648 / 20-6169-8177

Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 19-3393-7337	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 26 Sep-23 12:41	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 19-3776-9899	Test Type: Growth-Survival-Fec (7d)	Analyst: Kayn Ortiz
Start Date: 11 Sep-23 16:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 18 Sep-23 16:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 03-1813-0006	Code: 12F64756	Project: NT-100056
Sample Date: 11 Sep-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 11 Sep-23 14:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	12.22%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	105	75	2	18	Asymp	0.8333	Non-Significant Effect
		5	100	75	2	18	Asymp	0.6974	Non-Significant Effect
		6	94.5	75	2	18	Asymp	0.5100	Non-Significant Effect
		8	99.5	75	2	18	Asymp	0.6816	Non-Significant Effect
		11	100	75	2	18	Asymp	0.6974	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0.06454	<<	0.4	Yes	Passes Criteria
Control Resp	0.98	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0571246	0.0114249	5	0.6684	0.6490	Non-Significant Effect
Error	0.923011	0.0170928	54			
Total	0.980135		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	16.43	15.09	0.0057	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.6824	0.9459	4.1E-10	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%
3		10	0.9800	0.9348	1.0000	1.0000	0.8000	1.0000	0.0200	6.45%	0.00%
5		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	2.04%
6		10	0.9000	0.7610	1.0000	1.0000	0.4000	1.0000	0.0615	21.60%	8.16%
8		10	0.9400	0.8434	1.0000	1.0000	0.6000	1.0000	0.0427	14.36%	4.08%
11		10	0.9600	0.8997	1.0000	1.0000	0.8000	1.0000	0.0267	8.78%	2.04%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%
3		10	1.321	1.268	1.375	1.345	1.107	1.345	0.02381	5.70%	0.00%
5		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	1.80%
6		10	1.232	1.077	1.386	1.345	0.6847	1.345	0.06836	17.55%	6.80%
8		10	1.276	1.164	1.387	1.345	0.8861	1.345	0.04932	12.23%	3.47%
11		10	1.298	1.226	1.369	1.345	1.107	1.345	0.03175	7.74%	1.80%

Mysidopsis 7-d Survival, Growth and Fecundity Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 19-3393-7337

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.9.4

Analyzed: 26 Sep-23 12:41

Analysis: Nonparametric-Control vs Treatments

Status Level: 1

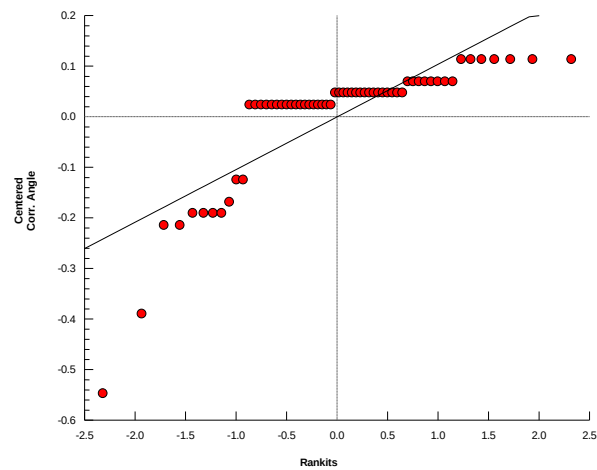
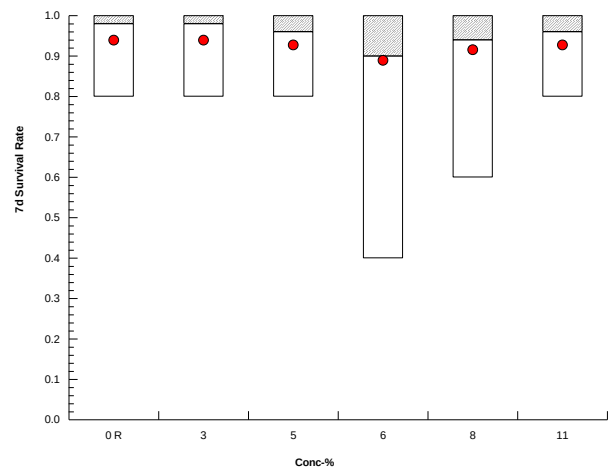
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000
3		1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		0.8000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	0.8000	0.8000	1.0000	0.4000	1.0000	1.0000
8		0.8000	1.0000	1.0000	1.0000	0.6000	1.0000	1.0000	1.0000	1.0000	1.0000
11		0.8000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.107	1.345
3		1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345
5		1.107	1.107	1.345	1.345	1.345	1.345	1.345	1.345	1.345	1.345
6		1.345	1.345	1.345	1.345	1.107	1.107	1.345	0.6847	1.345	1.345
8		1.107	1.345	1.345	1.345	0.8861	1.345	1.345	1.345	1.345	1.345
11		1.107	1.345	1.345	1.107	1.345	1.345	1.345	1.345	1.345	1.345

Graphics



CETIS Analytical Report

Report Date: 05 Oct-23 16:32 (p 3 of 6)
Test Code/ID: 23-0648 / 20-6169-8177

Mysidopsis 7-d Survival, Growth and Fecundity Test					NWDLS Environ. Toxicol. Lab	
Analysis ID:	13-2358-1969	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.9.4	
Analyzed:	26 Sep-23 12:41	Analysis:	Parametric-Control vs Treatments	Status Level:	1	
Batch ID:	19-3776-9899	Test Type:	Growth-Survival-Fec (7d)	Analyst:	Kayn Ortiz	
Start Date:	11 Sep-23 16:00	Protocol:	EPA/821/R-02-014 (2002)	Diluent:	Receiving Water	
Ending Date:	18 Sep-23 16:00	Species:	Mysidopsis bahia	Brine:	Instant Ocean	
Test Length:	7d 0h	Taxon:	Malacostraca	Source:	NWDLS	Age: 7d
Sample ID:	03-1813-0006	Code:	12F64756	Project:	NT-100056	
Sample Date:	11 Sep-23 08:00	Material:	Industrial Effluent	Source:	WQ0005143000	
Receipt Date:	11 Sep-23 14:30	CAS (PC):		Station:	Natgasoline LLC	
Sample Age:	8h	Client:	Providence Engineering and Env. Group LL			

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	14.87%

Dunnett Multiple Comparison Test									
Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-0.3588	2.289	0.063	18	CDF	0.9184	Non-Significant Effect
		5	0.5491	2.289	0.063	18	CDF	0.6242	Non-Significant Effect
		6	0.7614	2.289	0.063	18	CDF	0.5268	Non-Significant Effect
		8	1.04	2.289	0.063	18	CDF	0.3988	Non-Significant Effect
		11	0.3807	2.289	0.063	18	CDF	0.6968	Non-Significant Effect

Test Acceptability Criteria						TAC Limits
Attribute	Test Stat	Lower	Upper	Overlap	Decision	
Control CV	0.1021	<<	0.4	Yes	Passes Criteria	
Control Resp	0.4206	0.2	>>	Yes	Passes Criteria	

ANOVA Table						
Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0096856	0.0019371	5	0.5192	0.7606	Non-Significant Effect
Error	0.201472	0.003731	54			
Total	0.211158		59			

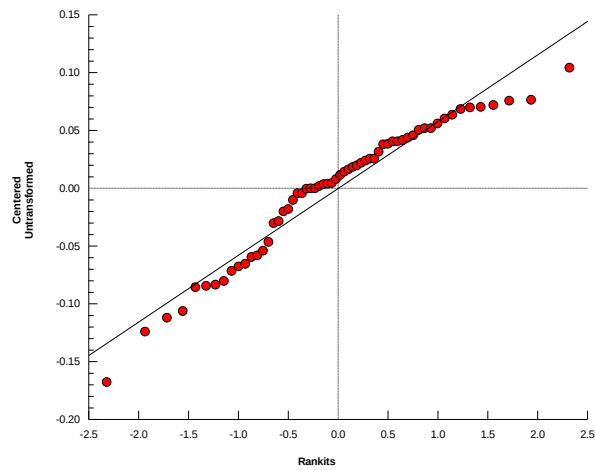
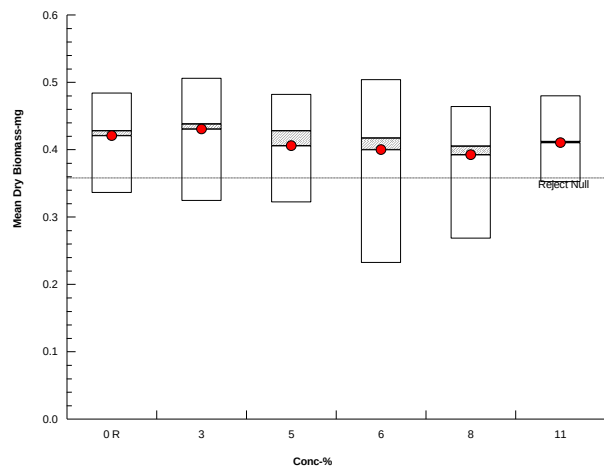
Distributional Tests						
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)	
Variances	Bartlett Equality of Variance Test	6.696	15.09	0.2443	Equal Variances	
Distribution	Shapiro-Wilk W Normality Test	0.9505	0.9459	0.0164	Normal Distribution	

Mean Dry Biomass-mg Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.4206	0.3899	0.4513	0.428	0.336	0.484	0.01357	10.21%	0.00%
3		10	0.4304	0.3887	0.4721	0.438	0.324	0.506	0.01843	13.54%	-2.33%
5		10	0.4056	0.3602	0.451	0.428	0.322	0.482	0.02009	15.66%	3.57%
6		10	0.3998	0.3405	0.4591	0.417	0.232	0.504	0.0262	20.72%	4.95%
8		10	0.3922	0.343	0.4414	0.405	0.268	0.464	0.02176	17.55%	6.75%
11		10	0.4102	0.3824	0.438	0.412	0.352	0.48	0.0123	9.48%	2.47%

Mean Dry Biomass-mg Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.42	0.424	0.446	0.432	0.446	0.374	0.484	0.452	0.336	0.392
3		0.35	0.472	0.324	0.4	0.474	0.45	0.426	0.506	0.426	0.476
5		0.322	0.34	0.334	0.346	0.456	0.41	0.482	0.446	0.474	0.446
6		0.504	0.438	0.332	0.314	0.46	0.416	0.414	0.232	0.418	0.47
8		0.28	0.444	0.416	0.372	0.268	0.392	0.394	0.448	0.444	0.464
11		0.356	0.4	0.48	0.41	0.352	0.392	0.414	0.418	0.448	0.432

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 13-2358-1969	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 26 Sep-23 12:41	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test NWDLS Environ. Toxicol. Lab

Analysis ID: 08-8472-8995	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 26 Sep-23 12:41	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 19-3776-9899	Test Type: Growth-Survival-Fec (7d)	Analyst: Kayn Ortiz
Start Date: 11 Sep-23 16:00	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 18 Sep-23 16:00	Species: Mysidopsis bahia	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Malacostraca	Source: NWDLS Age: 7d
Sample ID: 03-1813-0006	Code: 12F64756	Project: NT-100056
Sample Date: 11 Sep-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 11 Sep-23 14:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	12.90%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	-0.3931	2.289	0.055	18	CDF	0.9244	Non-Significant Effect
		5	0.2835	2.289	0.055	18	CDF	0.7358	Non-Significant Effect
		6	-1.138	2.289	0.055	18	CDF	0.9896	Non-Significant Effect
		8	0.4938	2.289	0.055	18	CDF	0.6487	Non-Significant Effect
		11	-0.01448	2.289	0.055	18	CDF	0.8376	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.009785	0.001957	5	0.6702	0.6477	Non-Significant Effect
Error	0.157676	0.0029199	54			
Total	0.167461		59			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	13.32	15.09	0.0206	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9834	0.9459	0.5880	Normal Distribution

Mean Dry Weight-mg Summary

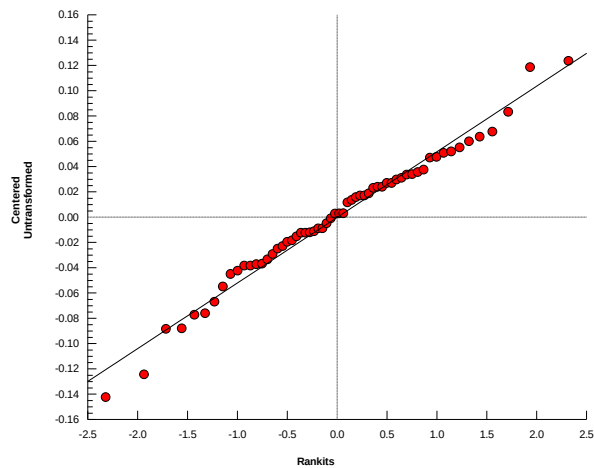
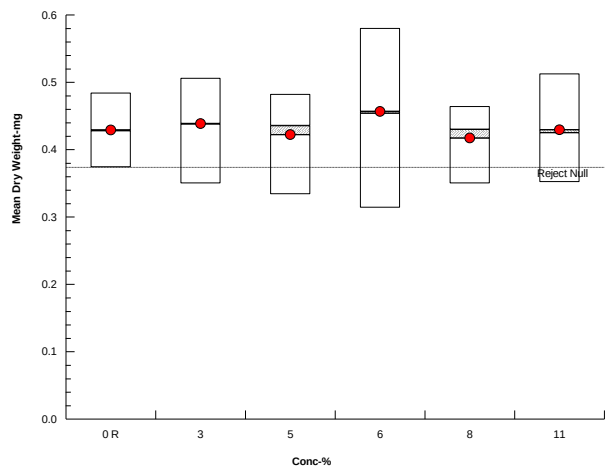
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	10	0.429	0.4067	0.4513	0.428	0.374	0.484	0.009844	7.26%	0.00%
3		10	0.4385	0.4054	0.4716	0.438	0.35	0.506	0.01462	10.54%	-2.21%
5		10	0.4221	0.3863	0.458	0.4355	0.334	0.482	0.01587	11.89%	1.60%
6		10	0.4565	0.3911	0.5219	0.454	0.314	0.58	0.02891	20.02%	-6.41%
8		10	0.4171	0.3897	0.4444	0.43	0.35	0.464	0.0121	9.17%	2.78%
11		10	0.4293	0.3968	0.4619	0.425	0.352	0.5125	0.01441	10.61%	-0.08%

Mean Dry Weight-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	R	0.42	0.424	0.446	0.432	0.446	0.374	0.484	0.452	0.42	0.392
3		0.35	0.472	0.405	0.4	0.474	0.45	0.426	0.506	0.426	0.476
5		0.4025	0.425	0.334	0.346	0.456	0.41	0.482	0.446	0.474	0.446
6		0.504	0.438	0.332	0.314	0.575	0.52	0.414	0.58	0.418	0.47
8		0.35	0.444	0.416	0.372	0.4467	0.392	0.394	0.448	0.444	0.464
11		0.445	0.4	0.48	0.5125	0.352	0.392	0.414	0.418	0.448	0.432

Mysidopsis 7-d Survival, Growth and Fecundity Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 08-8472-8995	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 26 Sep-23 12:41	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



CETIS Analytical Report

Report Date: 05 Oct-23 16:34 (p 1 of 6)
Test Code/ID: 23-0648 / 08-7415-9848

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 20-2612-9158	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.9.4
Analyzed: 04 Oct-23 10:14	Analysis: Nonparametric-Control vs Treatments	Status Level: 1
Batch ID: 14-4707-8877	Test Type: Growth-Survival (7d)	Analyst: Kayn Ortiz
Start Date: 11 Sep-23 16:20	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 18 Sep-23 16:40	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 03-1813-0006	Code: 12F64756	Project: NT-100056
Sample Date: 11 Sep-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 11 Sep-23 14:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	11	>11	n/a	9.091	6.46%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	22.5	16	1	8	Asymp	0.3937	Non-Significant Effect
		5	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		6	25	16	1	8	Asymp	0.6353	Non-Significant Effect
		8	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect
		11	27.5	16	1	8	Asymp	0.8333	Non-Significant Effect

Test Acceptability Criteria

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control CV	0	<<	0.4	Yes	Passes Criteria
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0236108	0.0047222	5	1.68	0.1778	Non-Significant Effect
Error	0.0674594	0.0028108	24			
Total	0.0910702		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	445.4	15.09	2.2E-07	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.712	0.9031	2.3E-06	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		5	0.9500	0.8650	1.0000	1.0000	0.8750	1.0000	0.0306	7.21%	5.00%
5		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6		5	0.9750	0.9056	1.0000	1.0000	0.8750	1.0000	0.0250	5.73%	2.50%
8		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
11		5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	0.00%
3		5	1.32	1.195	1.445	1.393	1.209	1.393	0.04499	7.62%	5.27%
5		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	0.00%
6		5	1.356	1.254	1.458	1.393	1.209	1.393	0.03673	6.06%	2.64%
8		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	0.00%
11		5	1.393	1.393	1.393	1.393	1.393	1.393	0	0.00%	0.00%

Inland Silverside 7-d Larval Survival and Growth Test

NWDLS Environ. Toxicol. Lab

Analysis ID: 20-2612-9158 Endpoint: 7d Survival Rate
Analyzed: 04 Oct-23 10:14 Analysis: Nonparametric-Control vs TreatmentsCETIS Version: CETISv1.9.4
Status Level: 1

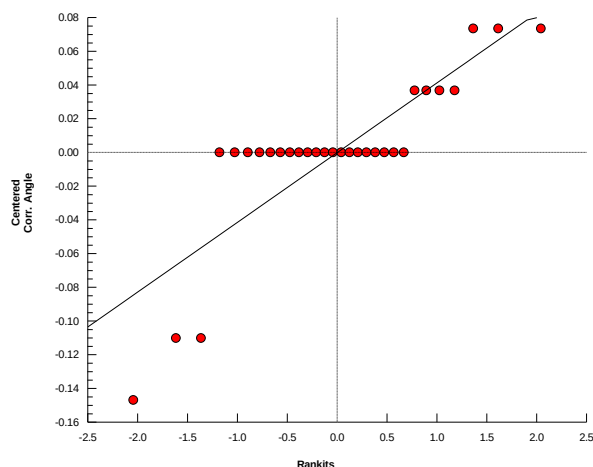
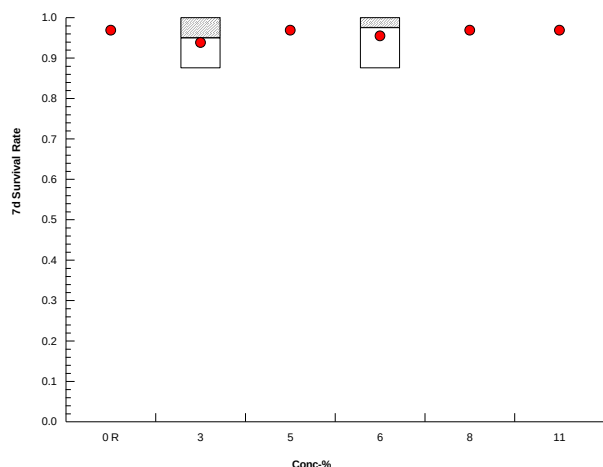
7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	0.8750	0.8750
5		1.0000	1.0000	1.0000	1.0000	1.0000
6		1.0000	1.0000	1.0000	1.0000	0.8750
8		1.0000	1.0000	1.0000	1.0000	1.0000
11		1.0000	1.0000	1.0000	1.0000	1.0000

Angular (Corrected) Transformed Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.393	1.393	1.393	1.393	1.393
3		1.393	1.393	1.393	1.209	1.209
5		1.393	1.393	1.393	1.393	1.393
6		1.393	1.393	1.393	1.393	1.209
8		1.393	1.393	1.393	1.393	1.393
11		1.393	1.393	1.393	1.393	1.393

Graphics



CETIS Analytical Report

Report Date: 05 Oct-23 16:34 (p 3 of 6)
 Test Code/ID: 23-0648 / 08-7415-9848

Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 08-6586-2366	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4
Analyzed: 04 Oct-23 10:14	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 14-4707-8877	Test Type: Growth-Survival (7d)	Analyst: Kayn Ortiz
Start Date: 11 Sep-23 16:20	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 18 Sep-23 16:40	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 03-1813-0006	Code: 12F64756	Project: NT-100056
Sample Date: 11 Sep-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 11 Sep-23 14:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	21.22%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.9791	2.362	0.267	8	CDF	0.4293	Non-Significant Effect
		5	-1.408	2.362	0.267	8	CDF	0.9950	Non-Significant Effect
		6	0.2011	2.362	0.267	8	CDF	0.7671	Non-Significant Effect
		8	-0.6785	2.362	0.267	8	CDF	0.9610	Non-Significant Effect
		11	-0.7647	2.362	0.267	8	CDF	0.9686	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits				
Attribute	Test Stat	Lower	Upper	Overlap	Decision	
Control CV	0.198	<<	0.4	Yes	Passes Criteria	
Control Resp	1.259	0.5	>>	Yes	Passes Criteria	

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.227815	0.045563	5	1.424	0.2514	Non-Significant Effect
Error	0.76768	0.0319867	24			
Total	0.995495		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	2.67	15.09	0.7507	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9542	0.9031	0.2182	Normal Distribution

Mean Dry Biomass-mg Summary

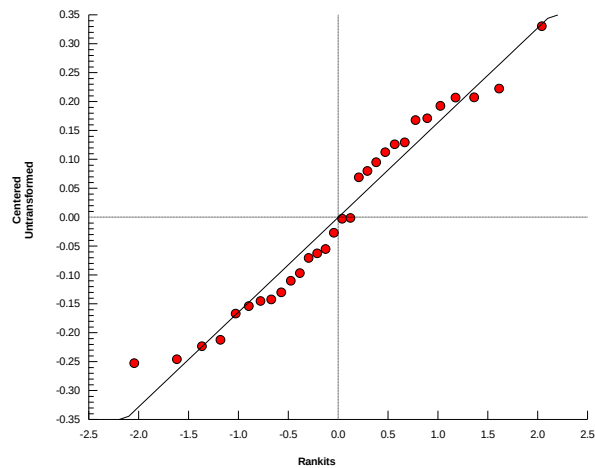
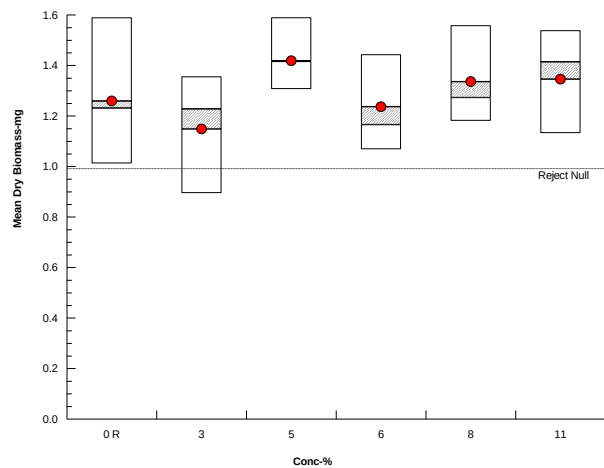
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.259	0.9493	1.568	1.231	1.013	1.589	0.1114	19.80%	0.00%
3		5	1.148	0.9101	1.386	1.228	0.895	1.355	0.0857	16.69%	8.80%
5		5	1.418	1.287	1.549	1.415	1.307	1.589	0.04715	7.43%	-12.65%
6		5	1.236	1.038	1.434	1.165	1.069	1.443	0.07133	12.90%	1.81%
8		5	1.336	1.13	1.541	1.272	1.181	1.557	0.07412	12.41%	-6.10%
11		5	1.345	1.134	1.557	1.414	1.133	1.537	0.07625	12.67%	-6.87%

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.426	1.589	1.013	1.231	1.035
3		1.003	1.26	1.227	0.895	1.355
5		1.416	1.307	1.589	1.362	1.415
6		1.443	1.365	1.165	1.139	1.069
8		1.205	1.273	1.181	1.557	1.461
11		1.414	1.537	1.133	1.44	1.203

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 08-6586-2366	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.9.4	
Analyzed: 04 Oct-23 10:14	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Inland Silverside 7-d Larval Survival and Growth Test NWDLS Environ. Toxicol. Lab

Analysis ID: 17-0746-2006	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4
Analyzed: 04 Oct-23 10:14	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 14-4707-8877	Test Type: Growth-Survival (7d)	Analyst: Kayn Ortiz
Start Date: 11 Sep-23 16:20	Protocol: EPA/821/R-02-014 (2002)	Diluent: Receiving Water
Ending Date: 18 Sep-23 16:40	Species: Menidia beryllina	Brine: Instant Ocean
Test Length: 7d 0h	Taxon: Actinopterygii	Source: NWDLS Age: 11d
Sample ID: 03-1813-0006	Code: 12F64756	Project: NT-100056
Sample Date: 11 Sep-23 08:00	Material: Industrial Effluent	Source: WQ0005143000
Receipt Date: 11 Sep-23 14:30	CAS (PC):	Station: Natgasoline LLC
Sample Age: 8h	Client: Providence Engineering and Env. Group LL	

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	11	>11	n/a	9.091	21.45%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Receiving Water		3	0.4065	2.362	0.27	8	CDF	0.6869	Non-Significant Effect
		5	-1.393	2.362	0.27	8	CDF	0.9948	Non-Significant Effect
		6	-0.06812	2.362	0.27	8	CDF	0.8527	Non-Significant Effect
		8	-0.6715	2.362	0.27	8	CDF	0.9603	Non-Significant Effect
		11	-0.7568	2.362	0.27	8	CDF	0.9680	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.137636	0.0275271	5	0.8428	0.5328	Non-Significant Effect
Error	0.783854	0.0326606	24			
Total	0.92149		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	3.483	15.09	0.6260	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9579	0.9031	0.2732	Normal Distribution

Mean Dry Weight-mg Summary

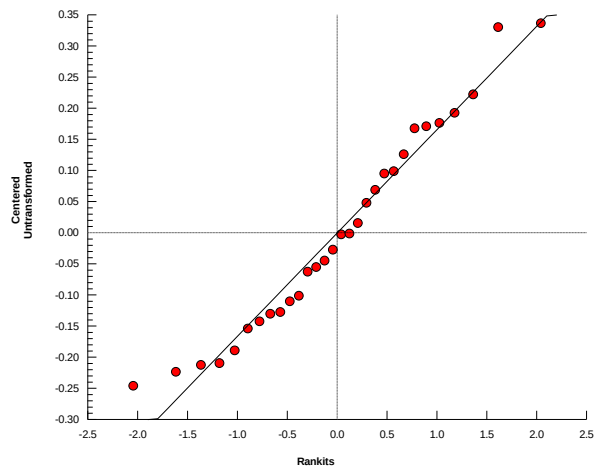
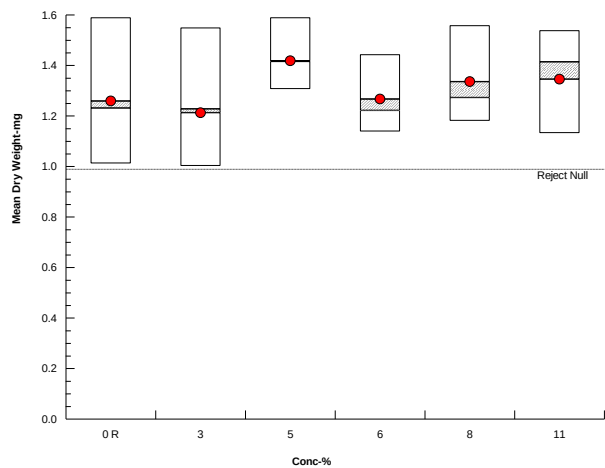
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	R	5	1.259	0.9493	1.568	1.231	1.013	1.589	0.1114	19.80%	0.00%
3		5	1.212	0.9378	1.487	1.228	1.003	1.549	0.09887	18.24%	3.69%
5		5	1.418	1.287	1.549	1.415	1.307	1.589	0.04715	7.43%	-12.65%
6		5	1.267	1.103	1.43	1.221	1.139	1.443	0.05888	10.39%	-0.62%
8		5	1.336	1.13	1.541	1.272	1.181	1.557	0.07412	12.41%	-6.10%
11		5	1.345	1.134	1.557	1.414	1.133	1.537	0.07625	12.67%	-6.87%

Mean Dry Weight-mg Detail

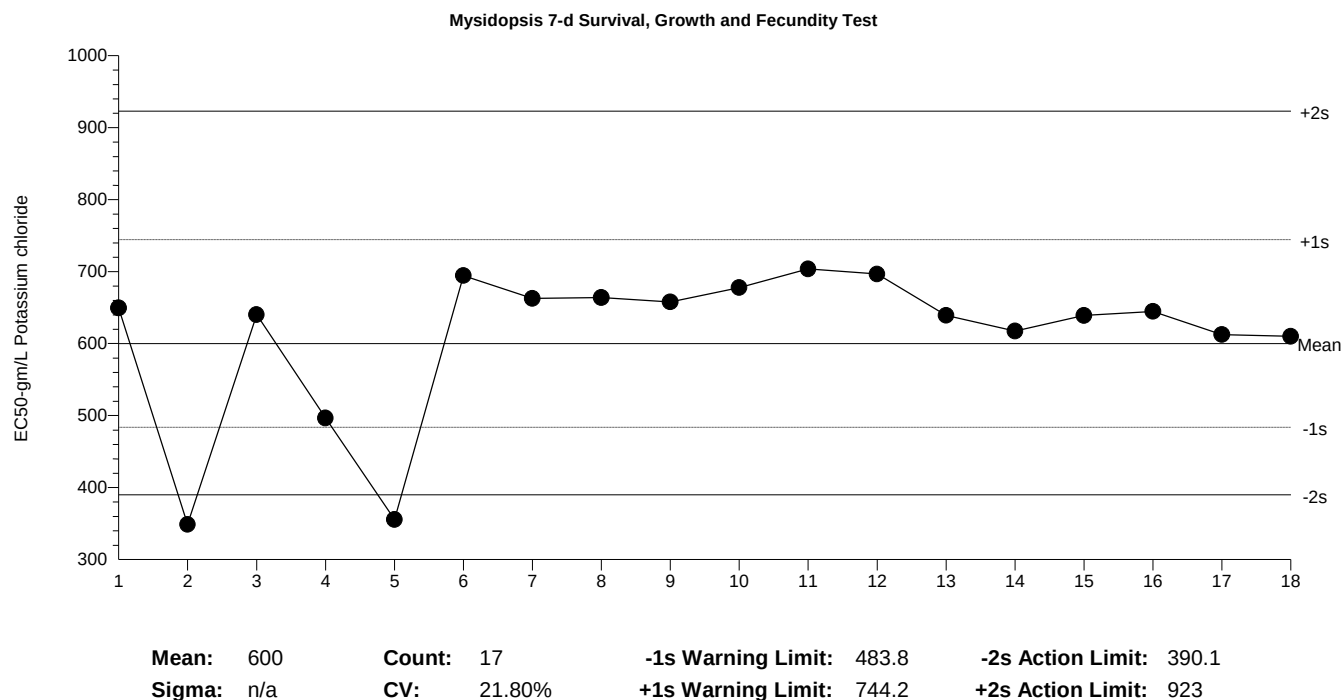
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	R	1.426	1.589	1.013	1.231	1.035
3		1.003	1.26	1.227	1.023	1.549
5		1.416	1.307	1.589	1.362	1.415
6		1.443	1.365	1.165	1.139	1.221
8		1.205	1.273	1.181	1.557	1.461
11		1.414	1.537	1.133	1.44	1.203

Inland Silverside 7-d Larval Survival and Growth Test			NWDLS Environ. Toxicol. Lab
Analysis ID: 17-0746-2006	Endpoint: Mean Dry Weight-mg	CETIS Version: CETISv1.9.4	
Analyzed: 04 Oct-23 10:14	Analysis: Parametric-Control vs Treatments	Status Level: 1	

Graphics



Mysidopsis 7-d Survival, Growth and Fecundity Test				All Matching Labs	
Test Type: Growth-Survival-Fec (7d)		Organism: Mysidopsis bahia (Atlantic Mysid)		Material:	Potassium chloride
Protocol: EPA/821/R-02-014 (2002)		Endpoint: 7d Survival Rate		Source:	Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	649.6	49.53	0.3684			01-6211-0221	11-5901-8122	NWDLS Environ. Toxicol.
2			22	16:00	348.7	-251.4	-2.521	(-)	(-)	09-3616-1421	00-9150-0822	NWDLS Environ. Toxicol.
3		Jul	20	14:40	640.2	40.13	0.3007			11-8307-1033	20-9270-2210	NWDLS Environ. Toxicol.
4		Aug	31	10:45	496.5	-103.6	-0.88			18-6777-7018	18-1763-7164	NWDLS Environ. Toxicol.
5		Sep	21	13:15	355.5	-244.6	-2.432	(-)	(-)	13-6667-4200	15-5979-0136	NWDLS Environ. Toxicol.
6		Oct	19	12:00	694.4	94.39	0.6786			09-3115-0814	15-7275-3360	NWDLS Environ. Toxicol.
7		Nov	3	13:45	662.7	62.68	0.4615			19-3160-7260	04-3340-0504	NWDLS Environ. Toxicol.
8		Dec	12	13:00	663.9	63.84	0.4696			06-4905-6652	20-1321-0134	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	657.9	57.81	0.4272			05-5770-2114	18-8602-2070	NWDLS Environ. Toxicol.
10		Feb	2	10:30	677.7	77.68	0.5655			08-8071-4725	11-7916-4212	NWDLS Environ. Toxicol.
11		Mar	9	13:30	703.7	103.7	0.7404			09-8373-8162	02-6662-5658	NWDLS Environ. Toxicol.
12		Apr	5	10:10	696.5	96.49	0.6926			12-5221-0131	20-7551-8253	NWDLS Environ. Toxicol.
13		May	4	15:30	639.1	39.08	0.2931			20-0824-9269	19-4652-2693	NWDLS Environ. Toxicol.
14		Jun	2	11:35	617.4	17.39	0.1327			16-9590-6699	18-1616-7626	NWDLS Environ. Toxicol.
15			20	14:15	639	38.94	0.292			04-0029-2682	07-4560-2821	NWDLS Environ. Toxicol.
16		Jul	5	10:50	644.7	44.64	0.3333			14-2040-3267	04-3834-3327	NWDLS Environ. Toxicol.
17		Aug	3	12:40	612.5	12.49	0.09569			02-8927-9944	09-7418-8254	NWDLS Environ. Toxicol.
18		Sep	6	12:15	610.1	10.11	0.07758			14-8800-9683	20-7502-1659	NWDLS Environ. Toxicol.

Mysidopsis 7-d Survival, Growth and Fecundity Test

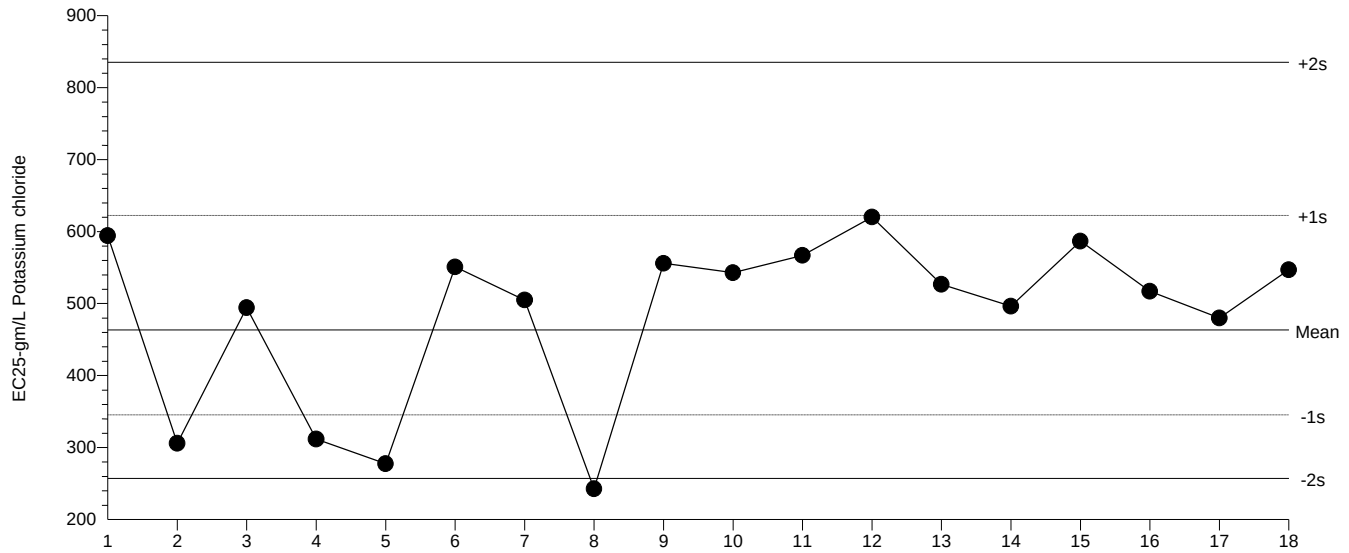
All Matching Labs

Test Type: Growth-Survival-Fec (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Mysidopsis bahia (Atlantic Mysid)
Endpoint: Mean Dry Biomass-mg

Material: Potassium chloride
Source: Reference Toxicant-REF

Mysidopsis 7-d Survival, Growth and Fecundity Test



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	13:15	594.3	130.7	0.8433			01-6211-0221	06-7581-2449	NWDLS Environ. Toxicol.
2			22	16:00	305.9	-157.7	-1.412	(-)		09-3616-1421	03-4116-2000	NWDLS Environ. Toxicol.
3		Jul	20	14:40	494.2	30.61	0.2171			11-8307-1033	07-3382-9498	NWDLS Environ. Toxicol.
4		Aug	31	10:45	311.8	-151.8	-1.347	(-)		18-6777-7018	09-8654-5792	NWDLS Environ. Toxicol.
5		Sep	21	13:15	277.5	-186.1	-1.742	(-)		13-6667-4200	10-8885-9716	NWDLS Environ. Toxicol.
6		Oct	19	12:00	550.9	87.3	0.5859			09-3115-0814	01-6337-8754	NWDLS Environ. Toxicol.
7		Nov	3	13:45	504.9	41.3	0.2898			19-3160-7260	19-5328-5189	NWDLS Environ. Toxicol.
8		Dec	12	13:00	242.7	-220.9	-2.197	(-)	(-)	06-4905-6652	20-7921-9787	NWDLS Environ. Toxicol.
9	2023	Jan	3	10:30	555.9	92.28	0.6164			05-5770-2114	18-4604-0045	NWDLS Environ. Toxicol.
10		Feb	2	10:30	542.8	79.25	0.5359			08-8071-4725	02-7679-2403	NWDLS Environ. Toxicol.
11		Mar	9	13:30	566.9	103.3	0.6834			09-8373-8162	01-5567-8537	NWDLS Environ. Toxicol.
12		Apr	5	10:10	620.2	156.6	0.9881			12-5221-0131	14-8696-9525	NWDLS Environ. Toxicol.
13		May	4	15:30	526.6	63.05	0.433			20-0824-9269	02-7703-6644	NWDLS Environ. Toxicol.
14		Jun	2	11:35	496.3	32.74	0.2317			16-9590-6699	00-8954-3441	NWDLS Environ. Toxicol.
15			20	14:15	586.6	123	0.7994			04-0029-2682	19-3009-0333	NWDLS Environ. Toxicol.
16		Jul	5	10:50	517	53.43	0.3704			14-2040-3267	13-2822-1665	NWDLS Environ. Toxicol.
17		Aug	3	12:40	480	16.42	0.1182			02-8927-9944	19-7379-7463	NWDLS Environ. Toxicol.
18		Sep	6	12:15	546.9	83.32	0.5612			14-8800-9683	13-3470-6346	NWDLS Environ. Toxicol.

Inland Silverside 7-d Larval Survival and Growth Test

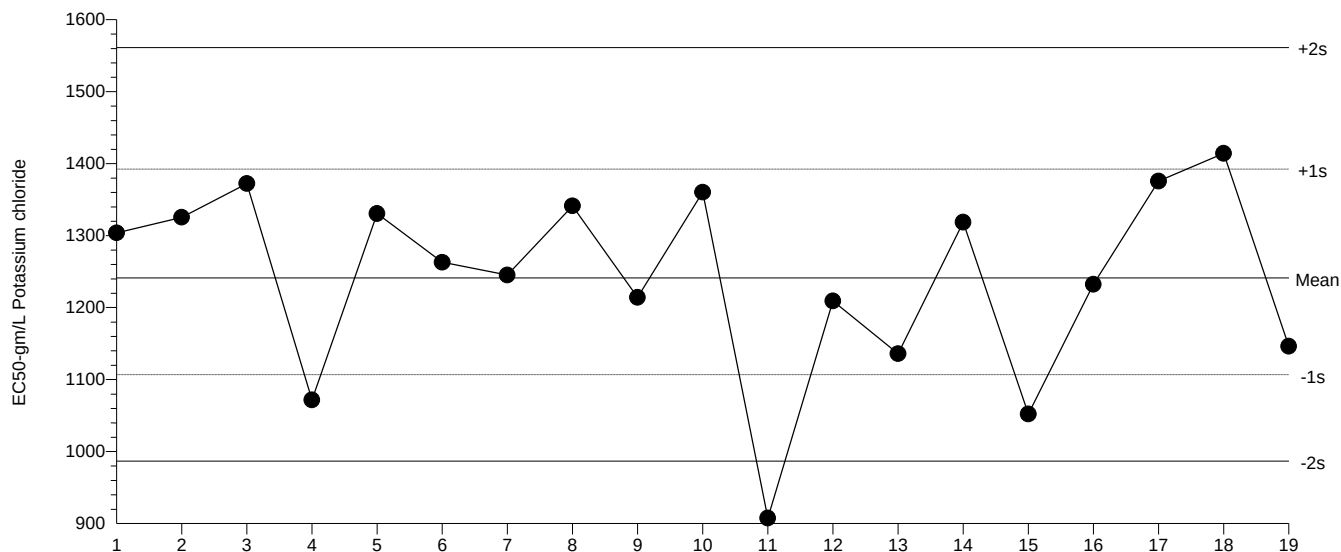
All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: 7d Survival Rate

Material: Potassium chloride
Source: Reference Toxicant-REF

Inland Silverside 7-d Larval Survival and Growth Test



Mean: 1241

Count: 18

-1s Warning Limit: 1107

-2s Action Limit: 986.9

Sigma: n/a

CV: 11.50%

+1s Warning Limit: 1392

+2s Action Limit: 1561

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1304	62.38	0.4275			21-0733-6817	12-9756-8876	NWDLS Environ. Toxicol.
2			22	16:30	1325	84.04	0.5711			06-9820-7448	08-3343-3400	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1372	130.8	0.8735			04-3327-2237	09-2136-3057	NWDLS Environ. Toxicol.
4		Aug	31	14:00	1072	-169.6	-1.281	(-)		00-7357-5399	04-3638-1725	NWDLS Environ. Toxicol.
5		Sep	21	13:10	1331	89.25	0.6053			19-5010-2951	10-6041-0723	NWDLS Environ. Toxicol.
6		Oct	19	12:30	1263	21.49	0.1496			14-8758-8127	09-2601-9551	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1245	3.75	0.0263			19-0042-2283	06-4677-3049	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1341	99.79	0.6741			12-9423-8120	19-6787-9140	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	1214	-27.21	-0.1932			08-4361-7466	16-1040-9564	NWDLS Environ. Toxicol.
10			18	11:50	1360	118.9	0.7974			07-9240-7672	14-5325-7119	NWDLS Environ. Toxicol.
11		Feb	2	10:30	907.5	-333.9	-2.731	(-)	(-)	07-7481-5869	00-3563-2871	NWDLS Environ. Toxicol.
12			16	13:00	1209	-32.31	-0.23			16-5741-0843	00-9267-7337	NWDLS Environ. Toxicol.
13		Mar	7	14:30	1136	-105.5	-0.7744			13-2753-6799	19-5347-3562	NWDLS Environ. Toxicol.
14		Apr	20	14:00	1319	77.18	0.5258			01-2157-4433	01-5171-6245	NWDLS Environ. Toxicol.
15		May	4	12:30	1052	-189.3	-1.443	(-)		17-5216-4390	09-5481-0405	NWDLS Environ. Toxicol.
16		Jun	1	13:30	1232	-9.092	-0.06409			10-7126-3489	15-6784-0584	NWDLS Environ. Toxicol.
17		Jul	9	12:30	1376	134.1	0.8945			19-2412-2077	07-8511-6490	NWDLS Environ. Toxicol.
18		Aug	10	10:40	1414	172.8	1.136	(+)		10-5910-7642	12-8270-5393	NWDLS Environ. Toxicol.
19		Sep	8	13:50	1146	-95.12	-0.695			16-6375-9308	02-3735-4536	NWDLS Environ. Toxicol.

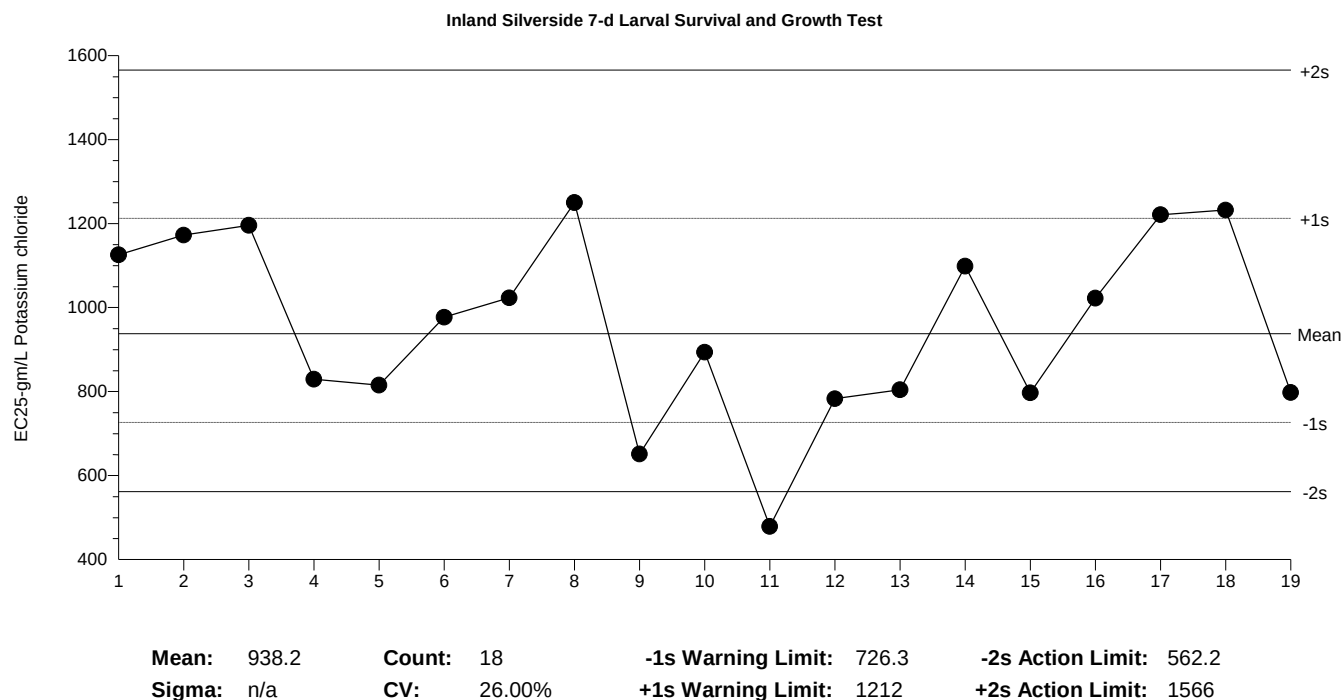
Inland Silverside 7-d Larval Survival and Growth Test

All Matching Labs

Test Type: Growth-Survival (7d)
Protocol: EPA/821/R-02-014 (2002)

Organism: Menidia beryllina (Inland Silverside)
Endpoint: Mean Dry Biomass-mg

Material: Potassium chloride
Source: Reference Toxicant-REF



Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	Laboratory
1	2022	Jun	3	14:00	1126	187.3	0.7107			21-0733-6817	17-3189-9270	NWDLS Environ. Toxicol.
2			22	16:30	1173	234.3	0.8704			06-9820-7448	18-1516-3722	NWDLS Environ. Toxicol.
3		Jul	20	14:00	1196	257.4	0.9466			04-3327-2237	10-2833-6233	NWDLS Environ. Toxicol.
4		Aug	31	14:00	829.3	-108.9	-0.4817			00-7357-5399	13-8104-1347	NWDLS Environ. Toxicol.
5		Sep	21	13:10	815.3	-122.9	-0.5482			19-5010-2951	12-8093-9078	NWDLS Environ. Toxicol.
6		Oct	19	12:30	976.9	38.71	0.1579			14-8758-8127	02-0371-2541	NWDLS Environ. Toxicol.
7		Nov	3	12:10	1023	84.8	0.3379			19-0042-2283	13-9374-3918	NWDLS Environ. Toxicol.
8		Dec	19	12:00	1250	311.8	1.12	(+)		12-9423-8120	13-4506-3415	NWDLS Environ. Toxicol.
9	2023	Jan	3	9:30	651.3	-286.9	-1.425	(-)		08-4361-7466	04-2200-5192	NWDLS Environ. Toxicol.
10			18	11:50	893.7	-44.57	-0.19			07-9240-7672	21-0019-2346	NWDLS Environ. Toxicol.
11		Feb	2	10:30	478.9	-459.4	-2.626	(-)	(-)	07-7481-5869	09-5599-2356	NWDLS Environ. Toxicol.
12			16	13:00	782.9	-155.3	-0.7067			16-5741-0843	06-2226-5122	NWDLS Environ. Toxicol.
13		Mar	7	14:30	804.1	-134.2	-0.6025			13-2753-6799	16-7456-6142	NWDLS Environ. Toxicol.
14		Apr	20	14:00	1099	160.4	0.6163			01-2157-4433	05-2206-1484	NWDLS Environ. Toxicol.
15		May	4	12:30	796.9	-141.3	-0.6375			17-5216-4390	02-4604-4670	NWDLS Environ. Toxicol.
16		Jun	1	13:30	1022	84.15	0.3354			10-7126-3489	09-7210-0631	NWDLS Environ. Toxicol.
17		Jul	9	12:30	1221	282.9	1.029	(+)		19-2412-2077	07-7250-6498	NWDLS Environ. Toxicol.
18		Aug	10	10:40	1232	294	1.064	(+)		10-5910-7642	02-6914-9600	NWDLS Environ. Toxicol.
19		Sep	8	13:50	797.5	-140.7	-0.6346			16-6375-9308	12-0523-3000	NWDLS Environ. Toxicol.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 09-10-23 0800 TO 09-11-23 0800
NO. 2: FROM 09-12-23 0800 TO 09-13-23 0800
NO. 3: FROM 09-14-23 0800 TO 09-15-23 0800

Test Initiated: 1600 TIME 09-11-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

Mysidopsis bahia SURVIVAL

	Replicate	Percent Effluent					
		0%	3%	5%	6%	8%	11%
Percent Survival	A	100	100	80	100	80	80
	B	100	100	80	100	100	100
	C	100	80	100	100	100	100
	D	100	100	100	100	100	80
	E	100	100	100	80	60	100
	F	100	100	100	80	100	100
	G	100	100	100	100	100	100
	H	100	100	100	40	100	100
	I	80	100	100	100	100	100
	J	100	100	100	100	100	100
Mean Percent Survival	24 hr.	100	100	100	100	100	100
	48 hr.	100	100	100	100	98	98
	7 day	98	98	96	90	94	96
	CV%❶	6.45	6.45	8.78	21.60	14.36	8.78

❶ coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
Mysidopsis bahia SURVIVAL AND GROWTH TEST

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

DATA TABLE FOR *M. bahia* GROWTH
Percent Effluent (%)

REP	Mean Dry Weight in Milligrams in Replicate Chambers					
	0%	3%	5%	6%	8%	11%
A	0.42	0.35	0.32	0.50	0.28	0.36
B	0.42	0.47	0.34	0.44	0.44	0.40
C	0.45	0.32	0.33	0.33	0.42	0.48
D	0.43	0.40	0.35	0.31	0.37	0.41
E	0.45	0.47	0.46	0.46	0.27	0.35
F	0.37	0.45	0.41	0.42	0.39	0.39
G	0.48	0.43	0.48	0.41	0.39	0.41
H	0.45	0.51	0.45	0.23	0.45	0.42
I	0.34	0.43	0.47	0.42	0.44	0.45
J	0.39	0.48	0.45	0.47	0.46	0.43
Mean Dry Weight in Milligrams	0.42	0.43	0.41	0.40	0.39	0.41
CV (%) ^①	10.21	13.54	15.66	20.72	17.55	9.48
PMDS	Acceptable Range: 37 or less					14.87

① coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

Dates and Times Composites Collected: NO. 1: FROM 09-10-23 0800 TO 09-11-23 0800
NO. 2: FROM 09-12-23 0800 TO 09-13-23 0800
NO. 3: FROM 09-14-23 0800 TO 09-15-23 0800

Test Initiated: 1620 TIME 09-11-23 DATE

Dilution Water Used: X Receiving Water Synthetic Dilution Water

INLAND SILVERSIDE MINNOW SURVIVAL

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV% ^①
	A	B	C	D	E	24 hr	48 hr	7 days	
0%	100	100	100	100	100	100	100	100	0.00
3%	100	100	100	88	88	100	100	95	7.21
5%	100	100	100	100	100	100	100	100	0.00
6%	100	100	100	100	88	100	100	98	5.73
8%	100	100	100	100	100	100	100	100	0.00
11%	100	100	100	100	100	100	100	100	0.00

① coefficient of variation = standard deviation x 100/mean

4. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the control survival for the % effluent corresponding to (lethality):

CRITICAL DILUTION (8%) YES X NO

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.

TABLE 1
INLAND SILVERSIDE MINNOW SURVIVAL AND GROWTH TEST
(*Menidia beryllina*)

Permittee: Natgasoline LLC
TPDES Permit No.: WQ0005143000
Outfall No.: 001

GROWTH OF INLAND SILVERSIDE MINNOWS

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV% ^❶
	A	B	C	D	E		
0%	1.43	1.59	1.01	1.23	1.04	1.26	19.80
3%	1.00	1.26	1.23	0.90	1.36	1.15	16.69
5%	1.42	1.31	1.59	1.36	1.42	1.42	7.43
6%	1.44	1.36	1.16	1.14	1.07	1.24	12.90
8%	1.20	1.27	1.18	1.56	1.46	1.34	12.41
11%	1.41	1.54	1.13	1.44	1.20	1.34	12.67
PMSD	Acceptable Range: 28 or less					21.22	

Weights are for: preserved larvae, or X unpreserved larvae

❶ coefficient of variation = standard deviation x 100/mean

5. Dunnett's Procedure or Steel's Many-one Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean dry weight (growth) at 7 days significantly less ($p=0.05$) than the control dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

CRITICAL DILUTION (8%) YES X NO

6. Enter percent effluent corresponding to each NOEC/LOEC below:

a. NOEC survival = 11 % effluent
b. LOEC survival = >11 % effluent
c. NOEC growth = 11 % effluent
d. LOEC growth = >11 % effluent

The Whole Effluent Toxicity tests reported herein were conducted according to the appropriate permit-required EPA protocol and, except as noted, are in compliance with the NELAC Institute (TNI) Standards. The test data and analyses were reviewed in accordance with the NWDLS SOP's and are approved for compliance reporting requirements.



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

12 February 2024

EAS NO.: 4A25065

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: Outfall 001 Weekly

Project No.: Acute Biomonitoring

Enclosed are the results of analyses for samples received by the laboratory on 01/25/24 15:45. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

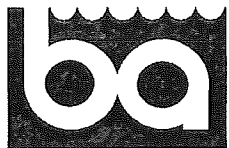
Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Case Narrative

Analysis for Biomonitoring was performed by Bio-Aquatic Testing. A certificate of analysis is enclosed.



BIO-AQUATIC TESTING, INC.
2501 MAYES RD., STE. 100
CARROLLTON, TX 75006
PH: 972-242-7750 FAX: 972-242-7749

CHAIN OF CUSTODY

☐ Bio Only:
No Sample Left

Lab Id : **91499**

Please Review & Complete Sections A, B, C, & D.

Sample No: **91499** -

Check Sample No. : ____ First, ____ Second, or ____ Third.

P.O. No: _____

Client: Earth Analytical

Facility: Natgasoline - Beaumont Gas to Gasoline

Permit No: 05143

Outfall: 001

Client Contact: SCOTT BOUDREAUX

Client Phone: (409) 842-0658

A. REVIEW SCHEDULED TEST(s):

24 Hr Acute	Americamysis bahia
24 Hr Acute	Menidia beryllina

To Ship the
1st Sample on:
1/29/2024

Concentration: 100

(For TX) Setup separate 24hr Acute Test?

☐ No

B. Use area below to make changes, if the Scheduled Test(s) in "A" are incorrect:

Freshwater Species

Saltwater Species

<i>C. dubia</i> (water flea)	<i>D. pulex</i> (water flea)	<i>D. magna</i> (water flea)	<i>P. promelas</i> (minnow)	<i>Selenastrum</i> (green algae)	<i>M. beryllina</i> (minnow)	<i>Mysidopsis</i> (shrimp)
☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour

Notes: 4th qtr 2023 makeup 24-hr Acute.

C.

Sample ID or Location:
(Outfall No. or Name)

Sample Type:
E = Effluent
RS = Rec. Stream
S = Sediment

Sample Date

From

To

Sample Time
(military)

From

To

Grab
or
Composite

Sampled By:
(Sign and Print Name)

Number Of
Containers
Shipped

001	E	01/24/24	1225	01/25/24	1125	C	Tracy Tubbs	1
2								
3								

D.

Relinquished By:

Date

Time

Received By:

Date

Time

1	Tracy Tubbs	01/25/24	1545		
2					
3					

Bio-Aquatic Sample Login

BAT sample personnel:

☒ Yes ☐ No

Dechlorinate Sample:

☐ Yes ☐ No

Dilution Water:

☐ Receiving Stream

☒ Synthetic Lab

Date:

Time:

By:

Temperature:

(C) IR#:

Chlorine:

mg/l

Ammonia:

mg/l

Int. SalCond:

ppt/uS

Adj. Salinity

ppt

pH:

Hardness:

mg/l

Other

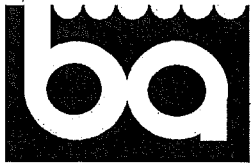
DO:

mg/l

Alkalinity:

mg/l

Condition:



Bio-Aquatic Testing, Inc.



TCEQ TNI Accredited

Earth Analytical
Natgasoline - Beaumont Gas to Gasoline Plant
OUTFALL 001

Client Address:
4825 WARD DRIVE
BEAUMONT, TX 77705

24 Hr Acute Biomonitoring Report

91499

Americamysis bahia
Menidia beryllina

January 26, 2024

Approved by:

Joshua Reed
Lab director

Bio-Aquatic Testing, Inc. ♦ 2501 Mayes Rd. Ste. 100 ♦ Carrollton, Texas ♦ 75006

TABLE OF CONTENTS

TOXICITY TEST REPORT	3
SURVIVAL TEST SUMMARY	5
STATISTICAL & CHEMICAL ANALYSIS	Appendix A
REFERENCE TOXICANTS	Appendix B
LITERATURE REFERENCES	Appendix C
CHAIN-OF-CUSTODY SHEETS	Appendix D
REGULATORY AGENCY TABLES	Appendix E

Unless otherwise noted in the body of the report, all data reported in this document are in compliance with TNI standards and apply only to the samples referenced within. This report document may not be edited or reproduced in part or in full by any other entity, unless Bio-Aquatic Testing, Inc. issues written approval.

***HAND-WRITTEN RAW DATA TABLES ARE AVAILABLE UPON REQUEST**

BIO-AQUATIC TESTING, INC.

2501 Mayes Road, Suite 100

Carrollton, Texas 75006

Tel: (972) 242-7750

Fax: (972) 242-7749

TOXICITY TEST REPORT - 24 Hr Acute

Client:	Earth Analytical	Sample:	001
Facility:	Natgasoline - Beaumont Gas to Gasoline Plant	Laboratory Number:	91499
Permit No.	05143	Date:	January 26, 2024

Americamysis bahia and *Menidia beryllina* **passed** survival testing requirements.

SAMPLE COLLECTION: A composite effluent sample from Earth Analytical, Natgasoline - Beaumont Gas to Gasoline Plant, was received by Bio-Aquatic Testing, Inc. personnel on January 26, 2024. The effluent sample was collected from Outfall 001 by facility personnel.

The effluent sample was analyzed for total residual chlorine using the Hanna Ion Specific Meter #711 and contained <0.10 mg/L. Effluent and laboratory dilution water pH, temperature, salinity, and dissolved oxygen data were collected daily.

TEST PROCEDURES:
Americamysis bahia

EPA METHOD: 2007

The 24 Hr Acute *Americamysis bahia* survival test was initiated at 16:00 hours on January 26, 2024. One concentration was prepared using 100% effluent. The test was set up with 450mL plastic cups containing 250mL of test solution. Each effluent concentration included five replicate cups with eight organisms in each cup. Test organisms were one to five days old laboratory cultured juveniles. Each concentration consisted of five replicate chambers containing eight laboratory-cultured larvae. The test proceeded for 24 hours during which survival data and water quality data were collected. A control of five replicate plastic cups containing eight organisms per cup in synthetic water of approximately 24+/-2 ppt was conducted concurrently with the test. There was 100% survival in the control. The test ended at 12:51 hours on January 27, 2024.

SURVIVAL:
Americamysis bahia

The *Americamysis bahia* survival data demonstrated >50% survival in the 100% effluent as compared to the control.

LOEC: Not Calculable (Q)

NOEC: 100% Effluent

TEST PROCEDURES:
Menidia beryllina

EPA METHOD: 2006

The 24 Hr Acute *Menidia beryllina* survival test was initiated at 16:05 hours on January 26, 2024. One concentration was prepared using 100% effluent. The test was set up with 250mL plastic cups containing 200mL of test solution as test chambers. Forty organisms nine to fourteen days old were used in each concentration. The test organisms were initiated in synthetic water 24 hours before the test began. Each concentration consisted of five replicate chambers containing eight laboratory-cultured larvae. The test proceeded for 24 hours after which survival data and water quality data were collected. A control of five replicate plastic cups containing eight organisms per cup in synthetic water of approximately 24+/-2 ppt was conducted concurrently with the test. There was 100% survival in the control. The test ended at 12:51 hours on January 27, 2024.

SURVIVAL:
Menidia beryllina

The *Menidia beryllina* survival data demonstrated >50% survival in the 100% effluent as compared to the control.

LOEC: Not Calculable (Q)
NOEC: 100% Effluent

BIO-AQUATIC TESTING, INC.

TOXICITY TEST

24 Hr Acute

Americamysis bahia

Lab ID: 91499

Client: Earth Analytical Natgasoline - Beaumont Gas to Gasoline Plant

Test Temperature (oC): 25 ± 1

Permit Number: TPDES

05143

Photo Period: 16 hours light
8 hours dark

Sample Type: Composite

Outfall Name: 001

Begin Date: 1/26/2024

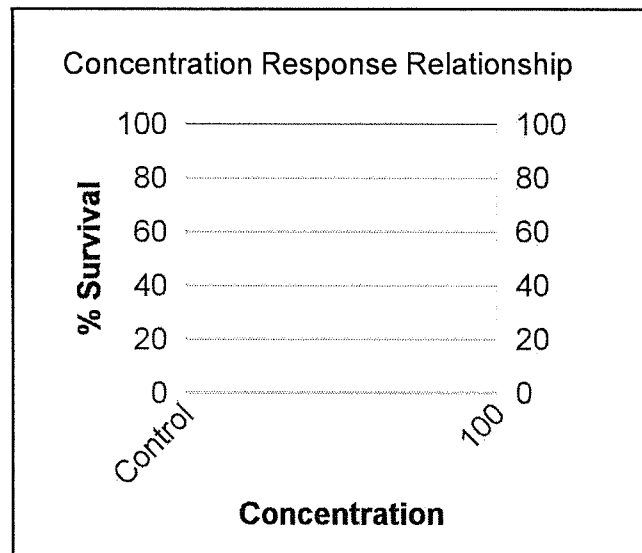
Receiving Water Name: Neches River Tidal

End Date: 1/27/2024

Test Start Time: 16:00

Test End Time: 12:51

Effluent Concentration %	SURVIVAL										Avg% Surv.
	Number Of Alive Per Replicate										
	1/26					1/27					
	A	B	C	D	E	A	B	C	D	E	
Control	8	8	8	8	8	8	8	8	8	8	100.0%
100	8	8	8	8	8	8	8	8	8	8	100.0%



BIO-AQUATIC TESTING, INC.

2501 Mayes Road, Suite 100
Carrollton, Texas 75006
Tel: 972-242-7750
Fax: 972-242-7749

24 HOUR ACUTE SURVIVAL

Organism: Americamysis bahia 24 Hr Acute

Client: Earth Analytical - Natgasoline - Beaumont Gas to Gasoline Plant

Outfall Name 001

Lab ID: 91499

Sample Type Composite

TEST INSTRUCTIONS:

4th qtr 2023 makeup 24-hr Acute.

Date Test Started: 1-26-24 Time: 1600

Technician: [Signature]

Date Test Ended: 1-27-24 Time: 1251

Technician: LC

Culture No. : MY-24-015022 *nm*

Units %	No. Surviving Organisms, 0 Hrs.					No. Surviving Organisms, 24 Hrs.				
Concentration	A	B	C	D	E	A	B	C	D	E
Control	8	—	—	—	—	8	—	—	—	—
100	8	—	—	—	—	8	—	—	—	—

Test Temperatures

	0Hr	24Hr
	new	old
Control	25.2	25.3
100	—	—
	—	—
	—	—
	—	—
	—	—
	—	—
	—	—
	—	—
IR GUN ID #	020	020

BIO-AQUATIC TESTING, INC.

TOXICITY TEST

24 Hr Acute

Menidia beryllina

Lab ID: 91499

Client: Earth Analytical Natgasoline - Beaumont Gas to Gasoline

Test Temperature (oC): 25 ± 1

Permit Number: TPDES 05143

Photo Period: 16 hours light
8 hours dark

Sample Type: Composite **Outfall Name:** 001

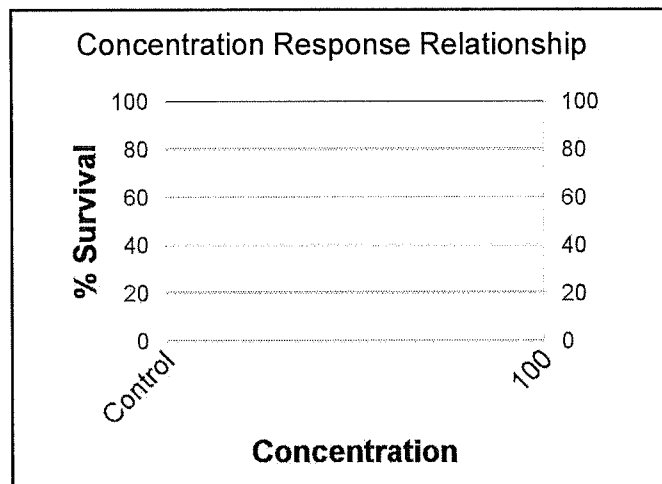
Begin Date: 1/26/2024

Receiving Water Name: Neches River Tidal

End Date: 1/27/2024

Test Start Time: 16:05 Test End Time: 12:51

Effluent Con. %	SURVIVAL										Avg% Surv.
	Number Of Alive Per Replicate										
	1/26					1/27					
	A	B	C	D	E	A	B	C	D	E	
Control	8	8	8	8	8	8	8	8	8	8	100.0%
100	8	8	8	8	8	8	8	8	8	8	100.0%



BIO-AQUATIC TESTING, INC.

2501 Mayes Road, Suite 100
Carrollton, Texas 75006
Tel: 972-242-7750
Fax: 972-242-7749

24 HOUR ACUTE SURVIVAL

Organism: Menidia beryllina 24 Hr Acute

Client: Earth Analytical - Natgasoline - Beaumont Gas to Gasoline

Lab ID: 91499

Outfall Name 001

Sample Type Composite

TEST INSTRUCTIONS:

4th qtr 2023 makeup 24-hr Acute.

Date Test Started: 1-26-24 Time: 1605

Technician: MM

Date Test Ended: 1-27-24 Time: 1251

Technician: LC

Culture No. : MN-24-012-015mm

Units %	No. Surviving Organisms, 0 Hrs.					No. Surviving Organisms, 24 Hrs.				
Concentration	A	B	C	D	E	A	B	C	D	E
Control	8					8				
100	8					8				

Test Temperatures

	0Hr	24Hr
	new	old
Control	25.1	25.3
100	1	1
IR GUN ID #	013	013

Lined through spaces preceded by a number represent the same number. Lined spaces without a preceding number indicate unused or not applicable spaces.

APPENDIX A

STATISTICS SUMMARY

Both the lethal and sub-lethal endpoints were statistically calculated according to their respective EPA guidelines. The Chronic Freshwater organisms were calculated according to EPA-821-R-02-013, October 2002 Fourth Edition. The Chronic Marine and Estuarine organisms were calculated according to EPA-821-R-02-014, October 2002 Third Edition. The Acute Freshwater and Marine organisms were calculated according to EPA-821-R-02-012, October 2002 Fifth Edition. The fertilization organisms were calculated according to EPA-600-R-95-136 or EPA-600-R-12-022, dependent upon the species. Listed below are the basic principles of these guidelines. If you would like a copy of the raw statistical calculations for your test then please contact us.

The chronic and acute *Pimephales promelas* and *Menidia beryllina* survival data is analyzed using Shapiro Wilks Test and Bartlett's Test. If the data passes both tests then the data is run through ANOVA and Dunnetts (parametric). If the data fails Shapiro Wilks Test or Bartlett's Test then Steels Many One Test (non-parametric) is used. The chronic *Pimephales promelas* and *Menidia beryllina* growth data is analyzed using Shapiro Wilks Test and Bartlett's Test. If the data passes one of these tests then the data is run through ANOVA and Dunnetts. If the data fails Shipiro Wilks Test and Bartlett's Test then Steels Many One Test is used. Point estimation may also be used.

The chronic *Mysidopsis bahia* survival data is analyzed using Chi-square test and Bartlett's Test. If the data passes both tests then the data is run through ANOVA and Dunnetts. If the data fails Chi-square test or Bartlett's Test then Steels Many One Test is used. *Mysidopsis bahia* growth data is analyzed using Chi-square test and Bartlett's Test. If the data passes one of these tests then the data is run through ANOVA and Dunnetts. If the data fails Chi-square test and Bartlett's Test then Steels Many One Test is used. Point estimation may also be used.

The acute *Mysidopsis bahia* survival data is analyzed using Shapiro Wilks Test and Bartlett's Test. If the data passes both tests then the data is run through ANOVA and Dunnetts. If the data fails Shipiro Wilks Test or Bartlett's Test then Steels Many One Test is used. Point estimation may also be used.

The chronic *Ceriodaphnia dubia* survival data are analyzed using the Fisher's Exact Test. The chronic *Ceriodaphnia dubia* reproduction and are analyzed using the Chi-square test and Bartlett Test. If the data passes one of these tests then the data is run through ANOVA and Dunnetts. If the data fails Chi-square test and Bartlett's Test then Steels Many One Test is used. Point estimation may also be used.

The acute *Daphnia pulex* and *Ceriodaphnia dubia* survival data is analyzed using Shapiro Wilks Test and Bartlett's Test. If the data passes both tests then the data is run through ANOVA and Dunnetts. If the data fails Shapiro Wilks Test or Bartlett's Test then Steels Many One Test is used. Point estimation may also be used.

The fertilization data is analyzed using Shapiro Wilks Test and Bartlett's Test. If the data passes both tests then the data is run through ANOVA and Dunnetts. If the data fails Shapiro Wilks Test or Bartlett's Test then Steels Many One Test is used. Point estimation or TST methodology may also be used.

Bio-Aquatic Testing, Inc.

SALT WATER TEST SETUP FORM

Client: Earth AnalyticalPermit 05143Facility: Natgasoline - Beaumont Gas to GasolineLab Number 91499Outfall Name: 001Number of samples 1Dilution Water: Synthetic LabReceiving Water Name: Neches River Tidal

Dechlorinate Sample: _____

Sx #	Rcvd Date	Rcvd Time	Sampling Dates		Sampling Times	
			Begin Date	End Date	Start	End
1	01/26/24	10:24	01/24/24	01/25/24	12:25	11:25

Type of Test(s)

Americamysis bahia 24 Hr AcuteMenidia beryllina 24 Hr AcuteStart Sx # 1 Date: 1/26/2024

Renew Sx # _____ Date: _____

Renew Sx # _____ Date: _____

Renew Sx # _____ Date: _____

Renew Sx # _____ Date: _____

Renew Sx # _____ Date: _____

Renew Sx # _____ Date: _____

Controls: Synthetic

pH Match: _____

Hardness Match: _____

Test Start Date: _____ Test End Date: _____

1/26/2024 1/27/2024Americamysis Test Set Up: 5 Reps & 8 Organisms per RepMenidia beryllina Test Set Up: 5 Reps & 8 Organism per RepConcentrations: 100 %Test Chemistry on these dilutions: 100

Samples received by: ☐ Express Delivery ☐ UPS Next Day ☐ via Air Cargo ☐ DHL
☒ Federal Express ☐ the Client ☐ Bio-Aquatic personnel

Other: _____

BIO-AQUATIC TESTING, INC.

Hardness, Alkalinity, Residual Chlorine, Specific Conductivity, and Salinity Analysis Data

Client: Earth Analytical

Lab ID: 91499

Facility: Natgasoline - Beaumont Gas to

Dilution Water(s): Synthetic Lab

Outfall: 001

Test Date: January 26, 2024

EFFLUENT PARAMETERS

Effluent Sample #	Received		Residual Cl ₂ (mg/L)	DeChlor (ml/L) ¹	Ammonia (mg/L)	Analyst Initials	Temp. Received
	Date	Time					
1	1/26/24	10:24	<0.10	N/A	11.1	DT	3.6

¹Dechlorination Reagent: 0.025 N Sodium Thiosulfate

Effluent Sample #	pH	DO (mg/L)	Init. Salinity (ppt)	Adjusted Salinity	Analyst Initials
1	7.3	9.9	0.7	25.2	DT

Analysis Methods: Chlorine: Hanna Colorimeter #HI711, Ammonia: Hanna Colorimeter #HI733, Hardness: Hanna Photometer #HI96735, Alkalinity: Hanna Colorimeter #HI775, pH, DO, Conductivity: Thermo Versa Star Benchtop Meter

BIO-AQUATIC TESTING, INC.

pH, Dissolved Oxygen, Salinity

24 Hr Acute Americamysis bahia

Client: Earth Analytical

Lab Number: 91499

Facility: Natgasoline - Beaumont Gas to
Outfall: 001

Dilution Water(s): Synthetic Lab
Test Begin Date: January 26, 2024

						Concentration							
ANALYST	DATE	TIME	SX#	UNIT	%	Control	100						
JR	1/26	Start	1	pH		7.9	7.3						
				DO (mg/L)		6.2	6.8						
		25 ± 1		Salinity (ppt)		24.6	25.4						
MM	1/27	24 Hr	1	pH		8.1	7.5						
				DO (mg/L)		7.4	6.9						
		25 ± 1		Salinity (ppt)		24.3	25.6						
	1/28			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									
	1/29			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									
	1/30			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									
	1/31			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									
	2/1			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									
	2/2			pH									
				DO (mg/L)									
		25 ± 1		Salinity (ppt)									

BIO-AQUATIC TESTING, INC.

pH, Dissolved Oxygen, Salinity

24 Hr Acute

Menidia beryllina

Client: Earth Analytical

Lab Number: 91499

Facility: Natgasoline - Beaumont Gas to

Dilution Water(s): Synthetic Lab

Outfall: 001

Test Begin Date: January 26, 2024

ANALYST	DATE	TIME	SX#	UNIT	%	Concentration							
						Control	100						
JR	1/26	Start	1		pH	7.9	7.3						
					DO (mg/L)	6.2	6.8						
		25 ± 1			Salinity (ppt)	24.6	25.4						
MM	1/27	24 Hr	1		pH	7.8	7.4						
					DO (mg/L)	6.2	6.7						
		25 ± 1			Salinity (ppt)	24.4	25.9						
	1/28				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								
	1/29				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								
	1/30				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								
	1/31				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								
	2/1				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								
	2/2				pH								
					DO (mg/L)								
		25 ± 1			Salinity (ppt)								

Appendix B

Americamysis bahia

BIO-AQUATIC TESTING, INC.

Carrollton, TX

REFERENCE TOXICANTS

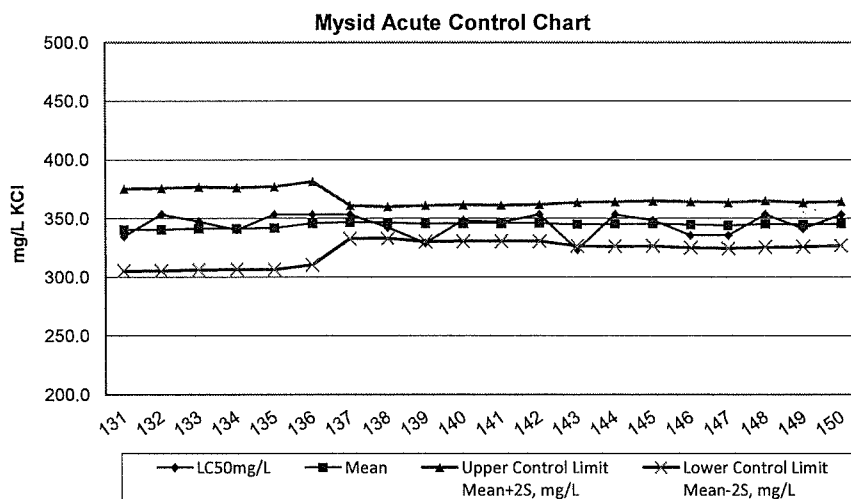
Bio-Aquatic Testing conducts reference toxicant testing monthly for organisms cultured in-house. For studies requiring purchased organisms, reference toxicant testing is performed simultaneously. Reference toxicant testing validates data and measures organism consistency. Only reagent grade chemicals are used of the following choices: sodium laurel sulfate (SLS), copper sulfate, copper chloride, potassium chloride, and sodium chloride. Organism responses are tracked with control charts for each reference toxicant/organism combination. The data are examined for sensitivity trends and to determine if results are within EPA described limits.

ACUTE REFERENCE TOXICANT TEST RESULTS

DILUTION WATER:	Standard Synthetic Saltwater
CHEMICAL:	Potassium Chloride
DURATION:	48 Hour Acute
TEST NUMBER:	150
PROJECT NUMBER:	90355
START DATE:	12/26/2023
START TIME:	16:48
TOTAL NUMBER EXPOSED:	40 organisms per concentration
CONCENTRATIONS (mg/L):	CON 25 50 125 250 500 1000
NUMBER DEAD PER CONCENTRATION:	0 0 0 0 0 40 40
TEST METHODS:	As listed in EPA-821-R-02-012
STATISTICAL METHODS:	SURVIVAL: Trimmed Spearman-Kärber
LC50:	353.55 mg/L
95% LOWER CONFIDENCE LIMITS:	N/A mg/L
95% UPPER CONFIDENCE LIMITS:	N/A mg/L

REFERENCE TOXICANT STATISTICAL RESULTS: LC50 AND CONTROL LIMITS
***Americamysis bahia* EXPOSED TO POTASSIUM CHLORIDE, 48 HOUR STATIC RENEWAL**

Test Number	Date	Project Number	Toxicant Lot Number	Statistical Method	LC50mg/L	Mean	Twice Standard Deviation 2S	Upper Control Limit Mean+2S, mg/L	Lower Control Limit Mean-2S, mg/L
131	4/26/2022	83436	923207A	Trimmed Spearman-Kärber	334.7	340.3	35.0	375.3	305.3
132	5/31/2022	83640	923207A	Trimmed Spearman-Kärber	353.6	340.6	35.2	375.8	305.4
133	6/28/2022	83640	923207A	Trimmed Spearman-Kärber	347.5	341.5	35.2	376.7	306.3
134	7/5/2022	83751 DOC	923207A	Trimmed Spearman-Kärber	340.2	341.5	34.8	376.3	306.6
135	8/30/2022	83867	923207B	Trimmed Spearman-Kärber	353.6	341.8	35.2	377.0	306.5
136	9/27/2022	83953	923207B	Trimmed Spearman-Kärber	353.6	346.0	35.5	381.6	310.5
137	10/28/2022	84025	923207B	Trimmed Spearman-Kärber	353.6	346.9	14.0	361.0	332.9
138	11/30/2022	84158	923207B	Trimmed Spearman-Kärber	342.3	346.6	13.4	360.0	333.2
139	12/27/2022	84761	923207B	Trimmed Spearman-Kärber	329.0	345.5	15.5	361.0	330.0
140	1/30/2023	85955	923207B	Trimmed Spearman-Kärber	348.4	346.0	15.5	361.4	330.5
141	2/28/2023	86332	923207B	Trimmed Spearman-Kärber	347.0	345.9	15.3	361.2	330.6
142	3/28/2023	86591	923207B	Trimmed Spearman-Kärber	353.6	346.2	15.6	361.9	330.6
143	4/27/2023	86822	923207B	Trimmed Spearman-Kärber	323.3	345.0	18.7	363.7	326.3
144	5/30/2023	87498	923207B	Trimmed Spearman-Kärber	353.6	345.3	19.1	364.4	326.2
145	7/26/2023	87923	923207B	Trimmed Spearman-Kärber	348.4	345.7	19.1	364.7	326.6
146	8/29/2023	88089	026712A	Trimmed Spearman-Kärber	335.6	344.7	19.5	364.2	325.2
147	9/28/2023	88262	026712A	Trimmed Spearman-Kärber	335.6	344.0	19.5	363.6	324.5
148	10/31/2023	88424	026712A	Trimmed Spearman-Kärber	353.6	345.3	19.9	365.2	325.4
149	11/29/2023	89554	923207B	Trimmed Spearman-Kärber	341.5	344.7	18.7	363.4	325.9
150	12/26/2023	90355	923207B	Trimmed Spearman-Kärber	353.6	345.6	18.7	364.4	326.9



Appendix B

Menidia beryllina

BIO-AQUATIC TESTING, INC.

Carrollton, TX

REFERENCE TOXICANTS

Bio-Aquatic Testing conducts reference toxicant testing monthly for organisms cultured in-house. For studies requiring purchased organisms, reference toxicant testing is performed simultaneously. Reference toxicant testing validates data and measures organism consistency. Only reagent grade chemicals are used of the following choices: sodium laurel sulfate (SLS), copper sulfate, copper chloride, potassium chloride, and sodium chloride. Organism responses are tracked with control charts for each reference toxicant/organism combination. The data are examined for sensitivity trends and to determine if results are within EPA described limits.

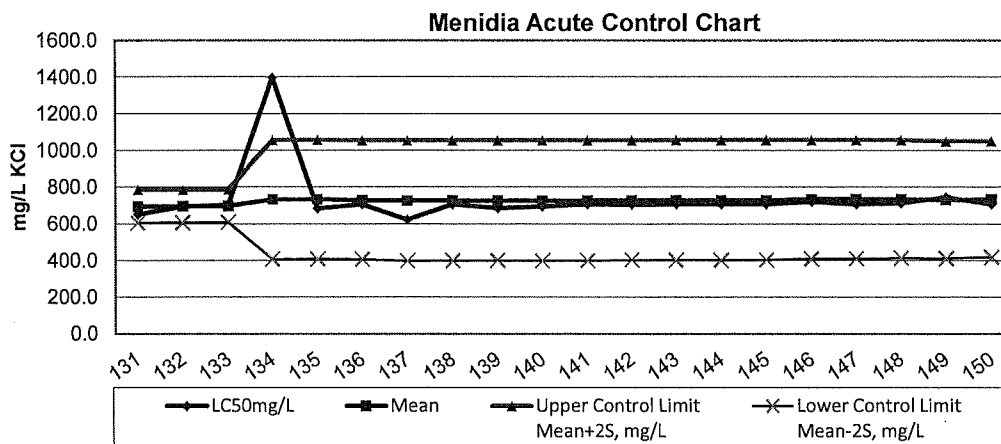
ACUTE REFERENCE TOXICANT TEST RESULTS

DILUTION WATER:	Standard Synthetic Saltwater
CHEMICAL:	Potassium Chloride
DURATION:	48 Hour Acute
TEST NUMBER:	150
PROJECT NUMBER:	90358
START DATE:	12/26/2023
START TIME:	17:08
TOTAL NUMBER EXPOSED:	40 organisms per concentration
CONCENTRATIONS (mg/L):	CON 125 250 500 1000 2000 4000
NUMBER DEAD PER CONCENTRATION:	0 0 0 0 40 40 40
TEST METHODS:	As listed in EPA-821-R-02-012
STATISTICAL METHODS:	SURVIVAL: Trimmed Spearman-Kärber
LC50:	707.11 mg/L
95% LOWER CONFIDENCE LIMITS:	N/A mg/L
95% UPPER CONFIDENCE LIMITS:	N/A mg/L

REFERENCE TOXICANT STATISTICAL RESULTS: LC50 AND CONTROL LIMITS

Menidia beryllina EXPOSED TO POTASSIUM CHLORIDE, 48 HOUR STATIC RENEWAL

Test Number	Date	Project Number	Toxicant Lot Number	Statistical Method	LC50mg/L	Mean	Twice Standard Deviation 2S	Upper Control Limit Mean+2S, mg/L	Lower Control Limit Mean-2S, mg/L
131	4/26/2022	83438	923207A	Trimmed Spearman-Kärber	651.6	694.9	90.6	785.5	604.3
132	5/31/2022	83642	923207A	Trimmed Spearman-Kärber	695.0	696.1	89.9	786.0	606.2
133	6/28/2022	83729	923207A	Trimmed Spearman-Kärber	703.0	697.7	89.2	786.9	608.5
134	7/6/2022	83747 DOC	923207A	Trimmed Spearman-Kärber	1397.6	732.2	325.6	1057.8	406.6
135	8/30/2022	83869	923207B	Trimmed Spearman-Kärber	683.0	733.4	324.7	1058.1	408.7
136	9/27/2022	83955	923207B	Trimmed Spearman-Kärber	707.1	730.2	324.4	1054.6	405.8
137	10/28/2022	84027	923207B	Trimmed Spearman-Kärber	622.4	725.9	327.9	1053.8	398.1
138	11/30/2022	84160	923207B	Trimmed Spearman-Kärber	707.1	726.5	327.7	1054.2	398.9
139	12/27/2022	84760	923207B	Trimmed Spearman-Kärber	686.8	726.7	327.6	1054.3	399.2
140	1/30/2023	85954	923207B	Trimmed Spearman-Kärber	694.8	726.1	327.8	1053.9	398.4
141	2/28/2023	86331	923207B	Trimmed Spearman-Kärber	707.1	727.3	327.3	1054.6	400.0
142	3/28/2023	86590	923207B	Trimmed Spearman-Kärber	702.6	727.5	327.2	1054.7	400.3
143	4/27/2023	86821	923207B	Trimmed Spearman-Kärber	707.1	728.7	326.7	1055.4	402.0
144	5/30/2023	87497	923207B	Trimmed Spearman-Kärber	707.1	728.7	326.7	1055.4	402.0
145	7/26/2023	87922	923207B	Trimmed Spearman-Kärber	707.1	728.7	326.7	1055.4	402.0
146	8/29/2023	88088	026712A	Trimmed Spearman-Kärber	719.5	732.7	324.1	1056.8	408.6
147	9/28/2023	88261	026712A	Trimmed Spearman-Kärber	707.1	733.3	323.9	1057.1	409.4
148	10/31/2023	88430	026712A	Trimmed Spearman-Kärber	711.2	734.8	323.1	1057.9	411.6
149	11/29/2023	89560	923207B	Trimmed Spearman-Kärber	745.3	730.0	319.3	1049.3	410.7
150	12/26/2023	90358	923207B	Trimmed Spearman-Kärber	707.1	733.5	316.6	1050.1	416.9



APPENDIX C

LITERATURE REFERENCES

- U.S.E.P.A., 2002. Short-Term Methods For Estimating The Chronic Toxicity Of Effluents And Receiving Water To Freshwater Organisms (Fifth Edition) U.S. Environmental Protection Agency, Office of Water, Washington D.C., EPA-821-R-02-012.
- U.S.E.P.A., 2002. Short-Term Methods For Estimating The Chronic Toxicity Of Effluents and Receiving Water To Marine And Estuarine Organisms (Third Edition) U.S. Environmental Protection Agency, Office of Water, Washington D.C., EPA-821-R-02-014.
- U.S.E.P.A., 2002. Short-Term Methods For Estimating The Chronic Toxicity Of Effluents And Receiving Water To Freshwater Organisms (Fourth Edition) U.S. Environmental Protection Agency, Office of Water, Washington D.C., EPA-821-R-02-013.
- U.S.E.P.A., 2012. Tropical Collector Urchin, *Tripneustes gratilla* (First Edition) U.S. Environmental Protection Agency, Office of Research and Development and Region 9, EPA-600-R-12-022.
- U.S.E.P.A., 1995. Short-Term Methods For Estimating The Chronic Toxicity Of Effluents And Receiving Water To West Coast Marine and Estuarine Organisms (First Edition) U.S. Environmental Protection Agency, EPA-600-R-95-136.
- U.S.E.P.A., 2010. National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, U.S. Environmental Protection Agency, Office of Wastewater, Washington D.C., EPA-833-R-10-004.
- U.S.E.P.A., 1991. Technical Support Document For Water Quality-Based Toxics Control, U.S. Environmental Protection Agency, EPA-505-2-90-001.
- Zarr, Jerrold, H., 1984. Biostatistical Analysis, (Second Edition). Prentice-Hall, Inc., Englewood Cliffs, N.J.

CHAIN-OF-CUSTODY SHEETS

Appendix D



BIO-AQUATIC TESTING, INC.
2501 MAYES RD., STE. 100
CARROLLTON, TX 75006
PH: 972-242-7750 FAX: 972-242-7749

Client: Earth Analytical

Facility: Natgasoline - Beaumont Gas to Gasoline

Permit No: 05143

Outfall: 001

Client Contact: SCOTT BOUDREAU

Client Phone: (409) 842-0658

A. REVIEW SCHEDULED TEST(S):

24 Hr Acute	Americamysis bahia
24 Hr Acute	Menidia beryllina

Concentration: 100

(For TX) Setup separate 24hr Acute Test? ☐ No

To Ship the
1st Sample on:
1/29/2024

Sample ID or Location:
(Outfall No. or Name)

Sample Type:
E = Effluent
RS = Rec. Stream
S = Sediment

Sample Date

From To

Grab or Composite

Sample Time (military)

From To

Received By:

Date

Time

Number Of Containers Shipped

Sampled By:
(Sign and Print Name)

CHAIN OF CUSTODY

☐ Bio Only
☐ No Sample Left

Lab Id: 91499

Please Review & Complete Sections A, B, C, & D.

Sample No: 91499

Check Sample No.: First, Second, or Third.

P.O. No:

B. Use area below to make changes, if the Scheduled Test(s) in "A" are incorrect:

Freshwater Species				Saltwater Species			
C. dubia (water flea)	D. pulex (water flea)	D. magna (water flea)	P. promelas (minnow)	Selenastrum (green algae)	M. beryllina (minnow)	Mysidopsis (shrimp)	
☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	☐ Chronic ☐ 96 Hour ☐ 48 Hour ☐ 24 Hour	

Notes: 4th qtr 2023 makeup 24-hr Acute.

Bio-Aquatic Sample Login

BAT sample personnel:
☐ Yes ☐ No

Dechlorinate Sample:
☐ Yes ☐ No

Dilution Water:
☐ Receiving Stream
☒ Synthetic Lab

Date: 1/26/24 Time: 1024 By: DT

Ammonia: 11.1 mg/l

Hardness: 490 mg/l

Alkalinity: 492 mg/l

Temperature: 3.6

Adj. Salinity: 25.2 ppt

Other

Condition: good

REGULATORY AGENCY TABLES

Appendix E

Table 2 (Sheet 1 of 2)
BIOMONITORING REPORT

Americamysis bahia SURVIVAL TEST

Permittee: Earth Analytical - Natgasoline - Beaumont Gas to
Permit No.: 05143
Outfall No.: 001

Dates and times
Composites were collected: FROM: 1/24/2024 @ 12:25 Date/Time TO: 1/25/2024 @ 11:25 Date/Time

Test Initiation: Time: 16:00 Date: 1/26/2024

Dilution Water Used: ☐ Receiving Water ☒ Synthetic Dilution Water

DATA TABLE FOR SURVIVAL OF *Americamysis bahia*

TIME	REPLICATE	EFFLUENT CONC. (%)	
		0%	100 %
24 HOUR	A	100	100
	B	100	100
	C	100	100
	D	100	100
	E	100	100
MEAN		100	100

Is the mean survival at 24 hours in the 100% effluent greater than 50%?

CRITICAL DILUTION (100 %) : X YES NO

If yes is checked enter a '0' for Parameter TIE3E, otherwise enter '1'.

Enter the percent effluent corresponding to LC50 below:

24 Hour LC50 (*Americamysis bahia*) = >100 % Effluent

95 % Confidence Interval : *Q

Method of LC50 Calculation: Visual Inspection

Q* refers to a value that is not calculable

Table 2 (Sheet 2 of 2)
BIOMONITORING REPORT

Menidia beryllina SURVIVAL TEST

Permittee: Earth Analytical - Natgasoline - Beaumont Gas to
Permit No.: 05143
Outfall No.: 001

Dates and times FROM: 1/24/2024 @ 12:25 TO: 1/25/2024 @ 11:25
Composites were collected:

Test Initiation: Time: 16:05 Date: 1/26/2024

Dilution Water Used: ☐ Receiving Water ☒ Synthetic Dilution Water

DATA TABLE FOR SURVIVAL OF *Menidia beryllina*

TIME	REPLICATE	EFFLUENT CONC. (%)	
		0%	100 %
24 HOUR	A	100	100
	B	100	100
	C	100	100
	D	100	100
	E	100	100
MEAN		100	100

Is the mean survival at 24 hours in the 100% effluent greater than 50%?

CRITICAL DILUTION (100 %) : X YES NO

If yes is checked enter a '0' for Parameter TIE6B, otherwise enter '1'.

Enter the percent effluent corresponding to LC50 below:

24 Hour LC50 (*Menidia beryllina*) = >100 % Effluent
95 % Confidence Interval : *Q
Method of LC50 Calculation: Visual Inspection

Q* refers to a value that is not calculable

ATTACHMENT 15

Attachment 15. Safety Data Sheets

3D TRASAR™ 3DT398

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 3D TRASAR™ 3DT398

Other means of identification : Not applicable.

Recommended use : COOLING WATER CORROSION INHIBITOR - INORGANIC COMPOUNDS

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 06/12/2023

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1

Serious eye damage : Category 1

Skin sensitization : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. 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. Immediately call a POISON CENTER/doctor. 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 or doctor/ physician.

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : Do not mix with bleach or other chlorinated products – will cause chlorine gas.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Modified benzimidazole salt	Proprietary	10 - 30
Organic Sulfonic Acid	Proprietary	10 - 30
Acetic Acid	64-19-7	10 - 30

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

SAFETY DATA SHEET

3D TRASAR™ 3DT398

- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation. Do not mix with bleach or other chlorinated products – will cause chlorine gas.
- Conditions for safe storage : Keep away from strong bases. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : Keep in properly labelled containers.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Acetic Acid	64-19-7	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 25 mg/m3	NIOSH REL
		ST	15 ppm 37 mg/m3	NIOSH REL

SAFETY DATA SHEET

3D TRASAR™ 3DT398

		TWA	10 ppm 25 mg/m ³	OSHA P0
--	--	-----	--------------------------------	---------

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Wear protective gloves.
Impervious gloves, resistant to chemicals.
Neoprene
Nitrile rubber
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear dark brown

Odour : vinegar-like

Flash point : 98.60 °C, Method: ASTM D 93

pH : < 1.5, (25 °C), Method: ASTM E 70

Odour Threshold : no data available

Melting point/freezing point : Freezing Point: -16.50 °C, ASTM D-1177

Initial boiling point and boiling range : 102.0 °C, Method: ASTM D 1120-72

Evaporation rate : no data available

Flammability (solid, gas) : Not applicable.

Upper explosion limit : no data available

Lower explosion limit : no data available

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.108, (25 °C),
Density	: no data available
Water solubility	: Miscible
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: log Pow: 1.89, Method: OECD Test Guideline 117, GLP: Yes, Active Substance
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: 3.77 mm ² /s (25 °C), Method: ASTM D 445
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Do not mix with bleach or other chlorinated products – will cause chlorine gas.
Conditions to avoid	: None known.
Incompatible materials	: Strong bases
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x) Sulphur oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes serious eye damage.
Skin	: Causes severe skin burns. May cause allergic skin reaction.
Ingestion	: Causes digestive tract burns.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation.

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions

Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 4,732 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : Acute toxicity estimate: 4,970 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : no data available

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): 502 mg/l
Exposure time: 96 hrs
Test substance: Similar Product

NOEC Pimephales promelas (fathead minnow): 360 mg/l
Exposure time: 96 hrs
Test substance: Similar Product

LC50 Rainbow Trout: 480 mg/l
Exposure time: 96 hrs

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Test substance: Similar Product

NOEC Rainbow Trout: 360 mg/l

Exposure time: 96 hrs

Test substance: Similar Product

LC50 Pimephales promelas (fathead minnow): 444 mg/l

Exposure time: 96 hrs

Test substance: Product

NOEC Pimephales promelas (fathead minnow): 200 mg/l

Exposure time: 96 hrs

Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : EC50 Ceriodaphnia dubia: 301 mg/l
Exposure time: 48 hrs

Test substance: Similar Product

LC50 Ceriodaphnia dubia: 369 mg/l

Exposure time: 48 hrs

Test substance: Similar Product

NOEC Ceriodaphnia dubia: 216 mg/l

Exposure time: 48 hrs

Test substance: Similar Product

EC50 Daphnia magna Straus: 400 mg/l

Exposure time: 48 hrs

Test substance: Product

LC50 Ceriodaphnia dubia: 377 mg/l

Exposure time: 48 hrs

Test substance: Product

EC50 Ceriodaphnia dubia: 300 mg/l

Exposure time: 48 hrs

Test substance: Product

Toxicity to algae : NOEC Macrocystis pyrifera (brown algae): 25 mg/l

Exposure time: 48 hrs

Test substance: Similar Product

Test Type: Reproduction

EC50 Macrocystis pyrifera (brown algae): 104 mg/l

Exposure time: 48 hrs

Test substance: Similar Product

Test Type: Reproduction

EC25 / IC25 Macrocystis pyrifera (brown algae): 74.5 mg/l

Exposure time: 48 hrs

Test substance: Similar Product

Test Type: Reproduction

NOEC Macrocystis pyrifera (brown algae): 25 mg/l

Exposure time: 48 hrs

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Test substance: Similar Product
Test Type: Growth

EC50 *Macrocystis pyrifera* (brown algae): 119 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Growth

EC25 / IC25 *Macrocystis pyrifera* (brown algae): 67.6 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Growth

ErC50 *Desmodesmus subspicatus* (green algae): 1,000 mg/l
Exposure time: 48 h
Test Type: Growth inhibition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC25 / IC25: 66 mg/l
Exposure time: 7 d
Species: *Ceriodaphnia dubia*
Test substance: Similar Product
Test Type: Reproduction

LOEC: 90 mg/l
Exposure time: 7 d
Species: *Ceriodaphnia dubia*
Test substance: Similar Product
Test Type: Reproduction

NOEC: 45 mg/l
Exposure time: 7 d
Species: *Ceriodaphnia dubia*
Test substance: Similar Product
Test Type: Reproduction

Persistence and degradability

Chemical Oxygen Demand (COD): 610,000 mg/l

Mobility

no data available

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Where possible recycling is preferred to disposal or

SAFETY DATA SHEET

3D TRASAR™ 3DT398

incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations
Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : CORROSIVE LIQUID, N.O.S.
Technical name(s) : Organic Sulfonic Acid, Acetic Acid
UN/ID No. : UN 1760
Transport hazard class(es) : 8
Packing group : III
Reportable Quantity (per package) : 49,978 lbs
RQ Component : Acetic Acid

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, N.O.S.
Technical name(s) : Organic Sulfonic Acid, Acetic Acid
UN/ID No. : UN 1760
Transport hazard class(es) : 8
Packing group : III
Reportable Quantity (per package) : 49,978 lbs
RQ Component : Acetic Acid

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, N.O.S.
Technical name(s) : Organic Sulfonic Acid, Acetic Acid
UN/ID No. : UN 1760
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : The following substance(s) is/are subject to a Significant New Use Rule: Modified benzimidazole salt

The following substance(s) is/are subject to TSCA 12(b) export notification requirements: Modified benzimidazole salt

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

SAFETY DATA SHEET

3D TRASAR™ 3DT398

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Acetic Acid	64-19-7	5000	49978

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Respiratory or skin sensitisation
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory This product is subject under TSCA 5(a) to Significant New Use Restrictions (SNUR).

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

not determined

Japan. ENCS - Existing and New Chemical Substances Inventory

not determined

Korea. Korean Existing Chemicals Inventory (KECI)

not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

not determined

China Inventory of Existing Chemical Substances

not determined

Taiwan Chemical Substance Inventory

not determined

Canadian Domestic Substances List (DSL)

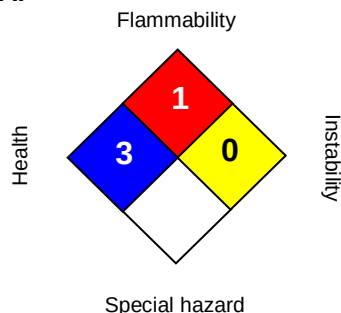
This product contains substance(s) which are not listed on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

3D TRASAR™ 3DT398

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 06/12/2023
Version Number : 1.8
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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. For additional copies of an SDS visit www.ecolab.com/sds and request access.



SAFETY DATA SHEET

DOW EUROPE GMBH

Product name: AMBERLITE™ HPR1200 H Ion Exchange Resin

Issue Date: 2018.03.29

Print Date: 2018.10.01

DOW EUROPE GMBH encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: AMBERLITE™ HPR1200 H Ion Exchange Resin

Recommended use of the chemical and restrictions on use

Identified uses: Ion exchange and/or Adsorption process

COMPANY IDENTIFICATION

DOW EUROPE GMBH
BACHTOBELSTRASSE 3
8810 HORGEN
SWITZERLAND

Customer Information Number:

31 115 67 2626
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 00 41 447 28 2820

Local Emergency Contact: 00 971 4883 18 28

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Serious eye damage - Category 1 - H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements

Hazard pictograms



Signal word: DANGER

Hazard statements

H318 Causes serious eye damage.

Precautionary statements

P280 Wear eye protection/ face protection.

P305 + P351 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.

Contains Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification
CASRN 69011-20-7 EC-No. Polymer Index-No. —	>= 50.0 - < 60.0 %	Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form	Eye Dam. - 1 - H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Sulfur oxides. Organic sulfonates. Hydrocarbons. Carbon monoxide. Carbon dioxide. Benzene compounds.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Spilled material may cause a slipping hazard. Keep upwind of spill. Ventilate area of leak or spill. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Sweep up. Recover spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get in eyes. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Static electricity can accumulate on dry beads. Leave room for expansion as dry resin swells upon wetting and/or changing ionic form. Equipment construction material should be compatible with feed, regenerant, ionic form and effluent of the ion exchange process. Avoid generating and breathing dust. Good housekeeping and controlling of dusts are necessary for safe handling of product. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Keep container tightly closed when not in use. Preferred storage temperature is in the lower half of the range given below.

Storage stability:	Shelf life: Use within
Storage temperature:	
0 - 50 °C	36 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

Individual protection measures

Eye/face protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. When prolonged or frequently repeated contact may occur, a glove is recommended to prevent contact with the solid material. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Under intended handling conditions, no respiratory protection should be needed.

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	solid Beads
Color	amber brown
Odor	No data available
Odor Threshold	No data available
pH	> 3.5
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	No data available
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available

Decomposition temperature	No test data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	50 - 56 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with oxidizing materials. Oxidizing agents such as nitric acid attack organic exchange resins under certain conditions. Before using strong oxidizing agents, consult sources knowledgeable in handling such materials. The severity of the reaction with oxidizing materials can vary from slight degradation to an explosive reaction.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aromatic compounds. Hydrocarbons. Organic sulfonates. Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Typical for this family of materials.

LD50. Rat. > 5,000 mg/kg

Acute dermal toxicity

No adverse effects anticipated by skin absorption.

The dermal LD50 has not been determined..

Acute inhalation toxicity

No adverse effects are anticipated from inhalation. Vapors are unlikely due to physical properties. For respiratory irritation and narcotic effects: No relevant data found. The LC50 has not been determined.

Skin corrosion/irritation

Prolonged exposure not likely to cause significant skin irritation.
May cause more severe response if skin is abraded (scratched or cut).

Serious eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

No relevant data found.

Carcinogenicity

No relevant data found.

Teratogenicity

No relevant data found.

Reproductive toxicity

No relevant data found.

Mutagenicity

No relevant data found.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Persistence and degradability

Biodegradability: This water-insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

In the terrestrial environment, material is expected to remain in the soil.
In the aquatic environment, material will sink and remain in the sediment.

Results of PBT and vPvB assessment

This mixture has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Other adverse effects

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods:

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Listed in Regulation: Not applicable

Classification and labeling have been performed according to Regulation (EC) No 1272/2008.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H318 Causes serious eye damage.

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact.

Revision

Identification Number: 99113756 / A305 / Issue Date: 2018.03.29 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Eye Dam.	Serious eye damage
----------	--------------------

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air

Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW EUROPE GMBH urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

AE

SAFETY DATA SHEET

Version 6.2
Revision Date 01/28/2021
Print Date 01/22/2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : AmberLite™ HPR1200 H

Product Number : 433950
Brand : Sigma-Aldrich
CAS-No. : 69011-20-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Warning

Hazard statement(s)
H319 : Causes serious eye irritation.

Precautionary statement(s)
P264 : Wash skin thoroughly after handling.

P280	Wear eye protection/ face protection.
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.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula	: (C ₁₀ H ₁₂ · C ₁₀ H ₁₀ · C ₈ H ₈) _x
CAS-No.	: 69011-20-7

Component	Classification	Concentration
ion exchanger		
	Eye Irrit. 2A; H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry.

Storage class (TRGS 510): 11: Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Body Protection

protective clothing

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: solid

Sigma-Aldrich - 433950

Page 4 of 8

b) Odor	No data available
c) Odor Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	()No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	0.690 g/cm ³
n) Water solubility	insoluble
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Nitric acid

Strong oxidizing agents

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local No mixing with other waste. Handle uncleaned containers like the product. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

Further information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

Sigma-Aldrich - 433950

Page 7 of 8

SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

SECTION 16: Other information**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.

Version: 6.2

Revision Date: 01/28/2021

Print Date: 01/22/2022

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

*** Section 1 - Identification ***

Chemical Name: Ammonium Bifluoride, Technical Flake Grade

Product Use: For Commercial Use

NOT TO BE USED AS A PESTICIDE. THIS PRODUCT IS NOT TO BE USED IN VIOLATION OF ANY PATENTS. CHEM ONE LTD. DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR APPLICATION. IN NO EVENT SHALL CHEM ONE LTD. OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF BUSINESS PROFITS OR SPECIAL DAMAGES, EVEN IF CHEM ONE LTD. OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SO THE FOREGOING LIMITATION MAY NOT APPLY.

Supplier Information

Chem One Ltd.
14140 Westfair East Drive
Houston, Texas 77041-1104

Phone: (713) 896-9966
Fax: (713) 896-7540
Emergency # (800) 424-9300 or +1-(703) 527-3887

General Comments: NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 – Hazard(s) Identification ***

Hazard Classes

Acute toxicity, oral
Skin corrosion/irritation

Hazard Categories

Category 3
Category 1B

Signal Word: Danger



Pictograms:

Hazard Statements

PHYSICAL HAZARDS:

None

HEALTH HAZARDS:

H301 Toxic if swallowed
H314 Causes severe skin burns and eye damage

ENVIRONMENTAL HAZARDS:

None

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children
P202: Do not handle until all safety precautions have been read and understood
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

RESPONSE STATEMENTS:

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER/doctor (USA National POISON CENTER 800-222-1222)

P363: Wash contaminated clothing before reuse.

STORAGE STATEMENTS:

P405: Store locked up.

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations

Hazards not otherwise classified (HNOC):

No data available

* * * Section 3 – Composition/information on Ingredients * * *

CAS #	Component	Percent
1341-49-7	Ammonium Bifluoride	> 94
12125-01-8	Ammonium Fluoride	4

Component Related Regulatory Information

This product may be regulated have exposure limits or other information identified as the following: Fluorides (16984-48-8), Fluorides, inorganic.

Synonyms: Ammonium Fluoride; Ammonium Hydrogen Fluoride; Ammonium hydrogendifluoride; Ammonium Difluoride; Acid Ammonium Fluoride.

* * * Section 4 - First Aid Measures * * *

Description of first aid measures:

In case of eye contact: In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. If there is a difficulty in keeping eyes open during irrigation, administer anesthetic drops. If calcium gluconate 1% solution is available, it should be administered. Seek immediate medical attention, preferably an ophthalmologist.

In case of skin contact: Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Apply calcium gluconate gel (2.5%) and massage into affected area (hands must be gloved); continue massage while repeatedly applying gel until 15 minutes after pain has ceased. Seek immediate medical attention.

In case of ingestion: DO NOT INDUCE VOMITING. Never give anything by mouth to a victim who is unconscious or having convulsions. Have victim rinse mouth thoroughly with water, if conscious. Attempt immediate administration of a fluoride binding substance with oral exposures. Options include milk (4 to 8 ounces), chewable calcium carbonate tablets or Milk of Magnesia. Avoid large amounts of liquid, since this may induce vomiting. Contact a physician or poison control center immediately.

If inhaled: Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

Symptoms and potential health effects:

Eyes: Exposure to particulates or solution of this product may cause redness, pain and blurred vision. Prolonged contact may cause corneal injury or, in severe cases, blindness. Effects may be delayed.

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

Skin: This product can cause irritation of the skin with pain, itching and redness. Ammonium Bifluoride can cause severe necrosis to tissue, with symptoms such as redness, itching, burns and scarring. Burns may not be immediately visible or painful. Ammonium Bifluoride can cause a unique, large, pustular skin rash, which is apparently not an irritant or allergic dermatitis. As a fluoride compound, Ammonium Bifluoride has the potential to decompose upon contact with moisture to form hydrofluoric acid, which can penetrate the skin, causing destruction of the deep tissue layers, including bone tissue. This damage to the body's tissues may continue for days, as the fluoride ion reacts with the calcium in the skin and bone. Severe skin-contact exposures (especially when the skin contamination exceeds 160 cm²) can lead to hypocalcemia, a life-threatening lowering of serum calcium in the body. Ammonium Bifluoride may be systematically absorbed in lethal amounts through intact skin. Effects may be delayed and not felt for hours.

Ingestion: Harmful if swallowed. Data indicate that ingestion of between 1 teaspoon and 1 ounce may be fatal. This product may cause corrosive damage to gastrointestinal tract, symptoms of such over-exposure include, salivation, nausea, vomiting, diarrhea, hypocalcemia, burning pain, convulsions, shock, muscle spasms, coma, cardiac arrhythmias, cardio and pulmonary arrest, and possibly, death. At high concentrations, there is a risk of hypocalcemia.

Inhalation: This product is irritating to the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases, ulceration and perforation of the nasal septum and upper respiratory tract can occur. Inhalation of high concentrations can lead to chemical pneumonia, pulmonary edema, and hypocalcemia. Effects may be delayed.

Notes to Physician and Special Treatment:

Provide general supportive measures and treat symptomatically. For eye contamination rinse eye(s) with a calcium gluconate 1% solution in physiological serum (10 mL of calcium gluconate 10% in 90 mL of physiological serum). In case of difficulty of opening lids, administer an analgesic eye wash (oxybuprocaine). For skin contact, application of calcium gluconate gel (2.5%) should occur 4 to 6 times per day. If victim suffers second or third degree burns, subcutaneous injection of 10% calcium gluconate at a distance of 7 mm around the affected area. If fingers or toes have been contaminated, dip in a bath of 5% calcium gluconate for 15 to 20 minutes. For severe burns of the digits, slow intraarterial infusion (over a 4 hour period) of 10 mL of a 10% calcium gluconate solution diluted in 40 mL of physiological serum. Phlyctenae and necrotic tissue should be debrided (warning: liquid in phlyctenae is corrosive). For ingestion exposure, provide oxygen therapy via intratracheal intubation, if breathing is difficult or victim is not breathing. If throat is constricted due to burns, perform tracheotomy. Careful gastric lavage should be performed after administration of 10 vials of calcium gluconate. Repeat as often as necessary. In case of intense pain, inject an I.M. morphomimetic analgesic drug (e.g. piritramide) prior to transport. Prevention and treatment for shock, pulmonary edema and esophageal stenosis, as well as hypocalcemia should occur. Examination by digestive tract endoscopy should be performed in all cases. In case of hypocalcemia, administer I.V. perfusion of 20 mL of a 10% calcium gluconate solution diluted in 1 liter of physiological serum. Surveillance of hyperfluoremia should occur, with possible treatment with hemodialysis should occur, as well as surveillance of cardiac ECG, and respiratory and renal function.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

This product is not combustible; however, this product is corrosive and presents a severe inhalation and contact hazard to firefighters. When involved in a fire, this material may decompose and produce corrosive and/or toxic gases (i.e. ammonia, hydrogen fluoride and nitrogen oxides).

Hazardous Combustion Products

Nitrogen oxides, hydrogen fluoride, and ammonia.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog. Use water to cool fire-exposed containers and to protect personnel. Contact of this product with water produces hydrofluoric acid, which is capable of etching glass, cement and many metals.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 1 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

*** Section 6 - Accidental Release Measures ***

Personal precautions

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials that burn away from spilled material. In case of large spills, follow all facility emergency response procedures. Wear appropriate protective equipment and clothing during clean-up. This includes full, chemically resistant clothing if spill is substantial. All contact with Ammonium Bifluoride must be avoided during cleanup. Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available. Emergency first aid kits which include calcium gluconate preparations should be readily available in case of exposure to response personnel during clean-up. Personnel should be trained in the use of these first aid materials.

Methods and materials for containment and clean-up

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information). Shovel the material into waste container. Thoroughly wash the area after a spill or leak cleanup.

Environmental precautions

Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Do not store this product in glass or silicate-based containers. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of corrosion- and fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

Emergency first aid kits which include calcium gluconate preparations should be readily available in storage areas, in case of exposure to personnel during use. Personnel should be trained in the use of these first aid materials.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

Component	CAS #	Value	Type/Regulation
Fluoride (as F)	16984-48-8	2.5 mg/m ³	ACGIH – TWA
		2.5 mg/m ³	OSHA – TWA
		2.5 mg/m ³	NIOSH – TWA

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent Standards of Canada. Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields (or goggles) and a face shield. . If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact. Natural rubber, nitrile, polyvinyl chloride or neoprene gloves are recommended. Gloves should be tested to determine their suitability for prolonged contact with this material. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use cartridge respirator or other NIOSH-approved respiratory protection. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. The following NIOSH recommended respiratory protection equipment guidelines for fluorine are presented for further information:

Concentration Respiratory Equipment

1 ppm: Any Supplied Air Respirator (SAR).

2.5 ppm: Any SAR operated in a continuous-flow mode.

5 ppm: Any Self-Contained Breathing Apparatus (SCBA) with a full facepiece or any SAR with a full facepiece.

25 ppm: Any SAR with a full facepiece operated in a positive pressure mode.

Emergency or Planned Entry into Unknown Concentration or IDLH Conditions: Any SAR with full facepiece operated in a positive pressure mode in combination with an auxiliary SCBA operated in positive pressure mode.

Escape: Any air purifying, full facepiece respirator or any appropriate escape type SCBA.

Note: The IDLH limit for this product is 25 mg/m³ as fluorine.

In addition, the ACGIH has the following Excursion Limit Recommendation: Excursions in worker exposure levels may exceed three times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed five times the TLV-TWA, provided that the TLV-TWA is not exceeded (for fluorides [as F]).

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area. Emergency first aid kits which include calcium gluconate preparations should be readily available in storage areas, in case of exposure to personnel during use. Personnel should be trained in the use of these first aid materials.

Protective Clothing Pictograms:



*** Section 9 - Physical & Chemical Properties ***

Physical Properties:

Physical State:	Solid
Appearance:	White crystals or flakes
Odor:	Pungent
Odor Threshold:	Not determined
pH:	2 (5.7 g/L, 20 °C)
Melting Point/Range:	124 °C (255 °F)
Boiling Point/Range:	Not applicable, decomposes
Flash Point:	Not applicable
Evaporation Rate:	Not applicable

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

Flammability:	Not flammable
Flammability/Explosive Limits:	Not determined
Vapor Pressure:	< 0.75 mmHg @ 20 °C
Vapor Density:	Not determined
Specific Gravity:	1.503
Solubility in Water:	63 g/L @ 20 °C
Partition Coefficient:	Not determined
Autoignition Temperature:	Not applicable
Decomposition Temperature:	240 °C (464 °F)
Viscosity:	Not applicable
Chemical Formula:	NH ₄ HF ₂
Molecular Weight:	57.04
Softening Point:	Not determined
Particle Size:	Not determined
Bulk Density:	Not determined

Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions. Contact with moisture will cause this product to decompose to form hydrofluoric acid.

Conditions to Avoid

Avoid dispersion of Ammonium Bifluoride particulates into air, contact with heat, moisture and ignition sources.

Incompatibility

Incompatible with strong acids, strong bases, and oxidizers. Contact with water forms hydrofluoric acid which can corrode glass, cement, and many metals.

Hazardous Decomposition

Thermal Decomposition: Nitrogen oxides, fluorine and ammonia gas. Contact with Moisture: Hydrofluoric acid.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Harmful or fatal if swallowed. Product is corrosive and can cause burns to contaminated eyes, skin and any other contaminated tissue. Effects may be delayed. Ammonium Bifluoride is a respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, ulceration and perforation of the nasal septum. Inhalation exposure to high levels could cause pulmonary edema (buildup of fluid in the lungs), which could result in death. Ingestion can result in severe gastric distress with possible vomiting, bloody diarrhea, hypocalcemia, CNS depression, shock, muscle spasms and death. Ammonium Bifluoride can be absorbed through intact skin in lethal amounts.

Chronic: Long term skin overexposure to this product may lead to mottled tooth enamel and osteosclerosis (an increased density in the bones and calcification ligaments due to accumulation of fluoride). Chronic ingestion of this product may result in fluorosis (an excess of fluoride in the body) with skeletal abnormalities, anemia and kidney damage.

B: Component Analysis - LD₅₀/LC₅₀

Ammonium Fluoride:

Route of Exposure	Test Type and Value
Oral:	Not determined
Inhalation:	TC _{Lo} (Rat, 6h, 39 weeks intermittent) = 1600 µg/m ³ ; Blood: changes in serum composition; Musculoskeletal: other changes; Biochemical: Enzyme inhibition
Dermal:	LD _{Lo} (Frog, adult, subcutaneous) = 280 mg/kg

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

The components of this product are found on the following lists:

Fluorides, as F:

ACGIH TLV-A4	Not Classifiable as a Human Carcinogen.
IARC-3	Unclassifiable as to Carcinogenicity in Humans

Neurotoxicity

Central Nervous System depression, seizures, muscle spasms, and paralysis may occur after ingestion of this product.

Mutagenicity

Some fluorides have shown mutagenic effects at very high concentrations *in vitro*.

Teratogenicity

No information available for this product, but large prenatal exposures to fluoride ions, have been shown to cause mottling of baby teeth.

Other Toxicological Information

Persons that suffer from diabetes insipidus or some forms of renal impairment have increased risk from the effects of this product. The following Biological Exposure Indices are currently available for Fluorides:

<u>Chemical Determinant</u>	<u>Sampling Time</u>	<u>BEI</u>
Fluorides (fluorides in urine)	Prior to Shift	3 mg/g creatinine
	End of Shift	10 mg/g Creatinine

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Effects of this product on aquatic life are unknown. This product may be toxic to fish and marine organisms when applied to streams, rivers, ponds or lakes.

B: Ecotoxicity

Ammonium Fluoride (12125-01-8):

Toxicity to fish:	LC ₅₀ (<i>Pimephales promelas</i> , fathead minnow, 96 h) = 417 mg/L
Toxicity to invertebrates:	LC ₅₀ (<i>Palaemonetes pugio</i> , grass shrimp, 96 h) = 93 mg/L
	LC ₅₀ (<i>Daphnia magna</i> , 96 h) = 50 mg/L
Toxicity to algae:	Not determined
Toxicity to bacteria:	Not determined

Environmental Fate

No potential for food chain accumulation.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Wastes of this product must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes. Liquid or aqueous solutions of this product may require an EPA waste code D002, for corrosivity.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations. Material can be converted to a less hazardous material by weak reducing agents followed by neutralization.

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

*** Section 14 – Transportation Information Ground ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under 49 CFR, IATA and IMDG to assure regulatory compliance.

US DOT 49 CFR 100-185 Revised December 31, 2014 Information



UN/NA #: UN 1727

Shipping Name: Ammonium hydrogendifluoride, solid

Hazard Class: 8

Packing Group: II

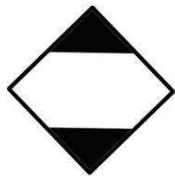
Required Label(s): Class 8 (Corrosive)

Special Provision: IB8, IP2, IP4, N34

Packaging: 172.212

Additional Shipping Information

For a single package less than the RQ of 100 lb (45.4 kg), the RQ designation should be not be used.



Limited Quantity Shipments: Shipments, except for air, need not be marked with the Proper Shipping Name of the contents, but shall be marked with a diamond. The top and bottom portions of the square-on-point must be black and the center white or of a suitable contrasting background. The mark must be at least 2 mm. Each side must have a minimum dimension of 100 mm. Small packages which cannot reasonably accommodate a 100 mm square-on-point mark may be marked with a square-on-point mark with a minimum side dimension of 50 mm. The total weight of each outer packaging cannot exceed 30 kg (66 pounds).

Small Quantities for Highway and Rail: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle. The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement of the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test requirements of 173.4(6) (i). The outside of the package must be marked with the statement **"This package conforms to 49 CFR 173.4 for domestic highway or rail transport only."**

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 500g (1.1 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet a drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce. For highway or rail transportation no shipping paper is required. The package must be legibly marked with the following marking:



.NOTE: The "***" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "****" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm (3.9 inches) x 100 mm (3.9 inches), and must be durable and clearly visible.

De minimis Exceptions: The maximum quantity of this material per inner receptacle is limited to 1g (0.04 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 100 g (0.22 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test. The requirements are

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce and may be transported by aircraft. If all of the above requirements are met, then this material is not regulated.

Please refer to the most recent edition of the "International Air Transport Association (IATA)" Regulations

Please refer to the most recent Amendment of the "International Maritime Dangerous Goods (IMDG) Code"

*** Section 15 – Regulatory Information ***

US Federal Regulations

A: General Product Information

Ammonium Bifluoride (CAS # 1341-49-7) and Ammonium Fluoride (CAS # 12125-01-8) are designated as hazardous substances under section 311(b)(2)(A) of the Federal Water Pollution Control Act and are further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of these substances.

B: Component Analysis

This product contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Ammonium Bifluoride (1341-49-7):

CERCLA: Final RQ = 100 pounds (45.4 kg)

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Ammonium Bifluoride. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

Ammonium Fluoride (12125-01-8):

CERCLA: Final RQ = 100 pounds (45.4 kg)

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Ammonium Fluoride. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

US Federal Regulations (continued)

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Ammonium Bifluoride	1341-49-7	No	Yes	No	Yes	Yes
Ammonium Fluoride	12125-01-8	No	Yes	No	Yes	Yes

State Regulations

A: General Product Information

California Proposition 65

Ammonium Bifluoride is not on the California Proposition 65 chemical lists.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Ammonium Bifluoride	1341-49-7	No	No	No	No	Yes	Yes
Ammonium Fluoride	12125-01-8	No	Yes	Yes	No	Yes	Yes

Other Regulations

A: General Product Information

U.S. Export Administration Regulations (EAR) (15 CFR Parts 736, 738, 740, 742, 745, 770 and 774): Under the Chemical Weapons Convention (CWC) Ammonium Bifluoride (Ammonium hydrogen fluoride, CAS # 1341-49-7) is on the list of Other Australia Group-controlled precursor chemicals not also identified as Schedule 1, 2 or 3 chemicals.

B: Component Analysis - Inventory

Component	CAS #	TSCA
Ammonium Bifluoride	1341-49-7	Yes Active
Ammonium Fluoride	12125-01-8	Yes Active

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Contact: Sue Palmer-Koleman, PhD

Contact Phone: (713) 896-9966

Revision Log

07/21/00 4:20 PM SEP Changed company name. Sect 1 and 16, from Corporation to Ltd.
12/12/00 1:20 PM HDF Added more detailed health hazard information related to hypocalcemia in Section 3. Added IARC-3 designation in Section 11. Added TClO data for Ammonium Fluoride.
05/14/01 9:31 AM Checked exposure limits; made changes to Section 9; overall review, add SARA 311/312 Hazard Ratings.
07/24/01 3:24 PM Changed contact to Sue, non-800 Chemtrec Phone Number added.
07/31/03 12:00 pm HDF General review of entire MSDS. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
03/22/04 9:06 AM HDF Addition of Export Administration Regulations, Section 15.
06/22/05 11:54AM SEP Updated IATA Section 14.
06/08/06 2:00 PM HDF Addition of text to Section 3 related to delay of symptoms.
09/05/06 2:29 PM SEP Updated DOT & IMO Section 14.
10/10/08 3:07 PM DLY Changed Chem One Physical Address
09/18/09 MMK Updated Section 14 limited & excepted quantites and exceptions.
1/2./2015 GHS revision all sections

Revised By:

SJC Compliance Education, Inc.
16516 El Camino Real Suite 417
Houston, TX 77062

06/13/2018 Melanie Koch removed IMDG and IATA specific shipping information and added a refer to latest edition statement. Nothing else was changed during this revision.

06/17/2019 Revised Sections 2, 4, and 9, removed ANSI Labeling.

11/10/2021 Revised Section 15 information. Modified format.

This is the end of MSDS # C1-102



SOUTHERN IONICS INCORPORATED (SII)
SAFETY DATA SHEET

SDS NO. 216
Effective Date: April 30, 2015
Revision Date: September 25, 2020

I. Product and Company Information

SII Product Name(s):	AQUA-CAT® Aqua Ammonia (5 % - 19 %)	Synonym:	Ammonia Solution, Aqua Ammonia
Chemical Name:	Ammonium Hydroxide	CAS Number:	1336-21-6
Manufacturer's Name: Southern Ionics Incorporated 579 Commerce Street West Point, MS 39773 Customer Service: 1-800-953-3585 Web Site: www.southernionics.com	Emergency Contacts: Afterhours (Southern Ionics): 1-888-610-2379 For Chemical Emergency, Spill, or Accident Call CHEMTREC at 1-800-424-9300 CHEMTREC CCN - 20596		

II. Hazard Identification

OSHA HCS / GHS Classification(s):		Hazard Statement(s):				
Acute Toxicity, Oral, Category 4		Harmful if swallowed.				
Skin Corrosion, Category 1		Causes severe skin burn.				
Serious Eye Damage, Category 1		Causes serious eye damage.				
Specific Target Organ Toxicity, Respiratory - single exposure, Category 3		May cause respiratory irritation.				
Simple Asphyxiants		May displace oxygen and cause rapid suffocation.				
Acute Aquatic Toxicity, Category 1		Very toxic to aquatic life.				
Signal Word: Danger	Precautionary Statement(s):					
Symbols: 						
				Prevention:	Wash affected body parts thoroughly after handling.	
					Do not eat, drink, or smoke when using this product.	
					Wear eye and face protection.	
					Wear protective gloves and clothing.	
					Do not breathe mist, vapors, or spray.	
					Avoid release to the environment.	
				Response:	IF SWALLOWED: Rinse mouth. Do not induce vomiting. Immediately seek medical advice.	
					IF ON SKIN: Immediately remove all contaminated clothing. Rinse skin with water.	
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.						
IF INHALED: Remove victim to fresh air and keep comfortable for breathing.						
Reference Section VI. Accidental Release Measures to collect spillage.						
For specific treatment, see Section IV. First Aid Measures.						

III. Composition / Information on Ingredients

Chemical Name(s):	CAS Number(s):	%
Ammonia (NH ₃)	7664-41-7	5 - 19.9
Water	7732-18-5	Balance

IV. First Aid Measures

Eyes:	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Remove any contact lenses. Seek medical attention, if you feel unwell.
Dermal / Skin:	Remove contaminated clothing and wash exposed area thoroughly with soap and water. Seek medical attention, if you feel unwell.
Inhalation:	Move to fresh air immediately. If breathing is difficult, give oxygen. Seek medical attention, if you feel unwell.
Ingestion:	If swallowed, DO NOT induce vomiting. Rinse mouth. Seek medical attention, if you feel unwell.

V. Fire Fighting Measures

NFPA Hazard Rating:	Health (Blue)	Fire (Red)	Reactivity (Yellow)	Special Instructions (White)
	3	1	0	None
NFPA Hazard Classification: 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme				
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire (Not CO ₂).			
Special Firefighting Procedure:	Wear full protective clothing and a self-contained breathing apparatus (SCBA) because toxic fumes are emitted. Stop flow if possible. Use water to keep fire-exposed containers cool and to protect persons shutting off flow of liquid. For a serious leak, use fire hose with a fog nozzle and plenty of water to absorb ammonia vapors.			
Unusual Fire and Explosive Hazards:	At elevated temperatures, aqua ammonia will emit ammonia gas and possibly small amounts of nitrogen oxides, which have been classified as toxic. Presence of oil or other combustible materials increases the fire hazard of ammonia gas. Ammonia concentrations in the range of 16-25 % by volume in air can be ignited or caused to explode if heated to the auto-ignition temperature.			

VI. Accidental Release Measures

Precaution if Spilled or Released:	Steps should be taken to contain spilled liquids and prevent discharges to streams or sewer systems. Ventilate spill or leak area to disperse gas. Eliminate all sources of ignition. Stop flow if possible. If small spill, either allow it to vaporize or absorb the vapor in water. If large spill, spray the vapor cloud with water to reduce fire and fume hazard.
Neutralizing Chemicals:	Neutralization with acid not recommended. Flush area with water.

VII. Handling and Storage

Handling:	Handle all chemicals with respect. Keep separated from incompatible substances. Handle only with equipment, materials, and supplies specified by their manufacturer as being compatible and appropriate for use with this product.
Storage:	Storage in specially designated areas outside or in detached structure is preferred. Store inside only in a cool, well-ventilated area free from combustibles and away from all sources of ignition. Protect containers from corrosion and mechanical damage. Containers should have safety relief valves. Keep separate from other chemicals, particularly oxidizing gases, organic materials, chlorine, bromine, iodine, mercury, and acids. Post visible warning signs in the storage area listing emergency measures. Water hoses should be readily available to knock down vapors from spill.

VIII. Exposure Control / Personal Protective Equipment

Component Workplace Control Parameters:				
Components:	CAS Number	Value	Parameters	Basis
Ammonia NH ₃	7664-41-7	TWA	25 ppm	as Ammonia NH ₃ (ACGIH)
Engineering Controls:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.			
General Hygiene:	Practice good personal hygiene after using this material, especially before eating, drinking, smoking, or using the toilet.			
Personal Protection Equipment:				
Eye:	Wear chemical goggles and face shield unless protected by a respirator with a full-face piece. Do not wear contact lenses as they may trap fumes against the eyes and can make flushing ineffective.			
Skin:	The use of gloves, boots, and aprons impermeable to the specific material handled (for Ammonia, includes Butyl, Teflon, Neoprene, and Viton) is advised to prevent skin contact, possible irritation, and skin damage.			
Respiratory:	None required under normal conditions. When conditions warrant a respirator, use NIOSH-approved respirator and cartridge for particulates and ammonia.			
Other Protective Items:	Where splash is possible, full chemically resistant protective clothing and boots are required. Ensure that eyewash stations and safety showers are proximal to the work location.			
HMIS Classification:	Health (Blue)	Flammability (Red)	Physical Hazard (Yellow)	PPE (White)
	3	1	0	See Above
Hazard Classification: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe				

IX. Physical and Chemical Properties

Physical State:	Liquid	pH:	> 12
Appearance:	Clear, colorless liquid	Molecular Weight:	35.05
Odor:	Pungent odor	Odor Threshold:	1 - 50 ppm
Specific Gravity: (H₂O=1)	0.98 (5 % Solution) 0.94 (15 % Solution) 0.93 (19 % Solution) @ 60 °F / 15.5 °C	Weight per Gallon:	8.17 (5 % Solution) 7.87 (15 % Solution) 7.76 (19 % Solution) lbs @ 60 °F / 15.5 °C
Vapor Density: (Air=1)	0.60 @ 32 °F (0 °C)	Vapor Pressure:	78 mm Hg (5 %) 194 mm Hg (15 %) 264 mm Hg (19 %) @ 77 °F / 25 °C
Boiling Point: at 14.7 psia	177 °F / 80.5 °C (5 %) 120 °F / 48.9 °C (19 %)	Freezing/Melting Point:	25 °F / -4 °C (5 %) -30 °F / -34 °C (19 %)
Lower Explosive Limit:	16 % by volume Ammonia gas	Upper Explosive Limit:	25 % by volume Ammonia gas
Flash Point:	Not Applicable	Autoignition Temp:	1,204 °F 651 °C (vapor)
Solubility in Water:	100 %	Other:	

X. Stability and Reactivity Data	
Chemical Stability:	Product is stable under normal or expected use.
Conditions to Avoid:	Heat, sunlight, incompatibles, sources of ignition.
Incompatible Materials:	Corrosive to copper, brass, silver, zinc, aluminum alloys, and galvanized steel. Immediately boils when mixed with acids and is dangerous. Forms explosive compounds with calcium hypochlorite, bleaches, gold, mercury, silver, chlorine, and other halogens.
Hazardous Products of Decomposition:	Burning may produce ammonia and nitrogen oxides.

XI. Toxicological Information										
Routes of Entry:	☒ Eyes ☒ Skin ☒ Ingestion ☒ Inhalation									
Sign and Symptoms of Exposure:	Burning of the eyes, conjunctivitis, skin irritations, swelling of the eyelids and lips, dry red mouth and tongue, burning in the throat, and coughing. In more severe cases of exposure, difficulty breathing, signs and symptoms of lung congestion, and, ultimately, death from respiratory failure due to pulmonary edema may occur.									
Eye Contact:	Vapor is irritating to the eyes. Liquid will cause burns.									
Ingestion:	Ingestion causes burning pain in mouth, throat, stomach, thorax, constriction of throat, and coughing. This is soon followed by vomiting of blood or by passage of loose stools containing blood. Ingestion of 3 - 4 mL may be fatal.									
Skin Contact:	Absorption: Because of its alkalinity and water solubility, ammonia tends to break down and disrupt the outer cell layers, permitting rapid penetration; however, ammonia is not a systemic poison, and the effects will be limited to local effects. Contact: Causes smarting of the skin and first-degree burns on short exposure. May cause second-degree burns on long exposure.									
Inhalation:	Ammonia vapors are highly irritating to throat at approximately 400 ppm. Causes edema, dyspnea, bronchospasm, chest pain, pink frothy sputum. Inhalation of ≥ 500 ppm ammonia is considered immediately dangerous to life and health (OSHA).									
Carcinogenicity: Not Listed		NPT	Not Listed		IARC	Not Listed		OSHA	Not Regulated	
Ingredient Name:		Species		Test		Period		Results		
Ammonium Hydroxide		Rat		350 mg/kg		Oral		LD50		
Comments:										

XII. Ecological Information				
Ingredient Name:	Species	Test	Period	Results
Ammonia NH ₃	Chinook Salmon	0.45 mg/L	96 hrs	LC50
Comments:	Ammonia dissipates relatively quickly in ambient air and rapidly returns to the soil via combination with sulfate ions or washout by rainfall. Ammonia strongly adsorbs to soil, sediment particles, and colloids in water under aerobic conditions. Biodegradation of ammonia to nitrate occurs in water under aerobic conditions which results in a biological oxygen demand (BOD).			

XIII. Disposal Considerations	
Waste Disposal:	Always dispose of material in accordance with local, state, and federal regulations.

XIV. Transportation Information

Proper Shipping Name:	Ammonium Hydroxide, with more than 10 % but not more than 35 % as ammonia. Marine pollutant.			
DOT Classification:	8			
Identification Number:	UN 2672	Packing Group:	III	Other Labels: Corrosive
Comments:				

XV. Regulatory Information

Inventory Status:		US Regulations:		
U. S. TSCA	Yes	SARA 302 TPQ	500 lbs as ammonia NH ₃	
Europe EINECS	Yes	SARA 304 RQ	100 lbs as ammonia NH ₃	
Canadian DSL	Yes	SARA 313 List	Listed	
Japan ENCS	Yes	CERCLA (RQ)	1,000 lbs for pure ammonium hydroxide	
Korean KECI	Yes	RCRA 261.33	Not Listed	
Philippines PICCS	Yes			
Australian AICS	Yes	SARA 311/312	☒ Acute ☐ Chronic ☐ Fire ☐ Release of Pressure ☐ Reactive	
International Regulations:			Other Regulations:	
Canada WHMIS	E	Corrosive	California PROP 65	Not listed
EINECS	231-635-3	as Anhydrous Ammonia		
EINECS	215-647-6	as Aqua Ammonia		

XVI. Other Information

Other:	
Revision Notes:	05.20.16 SDS product composition was changed from 19 - 30.5 to 5 - 19. 06.02.16 Added Marine pollutant designation under proper shipping name. 09.25.20 Reviewed as part of a 3-year review process. Updated logo and formatting.
MSDS Replacements:	SII MSDS 097 AQUA-CAT® Aqua Ammonia

SALES OFFICE

For Product Information:

TEL: 662-494-3055
FAX: 662-494-2828

Post Office Drawer 1217
West Point, MS 39773

To Place an Order:

TEL: 800-953-3585
FAX: 800-953-3588

IMPORTANT

Although the information contained is offered in good faith, SUCH INFORMATION IS EXPRESSLY GIVEN WITHOUT ANY WARRANTY (EXPRESS OR IMPLIED) OR ANY GUARANTEE OF ITS ACCURACY OR SUFFICIENCY and is taken at the user's sole risk. User is solely responsible for determining the suitability of use in each particular situation. SII specifically DISCLAIMS ANY LIABILITY WHATSOEVER FOR THE USE OF SUCH INFORMATION, including without limitation any recommendation which user may construe and attempt to apply which may infringe or violate valid patents, licenses, and/or copyright.

Safety Data Sheet (SDS)

Aqua Ammonia Solution 29.4%

Revision Date: 05/15/2015

Section 1: Identification

Product Name: Aqua Ammonia Solution 29.4%

Synonyms: Ammonium Hydroxide

Product Use Description:

Manufacturer/Supplier: ChemQuest Chemicals
9730 Bay Area Blvd.
Pasadena, Texas 77507

Telephone: (281) 291 - 9966

Emergency Contact Number: (800) 424 - 9300 CHEMTREC

Section 2: Hazard(s) Identification

Classifications: Acute Toxicity H302
Skin Corrosion H314
Harmful if inhaled H332
Aquatic (Acute) H400

Pictograms:



GHS05



GHS07



GHS09

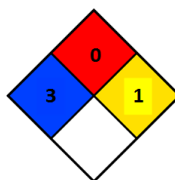
Signal Word: Warning; Danger

Hazard Statements: H302 – Harmful if swallowed
H304 – May be fatal if swallowed and enters airways
H314 – Causes severe skin burns and eye damage
H332 – Harmful if inhaled
H400 – Very toxic aquatic life

Precautionary Statements: P260 – Do not breathe mist, spray, vapors
P264 – Wash exposed skin thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.
P271 – Use only outdoors or in a well-ventilated area.

P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 – Immediately call a POISON CENTER or doctor/physician.
P321 – Specific treatment (see....on this label).
P363 – Wash contaminated clothing before reuse.
P391 – Collect spillage.
P403+P233 – Store in a well-ventilated place. Keep container tightly closed.
P405 – Store locked up.
P501 – Dispose of contents/container to comply with local, state and federal regulations.

NFPA Ratings: (scale 0-4)



Health = 3
Fire = 0
Reactivity = 1

HMIS Ratings: (scale 0-4)

HEALTH	3
FLAMMABILITY	0
REACTIVITY	1

Health = 3
Fire = 0
Reactivity = 1

Section 3: Composition/Information on Ingredients

Chemical characterization

Component	CAS – No.	Weight %	GHS-US Classification
Ammonium	1336-21-6	29.4%	H302 – Harmful if swallowed H304 – May be fatal if swallowed and enters airways H314 – Causes severe skin burns and eye damage H332 – Harmful if inhaled H400 – Very toxic aquatic life
Water	7732-18-5	70.6%	

Section 4: First-Aid Measures

Inhalation:	Evacuate the person from the area to fresh air and keep at rest in a position that is comfortable for breathing. If breathing becomes difficult or has stopped, administer artificial respiration.
Skin Contact:	Remove all contaminated clothing immediately. Rinse skin with water/shower/soap. Call a POISON CENTER or doctor/physician.
Eye Contact:	Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Ingestion:	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. If ingestion of large quantities immediately bring to hospital.
Information for doctor: Most important symptoms and effects, both acute and delayed:	Exposure to skin will cause itching, scaling, reddening, or blistering. Exposure to eyes will cause redness, watering, itching, or inflammation. Ingestion can cause vomiting, nausea, and corrosive burns to the esophagus and stomach. After ingestion nausea, vomiting, blue/grey discoloration of the skin, blood in stool, blood in vomit, esophageal perforation may follow.

Section 5: Fire-Fighting Measures

Suitable extinguishing agents:	Water spray or fog type streams. Carbon dioxide should only be used on small fires.
Special hazards arising From substance or mixture:	Vapors form explosive mixture with air. Vapors in the range of 16-25% NH ₃ in air can explode in a confined space on contact with sources of ignition. Heating above the ambient temperature will cause the vapor pressure to increase rapidly.
Recommendations for firefighters:	Wear self-contained breathing apparatus (NIOSH-approved) and full protective equipment (eye, body, and respiratory).
Protective equipment:	Wear OSHA standard goggles or face shield. Wear self-contained breathing apparatus (NIOSH-approved) if necessary. Wear gloves, apron, and footwear impervious to this material.

Section 6: Accidental Release Measures

Personal precautions:	Wear full face shield. Goggles. Rubber Gloves. Cartridge Mask. Rubber Boots. Slicker Suit.
Emergency procedures:	Shut off or remove all ignition sources. Evacuate unnecessary personnel. Ventilate area.
Environmental precautions:	Prevent entry to sewers and public water. Notify the authorities if liquid enters sewers or public waters.

Methods for cleaning up:

Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Once neutralized absorb residue with clay, vermiculite or other inert substances and package in a suitable container for disposal.

Section 7: Handling and Storage**Precautions for safe handling:**

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide proper ventilation. Avoid contact with skin or eyes. Empty containers may still be hazardous since they can retain product residues (vapors and liquids) so proceed with caution and observe all warnings and precautions listed for the product. Avoid the inhalation of vapors.

Conditions for safe storage, Including incompatibilities:

Store in a cool, dry, and ventilated area away from heat, direct sunlight or flames. Store away from zinc, copper and copper based materials since they are easily corroded by aqua ammonia. Store below 25 °C.

Section 8: Exposure Controls/Personal Protection**Exposure Guidelines**

List	Components	CAS-NO.	Type	Value
OSHA	Ammonium Hydroxide	1336-21-6	PEL	50 ppm (NH ₃)
ACGIH	Ammonium Hydroxide	1336-21-6	STEL	35 ppm
	Ammonium Hydroxide	1336-21-6	TWA	25 ppm (NH ₃)

Engineering measures:

Local exhaust ventilation should be provided at the site or chemical release. Emergency showers and eye wash stations should be readily accessible. Wash hands at the end of each work shift and before eating, smoking or using the toilet. Launder or discard contaminated clothing.

Eye protection:

Impact resistant eye protection with side shields, goggles or face shield

Hand protection:

Rubber gloves

Skin and body protection:

Slicker suit and rubber boots (neoprene and nitrile rubber are recommended materials).

Respiratory protection:

Filter or cartridge respirator (NIOSH Approved)

Work/Hygiene practices:

Do not eat, drink or smoke during use.

Section 9: Physical and Chemical Properties

Appearance	
Form:	Liquid
Color:	Clear. Colorless.
Odor:	Ammonia
Odor Threshold:	50 ppm
pH:	11-13
Change in condition	
Melting point:	(Pure 30% NH ₃) -72 °C (-98 °F)
Boiling point:	(Pure 30% NH ₃) 36 °C (97 °F)
Flash point:	Not available (Escaping NH ₃ can burn in air at 16-25% range)
Evaporation rate:	Not available
Flammability (<i>solid, gaseous</i>):	Not available
Ignition temperature:	Not available
Decomposition temperature:	Not available
Auto igniting:	Not available
Danger of explosion:	Not available
Explosion limits	
Lower:	16%
Upper:	25%
Vapor pressure @ 20 °C (68 °F):	580 mm Hg @ 20C (68F) for 29% solution
Density @ 20 °C (68 °F):	8.13 lb./gallon
Specific Gravity @ 20 °C (68 °F):	0.975
Solubility in/Miscibility with Water :	Complete
Partition coefficient (n-octanol/water)	Not available
Viscosity:	Not available

Section 10: Stability and Reactivity

Reactivity:	Ammonia is slightly reactive, and easily undergoes oxidation, substitution and additional reactions.
Chemical stability:	Stable
Possibility of hazardous reactions:	Not available
Conditions to avoid:	Avoid heat, open flame, direct sunlight, electrical equipment that is not vapor-proof as well as incompatible materials.
Hazardous decomposition dioxide:	Will decompose with heat. Combustion will result in small amounts of nitrogen and water.
Incompatible materials:	Mercury, chlorine, bromine, iodine, calcium, silver oxide, or hypochlorite can form explosive compounds.

Section 11: Toxicological Information

Information on Toxicological effects

Acute Toxicity: May be fatal if swallowed. Mist and vapor can cause burns to every exposed area.

LD/LC50

Oral LD50 (Rat – Ammonium Hydroxide)	350 mg/kg
Inhalation LC50 (Rat – Ammonia)	2000 ppm/4-hr

Irritant effects

Skin: Causes severe irritation and burns.

Eye: Causes severe irritation from direct exposure or vapor.

Respiratory: Can be suffocating and is irritating to the mucous membranes and lung tissues.

Ingestion: Causes vomiting, nausea and corrosive burns to the esophagus and stomach.

Specific target organ toxicity (single exposure): Ingestion of as little as 3-4 mL may be fatal.

Specific target organ toxicity (repeated exposure): Chronic inhalation of extremely high concentrations may cause bronchitis or pneumonia with some residual reduction in pulmonary function. Repeated or prolonged exposure to concentrations greater than the 500 ppm IDLH level for ammonia can cause permanent injury or death.

Aspiration hazard:

Symptoms/injuries after inhalation: Suffocation and irritation to the mucous membranes and lung tissues. Nausea and headache can occur. High concentration exposure can lead to oedema of the upper respiratory tract, inflammation of the respiratory tract, laryngeal spasm/oedema.

Symptoms/injuries after ingestion: Causes vomiting, nausea and corrosive burns to the esophagus and stomach.

Symptoms/injuries after eye contact: Causes severe irritation from direct exposure or vapor. Permanent eye damage may occur.

Carcinogenic Categories

IARC (International Agency for Research on Cancer) Not classified

NTP(national Toxicity Program) Not classified

Section 12: Ecological Information

Aquatic Toxicity: Very toxic to aquatic life.

Persistence and degradability: Expected to be readily biodegradable.

Bioaccumulative potential: This material is not expected to significantly bio-accumulate.

PBT and vPvB assessment

PBT:

vPvB:

Mobility in soil: Very water soluble and will move readily in soil and water.

Other adverse effects: US Regulations (CERCLA) require reporting spills and releases to

soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802

Section 13: Disposal Considerations

Waste treatment methods

Recommendation: Consult the local, state, and federal regulatory agencies for the acceptable disposal procedures and correct disposal locations.

Uncleaned packaging's

Recommendation:

Section 14: Transport Information

US DOT

UN Number: UN2672
UN proper shipping name: Ammonia Solution or Ammonium Hydroxide
Transport Hazard class(es): Class 8 – Corrosive substances
Packing group number: III

TDG

UN Number: UN2672
UN proper shipping name: Ammonia Solution or Ammonium Hydroxide
Transport Hazard class(es): Class 8 – Corrosive substances
Packing group number: III

IATA/ICAO

UN Number: UN2672
UN proper shipping name: Ammonia Solution or Ammonium Hydroxide
Transport Hazard class(es): Class 8 – Corrosive substances
Packing group number: III

IMDG

UN Number: UN2672
UN proper shipping name: Ammonia Solution or Ammonium Hydroxide
Transport Hazard class(es): Class 8 – Corrosive substances
Packing group number: III

Environmental hazards: No

Special precaution for user: Warning: Corrosive substances

Transport in bulk (*according to Annex II of MARPOL 73/78 and IBC code*):

UN "Model Regulation" UN2672, Ammonia Solution/Ammonium Hydroxide, 8, III
Reportable Quantity 1000 lbs

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

OSHA Hazard Communication Standard (29CFR1910.1200) Hazard Class(es)

Corrosive and is considered a hazardous chemical.

EPA SARA Title III Section 302 Extremely Hazardous Substance

Yes

EPA SARA Title III Section 313 (40CFR372) Toxic Chemicals above "De Minimis" Level Are

This material contains Ammonium Hydroxide which is subject to the reporting requirements of section 313 of SARA Title III

EPA SARA Title III Section 312 (40CFR370) Hazard Class

Immediate Acute Health Hazard

Toxic Substance Control Act

This material is listed in the TSCA Inventory.

CERCLA/SUPERFUND, 40 CFR 117.302

Unpermitted releases of 100 lb. Or more of ammonia in any 24 hour period must be reported immediately to the NRC at 1-800-424-8802, the SERC, and the LEPC. Written follow-up is required to SERC & LEPC.

Section 16: Other Information

Indication of changes: 06/20/2014

Other Information:

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

Supplier's name and address:



Armacell LLC
55 Vilcom Center Dr #200
Chapel Hill, NC 27514

Information Telephone No. (919) 304-3846
Website : <http://www.armacell.us>

24 Hr Emergency Telephone # : CHEM-TEL: 1-800-255-3924 OR 1-813-248-0585 (call collect)

Product Identifier : **Armaflex® 520 Adhesive**

Chemical Name	: N/Ap	Chemical Family	: Mixture
Chemical Formula	: N/Ap	Trade Name/Synonyms	: Armaflex 520
Molecular Weight	: N/Ap	Material Use	: Solvent dispersed synthetic rubber and resin adhesive.
		Advised Uses	: Use only as recommended in the product's installation manual

SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification per 29 CFR 1910.1200 (OSHA HCS 2012) / HPR (WHMIS 2015) / NOM-018-STPS-2015

Flammable liquids; Category 2
Skin corrosion/irritation; Category 2
Serious eye damage/eye irritation; Category 2A
Reproductive toxicity; Category 2
Specific target organ toxicity, single exposure; Narcotic effects; Category 3
Sensitization, Skin; Category 1
Specific target organ toxicity, repeated exposure; Category 2
Aspiration hazard; Category 1

GHS Pictograms



Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child via inhalation.
May cause drowsiness or dizziness.
May cause an allergic skin reaction.
May be fatal if swallowed and enters airways.
May cause damage to organs <Central Nervous System, Liver, Kidneys, Peripheral Nervous System> through prolonged or repeated exposure.

Precautionary Statements

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../equipment. Use only non-sparking tools. Take precautionary measures against static discharge. In case of fire: Use fire extinguishers suitable for Classes B, C, or E for extinction. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

Hazards Not Otherwise Classified

None

% With Unknown Acute Toxicity : 5% by weight of this product is comprised of ingredients with unknown acute toxicity.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (by weight)
Acetone	67-64-1	30.00 – 60.00
Hexanes	110-54-3	10.00 – 30.00
Toluene	108-88-3	10.00 – 30.00
Phenolic resin	25085-50-1	5.00 – 10.00

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

SECTION 4 – FIRST AID MEASURES

General	: IF exposed or concerned: Get medical advice/attention.
Inhalation	: Remove person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.
Skin contact	: Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.
Eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
Ingestion	: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
Notes for Physician	: Treat symptomatically.
Signs and symptoms of short-term (acute) exposure	
<i>Inhalation</i>	: May cause irritation to the nose, throat, and respiratory tract. Inhalation of high concentrations may cause central nervous system (CNS) effects such as nausea, headache, dizziness, fatigue, unconsciousness, and coma. May cause motor incoordination and speech abnormalities. Breathing high concentrations of this material, for example in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.
<i>Skin</i>	: May cause moderate skin irritation. Product may be absorbed through the skin, producing CNS effects.

- Eyes** : Direct contact will cause moderate to severe irritation to the eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Ingestion** : May cause irritation to the mouth, throat, and stomach. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. This material can get into the lungs (aspiration) during swallowing or vomiting. Small amounts in the lungs can cause chemical pneumonitis, possibly leading to chronic lung dysfunction or death.

Effects of long-term (chronic) exposure

- : Chronic exposure may cause drying, cracking, and defatting of the skin. Allergic skin reaction: Symptoms may include redness, swelling, blistering, and itching. Prolonged occupational overexposure to solvents may cause irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by intentionally concentrating and inhaling the vapors from this product may be harmful or fatal. Toluene, a component of this product, may cause harm to the human fetus. Long term overexposure to Toluene has been associated with peripheral neuropathy (damage to the nerves of the hands and feet), liver effects, kidney effects, impaired color vision and hearing damage.

Indication of need for immediate medical attention or special treatment

- : Difficulty breathing persists after removing the person to fresh air.
Any exposure to the eye which causes irritation.
Ingestion.

SECTION 5 – FIRE FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide, dry chemical powder, alcohol resistant foam or water fog.

Unsuitable extinguishing media : water jet; may spread the fire

Hazardous combustion products : Carbon oxides; Hydrocarbons; Aldehydes; Hydrogen chloride gas; other unidentified organic compounds.

Special fire-fighting procedures/equipment

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

Environmental precautions : Do not allow material to enter drains or contaminate ground water system.

Fire hazards/conditions of flammability

- : Highly flammable liquid. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapors may be heavier than air and may collect in confined and low-lying areas. Vapor can travel considerable distance and flashback to a source of ignition. Material will float on water and can be re-ignited at the water's surface. Static discharge may ignite this product's vapors.

Flammability classification (OSHA 29 CFR 1910.1200 and WHMIS 2015)

- : Flammable Liquid, Category 2.

Flammability classification (NFPA)

- : Flammable Liquid Class 1B.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions

- : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 for additional information on acceptable personal protective equipment.

- Environmental precautions** : Do not allow product to enter waterways. Do not allow material to contaminate ground water system.
- Spill response / clean-up** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Use non-sparking tools to contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g., sand), then place absorbent material into a container for later disposal (see Section 13.) Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.
- Incompatible materials** : See Section 10.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).
US CERCLA Reportable quantity (RQ): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SECTION 7 – HANDLING AND STORAGE

- Special Instructions** : HIGHLY FLAMMABLE LIQUID AND VAPOR. May cause flash fire. Keep away from fire, sources of heat, or sources of electrical discharges. Aspiration Hazard – may enter lungs and cause damage. If ingested, do not induce vomiting. Inhaling fumes may cause dizziness, drowsiness, nausea, headaches, and/or other Central Nervous System (CNS) symptoms. Contains a material that may cause peripheral nervous system damage. Breathing high concentrations can cause irregular heartbeats which may be fatal. Developmental hazard - Contains Toluene, which may cause birth defects or other reproductive harm. Avoid breathing vapors.
- Safe handling procedures** : Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor is important. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from oxidizing materials. Keep containers tightly closed when not in use. Wash hands and exposed skin thoroughly after handling. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).
- Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.
- Incompatible materials** : See Section 10.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Permissible exposure levels** : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Acetone	67-64-1	250 ppm	500 ppm	1000 ppm TWA 2400 mg/m ³ TWA	N/Av
Hexanes	110-54-3	50 ppm	N/Av	500 ppm 1800 mg/m ³	N/Av
Toluene	108-88-3	20 ppm	N/Av	200 ppm	300 ppm (10 min)
Phenolic resin	25085-50-1	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: Use with adequate ventilation. Provide adequate cross air circulation. Use explosion-proof general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, wear a NIOSH/MSHA-approved organic vapor respirator.

Skin protection

: Impervious gloves must be worn when using this product. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Advice should be sought from glove suppliers regarding the glove's breakthrough time for the ingredients listed in Section 3.

Eye / face protection

: Chemical goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Full chemical-resistant protective clothing should be used whenever splashing is anticipated. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations : Avoid contact with eyes, skin and clothing. Do not breathe vapors. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water at end of each work shift.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: yellow liquid.
Odor	: Characteristic solvent odor		
Odor threshold	: N/Av	pH	: N/Av
Specific gravity	: approx. 0.83	Boiling point	: > 133°F (>56.5°C)
Coefficient of water/oil distribution	: N/Av	Melting/Freezing point	: N/Av
Solubility in water	: negligible	Vapor pressure (mm Hg @ 20°C)	: 180
Evaporation rate (n-Butyl acetate = 1)	: N/Av	Vapor density (Air = 1)	: N/Av
Volatiles (% by weight)	: 80 – 82	General information	: N/Av
Volatile organic compounds (VOCs)	: 615 g/L (Calculated, SCAQMD Rule 1168)		
Particle size	: N/Av	Flammability classification (GHS)	: Flammable Liquid Cat. 2
Flash point	: -15°F (-26°C)	Lower flammable limit (% by vol)	: 1.1 according to ingredients
Flash point method	: Setaflash closed	Upper flammable limit (% by vol)	: 13.0 according to ingredients
Auto-ignition temperature	: N/Av	Decomposition temperature	: Not available
Viscosity	: Not available	Oxidizing properties	: Not available
Explosion data: Sensitivity to mechanical impact / static discharge			
: Not expected to be sensitive to mechanical impact. Static discharge could ignite the vapors of this product.			

SECTION 10 – REACTIVITY AND STABILITY INFORMATION

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Keep this product away from heat, sparks, flame, and other sources of ignition (e.g., pilot lights, electric motors, static electricity).
Materials to avoid and incompatibility	: Strong oxidizing agents; Reducing agents; Acids, Bases.
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

Target organs : Central Nervous System, Liver, Kidneys, Peripheral Nervous System

Routes of Exposure : *Inhalation*: YES *Skin Absorption*: YES *Skin and Eyes*: YES *Ingestion*: YES

Toxicological data : See below for individual ingredient acute toxicity data.

Ingredients		LC50 (4 hr)	LD50	
		Inhalation, rat, mg/L	Oral, rat, mg/kg	Dermal, rabbit, mg/kg
Acetone	67-64-1	50.1	5800	20000
Hexane	110-54-3	31.86	16000	> 2000
Toluene	108-88-3	12.5	> 5580	12196
Phenolic resin	25085-50-1	N/Av	N/Av	N/Av

Calculated Acute Toxicity Estimates for the Product

Inhalation : > 25 mg/L

Oral : > 2000 mg/kg

Dermal : > 4000 mg/kg

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects : Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Germ Cell Mutagenicity : None known.

Epidemiology : Not available.

Sensitization to material : This product contains a component known to cause allergic skin sensitization reactions.

Synergistic materials : N/Av

Irritancy : Severe eye irritant. Moderate irritant for respiratory system and skin.

Other important hazards : See Section 2 for additional information.

SECTION 12 – ECOLOGICAL INFORMATION

Environmental effects : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Important environmental characteristics

: No data is available on the product itself.

Ecotoxicological : No data is available on the product itself.

Ecotoxicity : No data available.

Biodegradability : No data available.

Bioaccumulative potential : No data available.

Mobility in soil : No data available.

PBT and vPvB assessment : No data available.

Other adverse effects : No data available.

SECTION 13 – DISPOSAL CONSIDERATION

Handling for disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

Methods of disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA : For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORTATION INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
TDG Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to TDG Part 1: 1.11, 1.17, 1.33; and Schedule 1.				
IATA IMDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Liters; in packages not exceeding 30 kg gross mass. Refer to 49 CFR 173.150(b) and Special Provision 149.				

SECTION 15 – REGULATORY INFORMATION

Canadian Information:

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR). This SDS contains all information required by the HPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL). The following components are listed on the Canadian Ingredient Disclosure List (IDL): Acetone, Hexane, Toluene.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:

- Fire hazard
- Acute hazard
- Chronic hazard.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above de minimus concentrations. This product contains: Hexane; Toluene.

U.S. State Right to Know Laws

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause developmental harm. This product contains: Toluene.

Other State Right to Know Laws:

On State RTK List?	CAS No.	CA	MA	MN	NJ	NY	PA	RI
Acetone	67-64-1	YES	YES	YES	YES	YES	YES	YES
Hexane	110-54-3	YES	YES	YES	YES	YES	YES	YES
Toluene	108-88-3	YES	YES	YES	YES	YES	YES	YES

SECTION 16 – OTHER INFORMATION

HMIS Rating

: * - Chronic Hazard 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe

*Health: *2 Flammability 3 Physical Hazard: 0*

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Services

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980

CFR: Code of Federal Regulations

CNS: Central Nervous System

DOT: Department of Transportation

DSL: Domestic Substances List

EPA: Environmental Protection Agency

GHS: Globally Harmonized System

IARC: International Agency for Research on Cancer

Inh: Inhalation

N/Av: Not Available

N/Ap: Not Applicable

NIOSH: National Institute of Occupational Safety and Health

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: Permissible exposure limit

RCRA: Resource Conservation and Recovery Act

SARA: Superfund Amendments and Reauthorization Act

STEL: Short Term Exposure Limit

TDG: Canadian Transportation of Dangerous Goods Act & Regulations

TLV: Threshold Limit Values

TSCA: Toxic Substance Control Act

TWA: Time Weighted Average

vPvB: Very Persistent or Very Bioaccumulative

WHMIS: Workplace Hazardous Materials Identification System

Disclaimer of Liability

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user determines the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. Armacell LLC will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein.

Prepared By:

Armacell LLC

55 Vilcom Center Dr #200

Chapel Hill, NC 27514

Product Information: (919) 304-3846

Visit our Website at www.armacell.us

Revision date: April 13, 2020

Replaces: October 24, 2019

End of Document

Section I - Product & Company Information**Product Name:** Armaflex WB Finish - White**Company Information:**Armacell LLC
7600 Oakwood Street Extension
Mebane, NC 27302**web:** www.armacell.us**e-mail:** info@armacell.com**phone:** 919.304.3846

In an emergency, contact Chemtrec: 800.424.9300

Product Use: Elastomeric Coating**Section II - Hazards Identification****GHS Ratings:**

Skin Irritant	3	Reversible adverse effects in dermal tissue
Eye Irritant	2B	Mild eye irritant
Carcinogen	2	Limited evidence of human or animal carcinogenicity

GHS Hazards

H316	Causes mild skin irritation
H320	Causes eye irritation
H351	Suspected of causing cancer

GHS Precautions

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood
P264	Wash hands thoroughly after handling
P281	Use personal protective equipment as required
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P405	Store locked up
P501	Dispose of contents/container in accordance with all local, state, federal and international regulations.

Signal Word: Warning

Section III - Composition / Information on Ingredients

Chemical Name	CAS number	Weight Concentration %
Water	7732-18-5	30.00% - 40.00%
Nepheline Syenite	37244-96-5	20.00% - 30.00%
Titanium Dioxide	13463-67-7	10.00% - 20.00%
Zinc Oxide	1314-13-2	1.00% - 5.00%
Propylene Glycol	57-55-6	1.00% - 5.00%
Diphenyl Ketone	119-61-9	0.10% - 1.00%

(1) There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting section

(2) Occupational exposure limits, if applicable, are listed in Section 8

Section IV - First Aid Measures

Inhalation: If affected, remove from exposure. Restore breathing. Get medical attention.

Eye Contact: Flush eyes with large amount of water for 15 minutes while holding eye lids open. Get medical attention.

Skin Contact: Wash affected area thoroughly with soap and water. Remove contaminated clothing and launder before re-use.

Ingestion: Do not induce vomiting. Call poison control and/or seek medical attention immediately.

Notes to Physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section V - Fire Fighting Measures

Flash Point: Non-Combustible

Extinguishing Media: Carbon Dioxide, Dry Chemical, or Alcohol Resistant Foam

Special Hazards: Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat. Material may spatter above 100C / 212 F.

Special Firefighting Equipment & Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible explosion when exposed to extreme heat

Section VI - Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area. Dike around spill and absorb liquids with absorbent. Sweep up and shovel into suitable containers for disposal. Stop spill from entering drains, sewers, streams, or waterways. Affected spill area may be slippery. Wear appropriate personal protection equipment while in affected area.

Section VII - Handling & Storage

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Do not store above 50C / 122 F, near heat or open flame. Protect from freezing. Close container and keep upright to prevent leakage. Keep out of reach of children. Transfer only to approved containers with complete and appropriate labeling.

Section VIII - Exposure Controls/Personal Protection

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits
Water 7732-18-5	N/A	N/A
Nepheline Syenite 37244-96-5	15 mg/m3 (total dust) 5 mg/m3 (respirable fraction)	15 mg/m3 (total dust) 5 mg/m3 (respirable fraction)
Titanium Dioxide 13463-67-7	15 mg/m3 (total dust) 5 mg/m3 (respirable fraction)	10 mg/m3
Zinc Oxide 1314-13-2	15 mg/m3 (total dust) 5 mg/m3 (respirable fraction)	10 mg/m3
Propylene Glycol 57-55-6	Not Established	Not Established
Diphenyl Ketone 119-61-9	Not Established	Not Established

PRECAUTIONS TO BE TAKEN IN USE:

Use only with adequate ventilation

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating contains materials classified as nuisance particles which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in this section, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

Ventilation: Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section II is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

Work/ Hygienic Practices: Wash hands before eating, smoking or using the wash room after use of this product. Do not consume food or beverages where this product is handled.

Respiratory Protection: If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection. When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

Protective Gloves: Required for long or repeated contact. Use neoprene or rubber gloves to prevent skin contact.

Eye Protection: Wear safety spectacles with sideshields.

Other Protective Clothing or Equipment: Use disposable or impervious clothing if work clothing contamination is likely. Availability of eye wash and shower stations recommended.

Section IX - Physical & Chemical Properties

Appearance: Liquid Vapor Pressure: No Data Vapor Density: No Data Specific Density: 1.34 Solubility: No Data Flash point: N/A Flammability: N/A Autoignition temperature: N/A Viscosity: 100 - 130 KU Partition coefficient (n-octanol/water): No Data	Odor: Mild Ammonia Odor threshold: No Data pH: 8.5 - 10 Freezing point: 0 C , 32 F Boiling range: 100 C, 212 F Evaporation rate: Slower than ether Explosive Limits: N/A Decomposition temperature: No Data Grams VOC less water: < 50 g/L
--	---

Section X - Stability & Reactivity

Stability: STABLE

Conditions to avoid: Freezing temperature; Heat, flames & sparks.

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: Carbon Monoxide; Carbon Dioxide

Section XI - Toxicological Information

Mixture Toxicity: No Data Available

Component Toxicity

13463-67-7	Titanium Dioxide
	Oral LD50: 5,000 mg/kg (Rat) Inhalation LC50: 7 mg/L (Rat)

Effect of Overexposure:

Eye and nasal irritation, headache, dizziness, nausea, difficulty breathing, itching or burning eye skin.

Carcinogenicity: The following ingredient either cause or are suspected of causing cancer.

Although IARC has classified titanium dioxide as possibly carcinogenic to humans (Category 2), their summary concludes: "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as paint."

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
119-61-9	Diphenyl Ketone	0.1 to 1.0%	Category 2
13463-67-7	Titanium Dioxide	10 to 20%	Category 2

Section XII - Ecological Information

Mixture Ecotoxicity: No Data Available

Component Ecotoxicity

Water	Not Applicable
Titanium Dioxide	LC50/ 96 h/ Fathead Minnow: > 1,000 mg/L
Zinc Oxide	LC50/ 48 h/ Water Flea: 98 ug/L
Propylene Glycol	EC50/ 48 h/ Water Flea: > 1,000 mg/L

Section XIII - Disposal Considerations

Waste Disposal Method: Dispose of in accordance with International, Federal, State/Provincial, and Local regulations regarding pollution. Local requirements may vary, consult your local sanitation and/or state designated environmental protection agency for disposal options.

Section XIV - Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT	Paint, Not Regulated	N/A	N/A	N/A

Section XV - Regulatory Information

OSHA: This mixture is considered to be hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

US Toxic Substance Control Act: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory

SARA Section 313: This product contains the following ingredients and as such, is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40 CFR 372
1314-13-2 Zinc Oxide 1 to 5 %

California Proposition 65: This product can expose you to chemicals known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov
119-61-9 Diphenyl Ketone

State of New Jersey Worker and Community Right-To-Know Act: This product contains the following chemicals which appear on the New Jersey Hazardous Substance List:

119-61-9 Diphenyl Ketone
57-55-6 Propylene Glycol
1314-13-2 Zinc Oxide
13463-67-7 Titanium Dioxide

Commonwealth of Pennsylvania Worker and Community Right-To-Know Act: This product contains the following chemicals which appear on the Pennsylvania Hazardous Substance List:

119-61-9 Diphenyl Ketone
57-55-6 Propylene Glycol
1314-13-2 Zinc Oxide
13463-67-7 Titanium Dioxide

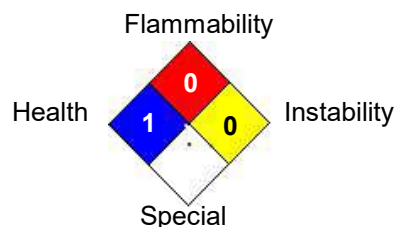
Section XVI - Disclaimer & Other Information

Prepared by Armacell LLC - Technical Department

Hazardous Material Information System (HMIS)

HEALTH	1	HMIS & NFPA Hazard Rating Legend * = Chronic Health Hazard 0 = INSIGNIFICANT 1 = SLIGHT 2 = MODERATE 3 = HIGH
FLAMMABILITY	0	
PHYSICAL HAZARD	0	
PERSONAL PROTECTION	X	

National Fire Protection Association (NFPA)



It is recommended that users of this product carefully review this Safety Data Sheet (SDS) to become aware of and understand the data contained herein and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. Since conditions of use are out of our control, users assume all risks associated with the use of the material. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The user is responsible to ensure that their activities comply with all country, federal, state, provincial or local laws.

Date revised: 2022-03-31

Revision number: 2.3

BICAR ® INDUSTRIAL GRADE

Revision Date 01/21/2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- | | |
|---------------------|--------------------------|
| - Trade name | BICAR ® INDUSTRIAL GRADE |
| - Chemical name | Sodium hydrogencarbonate |
| - Synonyms | Sodium bicarbonate |
| - Molecular formula | NaHCO ₃ |

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture**

- Food/ feedstuff additives
- Detergent
- Chemical industry
- Glass industry
- Foaming agent
- Water treatment
- Environmental protection
- Purifying flue gas
- Animal feedstuff

1.3 Details of the supplier of the safety data sheet**Company**

SOLVAY CHEMICALS, INC.
3737 Buffalo Speedway,
Suite 800,
Houston, TX 77098
USA
Tel: +1-800-7658292; +1-713-5256800
Fax: +1-713-5257804

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture**HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS).

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)**

- Not a hazardous product according to the OSHA Globally Harmonized System (GHS).

2.3 Other hazards which do not result in classification

None identified

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical name Sodium hydrogencarbonate

Hazardous Ingredients and Impurities

- No ingredients are hazardous.

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures**4.1 Description of first-aid measures****In case of inhalation**

- Move to fresh air.
- If symptoms persist, call a physician.

In case of skin contact

- Wash off with soap and water.

In case of eye contact

- Rinse thoroughly with plenty of water, also under the eyelids.
- If eye irritation persists, consult a specialist.

In case of ingestion

- Rinse mouth with water.
- If symptoms persist, call a physician or Poison Control Center immediately.

4.2 Most important symptoms and effects, both acute and delayed**In case of inhalation****Effects**

- No hazards to be specially mentioned.

In case of skin contact**Effects**

- No hazards to be specially mentioned.

Repeated or prolonged exposure

- Contact with dust can cause mechanical irritation or drying of the skin.

In case of eye contact**Effects**

- Dust contact with the eyes can lead to mechanical irritation.

In case of ingestion

Effects

- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician**

- When symptoms persist or in all cases of doubt seek medical advice.

SECTION 5: Firefighting measures

Flash point Not applicable, inorganic

Autoignition temperature The product is not flammable.

Flammability / Explosive limit No data available

5.1 Extinguishing media**Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- None.

5.2 Special hazards arising from the substance or mixture**Hazardous combustion products:**

- none

5.3 Advice for firefighters**Special protective equipment for fire-fighters**

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****Advice for non-emergency personnel**

- Evacuate personnel to safe areas.
- Avoid dust formation.

Advice for emergency responders

- Use personal protective equipment.
- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2 Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- Prevent any mixture with an acid into the sewer/drain (gas formations).

6.3 Methods and materials for containment and cleaning up

- Pick up and transfer to properly labeled containers.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Ensure adequate ventilation.
- Minimize dust generation and accumulation.
- Avoid contact with skin and eyes.
- Keep away from incompatible products

Hygiene measures

- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Store in original container.
- Keep in a dry place.
- Keep in properly labeled containers.
- Keep container closed.
- Keep away from:
- Incompatible products

Packaging material**Suitable material**

- Paper.
- Polyethylene
- Polypropylene
- Woven plastic material.
- Polyethylene

Unsuitable material

- No data available

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

- Contains no substances with occupational exposure limit values.

8.2 Exposure controls**Control measures****Engineering measures**

- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures**Respiratory protection**

- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.

Hand protection

- Impervious gloves

Eye protection

- Safety goggles

Skin and body protection

- No special protective equipment required.

Hygiene measures

- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

<u>Physical state</u>	solid
<u>Form</u>	crystalline, powder
<u>Color</u>	white
<u>Odor</u>	odorless
<u>Odor Threshold</u>	No data available
<u>Melting point/freezing point</u>	<u>Melting point/range:</u> Decomposition: yes
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> Thermal decomposition: yes

BICAR ® INDUSTRIAL GRADE

Revision Date 01/21/2021

<u>Flammability (solid, gas)</u>	The product is not flammable.
<u>Flammability (liquids)</u>	No data available
<u>Flammability / Explosive limit</u>	No data available
<u>Flash point</u>	Not applicable, inorganic
<u>Autoignition temperature</u>	No data available
<u>Decomposition temperature</u>	> 122 °F (> 50 °C)
<u>pH</u>	8.4 (ca. 8.4 g/l) (77 °F (25 °C)) Water 8.6 (ca. 52 g/l) <u>pKa</u> : 6.3
<u>Viscosity</u>	<u>Viscosity, dynamic</u> : Not applicable
<u>Solubility</u>	<u>Water solubility</u> : 69 g/l (32 °F (0 °C)) 93 g/l (68 °F (20 °C)) 165 g/l (140 °F (60 °C)) <u>Solubility in other solvents</u> : Other: soluble Alcohol: slightly soluble
<u>Partition coefficient: n-octanol/water</u>	Not applicable, inorganic
<u>Vapor pressure</u>	Thermal decomposition
<u>Density</u>	2.21 kg/dm ³ <u>Bulk density</u> : 500 - 1,300 kg/m ³
<u>Relative density</u>	2.21 - 2.23 (68 °F (20 °C))
<u>Relative vapor density</u>	Not applicable
<u>Particle characteristics</u>	No data available
<u>Evaporation rate (Butylacetate = 1)</u>	No data available

9.2 Other information

<u>Explosiveness</u>	Not expected
<u>Oxidizing properties</u>	Not expected
<u>Self-ignition</u>	The product is not flammable.
<u>Molecular weight</u>	84.01 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

P06000000103
Version : 3.00 / US (Z8)
www.solvay.com



- Incompatible with acids.
- Decomposes slowly on exposure to water.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- none

10.4 Conditions to avoid

- Exposure to moisture.
- To avoid thermal decomposition, do not overheat.

10.5 Incompatible materials

- Acids

10.6 Hazardous decomposition products

- none

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

LD50 : > 4,000 mg/kg - Rat , male and female
 Method: according to a standardized method
 The product has a low acute toxicity
 Unpublished reports

Acute inhalation toxicity

LC50 - 4.5 h (dust/mist) : > 4.74 mg/l - Rat , male and female
 Method: according to a standardized method
 Not classified as hazardous for acute inhalation toxicity according to GHS.
 Unpublished reports
 Dust

Acute dermal toxicity

No data available
 No data available

Acute toxicity (other routes of administration)**Skin corrosion/irritation**

Rabbit
 slight irritation
 Method: OECD Test Guideline 404
 Unpublished reports

Serious eye damage/eye irritation

Rabbit
 slight irritation
 Method: OECD Test Guideline 405
 Unpublished reports

Respiratory or skin sensitization

No data available

Mutagenicity

Genotoxicity in vitro

Strain: Escherichia coli
with and without metabolic activation

negative
Method: according to a standardized method
Published data
Ames test
with metabolic activation

negative
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Published data

Genotoxicity in vivo

No data available

Carcinogenicity

No data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA

Toxicity for reproduction and development**Toxicity to reproduction / fertility**

No data available

Developmental Toxicity/Teratogenicity

Rat, female, Oral
Teratogenicity NOAEL:> 340mg/kg
Method: according to a standardized method
Highest dose tested, The product is not considered to be embryotoxic / fetotoxic.,
Unpublished reports
Rabbit, female, Oral
Teratogenicity NOAEL:> 330mg/kg
Method: according to a standardized method
Highest dose tested, The product is not considered to be embryotoxic / fetotoxic.,
Unpublished reports

STOT**STOT-single exposure**

Routes of exposure: Oral, Inhalation
The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
internal evaluation

STOT-repeated exposure

No data available

Experience with human exposure

No data available

Aspiration toxicity

No data available

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

BICAR ® INDUSTRIAL GRADE

Revision Date 01/21/2021

LC50 - 96 h : 7,100 mg/l - Lepomis macrochirus (Bluegill sunfish)
flow-through test
Analytical monitoring: yes

Method: according to a standardized method
Unpublished internal reports
Not harmful to fish (LC/LL50 > 100 mg/L)

Acute toxicity to daphnia and other aquatic invertebrates

EC50 - 48 h : 4,100 mg/l - Daphnia magna (Water flea)
flow-through test
Analytical monitoring: yes
Method: according to a standardized method
Unpublished internal reports
Not harmful to aquatic invertebrates. (EC/EL50 > 100 mg/L)

Toxicity to aquatic plants

No data available

Toxicity to microorganisms

No data available

Chronic toxicity to fish

No data available

Chronic toxicity to daphnia and other aquatic invertebrates

NOEC: > 576 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: no
Method: OECD Test Guideline 211
Highest concentration tested
Published data
No adverse chronic effect observed up to and including the threshold of 1 mg / L.

12.2 Persistence and degradability**Abiotic degradation****Stability in water**

Product dissociates rapidly to corresponding ions on contact with water.

Physical- and photo-chemical elimination

No data available

Biodegradation**Biodegradability**

Not applicable, inorganic substance

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water**

Not applicable, inorganic substance

Bioconcentration factor (BCF)

According to the available data on the constituents
Not potentially bioaccumulable
Expert judgment

12.4 Mobility in soil

Adsorption potential (Koc)

According to the available data on the constituents
non-significant adsorption
internal evaluation

Known distribution to environmental compartments

No data available

12.5 Results of PBT and vPvB assessment

Not applicable, inorganic substance

12.6 Other adverse effects

Ecotoxicity assessment

Short-term (acute) aquatic hazard

Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)

Long-term (chronic) aquatic hazard

No adverse chronic effect observed up to and including the threshold of 1 mg / L.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Contact waste disposal services.
- If recycling is not practicable, dispose of in compliance with local regulations.
- Dilute with plenty of water.
- Neutralize with acid.
- In accordance with local and national regulations.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – NO

Advice on cleaning and disposal of packaging

- Where possible recycling is preferred to disposal or incineration.
- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

DOT

not regulated

TDG

not regulated

NOM

not regulated

IMDG

not regulated

IATA

not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Notification status**

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Federal Regulations**US. EPA EPCRA SARA Title III**

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)

No SARA Hazards

Section 313 Toxic Chemicals (40 CFR 372.65)

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

This material does not contain any components with a section 302 EHS TPQ.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)

This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

This material does not contain any components with a CERCLA RQ.

15.3 State Regulations**US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information**NFPA (National Fire Protection Association) - Classification**

Health	1 slight
Flammability	0 minimal
Instability or Reactivity	0 minimal
Special Notices	None

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	1 slight
Flammability	0 minimal
Reactivity	0 minimal
PPE	Determined by User; dependent on local conditions

Further information

- Distribute new edition to clients
- Update
- See section 1

Date Prepared: 01/21/2021

Key or legend to abbreviations and acronyms used in the safety data sheet

- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.

BICAR ® INDUSTRIAL GRADE

Revision Date 01/21/2021

- RID:	European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA:	International Air Transport Association.
- ICAO-TI:	Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG:	International Maritime Dangerous Goods.
- TWA:	Time weighted average
- ATE:	Estimated value of acute toxicity
- EC:	European Community number
- CAS:	Chemical Abstracts Service.
- LD50:	Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50:	Substance concentration causing 50% (half) death in the test animals group.
- EC50:	Effective Concentration of the substance causing the maximum of 50%.
- PBT:	Persistent, Bioaccumulative and Toxic substance.
- vPvB:	Very Persistent and Very Bioaccumulative.
- SEA:	Classification, labeling, packaging regulation
- DNEL:	Derived No Effect Level
- PNEC:	Predicted No Effect Concentration
- BHOT:	Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

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. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.



BNZ Materials, Inc.

SAFETY DATA SHEET

Section 1.

Identification

GHS product identifier: Blazelite® 2100, Blazelite® 2300, Blazelite® 2300 LI, Blazelite® 2300 VLI, Blazelite® 2500, Blazelite® 2600 LI

Other means Of identification: None

Product type: Castable refractory gunning mix

SDS No. BNZ-30-202

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Castables/gunning mix

Uses advised against: None known

Supplier: BNZ Materials, Inc.
6901 S. Pierce St., Suite 260
Littleton, CO 80128

Technical Support: 800-955-8650
www.bnzmaterias.com

Emergency telephone Number: CHEMTREC - 800-424-9300 or 703-741-5970 (Outside USA and Canada – collect calls accepted). 24 Hour service.

Section 2.

Hazards Identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture: CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (STOT) REPEATED EXPOSURE – Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 0%

GHS label elements
Hazard pictograms:



Signal word: Danger

Hazard statements: **If dust is present:**
Causes damage to lungs through prolonged or repeated exposure.
May cause cancer.

Precautionary statements

Prevention: If dust is present:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing, eye protection, face protection
Do not breathe dust.
Wash thoroughly after handling.
Do not eat, drink, or smoke while using this product.

Response: If exposed, concerned, or feel unwell: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplementary Information Use precautions if exposure exceeds the established OSHA limits.
This material does not present a hazard unless dust is generated from processing operations.

Hazards not otherwise Classified None known

Section 3.	Composition/Information on Ingredients
-------------------	---

Substance or mixture: Mixture

Other means of identification None

CAS number/other identifiers

CAS number : Mixture

Product code : None

Ingredient name	CAS number	%
Lightweight aggregate	Proprietary	50 – 70
Calcium aluminate cement	Various	20 – 40
Clay	1332-58-7	5 – 15
Perlite	93763-70-3	3 – 18
Aluminum oxide	1344-28-1	< 4
Product dust contains:		
Crystalline Silica	14808-60-7	< 15
Crystalline Silica (cristobalite)	14464-46-1	< 6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4.

First Aid Measures

Description of necessary first aid measures

- Inhalation:** Remove victim to fresh air.
Drink plenty of water and blow nose to evacuate remaining dust.
If coughing or irritation persist seek medical attention.
- Eye contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.
Check for and remove any contact lenses.
Rinse for at least 15 minutes.
If irritation persists seek medical attention.
- Skin contact:** Gently wash with plenty of soap and water after each exposure.
If skin becomes irritated and irritation persists seek medical attention.
- Ingestion** If prolonged irritation to gastrointestinal tract or mouth persist seek medical attention.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation :** Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.
- Skin contact:** Prolonged exposure may cause dryness or irritation to the skin.
- Eye contact:** Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.
- Ingestion:** May cause irritation to gastrointestinal tract or mouth.

Over-exposure signs/symptoms

- Inhalation:** Adverse symptoms may include the following:
Irritation, shortness of breath, chest pain
- Eye contact:** Adverse symptoms may include the following:
Irritation
Dryness
- Skin contact:** Adverse symptoms may include the following:
Irritation
Dryness
- Ingestion:** Adverse symptoms may include the following:
Irritation
Stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Medical conditions which may be aggravated by exposure include dry skin, dermatitis, and pre-existing lung conditions such as bronchitis, emphysema, and asthma. Cigarette smoking may increase the risk of silicosis, bronchitis, pneumoconiosis, and lung cancer in persons exposed to crystalline silica.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training
Wear a suitable NIOSH-approved dust mask.
Wash contaminated clothing before re-use.

Section 5.

Firefighting Measures

Specific hazards arising from the chemical:

None known other than those represented elsewhere in this SDS.

Hazardous thermal decomposition products

Decomposition products may include the following materials:

- Clays
- Aluminum Oxide
- Crystalline Silica

Special protective actions for firefighters

Material will not burn.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

No action shall be taken involving any personal risk or without suitable training.

No special firefighting equipment is necessary.

Special protective equipment for fire-fighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6.

Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency Personnel

No action shall be taken involving any personal risk or without suitable training.
Evacuate surrounding areas.

Keep unnecessary and unprotected personnel from entering.

Do not touch or walk through spilled material.

Provide adequate ventilation.

Wear appropriate respirator when ventilation is inadequate.

Put on appropriate personal protective equipment.

For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersion of material and runoff and contact with soil, waterways, drains and sewers.
This material does not pose a significant threat to the environment

Methods and materials for containment and cleaning up

Small spill

Stop source of spill .
Avoid creating airborne dust
Use dust suppressant as necessary
Place material into closed waste disposal container.
Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.

Large spill

Stop source of spill.
Avoid creating airborne dust
Use dust suppressant as necessary
Place material into closed waste disposal container.

Any sweeper or vacuum should be equipped with High Efficiency Particulate (HEPA) filter.
Dispose of using a licensed waste disposal contractor.
Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7.

Handling and Storage

Protective measures for safe handling

Protective Measures: Minimize dust generation during cutting, milling, or grinding.
Use appropriate respiratory protection if dust is present above the established exposure limits.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Workers should wash hands and face before eating, drinking and smoking.
Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
During initial exposure to service temperatures, smoke may be emitted which can cause transitory irritation to the lungs and upper respiratory system.

Conditions for safe storage,
including any
incompatibilities

Store in accordance with local regulations.
Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink.

Section 8.

Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits:

US Occupational Safety and Health Administration Permissible Exposure Limit (OSHA PEL):

Irritant (Nuisance) Dust (all components except crystalline silica):	5 mg/m ³
Crystalline Silica (Respirable)	$\frac{10 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$
Crystalline Silica (Total Dust)	$\frac{30 \text{ mg/m}^3}{\% \text{SiO}_2 + 2}$

(See 29 CFR 1910.1000 Table Z-3)

American Conference of Governmental and Industrial Hygienists Threshold Limit Value (ACGIH TLV®):

Lightweight aggregate	10 mg/m ³
Calcium aluminate cement	3 mg/m ³
Clay	2 mg/m ³
Perlite	3 mg/m ³
Aluminum oxide	1 mg/m ³
Crystalline Silica	0.025 mg/m ³

Note: TLV® and PEL values are for eight hour exposures, unless noted.

Appropriate

Engineering controls: If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Power equipment should be fitted with a properly designed dust collection device.

Environmental

Exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene Measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.
Appropriate techniques should be used to remove potentially contaminated clothing.
Wash contaminated clothing before reusing.
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection

Respiratory Protection:

Wear a NIOSH-approved dust mask to limit exposure to product dust.
Higher dust levels may require use of a half or full mask respirator with dust filters.
Use local exhaust if necessary to lower dust levels.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face Protection:

Wear safety glasses with side shields or goggles complying with an approved standard to avoid exposure to dust.

Hand Protection:

Protective gloves should be worn when handling and to avoid abrasion or drying of skin.

Body Protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other Skin Protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

Section 9.

Physical and Chemical Properties

Appearance

Physical State

Granular powder

Color

Off-white to gray

Odor

None

Odor Threshold

Not Applicable

pH

Not Applicable

Melting Point

> 2000 °F (1093 °C)

Boiling Point

N/A

Flash Point

None

Burning Time

Not applicable

Specific Gravity	0.9 – 1.5
Burning Rate	Not applicable
Evaporation Rate	0 (butyl acetate = 1)
Flammability (solid, gas)	Not applicable
Lower Explosive (flammable) Limit	Not available
Upper Explosive (flammable) Limit	Not available
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Relative Density	Not available
Solubility	Not available
Solubility in Water	Slight
Partition coefficient: n-octanol/water	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
SADT	Not available
Viscosity	Not available

Section 10.

Stability and Reactivity

Reactivity: This product is normally not reactive.

Chemical stability: The product is stable under normal conditions of use.

Possibility of

Hazardous Reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid: Avoid strong acids and ammonium salts. Contact with strong oxidizing agents (such as fluorine, chlorine trifluoride) may present a fire hazard.

Incompatible

Materials: Reactive or incompatible with the following materials:
Hydrofluoric acid, fluorine, chlorine trifluoride, oxygen difluoride

Hazardous Decomposition

Products Crystalline silica will dissolve in hydrofluoric acid and produce silicon tetrafluoride, a corrosive gas.

Section 11.

Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
None Known	--	--	--	--

	--	--	--	--
--	----	----	----	----

Irritation/Corrosion: Not available

Sensitization Not available

Mutagenicity Not available

Carcinogenicity: Not available

Reproductive toxicity Not available

Teratogenicity Not available

**Specific target organ toxicity
(single exposure)** Not available

**Specific target organ toxicity
(repeated exposure)** This material contains Crystalline Silica, which is known to cause silicosis. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal.

Aspiration hazard Not available

**Information on the likely
routes of exposure** Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : Respirable airborne particles may cause temporary irritation to the lungs and upper respiratory system.

Skin contact: Prolonged exposure may cause dryness or irritation to the skin.

Eye contact: Will cause mechanical irritation to the eyes. May cause moderate to severe eye irritation and dryness.

Ingestion: May cause irritation to gastrointestinal tract or mouth.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Adverse symptoms may include the following:
Irritation

Eye contact: Adverse symptoms may include the following:
Irritation
Dryness

Skin contact: Adverse symptoms may include the following:
Irritation
Dryness

Ingestion: Adverse symptoms may include the following:
Irritation
Stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects : Not available.

Potential chronic health effects: Not available

General: No other known significant effects or critical hazards.

Carcinogenicity: Crystalline silica – long term overexposure may cause permanent and irreversible lung damage, including silicosis, and increase the risk of lung cancer, kidney, and liver damage. Silicosis is a rapidly progressive, non-cancerous lung disease that is often fatal.

IARC (International Agency for Research on Cancer) 014808-60-7 Silica dust, crystalline, in the form of quartz or cristobalite - Group 1 (Sup 7, 68,100C, 2012)

National Toxicology Program (NTP) Report on Carcinogens Silica, Crystalline (Respirable Size) - Known To Be Human Carcinogen

OSHA: Crystalline Silica classified as a Category 1A Carcinogen

Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12.

Ecological Information

Toxicity Not available.

Persistence and Degradability: Not available.

Bioaccumulative Potential: Not available.

Mobility in soil

Soil/water partition coefficient (K_{OC}): Not available

Other adverse effects: Most of the ingredients in this product are naturally occurring minerals, and, unless contaminated in service, are not hazardous to the environment.

Section 13.

Disposal Considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.
Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
This material and its container must be disposed of in a safe way.
Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14.

Transport Information

	DOT Classification	TDG Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated	Not Regulated

Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage

Section 15.

Regulatory Information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not applicable
United States inventory (TSCA 8b): All components are listed.

Clean Air Act Section 112

(b) Hazardous Air

Pollutants (HAPs): Not listed

Clean Air Act Section 602

Class I Substances: Not listed

Clean Air Act Section 602

Class II Substances: Not listed

DEA List I Chemicals

(Precursor Chemicals): Not listed

DEA List II Chemicals

(Essential Chemicals): Not listed

SARA 302/304

Composition/information on ingredients: No components are listed.

SARA 304 RQ: Not applicable.

SARA 311/312

Classification :

Name	Immediate (acute) Health Hazard	Delayed (chronic) Health Hazard	Fire Hazard	Reactivity Hazard	Sudden Release of Pressure
Blazelite® All Grades	Yes	Yes	No	No	No

Section 313 listed: No

Listed material/compound: Not Applicable

State regulations

New York: Crystalline Silica

New Jersey: Crystalline Silica

Pennsylvania: Crystalline Silica

Massachusetts: Crystalline Silica

Rhode Island: Crystalline Silica

California Prop. 65: This product contains the following substances known to the State of California to cause cancer: Crystalline silica

International Lists

Blazelite® 2100, 2300, 2300 LI, 2300 VLI, 2500, 2600 LI SAFETY DATA SHEET
SDS No. BNZ-30-202

DSL (Canada) All ingredients are listed, or exempt from inclusion, on the Canadian Domestic Substances List (DSL).

Canada inventory (WHMIS): Listed. Class D-2A: Material causing other toxic effects.
Very Toxic – Chronic.



This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Australia inventory (AICS):	Not determined.
China inventory (IECSC):	Not determined.
Japan inventory:	Not determined.
Korea inventory:	Not determined.
Malaysia Inventory (EHS Register):	Not determined.
New Zealand Inventory of Chemicals (NZIoC):	Not determined.
Philippines inventory (PICCS):	Not determined.
Taiwan inventory (CSNN):	Not determined.

Chemical Weapons Convention List Schedule I Chemicals: Not listed

Chemical Weapons Convention List Schedule II Chemicals: Not listed

Chemical Weapons Convention List Schedule III Chemicals: Not listed

DSCL (Europe): R48/20: Harmful – Danger of serious damage to health by prolonged exposure through inhalation.
R36: Irritating to the eyes
R39: Danger of serious irreversible side effects.
R45: May cause cancer.

Section 16.	Other Information
--------------------	--------------------------

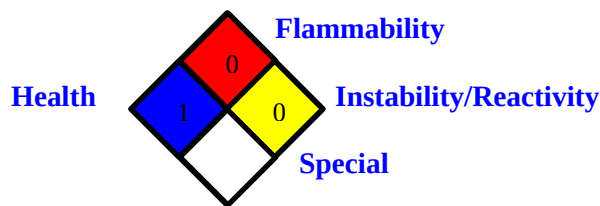
Hazardous Material Information System (U.S.A.)

Health		2
Flammability		0
Physical Hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

DISCLAIMER – BNZ Materials, Inc., (BNZ) believes the information contained in this Safety Data Sheet (SDS) to be accurate and reliable as of the date of issue, and is provided in good faith as a service to our customers and to comply with applicable laws. This document is intended as a guide for the safe handling, storage, and use of this material under normal conditions of use. No representation, warranty, or guarantee, either express or implied, is intended or given. BNZ does not accept any liability for any loss, injury, or damage resulting from the use of this product.

History

Date of issue/Date of revision:	June 1, 2015
Date of previous issue:	October 28, 2014
Version:	4
Changes:	Added SDS No.
Prepared by:	T Square Associates, Inc. www.tsquare.us

SAFETY DATA SHEET

1. Identification

Product identifier: - CAUSTIC SODA 50%

Other means of identification

Synonyms: Sodium Hydroxide
CAS NUMBERS: 1310-73-2

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Red Bird Supply, Inc.
3770 Victory Circle
Orange, TX 77630
409-735-2551

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral) Category 4

Skin Corrosion/Irritation Category 1A

Serious Eye Damage/Eye Irritation Category 1

Environmental HazardsAcute Category 3
hazards to the aquatic environment

Label Elements

Hazard Symbol



Signal Word

Danger

Hazard Statement

Corrosive.
Harmful if swallowed.
Causes severe skin burns and eye damage.

**Precautionary
Statements**

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product.

Response

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. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse.

Storage

Store in a closed container. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.

Disposal

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification

None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Sodium hydroxide		1310-73-2	>=48 - <=52%
Water		7732-18-5	>=48 - <=52%
Sodium Chloride		7647-14-5	>=0 - <=5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments:

The components are not hazardous or are below required disclosure limits.

4. First-aid measures

General information:

CAUTION! First aid personnel must be aware of own risk during rescue!

Ingestion:

Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately.

Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention immediately.

Skin Contact:

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact:

If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms:

No data available.

Indication of immediate medical attention and special treatment needed

Treatment:

No data available.

5. Fire-fighting measures

General Fire Hazards: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Powder. In case of fire in the surroundings: all extinguishing agents allowed.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Fire or excessive heat may produce hazardous decomposition products. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Avoid breathing fire vapors. Avoid water in straight hose stream; will scatter and spread fire. Move container from fire area if it can be done without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Do not touch or walk through spilled material. Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Use only with adequate ventilation. Container must be kept tightly closed.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in appropriate chemical storage area. Keep in a cool, well-ventilated place. Store in corrosive resistant container with a resistant inner liner.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
Sodium hydroxide	Ceiling	2 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Sodium hydroxide - Particulate.	ST ESL	20 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	2 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
Sodium hydroxide	Ceiling	2 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	Ceiling	2 mg/m ³	US. ACGIH Threshold Limit Values (03 2016)
	Ceil_Time	2 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
	Ceiling	2 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate Engineering Controls

Adequate ventilation should be provided so that exposure limits are not exceeded. Eye washes and showers for emergency use.

Individual protection measures, such as personal protective equipment

General information:

Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Practice good housekeeping.

Eye/face protection:

Use personal protective equipment as required. Wear goggles/face shield.

Skin Protection

Hand Protection:

Chemical resistant gloves.

Other:

Chemical resistant clothing

Respiratory Protection: In case of inadequate ventilation use suitable respirator.
Hygiene measures: When using do not eat, drink or smoke. Wash thoroughly after handling.
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.
Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Odorless
Odor threshold:	No data available.
pH:	14
Melting point/freezing point:	12 °C 54 °F
Initial boiling point and boiling range:	105 - 140 °C
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	1.333 hPa
Vapor density:	No data available.
Relative density:	1.5258
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.

Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.
Chemical Stability: Material is stable under normal conditions.
Possibility of hazardous reactions: This product may generate hydrogen gas. Keep away from ignition source. Empty container after use should be stored in separate area, and be disposed after degassing completely.
Conditions to avoid: No data available.
Incompatible Materials: Avoid contact with acids and oxidizing substances.
Hazardous Decomposition Products: This product may generate hydrogen gas. Keep away from ignition source. Empty container after use should be stored in separate area, and be disposed after degassing completely.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin Contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 3,000 mg/kg

Dermal

Product:

Not classified for acute toxicity based on available data.

Inhalation

Product: No data available.

Specified substance(s):

Sodium Chloride

LC50 (Rat,): > 42 mg/l 2 = reliable with restrictions LC50 (Rat, 1 h): > 42 mg/l 2 = reliable with restrictions

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Causes skin burns.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye damage. Causes severe eye burns.

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC50 (Bluegill Sunfish, 48 h): 1,294.6 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Sodium hydroxide
EC50 (Water flea (Ceriodaphnia dubia), 48 h): 34.59 - 47.13 mg/l
Intoxication LC50 (Cockle (Cerastoderma edule), 48 h): 330 - 1,000 mg/l
Mortality LC50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): 33 - 100 mg/l Mortality

Sodium Chloride LC50 (Tubificid worm, Oligochaete (Limnodrilus hoffmeisteri), 261 h): 5,800 mg/l Mortality LC50 (Water flea (Ceriodaphnia dubia), 7 d): < 330 mg/l Mortality LC50 (Pond snail, pulmonate snail (Physa heterostrophia), 24 h): > 5,600 mg/l Mortality EC50 (Tubificid worm (Tubifex tubifex), 24 h): 1,250 mg/l Intoxication LC50 (Pond snail, pulmonate snail (Physa heterostrophia), 96 h): 4,100 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil: No data available.

Known or predicted distribution to environmental compartments

Sodium hydroxide No data available.

Water No data available.

Sodium Chloride No data available.

Known or predicted distribution to environmental compartments

Sodium hydroxide No data available.

Sodium Chloride No data available.

13. Disposal considerations

General information: Dispose of waste and residues in accordance with local authority requirements.

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings

even after container is emptied.

14. Transport information

DOT

UN Number:	UN 1824
UN Proper Shipping Name:	Sodium hydroxide solution
Transport Hazard Class(es)	
Class:	8
Label(s):	8
Packing Group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	—

IMDG

UN Number:	UN 1824
UN Proper Shipping Name:	SODIUM HYDROXIDE SOLUTION
Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
Packing Group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	—

IATA

UN Number:	UN 1824
Proper Shipping Name:	Sodium hydroxide solution
Transport Hazard Class(es):	
Class:	8
Label(s):	8
Packing Group:	II
Environmental Hazards	Not regulated.
Special precautions for user:	—
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

15. Regulatory information

US Federal RegulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Sodium hydroxide Reportable quantity: 1000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

☐ Acute (Immediate) ☐ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	RQ
Sodium hydroxide	1000 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Sodium hydroxide	500 lbs
Water	500 lbs
Sodium Chloride	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Sodium hydroxide Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide Listed

US. Massachusetts RTK - Substance List

Sodium hydroxide Listed

US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide Listed

US. Rhode Island RTK

Sodium hydroxide Listed

Inventory Status: EINECS, ELINCS or NLP:	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.
Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
Ontario Inventory:	Not in compliance with the inventory.
Taiwan Chemical Substance Inventory:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

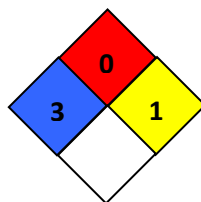
HMIS Hazard ID

Health	*	3
Flammability		0
Physical Hazards		1
PERSONAL PROTECTION		B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



	Flammability
	Health
	Reactivity
	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 06/06/2017
Revision Date: No data available.
Version #: 1.0
Further Information: No data available.

SAFETY DATA SHEET

Material Identity: CITRIC ACID 50%

SECTION 1 · COMPANY AND PRODUCT IDENTIFICATION

Manufacturers Address:

2565 NE 33rd Street
Fort Worth, TX 76111

Emergency Phone CHEMTREC: (800) 424-9300

General Information: (817) 831-0001

Synonyms: None

Product Use: Wash Solution

SECTION 2· HAZARDS IDENTIFICATION

GHS Classification:

Eye irritation Category 2A

GHS Label elements, including precautionary statements

Pictograms



Signal Word: Warning

Hazard statement(s)

H319 Causes serious eye irritation.

Precautionary statement(s)

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face protection.

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.

P501: Dispose of contents and container in accordance with local regulations.

SECTION 3 · COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity	Synonyms	CAS Number	Percent (Wgt)
Citric Acid	None	77-92-9	50

Other: Contains no impurities or stabilizing additives which are themselves classified and which contribute to the classification of this product.

SECTION 4 · FIRST AID MEASURES

FIRST AID PROCEDURES:

Eyes: Flush with large amounts of cool running water for at least 15 minutes. Seek immediate medical attention.

Skin: Wash skin with soap and water. If irritation develops and persists seek medical attention/advice.

Inhalation: For excessive inhalation remove to fresh air. If breathing is difficult seek immediate medical attention/advice.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention/advice.

See Section 11 for **Signs and Symptoms of Exposure**



Since 1952

SAFETY DATA SHEET

Material Identity: CITRIC ACID 50%

SECTION 5 · FIRE FIGHTING MEASURES

Extinguishing Media: Water spray, dry chemical, carbon dioxide or ordinary foam are recommended.

Flammable Limits: Lower: N/A Upper: N/A

Fire Fighting Procedures: Cool fire-exposed containers with water spray to prevent container weakening and possible rupture. Use self-contained breathing apparatus with a full face piece operated in the positive pressure mode.

Unusual Fire and Explosion Hazards: None known.

Fire and Explosion Hazards: Not considered an explosion hazard.

SECTION 6 · ACCIDENTAL RELEASE and DISPOSAL MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

SECTION 7 · STORAGE AND HANDLING

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not allow water to get into the container because of possible reaction. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Use only with adequate ventilation. Do not breathe spray or mist. Do not use with metal spatula or other metal items. Inform laundry personnel of contaminant's hazards.

Storage: Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not store near alkaline substances. Store protected from moisture.

SECTION 8 · EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Provide explosion-proof ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated below.

Exposure Limits: Citric Acid Contains no substances with occupational exposure limit values.

Personal Protective Equipment (PPE):

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Skin: If prolonged or repeated skin contact is likely, wear appropriate protective gloves.

Clothing: Selection of protective clothing depends on work conditions, potential exposure conditions and may include gloves, boots, suits and other protective items.

Respirators: Where adequate ventilation is not available an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of OSHA Respiratory Protection Standard, 29 CFR 1920.134. In confined areas, use a self-contained breathing apparatus.

SECTION 9 · PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear Liquid

Color/Odor: slight yellow / citrus odor.

Melting Point/Freezing Point: 32 °F

Boiling Point, Initial: 212 °F

Flammability: Not Flammable

Flammability Limits: NA

Flash Point: None to boil

Autoignition Temperature: No available data

Decomposition Temperature: No available data

pH: < 2.5 (0.1N Sol'n)

Viscosity, kinematic: No available data

Solubility: Complete

Partition coefficient: n-octanol/water: No available data

Vapor Pressure (mmHg): No available data

Relative Density: 1.29

Relative Vapor Density (Air=1): No available data

SAFETY DATA SHEET

Material Identity: CITRIC ACID 50%

SECTION 10 · STABILITY AND REACTIVITY

Stability: Stable under normal use conditions.

Conditions to Avoid: This material should be stored away from potassium tartrate, alkali and alkaline earth carbonated and bicarbonates, acetates, sulfites and metal nitrates.

Incompatibility: Avoid contact with oxidizing agents, reducing agents.

Hazardous Decomposition Products: Oxides of Carbon.

Hazardous Polymerization: Will not occur.

SECTION 11 · TOXICOLOGICAL INFORMATION

Signs and Symptoms of Overexposure:

Skin: Not likely to cause skin irritation upon short term or brief contact. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Eyes: May cause moderate irritation to the eyes, with symptoms that include redness, tearing, and pain.

Inhalation: Aerosols and mists from solutions may cause mild to moderate irritation of the nose and throat.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Acute oral toxicity:

Citric Acid LD50 rat: 5,040 mg/kg

Acute inhalation toxicity:

Citric Acid: LC50 rat: No available data

Acute dermal toxicity:

Citric Acid: LD50 Rabbit: No available data

Germ Cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive Toxicity: Not classified

STOT single exposure: Not classified

STOT repeated exposure: Not classified

SECTION 12 · ECOLOGICAL INFORMATION

Aquatic Toxicity: This product is moderately toxic initially but unlikely to pose a long term hazard to aquatic life.

Fish: Bluegill/Sunfish: 49 mg/L; 48Hr; TLm

Bio-accumulative potential: No Bioaccumulation data available.

Mobility: Moderately mobile in soil and likely to volatilize from soil surface.

SECTION 13 · DISPOSAL CONSIDERATIONS

Chemical waste generators must determine at the time of disposal, whether a discarded chemical is classified as a hazardous waste. Chemical additions, processing or otherwise altering this material may make waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate. The transportation, storage, treatment and disposal of this waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.



SAFETY DATA SHEET

Material Identity: CITRIC ACID 50%

SECTION 14 · TRANSPORTATION

U.S. DEPARTMENT OF TRANSPORTATION (Road or Rail):

Proper Shipping Name: Not a DOT Controlled Material

Hazard Class

UN Number:

Packaging Group:

Environmental Hazards:

SECTION 15 · REGULATORY INFORMATION

US FEDERAL REGULATIONS

Comprehensive Environmental Response and Liability Act (CERCLA)

This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

The reportable quantity (RQ) for this material has not been established. If appropriate, immediately report to the National Response Center (800/424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies.

SARA Section 311/312 (40 CFR 370) Hazard Categories:

Acute Health Hazard.

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA

Clean Air Act: None of the chemicals in this product are listed as Hazardous Substances under the CAA.

California Prop 65: This product contains no chemical known by the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16 · OTHER INFORMATION

SDS Origination Date: May 2018

National Fire Protection Association (NFPA) Ratings: This information is intended solely for the use of individuals trained in the NFPA system.

Health: 1

Flammability: 0

Reactivity: 0

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 Valley 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 Valley S&C has been advised of the possibility of such damages. The vendor assumes no responsibility for injury or damages resulting from the inappropriate alteration or manipulation of this SDS and its contents from that originally submitted by Valley S&C.



SAFETY DATA SHEET

1. Identification

Product identifier CITRIC ACID 50% FCC KOSH NSF 1-WAY BMS
Other means of identification None.
Recommended use ALL PROPER AND LEGAL PURPOSES
Recommended restrictions None known.
Manufacturer/Importer/Supplier/Distributor information
Manufacturer
Company name Brenntag Mid-South, Inc.
Address 1405 Highway 136, West
Henderson, KY 42420
Telephone 270-830-1222
E-mail Not available.
Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes serious eye irritation.
Precautionary statement
Prevention Wash thoroughly after handling. Wear eye protection/face protection.
Response If in 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.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-		77-92-9	25
Other components below reportable levels			75

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

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. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. 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.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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 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. Cover with plastic sheet to prevent spreading. 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	Provide adequate ventilation. Avoid contact with eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) 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. Provide eyewash station.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other	Wear suitable protective clothing.
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.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	CLEAR
Odor	ODORLESS TO BLAND
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	307.4 °F (153 °C) estimated / 999 °F (537.22 °C)
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	999.0 °F (537.2 °C)
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	0.00001 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	1850 °F (1010 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Density	13.89 lbs/gal estimated
Explosive properties	Not explosive.
Flammability class	Combustible III/B estimated
Oxidizing properties	Not oxidizing.
Percent volatile	75 % estimated
Specific gravity	1.66 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation No adverse effects due to inhalation are expected.
Skin contact No adverse effects due to skin contact are expected.
Eye contact Causes serious eye irritation.
Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY- (CAS 77-92-9)		
<u>Acute</u>		
Oral		
LD50	Mouse	5040 mg/kg
	Rat	6730 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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.

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.

Persistence and degradability No data is available on the degradability of this product.

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. 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 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

Not regulated as dangerous goods.

DOT information on packaging may be different from that listed.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
--------------------------	---

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

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

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. 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.

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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).

16. Other information, including date of preparation or last revision

Issue date	06-01-2015
Revision date	06-01-2015
Version #	02
HMIS® ratings	Health: 2 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 0 Instability: 0

Disclaimer BNA 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.



BRENNTAG MID SOUTH, INC.
1405 Highway 136 West
Henderson, Kentucky 42420-0020
Tel. (270) 830-1200 • Fax (270) 826-1486

CERTIFICATE OF ANALYSIS

Citric Acid 50% Solution

Kosher FCC

CUSTOMER:	LOT NUMBERS: 022735245160001 429703245160001 594478245160001 979305245160001
	DATE ANALYZED: 6-9-15
	DATE SHIPPED:

PARAMETERS	ANALYSIS	SPECIFICATIONS	Method
Citric Acid, % by weight	50.31	50 $\pm$ 1%	Acid/base titration
Color, APHA	< 35	35 Max.	Visual
Appearance	Pass	Clear liquid	Visual
Specific Gravity @ 68°F (20°C)	1.243	1.239 -1.250	Hydrometer/density meter

Analyst: S. Overall	Approved: <i>Brian Conrad</i>
---------------------	-------------------------------

cc: With Shipment
Lab File

Form Approval: *James Clements*
Form Approval Date: 2/20/14

C:\RD1\WORD\COA\CITRIC 50%KOSHER FCC

"All information provided is believed to be accurate and complete. The data provided is representative of the product quality on the date of analysis for the lot number indicated. This certificate of analysis may not include all of the constituents of the product. Persons using this information should make their own determination regarding its suitability for their particular application. This certificate of analysis shall not in any way limit or preclude the operation and effect of the applicable terms and conditions of sale."

SAFETY DATA SHEET

CORRSHIELD* MD4100

1. Identification

Product identifier	CORRSHIELD MD4100
Other means of identification	None.
Version #	1.0
Revision date	06/05/2016
Recommended use	Water-based corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original packaging. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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. 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. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material-damage.

Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium nitrite	7632-00-0	10 - 20

Composition comments	Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
-----------------------------	--

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. May cause respiratory irritation.
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 warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

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.

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 or vapor. 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

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits**

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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**

Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. Keep away from food and drink. 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.

9. Physical and chemical properties**Appearance**

Liquid

Color

Yellow

Odor

Mild

Odor threshold

Not available.

pH (concentrated product)

12.8

pH

Not available.

Melting point/freezing point

14 °F (-10 °C)

Initial boiling point and boiling range

220 °F (104 °C)

Flash point

> 200 °F (> 93 °C) SETA(CC)

Evaporation rate

< 1 (Ether = 1)

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 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.18

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 4 cps

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Percent volatile 0 (Estimated)

Shelf life 720 days

Specific gravity 1.18

10. Stability and reactivity

Reactivity Not available.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials Strong oxidizing agents. Metals.

Hazardous decomposition products Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system.

Skin contact Causes severe skin burns.

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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May cause respiratory irritation.

Product	Species	Test Results
CORRSHIELD MD4100 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	1717 mg/kg, (Calculated according to GHS additivity formula (Category 4))

Components	Species	Test Results
Sodium nitrite (CAS 7632-00-0)		
Acute		
<i>Oral</i>		
LD50	Rat	180 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary 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	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
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

Product		Species	Test Results
CORRSHIELD MD4100 (CAS Mixture)			
	LC50	Bluegill Sunfish	3258 mg/L, Static Acute Bioassay, 96 hour
		Fathead Minnow	2730 mg/L, Acute Toxicity, 96 hour, (Estimated)
	NOEL	Bluegill Sunfish	1800 mg/L, Static Acute Bioassay, 96 hour
		Fathead Minnow	1850 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic			
Crustacea	LC50	Daphnia magna	5997 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	500 mg/L, Static Acute Bioassay, 48 hour
Fish	0% Mortality	Rainbow Trout	2000 mg/L, Static Screen, 48 hour

Components	Species	Test Results
Sodium nitrite (CAS 7632-00-0)		
Aquatic		
Fish	LC50	Fish
		0.56 - 1.78 mg/l, 96 hour

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

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. Nutrients: P = 0 mg/g ; N = 22.2 mg/g

Persistence and degradability

No data is available on the degradability of this product.

- COD (mgO₂/g) 39 (calculated data)
- BOD 5 (mgO₂/g) 0 (calculated data)
- BOD 28 (mgO₂/g) 1 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 5 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days) 8 (calculated data)
- TOC (mg C/g) 6 (calculated data)

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

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

TDG

UN number UN3266
UN proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM NITRITE, SODIUM HYDROXIDE)
Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group III

Environmental hazards Not available.

The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification.

DOT

UN number UN3266
UN proper shipping name CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM NITRITE, SODIUM HYDROXIDE), (SODIUM NITRITE)
Transport hazard class(es) RQ

Class 8

Packing group III

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

UN number UN3266

Material name: CORRSHIELD* MD4100

Version number: 1.0

UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM NITRITE, SODIUM HYDROXIDE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM NITRITE, SODIUM HYDROXIDE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG; TDG



15. Regulatory information

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets USDA (according to 1998 guidelines):

Registration No. – 141672
 Category Code(s):
 G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products – nonfood contact

16. Other Information

Issue date	May-06-2016
Revision date	06/05/2016

Version #	1.0
List of abbreviations	CAS: Chemical Abstract Service Registration Number ACGIH: American Conference of Governmental Industrial Hygienists TWA: Time Weighted Average STEL: Short Term Exposure Limit LD50: Lethal Dose, 50% LC50: Lethal Concentration, 50% NOEL: No Observed Effect Level COD: Chemical Oxygen Demand BOD: Biochemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References:	No data available
Disclaimer	Not available.
Revision information	Product and Company Identification: Product and Company Identification Composition / Information on Ingredients: Disclosure Overrides Physical & Chemical Properties: Multiple Properties Toxicological Information: Toxicological Data Transport Information: Material Transportation Information Regulatory Information: Risk Phrases - Labeling Material Attributes & Uses; Experimental Data: Experimental Data HazReg Data: North America GHS: Classification

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

CORTROL* OS5607

1. Identification

Product identifier	CORTROL OS5607
Other means of identification	None.
Version #	1.0
Prepared by	This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
Revision date	04/05/2016
Supersedes date	20/04/2016
Recommended use	Water based dissolved oxygen scavenger/ metal passivator
Recommended restrictions	None known.

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Sensitization, skin	Category 1B
Label elements		



Signal word	Warning
Hazard statement	May cause an allergic skin reaction.
Precautionary statement	
Prevention	Avoid breathing mist or vapor. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.
Response	IF ON SKIN: Wash with plenty of water/. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Carbohydrazide	497-18-7	2.5 - 10

Composition comments Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

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. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse with water.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Dermatitis. Rash. May cause an allergic skin reaction.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. 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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. 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. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. 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. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage

Precautions for safe handling	Contact with oxidisers, peroxide and metal oxide may result in a violent reaction. Contamination with low pH products and low grade metal accelerate decomposition to hydrazine. Avoid breathing mist or vapor. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
--------------------------------------	---

Conditions for safe storage, including any incompatibilities

Store in a manner that minimizes potential contamination. Store only in vented containers. Protect from freezing. Store away from incompatible materials (see Section 10 of the SDS). Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection**Occupational exposure limits**

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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. Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Splash proof chemical goggles.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Chemical resistant gloves. Wash off after each use. Rubber gloves Replace as necessary. Viton or neoprene gloves.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

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**

Liquid

Color

Colorless to light yellow

Odor

Slight

Odor threshold

Not available.

pH (concentrated product)

8

pH in aqueous solution

7.4 (5% SOL.)

pH

Not available.

Melting point/freezing point

32 °F (0 °C)

Initial boiling point and boiling range

212 °F (100 °C)

Flash point

> 200 °F (> 93 °C) P-M(CC)

Evaporation rate

< 1 (Ether = 1)

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

18 mm Hg

Vapor pressure temp.

70 °F (21 °C)

Vapor density

< 1 (Air = 1)

Relative density

1.02

Relative density temperature

70 °F (21 °C)

Solubility(ies)**Solubility (water)**

100 %

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	9 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Calculated)
Pour point	37 °F (3 °C)
Shelf life	360 days
Specific gravity	1.02

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Protect from freezing. Contact with water reactive compounds may cause fire or explosion. Avoid contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to respiratory organs.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause gastrointestinal irritation.

Symptoms related to the physical, chemical and toxicological characteristics Dermatitis. Rash. Prolonged and repetitive exposure, depending on the route(s), may develop transient irritation on skin, eyes, ingestion tract, and/or respiratory tract.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction.

Product	Species	Test Results
CORTROL OS5607 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Estimated value)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Estimated value)
Components	Species	Test Results
Carbohydrazide (CAS 497-18-7)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Material name: CORTROL* OS5607

Version number: 1.0

Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
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 classified.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	May be harmful if swallowed and enters airways. Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
CORTROL OS5607 (CAS Mixture)			
	10% Mortality	Ceriodaphnia	96 mg/L, Static Renewal Bioassay, 48 hour
	5% Mortality	Fathead Minnow	96 mg/L, Static Renewal Bioassay, 96 hour
	LC50	Ceriodaphnia	160 mg/L, Static Renewal Bioassay, 48 hour
		Fathead Minnow	260 mg/L, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	850 mg/L, Static Renewal Bioassay, 48 hour
	NOEL	Daphnia magna	190 mg/L, Static Renewal Bioassay, 48 hour

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Not available.
Persistence and degradability	No data available

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
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). Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
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

TDG	Not regulated as dangerous goods. The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification.
DOT	Not regulated as a dangerous good.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

15. Regulatory information**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

16. Other Information

Issue date May-04-2016

Revision date 04/05/2016

Version # 1.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
TLV: Threshold Limit Value

References: No data available

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.

* Trademark of General Electric Company. May be registered in one or more countries.

SAFETY DATA SHEET

1. Identification

Product identifier	CR-5A		
Other means of identification			
Product code	800-0065		
Recommended use	Industrial Leak Sealant.		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/Distributor information			
Company name	Team Industrial Services, Inc.		
Address	200 Hermann Drive, Alvin, Texas 77511		
Telephone	Not available.		
E-mail	Not available.		
Emergency phone number	CHEMTREC - 24 HOURS: International:	800-424-9300 (USA) +1 703-527-3887 (Collect)	

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2 (Lung)
OSHA defined hazards	Not classified.	
Label elements		



Signal word Danger

Hazard statement May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May cause damage to organs (Lung) through prolonged or repeated exposure.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace.

Response

If exposed or concerned: Call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. Take off contaminated clothing and wash before reuse. Get medical advice/attention if you feel unwell.

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.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Methylene diphenyl diisocyanate	101-68-8	4-6

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact Remove contaminated clothing. Wash immediately with soap and water for at least 15 minutes. Get medical attention promptly if symptoms persist or occur after washing. Discard contaminated shoes and clothing.

Eye contact Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention.

Ingestion Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and delayed Sensitization. Wheezing. Difficulty in breathing. Irritation of eyes and mucous membranes. Skin irritation. Ingestion may cause irritation and malaise.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Dry chemical powder. Carbon dioxide (CO₂). Foam.

Unsuitable extinguishing media None known.

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, operated in positive pressure mode 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.

General fire hazards The product is not flammable. However: Will burn if strongly heated and when involved in fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Avoid inhalation of vapors and contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and materials for containment and cleaning up Collect and dispose of spillage as indicated in section 13 of the SDS. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Wipe up with absorbent material (e.g. cloth, fleece). Should not be released into the environment. Never return spills in original containers for re-use. Prevent product from entering drains.

Environmental precautions Prevent entry into waterways, sewer, basements or confined areas. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling Avoid inhalation of vapors and contact with skin and eyes. Wear personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in tightly closed original container. Store in a cool and well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m3
		0.02 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	TWA	0.005 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m3
		0.02 ppm
		0.05 mg/m3
	TWA	0.005 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

No exposure standards allocated.

Appropriate engineering controls

General ventilation normally adequate. Ensure adequate ventilation, especially in confined areas. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear approved chemical safety goggles. Use face shield in case of splash risk.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other

Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact chemical protective clothing manufacturer for specific information.

Respiratory protection

In case of inadequate ventilation, use respiratory protection.

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.

9. Physical and chemical properties

Appearance

Opaque liquid.

Physical state

Liquid.

Form

Liquid.

Color

Opaque.

Odor

Not available.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

Not available.

Initial boiling point and boiling range

> 500 °F (> 260 °C)

Flash point

> 270.0 °F (> 132.2 °C)

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

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	1.15 (Water=1)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	The product is stable under normal conditions of use, storage and transport.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Exposure to heat and contact with sources of ignition. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	During combustion: Carbon oxides. Nitrogen oxides.

11. Toxicological information**Information on likely routes of exposure**

Inhalation	May cause allergic respiratory reaction.
Skin contact	May cause skin irritation. May cause sensitization by skin contact.
Eye contact	May cause eye irritation.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics	Sensitization. Wheezing. Difficulty in breathing. Irritation of eyes and mucous membranes. Skin irritation. Ingestion may cause irritation and malaise.
--	---

Information on toxicological effects

Acute toxicity	Ingestion may cause irritation and malaise.
----------------	---

Components	Species	Test Results
Methylene diphenyl diisocyanate (CAS 101-68-8)		
Acute		
Inhalation		
LC50	Rat	> 2.24 mg/l, 1 Hours
Skin corrosion/irritation	May cause skin irritation.	
Serious eye damage/eye irritation	May cause eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitization	May cause an allergic skin reaction.	
Germ cell mutagenicity	Not classified.	
Carcinogenicity	Suspected of causing cancer.	

IARC Monographs. Overall Evaluation of Carcinogenicity

Methylene diphenyl diisocyanate (CAS 101-68-8)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	May cause damage to organs (Lung) through prolonged or repeated exposure.
Aspiration hazard	Not classified.
Chronic effects	May cause allergic respiratory and skin reactions.

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.
Persistence and degradability	Expected to be persistent.
Bioaccumulative potential	The product is not expected to bioaccumulate.
Mobility in soil	The product hardens to a solid immobile substance.
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	Dispose in accordance with all applicable regulations. Do not allow runoff to sewer, waterway or ground.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

US federal regulations	This product is hazardous according to OSHA 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)	
Methylene diphenyl diisocyanate (CAS 101-68-8)	LISTED
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	
	Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Methylene diphenyl diisocyanate	101-68-8	4-6

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methylene diphenyl diisocyanate (CAS 101-68-8)

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

US. Massachusetts RTK - Substance List

Methylene diphenyl diisocyanate (CAS 101-68-8)

US. New Jersey Worker and Community Right-to-Know Act

Methylene diphenyl diisocyanate (CAS 101-68-8)

US. Pennsylvania Worker and Community Right-to-Know Law

Methylene diphenyl diisocyanate (CAS 101-68-8)

US. Rhode Island RTK

Methylene diphenyl diisocyanate (CAS 101-68-8)

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies 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).

16. Other information, including date of preparation or last revision

Issue date Draft version.

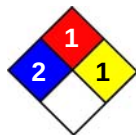
Revision date Draft version.

Version # Draft version.

Further information HMIS® is a registered trade and service mark of the NPCA.
I - Safety Glasses, Gloves, Dust, Vapor Respirator

HMIS® ratings Health: 2*
Flammability: 1
Physical hazard: 1
Personal protection: I

NFPA ratings



List of abbreviations

References

ACGIH
EPA: Acquire database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

TEAM[®] Industrial Services
SAFETY DATA SHEET

1. Identification

Product identifier CR-5B

Other means of identification

Product code 800-0064

Recommended use Industrial Leak Sealant.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Team Industrial Services, Inc.

Address 200 Hermann Drive, Alvin, Texas 77511

Telephone Not available.

E-mail Not available.

Emergency phone number CHEMTREC - 24 HOURS: 800-424-9300 (USA)
International: +1 703-527-3887 (Collect)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage.

Precautionary statement

Prevention Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

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 on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. 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.

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.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Coco alkyldimethyl amines	61788-93-0	10-20

Composition comments All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation	Remove to fresh air. If breathing stops, provide artificial respiration. Get medical attention.
Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.
Eye contact	Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention.
Most important symptoms/effects, acute and delayed	Contact with this material will cause burns to the skin, eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Chemical burns must be treated by a physician.

5. Fire-fighting measures

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	No restrictions known.
Specific hazards arising from the chemical	By heating and fire, corrosive vapors/gases may be formed. Carbon oxides. Nitrogen oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire fighting equipment/instructions	In the event of fire, cool tanks with water spray. Move containers from fire area if you can do it without risk. Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	This product is not flammable. Will burn if strongly heated and when involved in fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Eliminate all sources of ignition. Ventilate closed spaces before entering. Avoid inhalation of vapors and contact with skin and eyes. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewers, basements or confined areas. Absorb spillage with suitable absorbent material. After removal flush contaminated area thoroughly with water. Never return spills to original containers for re-use. This material and its container must be disposed of as hazardous waste.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling	Mechanical ventilation or local exhaust ventilation may be required. Avoid inhalation of vapors and contact with skin and eyes. Wear approved safety goggles. Wear protective gloves and appropriate clothing to prevent skin contact. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed original container in a dry, cool and well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists. An eye wash and safety shower must be available in the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection	Wear protective gloves. Frequent change is advisable.
Other	Wear appropriate clothing to prevent possibility of skin contact.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
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.

9. Physical and chemical properties

Appearance	Gray liquid.
Physical state	Liquid.
Form	Liquid.
Color	Gray.
Odor	Musty, amine odor.
Odor threshold	Not available.
pH	alkaline
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 365 °F (> 185 °C)
Flash point	> 212.0 °F (> 100.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
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	< 1 mm Hg
Vapor density	< 0.1 (Air = 1)
Relative density	0.95 (H ₂ O=1)
Solubility(ies)	
Solubility (water)	Partly miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	8.48 lb/gal

10. Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	High temperatures.

Incompatible materials	Aluminum. Lead sodium hypochlorite. Organic acids. Strong mineral acids. Reactive metals. hydroxyl compounds. Alkalies. Oxidizers.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides. Flammable hydrocarbon fragments.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged or repeated exposure may cause severe irritation.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics	Contact with this material will cause burns to the skin, eyes and mucous membranes. Symptoms include itching, burning, redness and tearing.
---	---

Information on toxicological effects

Acute toxicity	Corrosive effects.
Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.

Germ cell mutagenicity	No data available.
-------------------------------	--------------------

Carcinogenicity	Not classified.
------------------------	-----------------

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not classified.

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.
Persistence and degradability	The product is not expected to be readily biodegradable.
Bioaccumulative potential	
Mobility in soil	Expected to be mobile in soil.
Mobility in general	The product is partly miscible with water and may spread in the aquatic environment.
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	Dispose of this material and its container to hazardous or special waste collection point. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Coco alkyltrimethyl amines)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, T7, TP1, TP28
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241

IATA

UN number	UN2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Coco alkyltrimethyl amines)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Environmental hazards	No
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (Coco alkyltrimethyl amines)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-B
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

General information

Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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 This product does not contain a chemical known to the State of California to cause cancer birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies 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).

16. Other information, including date of preparation or last revision

Issue date 17-February-2015

Revision date -

Version # 01

Further information HMIS® is a registered trade and service mark of the NPCA.
I - Safety Glasses, Gloves, Dust, Vapor Respirator

HMIS® ratings

Health: 3
Flammability: 1
Physical hazard: 0
Personal protection: I

NFPA ratings**List of abbreviations****References**

ACGIH
EPA: Acquire database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

Section 1. Identification

Product name : CRONOX™ 240 Acid Corrosion Inhibitor
™ a trademark of Baker Hughes Incorporated.

Product code : CRO240

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Acid Corrosion Inhibitor.

Print date : 1/17/2023

Validation date : 1/17/2023

Version : 3.02

Supplier's details : Baker Petrolite LLC
Aquaness Chemical
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/SDSs Call: 800-231-3606
(8:00 a.m. - 5:00 p.m. CST, Monday - Friday) 281-276-5400

Emergency telephone number (with hours of operation) : CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petrolite: 800-231-3606 (North America 24 hour)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

Hazard statements	- Combustible liquid. - Harmful if swallowed. - Causes severe skin burns and eye damage. - May cause an allergic skin reaction. - Suspected of causing cancer. - May cause damage to organs through prolonged or repeated exposure. (kidneys) - Harmful to aquatic life. - Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves: > 8 hours (breakthrough time): Nitrile or Neoprene gloves. Viton gloves. 4H gloves.. Wear protective clothing. Wear eye or face protection. Keep away from flames and hot surfaces. No smoking. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
Response	Collect spillage. IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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 or doctor.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	Avoid contact with skin and clothing. Wash thoroughly after handling.
Hazards not otherwise classified	Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Oxyalkylated fatty alcohol	20 - 30	Trade secret.
Ethylene glycol	20 - 30	107-21-1
Heavy aromatic naphtha	10 - 20	64742-94-5
Oxyalkylated amine	5 - 10	Trade secret.
Dibutyl thiourea	5 - 10	109-46-6
Acetic acid	5 - 10	64-19-7
Alkylpyridine	1 - 5	Trade secret.
Oxyalkylated fatty alcohol	1 - 5	Trade secret.
Naphthalene	1 - 5	91-20-3
Oxyalkylated fatty alcohol	1 - 5	Trade secret.
Aniline	0 - 0.1	62-53-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- | | |
|---------------------|--|
| Eye contact | : Get medical attention immediately. Call a poison center or physician. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician. |
| Inhalation | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Skin contact | : Get medical attention immediately. Call a poison center or physician. Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| Ingestion | : Call a poison center or physician. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

- | | |
|---------------------|--|
| Eye contact | : Causes serious eye damage. |
| Inhalation | : No known significant effects or critical hazards. |
| Skin contact | : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction. |
| Ingestion | : Harmful if swallowed. |

Over-exposure signs/symptoms

- | | |
|---------------------|--|
| Eye contact | : Adverse symptoms may include the following: pain, watering, redness |
| Inhalation | : No specific data. |
| Skin contact | : pain or irritation, redness, dryness, cracking, blistering may occur |
| Ingestion | : Adverse symptoms may include the following: stomach pains |

Indication of immediate medical attention and special treatment needed, if necessary

- | | |
|----------------------------|---|
| Notes to physician | : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | : No specific treatment. |

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Additional information

If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs.

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store in original container, protected from direct sunlight. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Oxyalkylated fatty alcohol Ethylene glycol	None. ACGIH TLV (United States, 1/2022). STEL: 10 mg/m ³ 15 minutes. Form: Inhalable fraction. Aerosol only. STEL: 50 ppm 15 minutes. Form: Vapor fraction TWA: 25 ppm 8 hours. Form: Vapor fraction ACGIH TLV (United States, 3/2016). TWA: 25 ppm, (Vapor), 0 times per shift, 8 hours. Form: Vapor OSHA PEL 1989 (United States, 3/1989). CEIL: 125 mg/m ³ , 0 times per shift, 0 hours. CEIL: 50 ppm, 0 times per shift, 0 hours.
Heavy aromatic naphtha Oxyalkylated amine Dibutyl thiourea Acetic acid	None. None. None. ACGIH TLV (United States, 1/2022). STEL: 37 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. NIOSH REL (United States, 10/2020). STEL: 37 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 25 mg/m ³ , 0 times per shift, 10 hours. TWA: 10 ppm, 0 times per shift, 10 hours. OSHA PEL (United States, 5/2018). TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours.
Alkylpyridine Oxyalkylated fatty alcohol Naphthalene	None. None. ACGIH TLV (United States, 1/2022). Absorbed through skin. TWA: 52 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. NIOSH REL (United States, 10/2020). STEL: 75 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 50 mg/m ³ , 0 times per shift, 10 hours. TWA: 10 ppm, 0 times per shift, 10 hours. OSHA PEL (United States, 5/2018). TWA: 50 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 75 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 50 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours.
Oxyalkylated fatty alcohol Aniline	None. ACGIH TLV (United States, 1/2022). Absorbed through skin. TWA: 7.6 mg/m ³ , 0 times per shift, 8 hours. TWA: 2 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). Absorbed

Section 8. Exposure controls/personal protection

through skin.

TWA: 2 ppm 8 hours.

TWA: 8 mg/m³ 8 hours.

OSHA PEL (United States, 5/2018). Absorbed through skin.

TWA: 5 ppm 8 hours.

TWA: 19 mg/m³ 8 hours.

Consult local authorities for acceptable exposure limits.

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Chemical-resistant gloves: Nitrile or Neoprene gloves. Viton gloves. 4H gloves.

Skin protection : Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

Respiratory protection : If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid. [Clear.]

Color : Brown. [Dark]

Odor : Irritation. [Slight]

Odor threshold : Not available.

pH : 4 to 5

: 10% of product in water.

Melting point/freezing point : Not available.

Initial Boiling Point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: 75.556°C (168°F) [TCC]

Burning time : Not applicable.

Section 9. Physical and chemical properties

Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability	: Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Lower and upper explosion limit/flammability limit	: Not available.
Vapor pressure	: 0.43 kPa (3.2 mm Hg) @ 21.1°C (Calculated Value for all Components.)
Relative vapor density	: >1 [Air = 1]
Relative density	: 1.034 (15.6°C)
Density	: 8.61 (lbs/gal)
Solubility in water	: Dispersible
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
VOC	: Not available.
Pour Point	: -11.1°C (12°F)
<u>Particle characteristics</u>	
Median particle size	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials, organic materials and alkalis. Slightly reactive or incompatible with the following materials: acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Ethylene glycol	LD50 Dermal	Rabbit	10.48 g/kg	-
	LD50 Oral	Man	1700 mg/kg	-
	LD50 Oral	Rat	1700 mg/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Heavy aromatic naphtha	LC50 Inhalation Vapor	Rat	>11.4 mg/l	6 hours
	LD50 Oral	Rat	3200 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
Oxyalkylated amine	LD50 Oral	Rat	750 mg/kg	-
Dibutyl thiourea	LD50 Oral	Rat	350 mg/kg	-
Acetic acid	LC50 Inhalation Vapor	Rat	11000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-
Alkylpyridine	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	1400 mg/kg	-
Oxyalkylated fatty alcohol	LD50 Oral	Mouse	1170 to 4940 mg/kg	-
	LD50 Oral	Rat	1000 mg/kg	-
Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
Oxyalkylated fatty alcohol	LD50 Oral	Rat	3300 mg/kg	-
Aniline	LD50 Dermal	Rabbit	838 mg/kg	-
	LD50 Dermal	Rat	1400 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-

Irritation/Corrosion

No available toxicity data.

Sensitization

No available toxicity data.

Mutagenicity

No available toxicity data.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Aniline	-	2A	-

Reproductive toxicity

No available toxicity data.

Teratogenicity

No available toxicity data.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Heavy aromatic naphtha	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Ethylene glycol	Category 2	-	kidneys
Aniline	Category 1	-	spleen

Aspiration hazard

Section 11. Toxicological information

Name	Result
Heavy aromatic naphtha	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following: pain, watering, redness
- Inhalation** : No specific data.
- Skin contact** : pain or irritation, redness, dryness, cracking, blistering may occur
- Ingestion** : Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)

Section 11. Toxicological information

CRONOX™ 240 Acid Corrosion Inhibitor	889	5403.9	Not available.	60.4	69.9
Oxyalkylated fatty alcohol	500	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	1700	10480	Not available.	Not available.	Not available.
Heavy aromatic naphtha	3200	Not available.	Not available.	Not available.	Not available.
Oxyalkylated amine	750	Not available.	Not available.	Not available.	Not available.
Dibutyl thiourea	350	Not available.	Not available.	Not available.	Not available.
Acetic acid	3310	Not available.	Not available.	Not available.	Not available.
Alkylpyridine	1400	300	Not available.	3	Not available.
Oxyalkylated fatty alcohol	1000	1100	Not available.	Not available.	1.5
Naphthalene	500	Not available.	Not available.	Not available.	Not available.
Oxyalkylated fatty alcohol	3300	Not available.	Not available.	Not available.	Not available.
Aniline	250	838	Not available.	3	Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
CRONOX™ 240 Acid Corrosion Inhibitor	Acute LC50 6.1 ppm	Daphnia	48 hours
Oxyalkylated fatty alcohol	Acute LC50 4.1 ppm	Fish - Fathead minnow	96 hours
Ethylene glycol	Acute LC50 10000 to 25000 µg/l	Crustaceans - Idotea balthica	48 hours
	Acute LC50 100000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1000000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Dibutyl thiourea	Acute LC50 10700 to 12500 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Acetic acid	Acute EC50 73400 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 50.1 µl/L Marine water	Crustaceans - Artemia sp.	48 hours
Oxyalkylated fatty alcohol	Acute LC50 75000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 6460 to 7580 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Naphthalene	Acute LC50 1500 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
	EC50 2.96 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	EC50 2.16 mg/l Fresh water	Daphnia	48 hours
Aniline	LC50 1.6 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 175000 µg/l Fresh water	Algae - Chlorella pyrenoidosa	72 hours
	Acute EC50 19 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 184 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 100 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 7600 µg/l Fresh water	Fish - Carassius auratus - Egg	4 days

Section 12. Ecological information

	Chronic NOEC 90000 µg/l Fresh water Chronic NOEC 4 µg/l Fresh water Chronic NOEC 0.422 mg/l Fresh water	Algae - Chlorella pyrenoidosa Daphnia - Daphnia magna Fish - Pimephales promelas - Embryo	72 hours 21 days 32 days
--	---	---	--------------------------------

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
CRONOX™ 240 Acid Corrosion Inhibitor	-	62 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
CRONOX™ 240 Acid Corrosion Inhibitor	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Ethylene glycol	-1.36	-	low
Heavy aromatic naphtha	2.8 to 6.5	99 to 5780	high
Dibutyl thiourea	2.75	-	low
Acetic acid	-0.17	3.16	low
Naphthalene	3.4	36.5 to 168	low
Aniline	0.91	2.6	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN1760	UN1760	UN1760	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)

Section 14. Transport information

Transport hazard class(es)	8  	8  	8  	8 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

- DOT Classification** : This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a. **Reportable quantity** 6734 lbs / 3057.2 kg [781.08 gal / 2956.7 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-A S-B
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- Transport in bulk according to IMO instruments** : Not available.
- DOT Reportable Quantity**  Ethylene glycol, 2323 gal of this product.
Acetic acid, 8296 gal of this product.
Naphthalene, 782 gal of this product.

Marine pollutant Heavy aromatic naphtha
Alkylpyridine

North-America NAERG : 153

Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 12(b) one-time export:** No products were found.
TSCA 12(b) annual export notification: No products were found.
United States inventory (TSCA 8b): All components are active or exempted.
Clean Water Act (CWA) 307: naphthalene
Clean Water Act (CWA) 311: Naphthalene; Aniline; Quinoline; Acetic acid
- United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) :**

Section 15. Regulatory information

List name	Status	Ingredient name	Name on list	Conc.
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Ethylene glycol	Ethylene glycol	20 - 30
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Naphthalene	Naphthalene	1 - 5
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Aniline	Aniline	0 - 0.1
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Quinoline	Quinoline	0 - 0.1

SARA 302/304

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Aniline	0 - 0.1	Yes.	1000	117.6	5000	587.9

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 4
 ACUTE TOXICITY (oral) - Category 4
 SKIN CORROSION - Category 1B
 SERIOUS EYE DAMAGE - Category 1
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
 HNOC - Defatting irritant

SARA 313

	Product name	CAS number	%
Supplier notification	Ethylene glycol	107-21-1	20 - 30
	Naphthalene	91-20-3	1 - 5

California Prop. 65

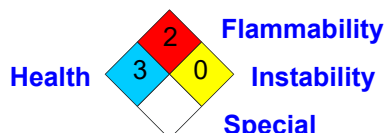
⚠ WARNING: This product can expose you to chemicals including naphthalene, aniline and quinoline, which are known to the State of California to cause cancer, and ethanediol; ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Canada

Canada (CEPA DSL): : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



History

Date of printing : 1/17/2023

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

📌 Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this SDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This SDS was prepared and is to be used for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Section 1. Identification

Product name : CRONOX™ 240 Acid Corrosion Inhibitor
™ a trademark of Baker Hughes Incorporated.

Product code : CRO240

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Acid Corrosion Inhibitor.

Print date : 1/17/2023

Validation date : 1/17/2023

Version : 3.02

Supplier's details : Baker Petrolite LLC
Aquaness Chemical
12645 W. Airport Blvd.
Sugar Land, TX 77478
For Product Information/SDSs Call: 800-231-3606
(8:00 a.m. - 5:00 p.m. CST, Monday - Friday) 281-276-5400

Emergency telephone number (with hours of operation) : CHEMTREC: 800-424-9300 (U.S. 24 hour)
Baker Petrolite: 800-231-3606 (North America 24 hour)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 4
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

Hazard statements	- Combustible liquid. - Harmful if swallowed. - Causes severe skin burns and eye damage. - May cause an allergic skin reaction. - Suspected of causing cancer. - May cause damage to organs through prolonged or repeated exposure. (kidneys) - Harmful to aquatic life. - Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves: > 8 hours (breakthrough time): Nitrile or Neoprene gloves. Viton gloves. 4H gloves.. Wear protective clothing. Wear eye or face protection. Keep away from flames and hot surfaces. No smoking. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
Response	Collect spillage. IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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 or doctor.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	Avoid contact with skin and clothing. Wash thoroughly after handling.
Hazards not otherwise classified	Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Oxyalkylated fatty alcohol	20 - 30	Trade secret.
Ethylene glycol	20 - 30	107-21-1
Heavy aromatic naphtha	10 - 20	64742-94-5
Oxyalkylated amine	5 - 10	Trade secret.
Dibutyl thiourea	5 - 10	109-46-6
Acetic acid	5 - 10	64-19-7
Alkylpyridine	1 - 5	Trade secret.
Oxyalkylated fatty alcohol	1 - 5	Trade secret.
Naphthalene	1 - 5	91-20-3
Oxyalkylated fatty alcohol	1 - 5	Trade secret.
Aniline	0 - 0.1	62-53-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- | | |
|---------------------|--|
| Eye contact | : Get medical attention immediately. Call a poison center or physician. Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician. |
| Inhalation | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Skin contact | : Get medical attention immediately. Call a poison center or physician. Wash affected area with soap and mild detergent for at least 20 - 60 minutes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| Ingestion | : Call a poison center or physician. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

- | | |
|---------------------|--|
| Eye contact | : Causes serious eye damage. |
| Inhalation | : No known significant effects or critical hazards. |
| Skin contact | : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction. |
| Ingestion | : Harmful if swallowed. |

Over-exposure signs/symptoms

- | | |
|---------------------|--|
| Eye contact | : Adverse symptoms may include the following: pain, watering, redness |
| Inhalation | : No specific data. |
| Skin contact | : pain or irritation, redness, dryness, cracking, blistering may occur |
| Ingestion | : Adverse symptoms may include the following: stomach pains |

Indication of immediate medical attention and special treatment needed, if necessary

- | | |
|----------------------------|---|
| Notes to physician | : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | : No specific treatment. |

Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Additional information

If product is ingested and vomiting occurs naturally, have person lean forward to reduce the risk of aspiration into the lungs.

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store in original container, protected from direct sunlight. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Oxyalkylated fatty alcohol Ethylene glycol	None. ACGIH TLV (United States, 1/2022). STEL: 10 mg/m ³ 15 minutes. Form: Inhalable fraction. Aerosol only. STEL: 50 ppm 15 minutes. Form: Vapor fraction TWA: 25 ppm 8 hours. Form: Vapor fraction ACGIH TLV (United States, 3/2016). TWA: 25 ppm, (Vapor), 0 times per shift, 8 hours. Form: Vapor OSHA PEL 1989 (United States, 3/1989). CEIL: 125 mg/m ³ , 0 times per shift, 0 hours. CEIL: 50 ppm, 0 times per shift, 0 hours.
Heavy aromatic naphtha Oxyalkylated amine Dibutyl thiourea Acetic acid	None. None. None. ACGIH TLV (United States, 1/2022). STEL: 37 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. NIOSH REL (United States, 10/2020). STEL: 37 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 25 mg/m ³ , 0 times per shift, 10 hours. TWA: 10 ppm, 0 times per shift, 10 hours. OSHA PEL (United States, 5/2018). TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 25 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours.
Alkylpyridine Oxyalkylated fatty alcohol Naphthalene	None. None. ACGIH TLV (United States, 1/2022). Absorbed through skin. TWA: 52 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. NIOSH REL (United States, 10/2020). STEL: 75 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 50 mg/m ³ , 0 times per shift, 10 hours. TWA: 10 ppm, 0 times per shift, 10 hours. OSHA PEL (United States, 5/2018). TWA: 50 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 75 mg/m ³ , 0 times per shift, 15 minutes. STEL: 15 ppm, 0 times per shift, 15 minutes. TWA: 50 mg/m ³ , 0 times per shift, 8 hours. TWA: 10 ppm, 0 times per shift, 8 hours.
Oxyalkylated fatty alcohol Aniline	None. ACGIH TLV (United States, 1/2022). Absorbed through skin. TWA: 7.6 mg/m ³ , 0 times per shift, 8 hours. TWA: 2 ppm, 0 times per shift, 8 hours. OSHA PEL 1989 (United States, 3/1989). Absorbed

Section 8. Exposure controls/personal protection

through skin.

TWA: 2 ppm 8 hours.

TWA: 8 mg/m³ 8 hours.

OSHA PEL (United States, 5/2018). Absorbed through skin.

TWA: 5 ppm 8 hours.

TWA: 19 mg/m³ 8 hours.

Consult local authorities for acceptable exposure limits.

If OSHA permissible exposure levels are shown above they are the OSHA 1989 levels or are from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Hughes recommends that these lower exposure levels be observed as reasonable worker protection.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Wear chemical safety goggles. When transferring material wear face-shield in addition to chemical safety goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Chemical-resistant gloves: Nitrile or Neoprene gloves. Viton gloves. 4H gloves.

Skin protection : Wear long sleeves and chemical resistant apron to prevent repeated or prolonged skin contact.

Respiratory protection : If a risk assessment indicates it is necessary, use a properly fitted, air purifying or supplied air respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid. [Clear.]

Color : Brown. [Dark]

Odor : Irritation. [Slight]

Odor threshold : Not available.

pH : 4 to 5

: 10% of product in water.

Melting point/freezing point : Not available.

Initial Boiling Point : Not available.

Boiling point, initial boiling point, and boiling range : Not available.

Flash point : Closed cup: 75.556°C (168°F) [TCC]

Burning time : Not applicable.

Section 9. Physical and chemical properties

Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability	: Flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Lower and upper explosion limit/flammability limit	: Not available.
Vapor pressure	: 0.43 kPa (3.2 mm Hg) @ 21.1°C (Calculated Value for all Components.)
Relative vapor density	: >1 [Air = 1]
Relative density	: 1.034 (15.6°C)
Density	: 8.61 (lbs/gal)
Solubility in water	: Dispersible
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
VOC	: Not available.
Pour Point	: -11.1°C (12°F)
<u>Particle characteristics</u>	
Median particle size	: Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials, organic materials and alkalis. Slightly reactive or incompatible with the following materials: acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Ethylene glycol	LD50 Dermal	Rabbit	10.48 g/kg	-
	LD50 Oral	Man	1700 mg/kg	-
	LD50 Oral	Rat	1700 mg/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Heavy aromatic naphtha	LC50 Inhalation Vapor	Rat	>11.4 mg/l	6 hours
	LD50 Oral	Rat	3200 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-
Oxyalkylated amine	LD50 Oral	Rat	750 mg/kg	-
Dibutyl thiourea	LD50 Oral	Rat	350 mg/kg	-
Acetic acid	LC50 Inhalation Vapor	Rat	11000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-
Alkylpyridine	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	1400 mg/kg	-
Oxyalkylated fatty alcohol	LD50 Oral	Mouse	1170 to 4940 mg/kg	-
	LD50 Oral	Rat	1000 mg/kg	-
Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
Oxyalkylated fatty alcohol	LD50 Oral	Rat	3300 mg/kg	-
Aniline	LD50 Dermal	Rabbit	838 mg/kg	-
	LD50 Dermal	Rat	1400 mg/kg	-
	LD50 Oral	Rat	250 mg/kg	-

Irritation/Corrosion

No available toxicity data.

Sensitization

No available toxicity data.

Mutagenicity

No available toxicity data.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Aniline	-	2A	-

Reproductive toxicity

No available toxicity data.

Teratogenicity

No available toxicity data.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Heavy aromatic naphtha	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Ethylene glycol	Category 2	-	kidneys
Aniline	Category 1	-	spleen

Aspiration hazard

Section 11. Toxicological information

Name	Result
Heavy aromatic naphtha	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain, watering, redness
Inhalation : No specific data.
Skin contact : pain or irritation, redness, dryness, cracking, blistering may occur
Ingestion : Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)

Section 11. Toxicological information

CRONOX™ 240 Acid Corrosion Inhibitor	889	5403.9	Not available.	60.4	69.9
Oxyalkylated fatty alcohol	500	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	1700	10480	Not available.	Not available.	Not available.
Heavy aromatic naphtha	3200	Not available.	Not available.	Not available.	Not available.
Oxyalkylated amine	750	Not available.	Not available.	Not available.	Not available.
Dibutyl thiourea	350	Not available.	Not available.	Not available.	Not available.
Acetic acid	3310	Not available.	Not available.	Not available.	Not available.
Alkylpyridine	1400	300	Not available.	3	Not available.
Oxyalkylated fatty alcohol	1000	1100	Not available.	Not available.	1.5
Naphthalene	500	Not available.	Not available.	Not available.	Not available.
Oxyalkylated fatty alcohol	3300	Not available.	Not available.	Not available.	Not available.
Aniline	250	838	Not available.	3	Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
CRONOX™ 240 Acid Corrosion Inhibitor	Acute LC50 6.1 ppm	Daphnia	48 hours
Oxyalkylated fatty alcohol	Acute LC50 4.1 ppm	Fish - Fathead minnow	96 hours
Ethylene glycol	Acute LC50 10000 to 25000 µg/l	Crustaceans - Idotea balthica	48 hours
	Acute LC50 100000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1000000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 8050000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Dibutyl thiourea	Acute LC50 10700 to 12500 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Acetic acid	Acute EC50 73400 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 50.1 µl/L Marine water	Crustaceans - Artemia sp.	48 hours
Oxyalkylated fatty alcohol	Acute LC50 75000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 6460 to 7580 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Naphthalene	Acute LC50 1500 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
	EC50 2.96 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	EC50 2.16 mg/l Fresh water	Daphnia	48 hours
Aniline	LC50 1.6 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 175000 µg/l Fresh water	Algae - Chlorella pyrenoidosa	72 hours
	Acute EC50 19 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 184 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 100 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 7600 µg/l Fresh water	Fish - Carassius auratus - Egg	4 days

Section 12. Ecological information

	Chronic NOEC 90000 µg/l Fresh water Chronic NOEC 4 µg/l Fresh water Chronic NOEC 0.422 mg/l Fresh water	Algae - Chlorella pyrenoidosa Daphnia - Daphnia magna Fish - Pimephales promelas - Embryo	72 hours 21 days 32 days
--	---	---	--------------------------------

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
CRONOX™ 240 Acid Corrosion Inhibitor	-	62 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
CRONOX™ 240 Acid Corrosion Inhibitor	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Ethylene glycol	-1.36	-	low
Heavy aromatic naphtha	2.8 to 6.5	99 to 5780	high
Dibutyl thiourea	2.75	-	low
Acetic acid	-0.17	3.16	low
Naphthalene	3.4	36.5 to 168	low
Aniline	0.91	2.6	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN1760	UN1760	UN1760	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)	CORROSIVE LIQUID, N.O.S. (Contains: Acetic acid, Alkylpyridine)

Section 14. Transport information

Transport hazard class(es)	8  	8  	8  	8 
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

- DOT Classification** : This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a. **Reportable quantity** 6734 lbs / 3057.2 kg [781.08 gal / 2956.7 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-A S-B
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- Transport in bulk according to IMO instruments** : Not available.
- DOT Reportable Quantity**  Ethylene glycol, 2323 gal of this product.
Acetic acid, 8296 gal of this product.
Naphthalene, 782 gal of this product.

Marine pollutant Heavy aromatic naphtha
Alkylpyridine

North-America NAERG : 153

Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 12(b) one-time export:** No products were found.
TSCA 12(b) annual export notification: No products were found.
United States inventory (TSCA 8b): All components are active or exempted.
Clean Water Act (CWA) 307: naphthalene
Clean Water Act (CWA) 311: Naphthalene; Aniline; Quinoline; Acetic acid
- United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) :**

Section 15. Regulatory information

List name	Status	Ingredient name	Name on list	Conc.
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Ethylene glycol	Ethylene glycol	20 - 30
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Naphthalene	Naphthalene	1 - 5
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Aniline	Aniline	0 - 0.1
United States - Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed	Quinoline	Quinoline	0 - 0.1

SARA 302/304

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Aniline	0 - 0.1	Yes.	1000	117.6	5000	587.9

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 4
 ACUTE TOXICITY (oral) - Category 4
 SKIN CORROSION - Category 1B
 SERIOUS EYE DAMAGE - Category 1
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
 HNOC - Defatting irritant

SARA 313

	Product name	CAS number	%
Supplier notification	Ethylene glycol	107-21-1	20 - 30
	Naphthalene	91-20-3	1 - 5

California Prop. 65

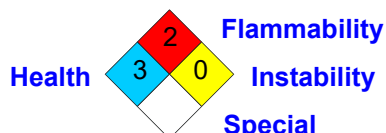
⚠ WARNING: This product can expose you to chemicals including naphthalene, aniline and quinoline, which are known to the State of California to cause cancer, and ethanediol; ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Canada

Canada (CEPA DSL): : Not determined.

Section 16. Other information

National Fire Protection Association (U.S.A.)



History

Date of printing : 1/17/2023

Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

📌 Indicates information that has changed from previously issued version.

Notice to reader

NOTE: The information on this SDS is based on data which is considered to be accurate. Baker Hughes, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This SDS was prepared and is to be used for this product. If the product is used as a component in another product, this SDS information may not be applicable.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier: DIXICHLOR MAX
Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%
Intended use: Swimming pool chlorinator, Hard surface cleaner, Water treatment chemical, Biocides
Uses Advised Against: None identified. This is a pesticide product, do not use in a pesticide application that is not included on the label.

Company Identification DPC Industries, Inc.
DPC Enterprises, LP
DXI Industries, Inc.
DX Terminals
Petra Chemical Company
PO Box 24600
Houston, TX 77229-4600

Emergency
CHEMTREC (USA) (800) 424-9300
24 hour Emergency Telephone No. (281) 457-4888
www.dxgroup.com

2. Hazard identification of the product

Physical hazards	Corrosive to metals	Category 1
Health hazards	Causes severe skin burns and eye damage Serious eye damage Specific target organ toxicity, single exposure	Category 1A Category 1 Category 3 respiratory tract irritation
Environmental hazards	Very toxic to aquatic life Toxic to aquatic life with long lasting effects	Category 1 Acute Category 2 Chronic

Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Signal Word	Danger
Hazard Statements	CORROSIVE. Causes serious eye damage. Causes severe skin burns. Causes damage to respiratory system when inhaled. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. May be corrosive to metals.
Precautionary Statements	
Prevention	Do not breathe mist / vapors / spray. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves / eye protection / face protection. Keep only in original container. Use in well ventilated area. Store in corrosive resistant container with a resistant inner liner.
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Remove / Take off immediately all contaminated clothing. Wash with plenty of soap and water. IF INHALED: 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. IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. Immediately call a POISON CENTER or doctor / physician. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight.
Disposal	Dispose of contents / container in accordance with local / national regulations.

Safety Data Sheet

3. Composition/information on ingredients

Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%

Ingredient	CAS Number	Percent (%)	GHS Classification	NOTES
Sodium hypochlorite.	7681-52-9	12.5 - 15.6	Skin Corr. 1B; Aquatic Acute 1; Eye Dam. 1 .	[1]
Sodium chloride	7647-14-5	9 - 10	Not classified	[1]
Sodium hydroxide	1310-73-2	0.5 - 2	Skin Corr. 1A;H314 Met. Corr. 1;H290	[1][2]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

*The full texts of the phrases are shown in Section 16.

4. First Aid Measures

General	Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Inhalation	Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Eyes	Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart. Get medical attention. Remove contact lenses if present and easy to do - continue rinsing.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Rinse mouth. Keep at rest. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content does not get into lungs.
Most important symptoms and effects, both acute and delayed	
Overview	Corrosive effects. 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	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
General information	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Recommended Extinguishing media	Alcohol resistant foam, CO ² , dry chemical powder, water spray. Do not use water jet.
Special hazards arising from the substance or mixture	Hydrogen chloride and chlorine. Chlorine gas rate of decomposition increases with the concentration with temperatures above 85 °F (30 °C). Do not breathe mist / vapors / spray.
Advice for fire-fighters	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. ERG Guide No. 154

Safety Data Sheet

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Local authorities should be contacted if significant spill cannot be contained.
Environmental precautions	Do not allow spills to enter drains or watercourses.
Methods and material 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 in original containers for re-use. For waste disposal, see Section 13 of the SDS.

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Chemical attack increases with solution strength. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.
Conditions for safe storage, including any incompatibilities	Handle containers carefully to prevent damage and spillage. Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.

8. Exposure controls and personal protection

Exposure Control Parameters

CAS No.	Ingestion	Source	Value
1310-73-2	Sodium hydroxide	OSHA	TWA 2 mg/m3
		ACGIH	Ceiling: 2 mg/m3
		NIOSH	C 2 mg/m3
7647-14-5	Sodium chloride	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
7681-52-9	Sodium hypochlorite.	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit

Individual protection measures, such as personal protective equipment

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Wear face shield with safety glasses with side shields and/or safety goggles.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Chemical Impervious gloves.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn. Eye wash and safety shower must be available when handling this product
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Safety Data Sheet

9. Physical and chemical properties

Appearance	Clear, pale yellow, or greenish Liquid
Odor	Pungent, chlorine odor
Odor threshold	0.9 mg/m ³
pH	12 - 13
Melting point / freezing point	-3 °F (-19.4 °C)
Initial boiling point and boiling range	Decomposes above 230 °F (110 °C)
Flash Point	Nonflammable
Evaporation rate (Ether = 1)	Not Established
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (mmHg)	17.5 (@ 20° C)
Vapor Density	Not Established
Specific Gravity	1.20 - 1.40
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured
Other information	No other relevant information.

10. Stability and reactivity

Reactivity	Hazardous Polymerization will not occur.
Chemical stability	Stable under normal circumstances.
Possibility of hazardous reactions	No data available.
Conditions to avoid	Contact with incompatible materials. Acid contact will produce chlorine gas.
Incompatible materials	Any acidic material, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Sodium hypochlorite (7681-52-9)	5,000.00, Rat - Category: 5	10,000.00, Rabbit - Category: NA	10.50, Rat - Category: 4	No data available	No data available
Sodium chloride (7647-14-5)	1,350.00, Rabbit - Category: 4	100.00, Rat - Category: 2	40.00, Mouse - Category: NA	10,500.00, Rat - Category: NA	No data available
Sodium hydroxide (1310-73-2)	6,600.00, Mouse - Category: NA	1,350.00, Rabbit - Category: 4	600.00, Mouse - Category: NA	No data available	No data available

Safety Data Sheet

11. Toxicological information Acute toxicity (cont.)

Item	Hazard
Acute Toxicity (mouth)	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Acute Toxicity (skin)	Harmful in contact with skin.
Acute Toxicity (inhalation)	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Eye damage/irritation	Causes serious eye damage.
Sensitization (respiratory)	No data available.
Sensitization (skin)	No data available.
Germ toxicity	No data available.
Carcinogenicity	Not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive Toxicity	No data available.
Specific target organ systemic toxicity (single exposure)	May cause respiratory irritation.
Specific target organ systemic Toxicity (repeated exposure)	Not Applicable.
Aspiration hazard	Not classified; however droplets of product may be aspirated into lungs, through ingestion or vomiting and may cause serious chemical pneumonia.

12. Ecological information

Toxicity: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium hypochlorite (7681-52-9)	0.08, Pimephales promelas	0.032, Daphnia magna	0.40 (72 hr), Dunaliella primolecta
Sodium chloride (7647-14-5)	1,100.00, Freshwater Fish	3,310.00, Daphnia magna	Not Available
Sodium hydroxide (1310-73-2)	196.00, Poecilia reticulata	40.38, Ceriodaphnia dubia	Not Available

Persistence and degradability:	There is no data available on the preparation itself.
Bioaccumulative potential:	Not Measured
Mobility in soil:	No data available.
Results of PBT and vPvB assessment:	This product contains no PBT/vPvB chemicals.
Other adverse effects:	No other effects are expected.

13. Disposal considerations

Waste treatment methods:	Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet, advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.
Waste from material:	The waste determination should be made in discussion between the user and the waste disposal company.
Container Management:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Safety Data Sheet

14. Transport information

UN number:	UN1791
UN proper shipping name:	Hypochlorite solutions
Transport hazard class(es)	
DOT (Domestic Surface Transportation)	
DOT Proper Shipping Name:	Hypochlorite solutions
DOT Hazard Class:	8
DOT Label:	8
UN / NA Number:	UN1791
DOT Packing Group:	III
CERCLA/DOT RQ:	100 lbs.
Environmental hazards:	IMDG Marine Pollutant: Yes (Sodium hypochlorite)
Special precautions for user:	Not Applicable

15. Regulatory information

Regulatory Overview:	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory.	
WHMIS Classification	D2B E	
US EPA Tier II Hazards:	Fire:	No
	Sudden Release of Pressure:	No
	Reactive:	No
	Immediate (Acute):	Yes
	Delayed (Chronic):	No
SARA 302 Extremely Hazardous Substance:		No
SARA 311/312 Chemicals and RQs (lbs) (>0.1%) :		100
SARA 313 (TRI):		No
CAA Section 112 Hazardous Air Pollutant:		No
CAA Section 112R Risk Management Plan:		No
State Regulations	N.J. RTK Substances (>1%) :	Listed
	Penn RTK Substances (>1%) :	Listed
	California Prop 65:	Not Listed

16. Other information:

EPA Registration Number: 813-15

NSF Maximum Use Level (STD 60): Check BOL for facility Data. (37 to 84 mg/L)

H314 Causes severe skin burns and eye damage.

H290. May be corrosive to metals

Revision Information:

5/2019 Section 2: Health Hazard, Skin Corrosion – Subcategory added
 Section 3: Revised Sodium hydroxide concentration (EPA registration).

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

THE USER IS CAUTIONED TO PERFORM HIS OWN HAZARD EVALUATION AND TO RELY ON HIS OWN DETERMINATIONS.



SAFETY DATA SHEET

FLOGARD* MS6222

1. Identification

Product identifier	FLOGARD MS6222
Other means of identification	None.
Version #	1.2
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
Revision date	May-27-2018
Supersedes date	Dec-18-2017
Recommended use	Water-based corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

SUEZ Water Technologies & Solutions Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Health hazards not otherwise classified	Category 1

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original packaging. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. 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. 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 or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material-damage.

Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent (wt/wt)
Phosphoric Acid	7664-38-2	80 - 100

Composition comments Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. May cause respiratory irritation.

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 If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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 In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

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 or vapor. 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

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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 or vapor. 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.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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**

Splash proof chemical goggles. Face shield.

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary. Not applicable.
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.

9. Physical and chemical properties

Appearance	Liquid
Color	Colorless to light yellow
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	< 1 Neat
pH in aqueous solution	1.2 (5% Solution)
Melting point/freezing point	< -30 °F (< -34 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Slower than Ether
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	15 mmHg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1
Relative density	1.58
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	44 mPa.s
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	25
Pour point	< -25 °F (< -32 °C)
Specific gravity	1.579
VOC	0 % ESTIMATED

10. Stability and reactivity

Reactivity	May be corrosive to metals. The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Not available.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire.

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.
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. May cause respiratory irritation.
---	---

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
-----------------------	-----------------------------------

Product	Species	Test Results
FLOGARD MS6222 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	3650 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	400 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2740 mg/kg
<i>Oral</i>		
LD50	Rat	300 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
----------------------------------	--

Serious eye damage/eye irritation	Causes serious eye damage.
--	----------------------------

Respiratory or skin sensitization

Canada - Alberta OELs: Irritant

Phosphoric Acid (CAS 7664-38-2)	Irritant
---------------------------------	----------

Respiratory sensitization	This product is not expected to cause respiratory sensitization.
----------------------------------	--

Skin sensitization	This product is not expected to cause skin sensitization.
---------------------------	---

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
-------------------------------	--

Carcinogenicity	Not available.
------------------------	----------------

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
------------------------------	--

Specific target organ toxicity - single exposure	May cause respiratory irritation.
---	-----------------------------------

Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
FLOGARD MS6222 (CAS Mixture)			
	IC25	Ceriodaphnia	416.7 mg/l, Chronic Bioassay, 7 day, (pH adjusted)
	LC50	Ceriodaphnia	1387 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Fathead Minnow	4200 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Ceriodaphnia	625 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
			125 mg/l, Chronic Bioassay, 7 day, (pH adjusted)
		Fathead Minnow	2100 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic			
Crustacea	LC50	Daphnia magna	3540 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	2100 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	7382 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	5000 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)

Bioaccumulative potential No information 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.
None.

Persistence and degradability

Product contains only inorganics that are not subject to typical biological degradation. Assimilation by microbes may occur in waste treatment or the environment. This product, being inorganic, has no TOC, BOD.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

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). Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

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

TDG

UN number	UN1805
UN proper shipping name	PHOSPHORIC ACID SOLUTION
Transport hazard class(es)	
Class	8

Subsidiary risk -
Packing group III
Environmental hazards Not available.

The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification. TDG Classification is valid for road or rail transport only. For shipment by air or water, refer to IATA or IMDG regulations.

DOT

UN number UN1805
UN proper shipping name Phosphoric acid solution, RQ(Phosphoric acid)
Transport hazard class(es)
Class 8
Packing group III
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
ERG number 154
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

UN number UN1805
UN proper shipping name PHOSPHORIC ACID SOLUTION, RQ(Phosphoric acid)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN1805
UN proper shipping name PHOSPHORIC ACID, SOLUTION
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No.
ERG Code 154
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG; TDG



15. Regulatory information

Canadian regulations

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

16. Other information

Issue date Aug-16-2016

Revision date May-27-2018

Version # 1.2

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TLV: Threshold Limit Value
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information

Composition/information on ingredients: Composition comments
Physical & Chemical Properties: Multiple Properties
Other information: Disclaimer

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

FOAMTROL* AF1440

1. Identification

Product identifier FOAMTROL AF1440
Other means of identification None.
Recommended use Antifoam
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2
Carcinogenicity Category 1B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Aspiration hazard Category 1
OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause cancer.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves. Wear eye protection/face protection.

Response IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. 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. If exposed or concerned: Get medical advice/attention. Call a POISON CENTER/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. 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 None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Distillates(petroleum), hydrotreated middle	64742-46-7	60 - 80
Fatty acid ethoxylate	61791-00-2	2.5 - 10
Fatty acids, C16-18	67701-03-5	2.5 - 10

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. 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. Get medical attention if irritation develops and persists.

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 Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Carbon dioxide, dry chemicals, foam, water spray (fog).

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 Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers / tanks with water spray.

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. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch or walk through spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

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.

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. Put material in suitable, covered, labeled containers.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store away from oxidizers. Store in original tightly closed container. Store between 32 - 38 °C. If storage is below 32 °C, warm and mix prior to use to ensure homogeneity. Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)	PEL	5 mg/m3	Mist.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)	TWA	5 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Provide adequate ventilation. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. A respiratory protection program that meets OSHA's 29 CFR 1910.34 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. 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.

9. Physical and chemical properties

Appearance

Liquid

Physical state

Liquid.

Form

Liquid.

Color

Amber

Odor

Hydrocarbon

Odor threshold

Not available.

pH (concentrated product)

Not available.

Melting point/freezing point

18 °F (-8 °C)

Initial boiling point and boiling range	350 °F (177 °C)
Flash point	> 200 °F (> 93 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	0.87
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	0 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	11 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	5.6 (5% EMULSION)
Pour point	< 60 °F (< 16 °C)
Specific gravity	0.87
VOC	53.9 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	May cause irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.
---	--

Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways.
-----------------------	---

Product	Species	Test Results
FOAMTROL AF1440		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg (Calculated according to GHS additivity formula)
Inhalation		
LC50	Rat	> 5 mg/l, 4 Hours (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg (Calculated according to GHS additivity formula)
Components	Species	Test Results
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	4.6 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg
Fatty acids, C16-18 (CAS 67701-03-5)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	This product is not expected to cause respiratory sensitization.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	Not classified.	
Carcinogenicity	May cause cancer.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)		3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)		Known To Be Human Carcinogen.
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity

Product	Species		Test Results
FOAMTROL AF1440			
Aquatic			
Crustacea	LC50	Daphnia magna	720 mg/L, 48 hour
	NOEL	Daphnia magna	250 mg/L, 48 hour
Fish	LC50	Rainbow Trout	353 mg/L, 96 hour
	NOEL	Rainbow Trout	250 mg/L, 96 hour

Persistence and degradability

- COD (mgO₂/g) 1486 (calculated data)
- BOD 5 (mgO₂/g) 138 (calculated data)
- BOD 28 (mgO₂/g) 285 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 13 (calculated data)
- TOC (mg C/g) 500 (calculated data)

Bioaccumulative potential

Mobility in soil No data available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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 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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

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
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

1,4-DIOXANE (CAS 123-91-1)
Ethylene oxide (oxirane) (CAS 75-21-8)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Ethylene oxide (oxirane) (CAS 75-21-8)

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

Food and drug administration 21 CFR 176.210 (defoaming agents used in the manufacture of paper and paperboard)

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 148167
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Distillates(petroleum), hydrotreated middle (CAS 64742-46-7)

California Proposition 65



WARNING: WARNING: This product can expose you to chemicals including Ethylene oxide (oxirane), 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-DIOXANE (CAS 123-91-1) Listed: January 1, 1988
Ethylene oxide (oxirane) (CAS 75-21-8) Listed: July 1, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: August 7, 2009

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: August 7, 2009

16. Other information, including date of preparation or last revision

Issue date Nov-14-2014

Revision date Mar-04-2022

Version # 4.0

NFPA ratings Health: 2
Flammability: 0
Instability: 0

NFPA ratings**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

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.

Revision information

Hazard(s) identification: Hazard statement
Hazard(s) identification: Disposal
Hazard(s) identification: Supplemental information
Composition/information on ingredients: Composition comments
Exposure controls/personal protection: Appropriate engineering controls
Exposure controls/personal protection: Eye/face protection
Exposure controls/personal protection: Respiratory protection
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Toxicological information: Germ cell mutagenicity
GHS: Classification

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN7004

1. Identification

Product identifier	GENGARD GN7004
Other means of identification	None.
Recommended use	Dispersant
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC)	None known.
---	-------------

Supplemental information	None.
--------------------------	-------

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Composition comments	This product does not contain hazardous ingredients in reportable concentrations. Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
----------------------	--

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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. 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	Handle in accordance with good industrial hygiene and safety procedures. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Keep container tightly closed. Store in cool, well ventilated area. Store away from oxidizers. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
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.

9. Physical and chemical properties

Appearance	
Color	Amber
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	5
pH in aqueous solution	5.9 (5% SOL.)
Melting point/freezing point	25 °F (-4 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.13
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	24 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Calculated)
Pour point	30 °F (-1 °C)
Specific gravity	1.134

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.

Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Prolonged or repeated contact may cause transient irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
GENGARD GN7004 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
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	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
GENGARD GN7004 (CAS Mixture)	LC50	Ceriodaphnia	1707.6 mg/L, Static Acute Bioassay, 48 hour
		Fathead Minnow	2367 mg/L, Static Acute Bioassay, 96 hour
	LOEL	Ceriodaphnia	1000 mg/L, Chronic Bioassay, 7 day
		Fathead Minnow	2000 mg/L, Chronic Bioassay, 7 day
	NOEL	Ceriodaphnia	1250 mg/L, Static Acute Bioassay, 48 hour
			500 mg/L, Chronic Bioassay, 7 day
		Fathead Minnow	1250 mg/L, Static Acute Bioassay, 96 hour
			1000 mg/L, Chronic Bioassay, 7 day
Aquatic			
Crustacea	LC50	Daphnia magna	3677 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	2500 mg/L, Static Acute Bioassay, 48 hour
Fish	LC50	Rainbow Trout	1894 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Rainbow Trout	1250 ma/L, Static Acute Bioassay, 96 hour

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Nutrients: P : 1.449 mg/g, N : 2.62 mg/g
Persistence and degradability	
- COD (mgO2/g)	385 (calculated data)
- BOD 5 (mgO2/g)	0 (calculated data)
- BOD 28 (mgO2/g)	24 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	6 (calculated data)
- TOC (mg C/g)	109 (calculated data)

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets Registration No. – 141931
USDA (according to 1998 Category Code(s):
guidelines): G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Jan-07-2015

Revision date Aug-03-2016

Version # 5.0

List of abbreviations CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists

References: No data available

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.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN8020

1. Identification

Product identifier	GENGARD GN8020
Other means of identification	None.
Version #	3.1
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
Revision date	Mar-04-2019
Supersedes date	Feb-19-2019
Recommended use	Deposit control agent
Recommended restrictions	None known.

Company/undertaking identification

SUEZ Water Technologies & Solutions Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1A

Label elements



Signal word	Warning
Hazard statement	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.
Precautionary statement	
Prevention	Avoid breathing mist/vapor. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear eye protection/face protection. Wear protective gloves.
Response	IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent (wt/wt)
Maleic acid	110-16-7	0.1 - 1
CARBOXYLIC ACID POLYMER	*	*

*HMIRA Trade Secret Registry #: 03321738 Date Filed: 28-FEB-2019

Composition comments The exact concentrations of the above listed chemicals are being withheld as confidential business information. Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

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. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Skin irritation. May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. 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 Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Use standard firefighting procedures and consider the hazards of other involved materials.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

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. Avoid breathing mist/vapor. 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. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage

Precautions for safe handling

Observe good industrial hygiene practices. Do not get in eyes, on skin, on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in cool, well ventilated area. Store containers closed when not in use. Avoid high temperatures. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

No exposure limits noted for ingredient(s).

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. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Wash off after each use. Replace as necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

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

Liquid

Color

Amber to brown

Odor

Slight sweet

Odor threshold

Not available.

pH (concentrated product)

2.6

pH in aqueous solution

3 (5% SOL.)

Melting point/freezing point

27 °F (-3 °C)

Initial boiling point and boiling range

212 °F (100 °C)

Flash point

Not available.

Evaporation rate

< 1 (Water = 1)

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

18 mm Hg

Vapor pressure temp.

70 °F (21 °C)

Vapor density

< 1 (Air = 1)

Relative density	1.17
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	17 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	32 °F (0 °C)
Specific gravity	1.166
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Ingestion of large amounts may produce gastrointestinal disturbances including irritation, nausea, and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
--	--

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
GENGARD GN8020 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
CARBOXYLIC ACID POLYMER (TSRN 03321738*)		
Acute		
<i>Oral</i>		
LD50	Rat	4563 mg/kg

Components	Species	Test Results
Maleic acid (CAS 110-16-7)		
Acute		
Dermal		
LD50	Rabbit	1560 mg/kg
Inhalation		
LC50	Rat	> 2.88 mg/L, 4 Hour
Oral		
LD50	Rat	708 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	This product is not expected to cause respiratory sensitization.	
Skin sensitization	May cause an allergic skin reaction.	
Germ cell mutagenicity	Not classified.	
Carcinogenicity	Not classified.	
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Based on available data, the classification criteria are not met.	

12. Ecological information

Ecotoxicity

Product		Species	Test Results
GENGARD GN8020 (CAS Mixture)			
	IC50	Selenastrum (algae)	3872 mg/l, Growth Inhibition, 96 hour, (pH adjusted)
	LC50	Fathead Minnow	5814 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Fathead Minnow	5000 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
		Selenastrum (algae)	2000 mg/l, Growth Inhibition, 96 hour, (pH adjusted)
Aquatic			
Crustacea	LC50	Daphnia magna	3628 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	1250 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	7071 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	5000 mg/l, Static Renewal Bioassay, 96 hour, (pH adjusted)

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Maleic acid -0.48

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO2/g)	359
- BOD 5 (mgO2/g)	21
- BOD 28 (mgO2/g)	3

- **Closed Bottle Test (%) Degradation in 28 days)** 1 OECD 301D
- **TOC (mg C/g)** 142 (calculated data)

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	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

TDG

Not regulated as dangerous goods.

DOT

Not regulated as a dangerous good.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

15. Regulatory information

Canadian regulations	This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.
-----------------------------	--

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets USDA (according to 1998 guidelines):	Registration No. – 144523 Category Code(s): G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact
---	--

16. Other information

Issue date	Sep-07-2016
Revision date	Mar-04-2019
Version #	3.1
NFPA ratings	Health: 2 Flammability: 0 Instability: 0

NFPA ratings**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
NFPA: National Fire Protection Association
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TLV: Threshold Limit Value
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

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.

Revision information

Physical & Chemical Properties: Multiple Properties

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

According to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: **HYPERFLOC™ CE 5084**

Type of product: Mixture.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Processing aid for industrial applications.

Uses advised against: None.

1.3. Details of the supplier of the safety data sheet

Company: Hychem, Inc.
10014 North Dale Mabry Hwy
Tampa, FL 33618
United States

Telephone: (800) 327-2998

Telefax: (813) 960-0175

E-mail address: -

1.4. Emergency telephone number

24-hour emergency number: Chemtrec: 1-800-424-9300 (CCN 20412)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to paragraph (d) of 29 CFR 1910.1200:

Not classified.

2.2. Label elements

Labelling according to paragraph (f) of 29 CFR 1910.1200:

Hazard symbol(s): None.

Signal word: None.

Hazard statement(s): None.

Precautionary statement(s): None.

2.3. Other hazards

Spills produce extremely slippery surfaces.

For explanation of abbreviations see Section 16.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable, this product is a mixture.

3.2. Mixtures

This product is a mixture.

Hazardous components

Distillates (petroleum), hydrotreated light

Concentration/ -range: 20 - 30%

CAS Number: 64742-47-8

Classification according to paragraph (d)
of 29 CFR 1910.1200: Asp. Tox. 1;H304

Notes

Does not result in classification of the mixture if the kinematic viscosity is greater than 20.5 mm²/s measured at 40°C.

Poly(oxy-1,2-ethanediyl), α -tridecyl-w-hydroxy-, branched

Concentration/ -range: < 5%

CAS Number: 69011-36-5

Classification according to paragraph (d)
of 29 CFR 1910.1200: Acute Tox. 4;H302, Eye Dam. 1;H318

For explanation of abbreviations see section 16

SECTION 4: First aid measures***4.1. Description of first aid measures****Inhalation:*

Move to fresh air. No hazards which require special first aid measures.

Skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. In case of persistent skin irritation, consult a physician.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately.

Ingestion:

Rinse mouth with water. Do NOT induce vomiting. Call a physician or poison control centre immediately.

4.2. Most important symptoms and effects, both acute and delayed

None under normal use.

4.3. Indication of any immediate medical attention and special treatment needed

None reasonably foreseeable.

Other information:

None.

SECTION 5: Firefighting measures***5.1. Extinguishing media****Suitable extinguishing media:*

Water. Water spray. Foam. Carbon dioxide (CO₂). Dry powder.

Warning! Spills produce extremely slippery surfaces.

Unsuitable extinguishing media:

None known.

5.2. Special hazards arising from the substance or mixture*Hazardous decomposition products:*

Ammonia. Carbon oxides (CO_x). Nitrogen oxides (NO_x). Hydrogen chloride. Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

5.3. Advice for firefighters*Protective measures:*

Wear self-contained breathing apparatus and protective suit.

Other information:

Spills produce extremely slippery surfaces.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures***Personal precautions:*

Do not touch or walk through spilled material. Spills produce extremely slippery surfaces.

Protective equipment:

Wear adequate personal protective equipment (see Section 8 Exposure Controls/Personal Protection).

Emergency procedures:

Keep people away from spill/leak. Prevent further leakage or spillage if safe to do so.

6.2. Environmental precautions

As with all chemical products, do not flush into surface water.

6.3. Methods and material for containment and cleaning up*Small spills:*

Do not flush with water. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.

Large spills:

Do not flush with water. Dam up. Soak up with inert absorbent material. Clean up promptly by scoop or vacuum.

Residues:

After cleaning, flush away traces with water.

6.4. Reference to other sections

SECTION 7: Handling and storage; SECTION 8: Exposure controls/personal protection; SECTION 13: Disposal considerations;

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid contact with skin and eyes. Renders surfaces extremely slippery when spilled. When using, do not eat, drink or smoke.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Freezing will affect the physical condition and may damage the material. Incompatible with oxidizing agents.

7.3. Specific end use(s)

This information is not available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters***Occupational exposure limits:*

Distillates (petroleum), hydrotreated light

ACGIH: 200 mg/m³ (8 hours) (vapors)

8.2. Exposure controls

Appropriate engineering controls:

Ensure adequate ventilation, especially in confined areas. Use local exhaust if misting occurs. Natural ventilation is adequate in absence of mists.

Individual protection measures, such as personal protective equipment:

a) Eye/face protection:

Safety glasses with side-shields.

b) Skin protection:

i) *Hand protection:* PVC or other plastic material gloves.

ii) *Other:* Wear coveralls and/or chemical apron and rubber footwear where physical contact can occur.

c) Respiratory protection:

No personal respiratory protective equipment normally required.

d) Additional advice:

Wash hands before breaks and immediately after handling the product. Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls:

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<i>a) Appearance:</i>	Viscous liquid, Milky.
<i>b) Odour:</i>	Aliphatic.
<i>c) Odour Threshold:</i>	No data available.
<i>d) pH:</i>	3.5 - 6.5 @ 5 g/L (See Technical Bulletin or Product Specifications for precise value)
<i>e) Melting point/freezing point:</i>	< 5°C
<i>f) Initial boiling point and boiling range:</i>	> 100°C
<i>g) Flash point:</i>	Does not flash.
<i>h) Evaporation rate:</i>	No data available.

i) Flammability (solid, gas):	Not applicable.
j) Upper/lower flammability or explosive limits:	Not expected to create explosive atmospheres.
k) Vapour pressure:	2.3 kPa @ 20°C
l) Vapour density:	0.804 g/litre @ 20°C
m) Relative density:	1.0 - 1.2
n) Solubility(ies):	Completely miscible.
o) Partition coefficient:	Not applicable.
p) Autoignition temperature:	Not applicable.
q) Decomposition temperature:	> 150°C
r) Viscosity:	> 20.5 mm ² /s @ 40°C
s) Explosive properties:	Not expected to be explosive based on the chemical structure.
t) Oxidizing properties:	Not expected to be oxidising based on the chemical structure.

9.2. Other information

None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended storage conditions.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Oxidizing agents may cause exothermic reactions.

10.4. Conditions to avoid

Protect from frost, heat and sunlight.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO_x), carbon oxides (CO_x). Ammonia. Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**Information on the product as supplied:

Acute oral toxicity:	LD50/oral/rat > 5000 mg/kg (Estimated)
Acute dermal toxicity:	LD50/dermal/rat > 5000 mg/kg. (Estimated)
Acute inhalation toxicity:	The product is not expected to be toxic by inhalation.
Skin corrosion/irritation:	Non-irritating to skin.
Serious eye damage/eye irritation:	Not irritating. (OECD 437)
Respiratory/skin sensitisation:	Not sensitizing.
Mutagenicity:	Not mutagenic.
Carcinogenicity:	Not carcinogenic.
Reproductive toxicity:	Not toxic for reproduction.
STOT - Single exposure:	No known effects.
STOT - Repeated exposure:	No known effect.
Aspiration hazard:	Due to the viscosity, this product does not present an aspiration hazard.

Relevant information on the hazardous components:Distillates (petroleum), hydrotreated light

Acute oral toxicity:	LD50/oral/rat > 5000 mg/kg (OECD 401)
Acute dermal toxicity:	LD50/dermal/rabbit > 5000 mg/kg (OECD 402)
Acute inhalation toxicity:	LC0/inhalation/4 hours/rat $\geq$ 4951 mg/m ³ (OECD 403) (Based on results obtained from tests on analogous products)
Skin corrosion/irritation:	Not irritating. (OECD 404) Repeated exposure may cause skin dryness or cracking.
Serious eye damage/eye irritation:	Not irritating. (OECD 405)
Respiratory/skin sensitisation:	By analogy with similar products, this product is not expected to be sensitizing. (OECD 406)
Mutagenicity:	Not mutagenic. (OECD 471, 473, 474, 476, 478, 479)

<i>Carcinogenicity:</i>	Carcinogenicity study in rats (OECD 451): Negative.
<i>Reproductive toxicity:</i>	By analogy with similar substances, this substance is not expected to be toxic for reproduction. NOAEL/rat = 300 ppm. (OECD 421)
<i>STOT - Single exposure:</i>	No known effects.
<i>STOT - Repeated exposure:</i>	NOAEL/oral/rat/90 days $\geq$ 3000 mg/kg/day (OECD 408) (Based on results obtained from tests on analogous products)
<i>Aspiration hazard:</i>	May be fatal if swallowed and enters airways.
<u><i>Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched</i></u>	
<i>Acute oral toxicity:</i>	LD50/oral/rat = 500 - 2000 mg/kg
<i>Acute dermal toxicity:</i>	LD50/dermal/rabbit > 2000 mg/kg
<i>Acute inhalation toxicity:</i>	No data available.
<i>Skin corrosion/irritation:</i>	Not irritating. (OECD 404)
<i>Serious eye damage/eye irritation:</i>	Causes serious eye irritation. (OECD 405)
<i>Respiratory/skin sensitisation:</i>	The results of testing on guinea pigs showed this material to be non-sensitizing.
<i>Mutagenicity:</i>	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
<i>Carcinogenicity:</i>	Based on the absence of mutagenicity, it is unlikely that the substance is carcinogenic.
<i>Reproductive toxicity:</i>	Two-Generation Reproduction Toxicity (OECD 416) - NOAEL/rat > 250 mg/kg/day Prenatal Development Toxicity Study (OECD 414) - NOAEL/Maternal toxicity/rat > 50 mg/kg/day - NOAEL/Developmental toxicity/rat > 50 mg/kg/day
<i>STOT - Single exposure:</i>	No known effects.
<i>STOT - Repeated exposure:</i>	NOAEL/oral/rat/600 days = 50 mg/kg/day
<i>Aspiration hazard:</i>	No known effects.

SECTION 12: Ecological information**12.1. Toxicity**Information on the product as supplied:

Acute toxicity to fish:	LC50/Fish/96 hours = 10 - 100 mg/L (Estimated)
Acute toxicity to invertebrates:	EC50/Daphnia magna/48 hours = 10 - 100 mg/L (Estimated)
Acute toxicity to algae:	Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
Chronic toxicity to fish:	No data available.
Chronic toxicity to invertebrates:	No data available.
Toxicity to microorganisms:	No data available.
Effects on terrestrial organisms:	No data available.
Sediment toxicity:	No data available.

Relevant information on the hazardous components:Distillates (petroleum), hydrotreated light

Acute toxicity to fish:	LC0/Oncorhynchus mykiss/96 hours > 1000 mg/L. (OECD 203)
Acute toxicity to invertebrates:	EC0/Daphnia magna/48 hours > 1000 mg/L (OECD 202)
Acute toxicity to algae:	IC0/Pseudokirchneriella subcapitata/72 hours > 1000 mg/L. (OECD 201)
Chronic toxicity to fish:	NOEC/Oncorhynchus mykiss/28 days > 1000 mg/L
Chronic toxicity to invertebrates:	NOEC/Daphnia magna/21 days > 1000 mg/L
Toxicity to microorganisms:	EC50/Tetrahymena pyriformis/ 48h > 1000 mg/L.
Effects on terrestrial organisms:	No data available.
Sediment toxicity:	No data available. Readily biodegradable, exposure to sediment is unlikely.

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

Acute toxicity to fish:	LC50/Cyprinus carpio/96 hours = 1 - 10 mg/L (OECD 203)
-------------------------	--

<i>Acute toxicity to invertebrates:</i>	EC50/Daphnia/48 hours = 1 - 10 mg/L (OECD 202)
<i>Acute toxicity to algae:</i>	IC50/Desmodesmus subspicatus/72 hours = 1 - 10 mg/L (OECD 201)
<i>Chronic toxicity to fish:</i>	No data available.
<i>Chronic toxicity to invertebrates:</i>	NOEC/Daphnia magna/21 days > 1 mg/L (OECD 202)
<i>Toxicity to microorganisms:</i>	EC10/activated sludge/17 hours > 10000 mg/L (DIN 38412-8)
<i>Effects on terrestrial organisms:</i>	No data available.
<i>Sediment toxicity:</i>	No data available.

12.2. Persistence and degradability

Information on the product as supplied:

<i>Degradation:</i>	Based on degradation data of components, this product is expected to be readily (bio)degradable.
<i>Hydrolysis:</i>	At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmful to aquatic organisms.
<i>Photolysis:</i>	No data available.

Relevant information on the hazardous components:

Distillates (petroleum), hydrotreated light

<i>Degradation:</i>	Readily biodegradable. 67.6% / 28 days (OECD 301 F) ; 68.8% / 28 days (OECD 306) ; 61.2% / 61 days (OECD 304 A)
<i>Hydrolysis:</i>	Does not hydrolyse.
<i>Photolysis:</i>	No data available.

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

<i>Degradation:</i>	Readily biodegradable. > 60% / 28 days (OECD 301 B)
<i>Hydrolysis:</i>	Does not hydrolyse.
<i>Photolysis:</i>	No data available.

12.3. Bioaccumulative potential

Information on the product as supplied:

The product is not expected to bioaccumulate.

Partition co-efficient (Log Pow): Not applicable.

Bioconcentration factor (BCF): No data available.

Relevant information on the hazardous components:

Distillates (petroleum), hydrotreated light

Partition co-efficient (Log Pow): 3 - 6

Bioconcentration factor (BCF): No data available.

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

Partition co-efficient (Log Pow): > 3

Bioconcentration factor (BCF): No data available.

12.4. Mobility in soil

Information on the product as supplied:

No data available.

Relevant information on the hazardous components:

Distillates (petroleum), hydrotreated light

K_{oc}: No data available.

Poly(oxy-1,2-ethanediyl), a-tridecyl-w-hydroxy-, branched

K_{oc}: > 5000

12.5. Other adverse effects

None known.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations***13.1. Waste treatment methods*****Waste from residues/unused products:**

Dispose in accordance with local and national regulations.

Contaminated packaging:

Rinse empty containers with water and use the rinse-water to prepare the working solution. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled or incinerated, when in compliance with local regulations.

Recycling:

Store containers and offer for recycling of material when in accordance with the local regulations.

SECTION 14: Transport information***Land transport (DOT)***

Not classified.

Sea transport (IMDG)

Not classified.

Air transport (IATA)

Not classified.

SECTION 15: Regulatory information***15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture*****Information on the product as supplied:****TSCA Chemical Substances Inventory:**

All components of this product are either listed as active on the inventory or are exempt from listing.

US SARA Reporting Requirements:***SARA (Section 311/312) hazard class:***

Not concerned.

SARA Title III Sections:***Section 302 (TPQ) - Reportable Quantity:***

Not concerned.

Section 304 - Reportable Quantity:

Not concerned.

Section 313 (De minimis concentration):

Not concerned.

*Clean Water Act**Section 311 Hazardous Substances (40 CFR 117.3) - Reportable Quantity:*

Not concerned.

*Clean Air Act**Section 112(r) Accidental release prevention requirements (40 CFR 68) - Reportable Quantity:*

Not concerned.

*CERCLA**Hazardous Substances List (40 CFR 302.4) - Reportable Quantity:*

Not concerned.

RCRA status:

Not RCRA hazardous.

California Proposition 65 Information:

WARNING! This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm, Acrylamide

SECTION 16: Other information*NFPA and HMIS Ratings:**NFPA:*

Health:	0
Flammability:	1
Instability:	0

*HMIS:*

Health:	0
Flammability:	1

Physical Hazard: 0
PPE Code: B

This data sheet contains changes from the previous version in section(s):

SECTION 8. Exposure controls/personal protection, SECTION 15. Regulatory information, SECTION 16. Other Information.

Key or legend to abbreviations and acronyms used in the safety data sheet:

Acronyms

STOT = Specific target organ toxicity

Abbreviations

Acute Tox. 4 = Acute toxicity Category Code 4

Asp. Tox. 1 = Aspiration hazard Category Code 1

Eye Dam 1 = Serious eye damage/eye irritation Category Code 1

Hazard statements

H302 - Harmful if swallowed

H304 - May be fatal if swallowed and enters airways

H318 - Causes serious eye damage

Training advice:

Do not handle until all safety precautions have been read and understood.

This SDS was prepared in accordance with the following:

U.S. Code of Federal Regulations 29 CFR 1910.1200

Version: 19.01.a

ENCC046

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.



SAFETY DATA SHEET

INHIBITOR AZ8104

1. Identification

Product identifier	INHIBITOR AZ8104
Other means of identification	None.
Recommended use	Water-based corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. 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. 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. Wash contaminated clothing before reuse. Absorb spillage to prevent material-damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Chlorotolyltriazole sodium salt	202420-04-0	10 - 20
DICHLOROTOLYLTRIAZOLE	NOT ASSIGNED	2.5 - 10
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	1 - 2.5
Sodium hydroxide	1310-73-2	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. May cause respiratory irritation.
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	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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	Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Alkaline. Do not mix with acidic material. Do not breathe mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not get in eyes, on skin, or on clothing.

Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store away from acids. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store locked up. Keep only in the original container.

8. Exposure controls/personal protection

Occupational 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/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash facilities and emergency shower must be available when handling this product. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

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.

9. Physical and chemical properties

Appearance

Color

Yellow to amber

Physical state

Liquid

Odor

Slight

Odor threshold

Not available.

pH (concentrated product)

12.7

pH in aqueous solution

11.6 (5% SOL.)

Melting point/freezing point

12 °F (-11 °C)

Initial boiling point and boiling range

210 °F (99 °C)

Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.13
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	5 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Estimated)
Pour point	17 °F (-8 °C)
Specific gravity	1.132

10. Stability and reactivity

Reactivity	May be corrosive to metals. May react violently with acidic materials.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong acids. Strong oxidizing agents. Metals.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

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.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
----------------	-----------------------------------

Product	Species	Test Results
INHIBITOR AZ8104 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3100 mg/kg
DICHLOROTOLYLTRIAZOLE (CAS NOT ASSIGNED)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3100 mg/kg
Sodium 4(or 5)-methyl-1H-benzotriazolide (CAS 64665-57-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	735 mg/kg

* Estimates for product may be based on additional component data not shown.

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	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
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	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
INHIBITOR AZ8104 (CAS Mixture)	LC50	Annelida(Lumbriculus variegatus)	138 mg/L, Static Acute Bioassay, 96 hour
		Benthic Crustacean(Gammarus pseudolimnaeus)	42.1 mg/L, Static Acute Bioassay, 96 hour
		Bluegill Sunfish	36.6 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	124 mg/L, Static Renewal Bioassay, 48 hour
		Fathead Minnow	135 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
			50.7 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
		Freshwater Snail(Physa sp.)	47.4 mg/L, Static Acute Bioassay, 96 hour
		Menidia beryllina (Silversides)	41 mg/L, Static Acute Bioassay, 96 hour
		Midge larvae (Chironomus tentans)	95.8 mg/L, Static Acute Bioassay, 96 hour
		Mysid Shrimp	53 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
		Sheepshead Minnow	132 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
	LOEL	Ceriodaphnia	40 mg/L, Chronic Bioassay, 7 day
		Fathead Minnow	8.3 mg/L, Chronic Flow-Thru Bioassay, 28 day, (pH adjusted)
	NOEL	Annelida(Lumbriculus variegatus)	62.5 mg/L, Static Acute Bioassay, 96 hour
		Benthic Crustacean(Gammarus pseudolimnaeus)	25 mg/L, Static Acute Bioassay, 96 hour
		Bluegill Sunfish	25 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	75 mg/L, Static Renewal Bioassay, 48 hour
		Fathead Minnow	20 mg/L, Chronic Bioassay, 7 day
			21.8 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
			15 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
		Fathead Minnow	4.2 mg/L, Chronic Flow-Thru Bioassay, 28 day, (pH adjusted)
			25 mg/L, Static Acute Bioassay, 96 hour
			25 mg/L, Static Acute Bioassay, 96 hour
		Midge larvae (Chironomus tentans)	62.5 mg/L, Static Acute Bioassay, 96 hour
		Mysid Shrimp	25 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
		Sheepshead Minnow	100 mg/L, Static Acute Bioassay, 96 hour, (pH adjusted)
	Aquatic Crustacea	Daphnia magna	155 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
			210 mg/L, Static Acute Bioassay, 48 hour, (pH adjusted)
		Daphnia magna	50 mg/L, Chronic Bioassay, 21 day, (pH adjusted)
			217 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Daphnia magna	217 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
			217 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Product		Species	Test Results
	NOEL	Daphnia magna	148 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
			27 mg/L, Chronic Bioassay, 21 day, (pH adjusted)
Fish	LC50	Rainbow Trout	15.4 mg/L, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	6.3 mg/L, Static Renewal Bioassay, 96 hour
Components		Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)			
Aquatic			
Algae	EbC50	Algae	6.84 mg/l
	ErC50	Algae	18.6 mg/l

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Nutrients: N: 40,4 mg/g
Persistence and degradability	Testing has shown product not to be readily biodegradable.
- COD (mgO2/g)	300
- BOD 5 (mgO2/g)	15
- BOD 28 (mgO2/g)	15
- Closed Bottle Test (% Degradation in 28 days)	6
- Zahn-Wellens Test (% Degradation in 28 days)	0
- TOC (mg C/g)	100

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	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 LIQUID, N.O.S. (SODIUM HYDROXIDE, HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE; HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
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 LIQUID, N.O.S. (SODIUM HYDROXIDE; HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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.
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 1910.1001-1050)	
Not regulated.	

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 141530
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

No ingredient listed.

16. Other information, including date of preparation or last revision**Issue date** Oct-24-2014**Revision date** Aug-08-2016**Version #** 3.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

Page 1 of 5

Date Prepared: March 10, 2021

1. Product and Company Identification

Industrial Specialty Services, LLC

4900 Railroad Street
Deer Park, TX 77536
Phone: (346) 708-0989

24 Hour Emergency Response Contact:
CHEMTREC (USA and CANADA)
Phone: 800-424-9300 or 703-527-3887

Manufactured by:
Jet-Lube LLC / Deacon
Washington, PA 15301
USA

Product Name: ISS-770-L
Product Type: Sealant Compound
Product Description: Brown Liquid
General Use: Injectable Sealant

2. Hazards Identification

GHS Classification : Carcinogenicity, 1A
Skin Irritation, 2
Eye Irritation, 2B
Aspiration Hazard, 1

GHS Label Elements :
Signal Word : Warning



Hazard Statements:

H315 / 320 Causes Skin and Eye Irritation
H333 May be harmful if inhaled (respirable dust, see NOTE below)
H303 May be harmful if swallowed
H335 May cause respiratory irritation

Precautionary Statements :

P261 Avoid breathing dust/vapors
P262 Do not get in eyes, on skin, or on clothing
P285 In case of inadequate ventilation wear respiratory protection
P281 Use personal protective equipment as required
P301/P330/P331 If Swallowed : Rinse mouth, Do NOT induce vomiting.
P301/P310 If Swallowed: Immediately call a Poison Center or Physician
P333/P313 If skin irritation or rash develops: Get medical attention.
P302/P352 If on skin: Wash with plenty of soap and water
P305/P351/P338 If in eyes : Rinse cautiously with water for several minutes.
Remove contact lenses if easy to do. Continue Rinsing.
P337/P313 If eye irritation persists: Get medical attention
P342/P311 If experiencing respiratory symptoms : Get medical attention.
P233 Keep container tightly closed
P210 Keep away from open flames. – No Smoking
P501 Dispose of observing all Federal, State and Local regulations.

NOTE: THIS PRODUCT IN ITS PURCHASED FORM DOES NOT PRESENT AN INHALATION HAZARD FROM FIBERS OR DUST, AS IT IS A LIQUID DUST IS NOT AIRBORNE UNDER NORMAL HANDLING.

3. Composition / Information on Ingredients

Ingredients	CAS No.	% by weight
Solvent Mixture	64742-47-8	1-20
Crystalline Silica	None	<2
Modified Natural Resins	Proprietary	75-100

4. First Aid Measures

Ingestion: DO NOT INGEST. Oral toxicity not determined. Do NOT induce vomiting. Even small amount of solvent aspirated into the lungs during ingestion or vomiting may cause aspiration pneumonitis. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Call a physician or get medical help immediately.

Inhalation: Remove to fresh air. If symptoms persist, seek medical attention.

Skin Contact: Wash with soap and water, consult physician if rash develops.

Eye Contact: Flush with water 15 minutes. If symptoms persist, seek medical attention.

5. Fire Fighting Measures

Recommended Extinguishing Agent:
Foam, Dry Chemical, Carbon Dioxide, Water Fog

Special Fire Fighting Procedures:
Self contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals. (Professionally Trained Personnel).

Hazardous Products Formed by Fire or Thermal Decomposition:
CO, CO₂, H₂S, SO₂, Smoke, Incomplete Combustion Products

Unusual Fire or Explosion Hazards:
Closed containers may rupture when exposed to extreme heat or fire conditions

Compressed Gases: None

Pressure at Room Temperature: Does not apply

6. Accidental Release Measures

Steps to be taken in cases of spill or leak:

Wear proper personal protective equipment. Remove any sources of ignition from the area and allow hot surfaces to cool. Return uncontaminated material to metal container and seal container tightly. Dispose of contaminated material or waste. Clean up with mineral spirits.

7. Handling and Storage

Storage: Cool, dry, storage below 90 degrees F. Store in closed containers. Refrigerate for best shelf life.

Handling: Avoid contact with skin and eyes. Do not breathe vapors. This product in its purchased form does not create an inhalation hazard from fibers or dust. If grinding or sanding or any other process is performed to this compound will cause airborne particles wear appropriate respirator to avoid breathing any dust or vapors. Wear appropriate safety gear as required in work area.

8. Exposure Controls / Personal Protection

Exposure Limits Ingredients	(TLV)	(PEL)	ACGIH	OSHA	OTHER
--------------------------------	-------	-------	-------	------	-------

Crystalline Silica					
Cristobalite			0.05 mg/m3 (respirable)	0.025 mg/m3 (respirable)	
Tridymite			0.05 mg/m3 (respirable)		
Quartz			0.1 mg/m3 (respirable)	0.025 mg/m3 (respirable)	

Solvent Mixture			100ppm TWA	500ppm TWA	
-----------------	--	--	------------	------------	--

Modified Natural Resins			10mg/m3	15mg/m3	
-------------------------	--	--	---------	---------	--

Personal Protective Equipment (PPE)

Eyes: Safety Glasses
Full face shield recommended. (during injection process)

Skin: Chemical resistant gloves.

Respiratory Protection: NIOSH approved for organic vapors and dust.

Other Protective Clothing or Equipment: Coveralls or other protective clothing. Safety equipment as required in area.

Work / Hygienic Practices: Avoid contact with skin. Wash hands before eating.

Engineering Controls : Ventilation: Local exhaust if poorly ventilated area or in confined spaces.
Ventilation should be provided during heat up to exhaust organic vapors resulting from vaporization of certain organic agents

9. Chemical and Physical Properties

Appearance:	Brown Liquid
Odor:	Solvent like
pH:	6.3
Solubility in Water:	NIL
Specific Gravity:	1.0 (uncured) (H2O =1)
Evaporation Rate:	Not Applicable
Boiling Point:	Not Applicable
Melting Point:	Not Applicable
Vapor Pressure:	Solvent only, mixture not tested : 0.6 kPa (2.2 mm Hg) at 20 C
Vapor Density:	Solvent only, mixture not tested 5.5 (air =1)

VOC Content: Max 14% by weight

Flash Point: 160° F. Method: ASTM D93 Pensky-Martens Closed Cup

Flammable Limits:

LEL: Not Established

UEL: Not Established

10. Stability and Reactivity

Stability:	Stable
Hazardous Polymerization:	Will not occur
Hazardous Decomposition	
Or By-Products:	CO, CO2, H2S, SO2, Smoke, Incomplete Combustion Products
Incompatibility:	Strong Oxidizers and Strong Acids, Mineral Acids, Alkalies,

11. Toxicology Information

Primary Routes of Entry: Inhalation and contact.
Signs and Symptoms of Overexposure: **Inhalation:** Possible dizziness or headaches, respiratory irritation. **Eyes:** Redness and irritation.
Skin: Chemical dermatitis, redness and itching.

Existing Conditions Aggravated by Exposure: Pre-existing skin condition if prolonged exposure to skin. (Wear chemical resistant gloves) Respiratory disorders, asthma, chronic emphysema, heart condition (if prolonged and continuous exposure to dust or vapors).
Dust exposure is not a hazard with this product under normal use. Product is in a liquid form. (Organic vapors, Wear recommended respirator if exceeding permissible exposure limit, see section 8)

Carcinogenicity

NTP: Crystalline Silica (respirable size) Known to be a Carcinogen

IARC: Crystalline Silica, Group 1 IARC

OSHA Regulated: NO

Toxicity : (Solvent only, mixture not tested)

Inhalation (Solvent): Low Toxicity: LC50 greater than near-saturated vapor concentration / 1 hour rat

Skin (Solvent): Expected to be of Low Toxicity : LD50.2000 mg/kg, Rat mg/kg, rat

Ingestion: (Solvent): Expected to be of Low Toxicity : LD50>2000 mg/kg, rat

Acute Health Hazards: **Skin:** Contact on bare skin can cause chemical dermatitis, redness, itching

Inhalation: Breathing excessive vapors may cause dizziness or headaches irritation of eyes, nose, throat, lungs and can cause central nervous system depression.

Chronic Health Hazards: **Inhalation:** Crystalline Silica, respirable size NTP Known Carcinogen.
Repeated exposure to solvent vapors above recommended exposure limits, can cause central nervous system effects, drowsiness, dizziness and headaches.
(Wear recommended respirator if exceeding permissible exposure limit, see section 8)

NOTE: THIS PRODUCT IN ITS PURCHASED FORM DOES NOT PRESENT AN INHALATION HAZARD FROM FIBERS OR DUST, AS IT IS A LIQUID.
DUST IS NOT AIRBORN UNDER NORMAL HANDLING.

12. Ecological Information

Solvent Only : Expected to have low toxicity. LC/EC/IC50 > 1000 mg/l, Fish, Aquatic Invertebrates, Algae, Microorganisms.
Mobility - Absorbs to soil and has low mobility. Floats on water.

13. Disposal Considerations

Recommended Methods of Disposal:

RCRA 40 CFR 261 Classification : This product as purchased does not fall under current US EPA RCRA definitions of Hazardous Waste. Contains solvent, do not let waste contaminate soil or water.

Certain state regulations could affect whether a material is considered a hazardous waste upon disposal.

It must also be noted that a material can become a hazardous waste if it is mixed with or comes in contact with a hazardous substance during use. Under RCRA it is the responsibility of user of a product to determine at the time of disposal, whether a material should be classified as a hazardous waste.

14. Transport Information

DOT (49 CFR 172): Not Regulated*

*Not Regulated under 49 CFR if in a container of 119 gallon capacity or less.

IATA : Not Regulated

Liquid / Solid (per ASTM D 4359-90) : Material is a liquid

15. REGULATORY INFORMATION

CERCLA HAZARDOUS SUBSTANCES (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR Part 355): This product does not contain any SARA 302 Extremely Hazardous Substances.

SARA TITLE III SECTION 311/312 HAZARDOUS CATEGORIZATION (40 CFR Part 370): Certain ingredients of this product are regulated under Sara Title III Section 311/312, see section 3 of this MSDS.

SARA TITLE III SECTION 313 (40 CFR Part 372): None

U.S. INVENTORY (TSCA): Any chemical substances (as defined in 40 CFR Part 710.2), that are contained in, or used in the manufacture of this product, are reported in the EPA TSCA Inventory. (As required per 40 CFR 710.3)

CALIFORNIA PROPOSITION 65: Crystalline Silica

CANADA WHMIS: Ingredient Disclosure List: Crystalline Silica, quartz -- Crystalline Silica, Tridymite --
Crystalline Silica, Cristobalite, Solvent Mixture 64742-47-8
WHMIS Classification : Solvent Mixture, B3, Crystalline Silica, quartz:, D2A

EUROPEAN UNION : Crystalline Silica: CLP Carc.1A,
Solvent 64742-47-8:CLP Asp Tox 1

OZONE DEPLETERS: * This product is not manufactured with or contains any Class I or Class II Ozone Depleting Chemicals. (ODC's)

NOTE: THIS PRODUCT IN ITS PURCHASED FORM DOES NOT PRESENT AN INHALATION HAZARD FROM FIBERS OR DUST AS IT IS A LIQUID. DUST IS NOT AIRBORN UNDER NORMAL HANDLING.

16. OTHER INFORMATION

The information contained in this MSDS sheet is based upon data supplied by our suppliers and data determined by us in our facilities at the time these products were formulated. We have reviewed any information that we received from sources outside our company. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety data in this sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. If after reviewing this MSDS you have determined that this product poses unusual risks to you, your plant, or your plant personnel, or if you cannot comply fully with all safety recommendations, do not use this product. This product is intended for a temporary repair. The responsibility for whether or not the product is suitable for use rest solely with the purchaser. We recommend that the product be tested prior to use. Your use of this information is beyond our control, therefore, the information is provided without warranty expressed or implied. We accept no liability beyond the purchase price of the material.

Estimated HMIS® Code:

Health Hazard: * 1
Flammability Hazard: 2
Physical Hazard: 0
Personal Protection:

* See section 11 for chronic effects.

NPCA recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.

Procedural Warning:

Attn: Technician

(For industrial use by professionally trained personnel only) When the compound is curing, vapors and gasses are given off and should be vented. Steps should be taken to insure that the injection pressure in conjunction with pressure that may occur from gassing off does not exceed the pressure limitations of the piping system. Also, be aware it is quite common that the application temperature will exceed the compound flash point. Be aware of the possibility of a flash and take necessary precautions. Avoid contact with skin and eyes. See section 8 of SDS for personal protective equipment. Ventilation may be needed during heating/curing stage to exhaust organic vapors resulting from vaporization of certain organic agents. Always avoid direct contact with smoke and vapors being emitted from the compound during the heating/curing process. These vapors may be irritating to the skin, eyes and respiratory system. Read product technical data and safety information before use.

PREPARATION INFORMATION

Prepared By: Safety Department
Company: Jet-Lube LLC / Deacon
Revision Date: 05-01-15 Revision: B

Date Prepared: March 10, 2021

1. **Product and Company Identification**

Industrial Specialty Services, LLC

4900 Railroad Street
Deer Park, TX 77536
Phone: (346) 708-0989

24 Hour Emergency Response Contact:
CHEMTREC (USA and CANADA)
Phone: 800-424-9300 or 703-527-3887

Manufactured by:
Jet-Lube LLC / Deacon
Washington, PA 15301
USA

Product Name: ISS-DP-8
Product Type: Bulk Fibers
Product Description: Grayish-Green Fiber Mixture
General Use : Sealant additive

2. **Hazards Identification**

GHS Classification : Carcinogenicity, 1A
Skin Irritation, 2
Eye Irritation, 2B

GHS Label Elements :
Signal Word : Warning



Hazard Statements:

H315 / 320 Causes Skin and Eye Irritation
H333 May be harmful if inhaled (respirable dust and fibers)
H335 May cause respiratory irritation

Precautionary Statements :

P261 Avoid breathing dust/vapors
P262 Do not get in eyes, on skin, or on clothing
P285 In case of inadequate ventilation wear respiratory protection
P281 Use personal protective equipment as required
P301/P330/P331 If Swallowed : Rinse mouth, Do NOT induce vomiting.
P301/P310 If Swallowed: Immediately call a Poison Center or Physician
P333/P313 If skin irritation or rash develops: Get medical attention.
P302/P352 If on skin: Wash with plenty of soap and water
P305/P351/P338 If in eyes : Rinse cautiously with water for several minutes.
Remove contact lenses if easy to do. Continue Rinsing.
P337/P313 If eye irritation persists: Get medical attention
P342/P311 If experiencing respiratory symptoms : Get medical attention.
P233 Keep container tightly closed
P501 Dispose of observing all Federal, State and Local regulations.

3. Composition / Information on Ingredients

Ingredients	CAS No.	% by weight
Natural Graphite	7782-42-5	1-20
Aluminosilicate	142844-00-6	20-50
Crystalline Silica	None	<10
Liquid Lubricant*	Proprietary	20-50

* Liquid Lubricant is not considered hazardous according to OSHA criteria

4. First Aid Measures

Ingestion: DO NOT INGEST. Oral toxicity not determined.
Do NOT induce vomiting. Ingestion not likely.
Call a physician or get medical help immediately.

Inhalation: Remove to fresh air. If symptoms persist,
seek medical attention.

Skin Contact: Wash with soap and water, consult physician if
rash develops.

Eye Contact: Flush with water 15 minutes. If symptoms persist,
Seek medical attention.

5. Fire Fighting Measures

Recommended Extinguishing Agent:
Foam, Dry Chemical, Carbon Dioxide, Water Fog

Special Fire Fighting Procedures:
Self contained breathing apparatus and protective clothing
should be worn in fighting fires involving chemicals.
(Professionally Trained Personnel).

Hazardous Products Formed by Fire
or Thermal Decomposition:
CO, CO₂, Smoke

Unusual Fire or Explosion Hazards:
Closed containers may rupture when exposed to extreme
heat or fire conditions

Compressed Gases: None

Pressure at Room Temperature: Does not apply

6. Accidental Release Measures

Steps to be taken in cases of
spill or leak:
Wear proper personal protective equipment. Remove any sources of
ignition from the area and allow hot surfaces to cool. Return
uncontaminated material to metal container and seal container tightly.
Dispose of contaminated material or waste. Clean up with mineral spirits.

7. Handling and Storage

Storage: Dry storage . Store in closed containers.

Handling: Avoid contact with skin and eyes. Do not breathe dust or
heated vapors. If grinding or sanding or any other process is
performed to this compound will cause airborne particles wear
appropriate respirator to avoid breathing any dust or vapors.
Wear appropriate safety gear as required in work area.

8. Exposure Controls / Personal Protection

Exposure Limits Ingredients	ACGIH (TLV)	OSHA (PEL)	OTHER
Natural Graphite	2.0 mg/m3 TWA Respirable Dust	N/E	3 mg/m3 for nuisance dust
Crystalline Silica			
Cristobalite	0.05 mg/m3 (respirable)	0.025 mg/m3 (respirable)	
Tridymite	0.05 mg/m3 (respirable)		
Quartz	0.1 mg/m3 (respirable)	0.025 mg/m3 (respirable)	
Aluminosilicate (respirable ceramic fibers)	0.2 f/cc TLV, 8 hr, TWA	0.5 f/cc, 8 hr. TWA* * (Manufacturer Recommendation) (California PEL is 0.2 f/cc, 8 hr TWA)	
Liquid Lubricant	5 mg/m3 8 hours TWA (Inhalable Fraction)	5 mg/m3 8 hours TWA	

Personal Protective Equipment (PPE)

Eyes: Safety Glasses

Full face shield recommended. (during injection process)

Skin: Chemical resistant gloves.

Respiratory Protection: NIOSH approved for organic vapors and dust.

Other Protective Clothing or Equipment: Coveralls or other protective clothing. Safety equipment as required in area.

Work / Hygienic Practices: Avoid contact with skin. Wash hands before eating.

Engineering Controls : Ventilation: Local exhaust if poorly ventilated area or in confined spaces.

9. Chemical and Physical Properties

Appearance:	Grayish-Green Fiber Mixture
Odor:	Mild Odor
pH:	7.4
Solubility in Water:	NIL
Specific Gravity:	Not Applicable (bulk fiber)
Evaporation Rate:	Not Applicable
Boiling Point:	Not Applicable
Melting Point:	Not Applicable
Vapor Pressure:	Not Established
Vapor Density:	Not Established
VOC Content:	None
Flash Point:	>330° F. Method: Cleveland Open Cup
Flammable Limits:	
LEL:	Not Established
UEL:	Not Established

10. Stability and Reactivity

Stability:	Stable
Hazardous Polymerization:	Will not occur
Hazardous Decomposition Or By-Products:	CO, CO2, Smoke
Incompatibility:	Strong Oxidizers and Strong Acids

11. Toxicology Information

Primary Routes of Entry: Inhalation and contact.
Signs and Symptoms of Overexposure: **Inhalation:** dust or heated vapors, respiratory irritation.
Eyes: Redness and irritation.
Skin: Chemical dermatitis, redness and itching.

Existing Conditions Aggravated by Exposure: Pre-existing skin condition if prolonged exposure to skin. (Wear chemical resistant gloves)
Respiratory conditions if exposed to dust, fibers or heated vapors.

Carcinogenicity
NTP: Crystalline Silica (respirable size) Known to be a Carcinogen
Ceramic Fibers, (respirable size) Reasonably Anticipated to be a Carcinogen
IARC: Crystalline Silica, Group 1 IARC
Ceramic Fibers, (respirable size) 2B

OSHA Regulated: NO

Toxicity : Mixture, Not determined
Skin : (Fluid Lubricant) Toxicity : LD50>2000 mg/kg Rabbit
Ingestion: (Fluid Lubricant) Toxicity : LD50>5000 mg/kg Rat

Acute Health Hazards: **Skin:** Defatting of the skin, Dryness and Irritation
Inhalation: dust or heated vapors, respiratory irritation.

Chronic Health Hazards: **Inhalation:** Crystalline Silica, respirable size NTP Known Carcinogen.
Ceramic Fibers, NTP Reasonably Anticipated to be a Carcinogen.

12. Ecological Information

The fluid lubricant in this product shows a high bioaccumulation potential.

13. Disposal Considerations

Recommended Methods of Disposal:
RCRA 40 CFR 261 Classification : This product as purchased does not fall under current US EPA RCRA Definitions of Hazardous Waste. Can be landfilled or incinerated.
Certain state regulations could affect whether a material is considered a hazardous waste upon disposal. It must also be noted that a material can become a hazardous waste if it is mixed with or comes in contact with a hazardous substance during use. Under RCRA it is the responsibility of user of a product to determine at the time of disposal, whether a material should be classified as a hazardous waste.

14. Transport Information

DOT (49 CFR 172): Not Regulated
IATA : Not Regulated
Liquid / Solid (per ASTM D 4359-90) : Material is a solid

15. REGULATORY INFORMATION

CERCLA HAZARDOUS SUBSTANCES (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR Part 355): This product does not contain any SARA 302 Extremely Hazardous Substances.

SARA TITLE III SECTION 311/312 HAZARDOUS CATEGORIZATION (40 CFR Part 370): Certain ingredients of this product are regulated under Sara Title III Section 311/312, see section 3 of this MSDS.

SARA TITLE III SECTION 313 (40 CFR Part 372): None

U.S. INVENTORY (TSCA): Any chemical substances (as defined in 40 CFR Part 710.2), that are contained in, or used in the manufacture of this product, are reported in the EPA TSCA Inventory. (As required per 40 CFR 710.3)

CALIFORNIA PROPOSITION 65: Crystalline Silica, Aluminosilicate (ceramic fibers)

CANADA WHMIS: Ingredient Disclosure List: Crystalline Silica, quartz -- Crystalline Silica, Tridymite --
Crystalline Silica, Cristobalite, RCF (Aluminosilicate),
WHMIS Classification : Crystalline Silica, quartz:, D2A , RCF (Aluminosilicate) D2A

EUROPEAN UNION : Crystalline Silica: CLP Carc.1A, 2, Natural Graphite: CLP STOT SE3,
Aluminosilicate (ceramic fibers): CLP Carc 1B

OZONE DEPLETERS: * This product is not manufactured with or contains any Class I or Class II Ozone Depleting Chemicals. (ODC's)

16. OTHER INFORMATION

The information contained in this MSDS sheet is based upon data supplied by our suppliers and data determined by us in our facilities at the time these products were formulated. We have reviewed any information that we received from sources outside our company. We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and safety data in this sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. If after reviewing this MSDS you have determined that this product poses unusual risks to you, your plant, or your plant personnel, or if you cannot comply fully with all safety recommendations, do not use this product. This product is intended for a temporary repair. The responsibility for whether or not the product is suitable for use rest solely with the purchaser. We recommend that the product be tested prior to use. Your use of this information is beyond our control, therefore, the information is provided without warranty expressed or implied. We accept no liability beyond the purchase price of the material.

Estimated HMIS® Code:

Health Hazard:	*1	* See section 11 for chronic effects.
Flammability Hazard:	1	
Physical Hazard:	0	
Personal Protection:	NPCA recommends that PPE codes be determined by the employer, who is familiar with the actual conditions under which chemicals in the facility are used.	

Procedural Warning:

Attn: Technician

(For industrial use by professionally trained personnel only) When the compound is curing, vapors and gasses are given off and should be vented. Steps should be taken to insure that the injection pressure in conjunction with pressure that may occur from gassing off does not exceed the pressure limitations of the piping system. Also, be aware it is quite common that the application temperature will exceed the compound flash point. Be aware of the possibility of a flash and take necessary precautions. Avoid contact with skin and eyes. See section 8 of SDS for personal protective equipment. Ventilation may be needed during heating/curing stage to exhaust organic vapors resulting from vaporization of certain organic agents. Always avoid direct contact with smoke and vapors being emitted from the compound during the heating/curing process. These vapors may be irritating to the skin, eyes and respiratory system. Read product technical data and safety information before use.

PREPARATION INFORMATION

Prepared By:	Safety Department
Company:	Jet-Lube LLC / Deacon
Revision Date:	05-01-15 Revision: D



GE Power & Water
Water & Process Technologies

SAFETY DATA SHEET

KLARAIID* CDP1362

1. Identification

Product identifier KLARAIID CDP1362
Other means of identification Not available.
Recommended use Coagulant
Recommended restrictions None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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/. Specific treatment (see this label). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant/ container with a resistant inner liner.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of contents/container to approved local facility..
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	54.99% of the mixture consists of component(s) of unknown acute oral toxicity.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Ferric sulphate		10028-22-5	40 - 60

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Abdominal pain. Burning pain and severe corrosive skin damage. Diarrhea. Nausea, vomiting. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
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. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not breathe mist or vapor. 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. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. 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. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage**Precautions for safe handling**

Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Use care in handling/storage.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Ferric sulphate (CAS 10028-22-5)	TWA	1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ferric sulphate (CAS 10028-22-5)	TWA	1 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. 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.

9. Physical and chemical properties**Appearance****Color**

Dark brown

Physical state

Liquid

Odor

Mild

Odor threshold

Not available.

pH (concentrated product)

1

pH in aqueous solution

1.7 (5% SOL.)

Melting point/freezing point

-11 °F (-24 °C)

Initial boiling point and boiling range

220 °F (104 °C)

Flash point

> 200 °F (> 93 °C) P-M(CC)

Evaporation rate

< 1 (Ether = 1)

Flammability (solid, gas)

Not available.

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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.43
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	292 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Percent volatile	0 (Calculated)
Pour point	-6 °F (-21 °C)
Specific gravity	1.43

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Not available.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Ingestion	Causes digestive tract burns. Harmful if swallowed.
Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Abdominal pain. Burning pain and severe corrosive skin damage. Diarrhea. Nausea, vomiting. Causes serious eye damage. May cause respiratory irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. May cause respiratory irritation.
----------------	---

Product	Species	Test Results
KLARAID CDP1362 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 4000 mg/kg. (Estimated value)
Oral		
LD50	Rat	1134 mg/kg. (Estimated value)

Components	Species	Test Results
Ferric sulphate (CAS 10028-22-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	500 mg/kg

* Estimates for product may be based on additional component data not shown.

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 available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Risk of cancer cannot be excluded with prolonged exposure.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met. May be harmful if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

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
KLARAID CDP1362 (CAS Mixture)		
LC50	Fathead Minnow	4.2 mg/L, Acute Toxicity, 96 hour, (Estimated)
NOEL	Fathead Minnow	2.4 mg/L, Acute Toxicity, 96 hour, (Estimated)
Crustacea		
LC50	Daphnia magna	5.6 mg/L, Acute Toxicity, 48 hour, (Estimated)
NOEL	Daphnia magna	2.3 mg/L, Acute Toxicity, 48 hour, (Estimated)

* Estimates for product may be based on additional component data not shown.

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.
Environmental fate	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.
Persistence and degradability	
	No data is available on the degradability of this product.
- COD (mgO2/g)	39 (calculated data)
- BOD 5 (mgO2/g)	0 (calculated data)
- BOD 28 (mgO2/g)	0 (calculated data)

- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	1 (calculated data)
- TOC (mg C/g)	19 (calculated data)

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.
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	Not available.

14. Transport information

DOT

UN number	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (FERRIC SULFATE), RQ
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154
Some containers may be DOT exempt, please check BOL for exact container classification.	

IATA

UN number	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Ferric sulphate)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Ferric sulphate)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT





15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US CWA Section 304(a)(1) Ambient Water Quality Criteria: Listed substance

Ferric sulphate (CAS 10028-22-5)

Listed. LISTED IRON US CWA Section 304(a)(1) Ambient Water Quality Criteria: Listed substance

CERCLA Hazardous Substance List (40 CFR 302.4)

Ferric sulphate (CAS 10028-22-5)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
---------------	------------	---------------------	-----------------------------	--	--

Sulphuric acid	7664-93-9	1000	1000 lbs		
Epichlorohydrin	106-89-8	100	1000 lbs		

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Sulphuric acid	7664-93-9	0.1 - 1
Epichlorohydrin	106-89-8	0 - 0.1

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.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

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).

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - Massachusetts RTK - Substance List

Ferric sulphate (CAS 10028-22-5)

US - Pennsylvania RTK - Hazardous Substances

Ferric sulphate (CAS 10028-22-5)

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Epichlorhydrin (CAS 106-89-8)

Listed: October 1, 1987

Sulphuric acid (CAS 7664-93-9)

Listed: March 14, 2003

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Epichlorhydrin (CAS 106-89-8)

Listed: September 1, 1996

16. Other information, including date of preparation or last revision

Issue date Dec-04-2014

Revision date Dec-04-2014

Version # 1.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TLV: Threshold Limit Value
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. 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.

Revision Information

Composition / Information on Ingredients: Disclosure Overrides
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
GHS: Classification

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department
{1-215-355-3300}.

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

KLARAID* CDP2727

1. Identification

Product identifier	KLARAID CDP2727
Other means of identification	None.
Version #	2.1
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
Revision date	Dec-19-2017
Supersedes date	Mar-21-2017
Recommended use	Coagulant
Recommended restrictions	None known.

Company/undertaking identification

SUEZ Water Technologies & Solutions Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 2

Label elements



Signal word	Warning
Hazard statement	Causes serious eye irritation.
Precautionary statement	
Prevention	Wash thoroughly after handling. Wear eye protection/face protection.
Response	IF IN 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.
Storage	Store away from incompatible materials.
Disposal	Not available.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent (wt/wt)
Aluminium chlorhydroxide	12042-91-0	10 - 20

Components	CAS #	Percent (wt/wt)
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer	26062-79-3	10 - 20

Composition comments Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

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. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. 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.

5. Fire-fighting measures

Suitable extinguishing media Carbon dioxide, dry chemicals, foam, water spray (fog).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Spills produce extremely slippery surfaces.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

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 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. 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. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Flush with plenty of water. Ventilate the area.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	1 mg/m3	Respirable fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	2 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	1 mg/m3	Respirable.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	1 mg/m3	Respirable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	1 mg/m3	Respirable fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Aluminium chlorhydroxide (CAS 12042-91-0)	TWA	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear suitable protective clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

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.

9. Physical and chemical properties

Appearance

Liquid

Color

Light yellow

Odor

Not available.

Odor threshold

Not available.

pH (concentrated product)

4.2

Melting point/freezing point

< 23 °F (< -5 °C)

Initial boiling point and boiling range

212 °F (100 °C)

Flash point	Not available.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.1
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	750 cps
Viscosity temperature	77 °F (25 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	< 23 °F (< -5 °C)
Specific gravity	1.096
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to respiratory organs.
Skin contact	May cause irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
---	---

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Aluminium chlorhydroxide (CAS 12042-91-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer (CAS 26062-79-3)		
Acute		
<i>Oral</i>		
LD50	Rat	3000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Canada - Alberta OELs: Irritant

Aluminium chlorhydroxide (CAS 12042-91-0) Irritant

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classified.

ACGIH Carcinogens

Aluminium chlorhydroxide (CAS 12042-91-0) A4 Not classifiable as a human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Aluminium chlorhydroxide (CAS 12042-91-0) Not classifiable as a human carcinogen.

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 Based on available data, the classification criteria are not met.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
KLARAID CDP2727 (CAS Mixture)		
LC50	Fathead Minnow	1.6 mg/l, Static Renewal Bioassay, 96 hour
NOEL	Fathead Minnow	0.75 mg/l, Static Renewal Bioassay, 96 hour
Aquatic		
Crustacea	LC50	4.4 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	3.125 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	1.1 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	0.75 mg/l, Static Renewal Bioassay, 96 hour

Bioaccumulative potential Not available.

Mobility in soil Not available.

Material name: KLARAID* CDP2727

Version number: 2.1

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

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

TDG

Not regulated as dangerous goods.

The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification. TDG Classification is valid for road or rail transport only. For shipment by air or water, refer to IATA or IMDG regulations.

DOT

Not regulated as a dangerous good.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

15. Regulatory information

Canadian regulations

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

16. Other information

Issue date Feb-03-2017

Revision date Dec-19-2017

Version # 2.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TLV: Threshold Limit Value

References:

No data available

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.

Revision information

Physical & Chemical Properties: Multiple Properties

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

KLARAID* PC1192

1. Identification

Product identifier KLARAID PC1192
Other means of identification None.
Recommended use Coagulant
Recommended restrictions None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes serious eye irritation.

Precautionary statement

Prevention Wear eye/face protection. Wash thoroughly after handling.

Response If in 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.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N,N-Dimethyl-N-2-propenyl-2-propen-1-ammonium chloride homopolymer	26062-79-3	10 - 20

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water.

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. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. 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.

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

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

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. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. 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

Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. 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.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage

Precautions for safe handling

Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Provide eyewash station. 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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
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.

9. Physical and chemical properties

Appearance	
Color	Yellow
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	6.3
pH in aqueous solution	6.2 (5% SOL.)
Melting point/freezing point	30 °F (-1 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.03
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	168 cps
Viscosity temperature	70 °F (21 °C)

Other information

Percent volatile	0 (ASTM 3960-93)
Pour point	35 °F (2 °C)
Specific gravity	1.032

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information**Information on likely routes of exposure**

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects**Acute toxicity**

Product	Species	Test Results
KLARAID PC1192 (CAS Mixture)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer (CAS 26062-79-3)		
Acute		
Oral		
LD50	Rat	3000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	Not listed.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	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	Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
KLARAID PC1192 (CAS Mixture)	LC50	Ceriodaphnia	9.3 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
		Fathead Minnow	3.8 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	NOEL	Ceriodaphnia	6.25 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
		Fathead Minnow	2.5 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	Aquatic		
	Crustacea		
	LC50	Daphnia magna	32 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
	NOEL	Daphnia magna	15.6 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
Fish	LC50	Rainbow Trout	14.1 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	NOEL	Rainbow Trout	10 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Not available.

Persistence and degradability

- COD (mgO2/g)	270
- BOD 5 (mgO2/g)	0
- BOD 28 (mgO2/g)	7
- Closed Bottle Test (% Degradation in 28 days)	3
- Zahn-Wellens Test (% Degradation in 28 days)	6
- TOC (mg C/g)	90

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

Food and drug administration 21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

US state regulations

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-20-2014

Revision date Sep-27-2016

Version # 3.0

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information Hazard(s) identification: Prevention
Composition/information on ingredients: Composition comments
Exposure controls/personal protection: Appropriate engineering controls
Exposure controls/personal protection: Respiratory protection
Physical and chemical properties: Explosive properties
Physical and chemical properties: Oxidizing properties
Stability and reactivity: Possibility of hazardous reactions
Toxicological information: Aspiration hazard
Toxicological information: Respiratory sensitization
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection
Other information, including date of preparation or last revision: Further information
HazReg Data: Pacific Rim
GHS: Classification

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



Product Name: MOBIL POLYREX EM
Revision Date: 09 Nov 2021
Page 1 of 9

SAFETY DATA SHEET

SECTION 1 IDENTIFICATION

PRODUCT

Product Name: MOBIL POLYREX EM
Product Description: Base Oil and Additives
SDS Number: 17183
Product Code: 2015A020G010
Intended Use: Grease

COMPANY IDENTIFICATION

Supplier: Imperial Oil Downstream
P.O. Box 2480, Station M
Calgary, ALBERTA T2P 3M9 Canada

24 Hour Emergency Telephone	1-866-232-9563
Transportation Emergency Phone Number	1-866-232-9563
Product Technical Information	1-800-268-3183
Supplier General Contact	1-800-567-3776

SECTION 2 HAZARD IDENTIFICATION

This material is considered to be NON-HAZARDOUS according to regulatory guidelines.

This product has been classified in accordance with hazard criteria of the Hazardous Products Regulations (HPR) SOR/2015-17 and the SDS contains all the information required by the HPR SOR/2015-17.

Other hazard information:

Health Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

Physical Hazards Not Otherwise Classified: None as defined under HPR SOR/2015-17.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID: Health: 0 Flammability: 1 Reactivity: 0
HMIS Hazard ID: Health: 0 Flammability: 1 Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*	GHS Hazard Codes
1H-IMIDAZOLE-1-ETHANOL, 2-(8-HEPTADECENYL)-4,5-DIHYDRO-	95-38-5	0.1 - < 0.25%	H302, H314(1C), H373, H400(M factor 10), H410(M factor 1)
ALCOHOLS, C7-9-ISO-, C8-RICH, REACTION PRODUCTS WITH PHOSPHORUS OXIDE, COMPS. WITH C12-14-TERT-ALKYL AMINES	124018-37-7	1 - < 2.5%	H302, H312, H314(1C), H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST-AID MEASURES

INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >204°C (399°F) [EST. FOR OIL, ASTM D-92 (COC)]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction

and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: 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. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Colour: Blue
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.884
Flammability (Solid, Gas): N/A
Flash Point [Method]: >204°C (399°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 330°C (626°F)
Decomposition Temperature: N/D
Vapour Density (Air = 1): N/D
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20°C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 95 cSt (95 mm²/sec) at 40°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D

Product Name: MOBIL POLYREX EM
Revision Date: 09 Nov 2021
Page 6 of 9

Melting Point: >250°C (482°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 437 492
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data	Not expected to be a reproductive toxicant. Based on assessment

Product Name: MOBIL POLYREX EM
Revision Date: 09 Nov 2021
Page 7 of 9

for material.	of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
1H-IMIDAZOLE-1-ETHANOL, 2-(8-HEPTADECENYL)-4,5-DIHYDRO-	Oral Lethality: LD 50 1265 mg/kg (Rat)

OTHER INFORMATION

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

CMR Status: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1
2 = IARC 2A

3 = IARC 2B
4 = ACGIH ALL

5 = ACGIH A1
6 = ACGIH A2

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13	DISPOSAL CONSIDERATIONS
-------------------	--------------------------------

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14	TRANSPORT INFORMATION
-------------------	------------------------------

LAND (TDG): Not Regulated for Land Transport

LAND (DOT): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
-------------------	-------------------------------

CEPA: All components of this product are either on the Domestic Substance List (DSL) or are exempt.

Listed or exempt from listing/notification on the following chemical inventories: AIIIC, DSL, ENCS, IECSC, ISHL, KECI, TCSI, TSCA

The Following Ingredients are Cited on the Lists Below: None.

--REGULATORY LISTS SEARCHED--

1 = TSCA 4

3 = TSCA 5e

5 = TSCA 12b



Product Name: MOBIL POLYREX EM
Revision Date: 09 Nov 2021
Page 9 of 9

2 = TSCA 5a2

4 = TSCA 6

6 = NPRI

SECTION 16	OTHER INFORMATION
-------------------	--------------------------

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H302: Harmful if swallowed; Acute Tox Oral, Cat 4

H312: Harmful in contact with skin; Acute Tox Dermal, Cat 4

H314(1C): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1C

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H400: Very toxic to aquatic life; Acute Env Tox, Cat 1

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information

The information and recommendations contained herein are, to the best of Imperial Oil's knowledge and belief, accurate and reliable as of the date issued. Imperial Oil assumes no responsibility for accuracy of information unless the document is the most current available from an official Imperial Oil distribution system. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted.

DGN: 5015668 (1008419)

Copyright 2002 Imperial Oil Limited, All rights reserved



SAFETY DATA SHEET

NALCO® 3DT394

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® 3DT394

Other means of identification : Not applicable.

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 11/10/2014

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Precautionary Statements : **Prevention:**
Wash hands thoroughly after handling.
Response:
Specific measures: consult MSDS Section 4.
Storage:
Store in accordance with local regulations.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

No hazardous ingredients

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : No specific measures identified.

SAFETY DATA SHEET

NALCO® 3DT394

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Carbon oxides

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.

Environmental precautions : No special environmental precautions required.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8. Wash hands after handling.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers. Store separately from oxidizers. Store separately from bases.

Suitable material : Keep in properly labelled containers.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

SAFETY DATA SHEET

NALCO® 3DT394

Contains no substances with occupational exposure limit values.

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Wash hands before breaks and immediately after handling the product.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Viscous liquid

Colour : clear Light yellow Orange

Odour : Mild

Flash point : 93.3 °C

pH : 2.5 - 4.0, (22.2 °C)

Odour Threshold : no data available

Melting point/freezing point : Melting point/freezing point: -7.6 °C

Initial boiling point and boiling range : 92.2 °C

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : 5.7 hPa (0 °C)
19.9 hPa (20 °C)
49.3 hPa (37.78 °C)
187 hPa (65.56 °C)
547 hPa (93.33 °C)
1,010 hPa (111.67 °C)

Relative vapour density : no data available

Relative density : 1.22 (25 °C)

Density : 1.2219 - 1.2221 g/cm³

Water solubility : Complete

Solubility in other solvents : no data available

SAFETY DATA SHEET

NALCO® 3DT394

Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: 150 - 400 mPa.s (22.2 °C)
Viscosity, kinematic	: no data available
VOC	: 0 g/l

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Hazardous decomposition products	: Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Inhalation, Eye contact, Skin contact
--	---

Potential Health Effects

Eyes	: Health injuries are not known or expected under normal use.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: No symptoms known or expected.
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available

SAFETY DATA SHEET

NALCO® 3DT394

Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	
IARC	Not classified as a human carcinogen.
NTP	Not classifiable as a human carcinogen.
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): 5,669 mg/l
Exposure time: 96 h
Test substance: Product

LC50 Oncorhynchus mykiss (rainbow trout): 8,412 mg/l
Exposure time: 96 h
Test substance: Product

LC50 Inland Silverside: > 10,000 mg/l
Exposure time: 96 h
Test substance: Product

Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Americamysis bahia: > 10,000 mg/l
Exposure time: 96 h
Test substance: Product

SAFETY DATA SHEET

NALCO® 3DT394

LC50 Ceriodaphnia dubia: 947 mg/l
Exposure time: 48 h
Test substance: Product

Persistence and degradability

Total Organic Carbon (TOC) : 470,000 mg/l

Chemical Oxygen Demand (COD): 230,000 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period	Value	Test Descriptor
5 d	1,200 mg/l	Product

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: <5%
Water	: 10 - 30%
Soil	: 70 - 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING

SAFETY DATA SHEET

NALCO® 3DT394

TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements
of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known
CAS numbers that exceed the threshold (De Minimis) reporting levels
established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth
defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

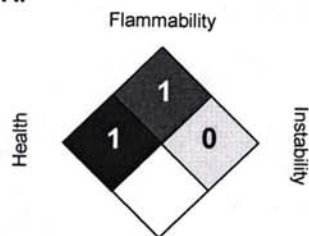
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40
CFR 710)

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

NALCO® 3DT394

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 11/10/2014
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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.

For additional copies of an MSDS visit www.nalco.com and request access.

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® BT-3011 BOILER WATER TREATMENT

Other means of identification : Not applicable.

Recommended use : BOILER WATER TREATMENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/16/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1B
Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
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.
Immediately call a POISON CENTER/doctor. 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 or doctor/ physician.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Chemical Name	CAS-No.	Concentration: (%)
Sodium Hydroxide	1310-73-2	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
In case of skin contact	: Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
If swallowed	: Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
If inhaled	: Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: None known.
Specific hazards during firefighting	: Not flammable or combustible.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	: Use personal protective equipment.
Specific extinguishing methods	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Shipping and long term storage compatibility with construction materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sodium Hydroxide	1310-73-2	Ceiling	2 mg/m ³	ACGIH
		Ceiling	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z1

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Skin protection	: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
Respiratory protection	: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: colourless
Odour	: odourless
Flash point	: > 93.3 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: 13.6,(100 %), Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: < 0 °C, ASTM D-1177
Initial boiling point and boiling range	: 90 °C
Evaporation rate	: similar to water
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: similar to water
Relative vapour density	: no data available
Relative density	: 1.09, ASTM D-1298
Density	: 9.1 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: < 4 mPa.s (22 °C), Method: ASTM D 2983
Viscosity, kinematic	: no data available
Molecular weight	: no data available

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

VOC : 0 %, 0 g/l, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.

Conditions to avoid : Freezing temperatures.

Incompatible materials : Strong acids

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Causes severe skin burns.

Ingestion : Causes digestive tract burns.

Inhalation : May cause nose, throat, and lung irritation.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Corrosion

Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Acute inhalation toxicity : no data available

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): > 5,000 mg/l
Exposure time: 96 hrs
Test substance: Product
Test Type: Static

NOEC Oncorhynchus mykiss (rainbow trout): 5,000 mg/l
Exposure time: 96 hrs
Test substance: Product
Test Type: Static

Toxicity to daphnia and other aquatic invertebrates : EC50 Daphnia magna (Water flea): 3,536 mg/l
Exposure time: 48 hrs
Test substance: Product
Test Type: Static

NOEC Daphnia magna (Water flea): 2,500 mg/l
Exposure time: 48 hrs
Test substance: Product
Test Type: Static

Persistence and degradability

no data available

Mobility

no data available

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

- Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

- Proper shipping name : SODIUM HYDROXIDE SOLUTION
- Technical name(s) :
- UN/ID No. : UN 1824
- Transport hazard class(es) : 8
- Packing group : III
- Reportable Quantity (per package) : 46,000 lbs
- RQ Component : SODIUM HYDROXIDE

Air transport (IATA)

- Proper shipping name : SODIUM HYDROXIDE SOLUTION
- Technical name(s) :
- UN/ID No. : UN 1824
- Transport hazard class(es) : 8
- Packing group : III
- Reportable Quantity (per package) : 46,000 lbs
- RQ Component : SODIUM HYDROXIDE

Sea transport (IMDG/IMO)

- Proper shipping name : SODIUM HYDROXIDE SOLUTION
- Technical name(s) :
- UN/ID No. : UN 1824
- Transport hazard class(es) : 8

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	46083

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

SAFETY DATA SHEET

NALCO® BT-3011 BOILER WATER TREATMENT

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

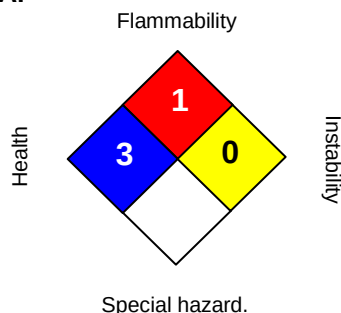
All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/16/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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. For additional copies of an SDS visit www.nalco.com and request access.



SAFETY DATA SHEET

PRODUCT

NALCO® BT-3011

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALCO® BT-3011**

APPLICATION : BOILER WATER TREATMENT

SUPPLIER IDENTIFICATION :
Nalco Canada Co.
1055 Truman Street
Burlington, Ontario
L7R 3Y9

EMERGENCY TELEPHONE NUMBER(S) : (800)463-3216 (24 Hours)
For Transportation Emergencies call CANUTEC 613-996-6666
(24 hours)

NFPA 704M/HMIS RATING

HEALTH : 3 / 3 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

Prepared By : SHE Department; (905) 632-8791

Date issued : 2013/07/30

Version Number : 1.9

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Corrosive. May cause tissue damage.

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Use a mild soap if available. Protect product from freezing.

Wear a face shield. Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots.

Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

SKIN CONTACT :

Corrosive; causes permanent skin damage.

**SAFETY DATA SHEET****PRODUCT****NALCO® BT-3011****EMERGENCY TELEPHONE NUMBER(S)****(800)463-3216 (24 Hours)****INGESTION :**

Corrosive; causes chemical burns to the mouth, throat and stomach.

INHALATION :

Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes, nose, throat and lungs.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

HUMAN HEALTH HAZARDS - CHRONIC :

No adverse effects expected other than those mentioned above.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Refer to Section 15 for more information.

Hazardous Substance(s)	CAS NO	% (w/w)	LD50's and LC50's Route & Species
Sodium Hydroxide	1310-73-2	1.0 - 5.0	No data available.

4. FIRST AID MEASURES**EYE CONTACT :**

PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 30 minutes while holding eyelids open. If only one eye is affected be sure to use care not to contaminate the other eye with the run-off. Get immediate medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 30 minutes or until the material is removed. Use a mild soap if available. For a large splash, flood body under a shower. Get immediate medical attention. Contaminated clothing, shoes, and leather goods must be discarded or cleaned before re-use.

INGESTION :

Get immediate medical attention. DO NOT INDUCE VOMITING. Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing.

INHALATION :

Remove to fresh air, treat symptomatically. Get immediate medical attention.

NOTE TO PHYSICIAN :

Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

Flash Point : > 93.3 °C (PMCC)

LOWER EXPLOSION LIMIT : No data available.

UPPER EXPLOSION LIMIT : No data available.



SAFETY DATA SHEET

PRODUCT

NALCO® BT-3011

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

AUTOIGNITION TEMPERATURE : No data available.

EXTINGUISHING MEDIA :

Not expected to burn. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :

Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

SENSITIVITY TO MECHANICAL IMPACT :

Not expected to be sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE :

Not expected to be sensitive to static discharge.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Keep people away from and upwind of spill/leak. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled.

STORAGE CONDITIONS :

Store the containers tightly closed. Store in suitable labeled containers. Store separately from acids.



SAFETY DATA SHEET

PRODUCT

NALCO® BT-3011

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

SUITABLE CONSTRUCTION MATERIAL :

Shipping and long term storage compatibility with construction materials can vary; we therefore recommend that compatibility is tested prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Substance(s)	Basis	ppm	mg/m3	Non-Standard Unit
Sodium Hydroxide	ACGIH/Ceiling		2	
	NIOSH		2	
	REL/Ceiling			
	OSHA Z1/TWA		2	

* A skin notation refers to the potential significant contribution to overall exposure by the cutaneous route, including mucous membranes and the eyes.

ENGINEERING MEASURES :

General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

RESPIRATORY PROTECTION :

Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. Consider the use of filter type: Multi-contaminant cartridge. with a Particulate pre-filter. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

When handling this product, the use of chemical gauntlets is recommended. The choice of work glove depends on work conditions and what chemicals are handled, but we have positive experience under light handling conditions using gloves made from Neoprene gloves Nitrile gloves PVC gloves Butyl gloves Rubber gloves Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION :

Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible.

EYE PROTECTION :

Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Use good work and personal hygiene practices to avoid exposure. Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

**SAFETY DATA SHEET****PRODUCT****NALCO® BT-3011****EMERGENCY TELEPHONE NUMBER(S)****(800)463-3216 (24 Hours)****9. PHYSICAL AND CHEMICAL PROPERTIES**

PHYSICAL STATE	Liquid
APPEARANCE	Light yellow
ODOR	None
ODOR THRESHOLD	No data available.
SPECIFIC GRAVITY	1.09
SOLUBILITY IN WATER	Complete
pH	13.6 (100 %)11.5 (1 %)
VISCOSITY	< 4 cps @ 22 °C
FREEZING POINT	< 0 °C
BOILING POINT	No data available.
VAPOR PRESSURE	Same as water
EVAPORATION RATE	Same as water
VAPOR DENSITY	No data available.
COEFFICIENT OF WATER/OIL DISTRIBUTION	No data available.

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY**STABILITY :**

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Freezing temperatures.

MATERIALS TO AVOID :

Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of phosphorus, Oxides of sulfur

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :

This product is not expected to be a sensitizer.

**SAFETY DATA SHEET****PRODUCT****NALCO® BT-3011****EMERGENCY TELEPHONE NUMBER(S)****(800)463-3216 (24 Hours)****CARCINOGENICITY :**

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

REPRODUCTIVE EFFECTS :

No quantitative data available.

TERATOGENICITY AND EMBRYOTOXICITY :

No quantitative data available.

MUTAGENICITY :

No quantitative data available.

OTHER TOXICITY INFORMATION :

Toxicologically Synergistic Products: None known

12. ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL EFFECTS :**

The following results are for the product, unless otherwise indicated.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Rainbow Trout	96 hrs	LC50	> 5,000 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	EC50	3,536 mg/l	Product

13. DISPOSAL CONSIDERATIONS

In Ontario, the waste class under Regulation 347 is: 148C

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.



SAFETY DATA SHEET

PRODUCT

NALCO® BT-3011

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

TRANSPORTATION OF DANGEROUS GOODS (TDG) CLASSIFICATION:

SODIUM HYDROXIDE SOLUTION (), Class 8, UN1824, PG III

For Transportation Emergencies call CANUTEC 613-996-6666 (24 hours)

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. Corrosive Material

WHMIS CLASSIFICATION :

E Corrosive Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

NATIONAL POLLUTANT RELEASE INVENTORY (NPRI) :

This product does not contain any substances listed in Part 1A (Core Substances) of the NPRI at a concentration of one percent or more by weight. For a complete NPRI listing (Parts 1 - 5) please consult Environment Canada's NPRI web site.

NATIONAL REGULATIONS, USA :

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :

When use situations necessitate compliance with FDA regulations, this product is acceptable under : the following use conditions.

This product may be used in pulp and papermill boilers where the steam is used to treat pulp in the manufacture of paper and paperboard that may be used to package food.

16. OTHER INFORMATION



SAFETY DATA SHEET

PRODUCT

NALCO® BT-3011

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 1. IDENTIFICATION DU PRODUIT ET DE LA SOCIÉTÉ

Nom du produit	: NALCO BT-3011 BOILER WATER TREATMENT
Autres moyens d'identification	: Non applicable
Utilisation recommandée	: TRAITEMENT DES EAUX DE CHAUDIÈRES
Restrictions d'utilisation	: Se référer à la documentation disponible sur le produit ou demandez à votre représentant régional pour connaître les restrictions sur l'utilisation et les doses limites.
Société	: Nalco Canada ULC 1055, rue Truman Burlington, Ontario L7R 3Y9 Canada TÉL : (905)633-1000
Numéro d'appel d'urgence	: (800) 463-3216 (24 heures) En cas d'urgence de transport veuillez appeler CANUTEC au 613-996-6666 (24 heures)
Date d'émission	: 2016/06/22

SECTION 2. IDENTIFICATION DES DANGERS

Classification SGH

Corrosion cutanée	: Catégorie 1B
Lésions oculaires graves	: Catégorie 1

Éléments d'étiquetage SGH

Pictogrammes de danger :



Mention d'avertissement	: Danger
Mention de danger	: Provoque des brûlures de la peau et des lésions oculaires graves.
Conseils de prudence	: Prévention: Se laver la peau soigneusement après manipulation. Porter des gants de protection/ des vêtements de protection/ un équipement de protection des yeux/ du visage. Intervention: EN CAS D'INGESTION: rincer la bouche. NE PAS faire vomir. EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau. EN CAS D'INHALATION: transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer. Appeler immédiatement un CENTRE ANTIPOISON/un médecin. EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. Appeler immédiatement un CENTRE ANTIPOISON/un médecin. Laver les vêtements contaminés avant réutilisation.

Stockage:

Garder sous clef.

Élimination:

Éliminer le contenu/récipient dans une installation d'élimination des déchets agréée.

Autres dangers : Aucun(e) à notre connaissance.

SECTION 3. COMPOSITION/ INFORMATIONS SUR LES COMPOSANTS

Nom Chimique	No.-CAS	Concentration (%) (w/w)
Hydroxyde de sodium	1310-73-2	1 - 5

SECTION 4. PREMIERS SECOURS

En cas de contact avec les yeux	: Rincer immédiatement avec beaucoup d'eau, également sous les paupières. Pendant au moins 15 minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. Faire immédiatement appel à une assistance médicale.
En cas de contact avec la peau	: Laver immédiatement et abondamment à l'eau pendant au moins 15 minutes. Utilisez un savon doux, si disponible. Laver les vêtements avant de les remettre. Nettoyer méticuleusement les chaussures avant de les réutiliser. Faire immédiatement appel à une assistance médicale.
En cas d'ingestion	: Se rincer la bouche à l'eau. Ne PAS faire vomir. Ne jamais rien faire avaler à une personne inconsciente. Faire immédiatement appel à une assistance médicale.
En cas d'inhalation	: Transférer la personne à l'air frais. Traiter de façon symptomatique. Faire appel à une assistance médicale si des symptômes apparaissent.
Protection pour les secouristes	: En cas d'urgence, évaluez le danger avant d'agir. Ne vous exposez pas à des risques de blessure. Dans le doute, contactez les agents Utiliser l'équipement de protection individuel requis.
Avis aux médecins	: Traiter de façon symptomatique.
Principaux symptômes et effets, aigus et différés	: Voir section 11 pour plus d'informations concernant les effets sur la santé et les symptômes.

SECTION 5. MESURES DE LUTTE CONTRE L'INCENDIE

Moyens d'extinction appropriés	: Utiliser des moyens d'extinction appropriés aux conditions locales et à l'environnement proche.
Moyens d'extinction inappropriés	: Aucun(e) à notre connaissance.
Dangers spécifiques pendant	: Ininflammable et incombustible.

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

la lutte contre l'incendie

- Produits de combustion dangereux : Les produits de décomposition peuvent éventuellement comprendre les substances suivantes: Oxydes de carbone Oxydes d'azote (NOx) Oxydes de soufre Oxydes de phosphore
- Équipement de protection spécial pour les pompiers : Utiliser un équipement de protection individuelle.
- Méthodes spécifiques d'extinction : Les résidus d'incendie et l'eau d'extinction contaminée doivent être éliminés conformément à la réglementation locale en vigueur. En cas d'incendie et/ou d'explosion, ne pas respirer les fumées.

SECTION 6. MESURES À PRENDRE EN CAS DE DISPERSION ACCIDENTELLE

- Précautions individuelles, équipement de protection et procédures d'urgence : Assurer une ventilation adéquate. Garder les personnes à l'écart de l'endroit de l'écoulement/de la fuite et dans le sens opposé au vent. Éviter l'inhalation, l'ingestion et le contact avec la peau et les yeux. Lorsque les travailleurs sont confrontés à des concentrations supérieures aux limites d'exposition, ils doivent porter des masques appropriés et agréés. S'assurer que le nettoyage est effectué uniquement par un personnel qualifié Voir mesures de protection en sections 7 et 8.
- Précautions pour la protection de l'environnement : Ne pas laisser entrer en contact avec le sol, les eaux de surface ou souterraines.
- Méthodes et matériel de confinement et de nettoyage : Obturer la fuite si cela peut se faire sans danger. Contenir et collecter le matériel répandu à l'aide d'un matériau absorbant non combustible, (p.e. sable, terre, terre de diatomées, vermiculite) et le mettre dans un conteneur pour l'élimination conformément aux réglementations locales / nationales (voir chapitre 13). En cas de déversement important, bloquer ou contenir les substances déversées afin que l'écoulement n'atteigne pas les voies d'eau. Éliminer les traces en déversant de l'eau.

SECTION 7. MANIPULATION ET STOCKAGE

- Conseils pour une manipulation sans danger : Ne pas ingérer. Ne pas respirer les poussières/ fumées/ gaz/ brouillards/ vapeurs/ aérosols. Éviter tout contact avec les yeux, la peau ou les vêtements. Se laver les mains soigneusement après manipulation. N'utiliser qu'avec une ventilation adéquate.
- Conditions de stockage sûres : Ne pas entreposer près des acides. Tenir hors de portée des enfants. Maintenir le récipient fermé de manière étanche. Entreposer dans des conteneurs appropriés bien étiquetés.
- Matière appropriée : Les données suivantes de compatibilité sont suggérées basé sur des données semblables et/ou l'expérience de l'industrie. La compatibilité en terme de transport et de stockage à long terme avec les matériaux de construction peut varier. Par conséquent, il est recommandé de tester la compatibilité avant utilisation.
- Matière non-appropriée : non déterminé

SECTION 8. CONTRÔLES DE L'EXPOSITION/ PROTECTION INDIVIDUELLE

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

Composants avec valeurs limites d'exposition professionnelle

Composants	No.-CAS	Type d'exposition	Concentration admissible	Base
Hydroxyde de sodium	1310-73-2	C	2 mg/m3	ACGIH
		Ceiling	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z1

Mesures d'ordre technique : Système efficace de ventilation par aspiration. Maintenir les concentrations dans l'air au-dessous des standards d'exposition professionnelle.

Équipement de protection individuelle

- Protection des yeux : Lunettes de sécurité à protection intégrale
Écran facial
- Protection des mains : Porter les équipements de protection individuelle suivants:
Type de gants standards.
Les gants devraient être jetés et remplacés s'il y a le moindre signe de dégradation ou de perméabilité chimique.
- Protection de la peau : Équipement de protection individuelle comprenant: gants de protection adaptés, lunettes de sécurité avec protections latérales et vêtements de protection
- Protection respiratoire : Lorsque les travailleurs sont confrontés à des concentrations supérieures aux limites d'exposition, ils doivent porter des masques appropriés et agréés.
- Mesures d'hygiène : À manipuler conformément aux bonnes pratiques d'hygiène industrielle et aux consignes de sécurité. Enlever et laver les vêtements contaminés avant réutilisation. Se laver le visage, les mains et toute partie de la peau exposée soigneusement après manipulation. Fournir les équipements nécessaires permettant de rincer ou laver abondamment les yeux et le corps rapidement en cas de contact ou de projection.

Caractérisation De L'exposition Des Personnes :

Selon nos recommandations concernant l'application du produit et l'équipement de protection individuelle à porter , l'exposition potentielle pour les personnes se définit comme suit : Faible

SECTION 9. PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

- Aspect : Liquide
- Couleur : Incolore
- Odeur : inodore
- Point d'éclair : > 93.3 °C, Méthode: ASTM D 93, Creuset fermé Pensky-Martens
- pH : 13.6, 100 %, Méthode: ASTM E 70
- Seuil olfactif : Donnée non disponible
- Point de fusion/point de congélation : POINT DE CONGÉLATION: < 0 °C, ASTM D-1177
- Point initial d'ébullition et : Donnée non disponible

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

intervalle d'ébullition

Taux d'évaporation	: similaire à l'eau
Inflammabilité (solide, gaz)	: Donnée non disponible
Limite d'explosivité, supérieure	: Donnée non disponible
Limite d'explosivité, inférieure	: Donnée non disponible
Pression de vapeur	: similaire à l'eau
Densité de vapeur relative	: Donnée non disponible
Densité relative	: 1.09, ASTM D-1298
Densité	: 9.1 lb/gal
Hydrosolubilité	: complètement soluble
Solubilité dans d'autres solvants	: Donnée non disponible
Coefficient de partage: n-octanol/eau	: Donnée non disponible
Température d'auto-inflammabilité	: Donnée non disponible
Décomposition thermique	: Donnée non disponible
Viscosité, dynamique	: < 4 mPa.s (22 °C), Méthode: ASTM D 2983
Viscosité, cinématique	: Donnée non disponible
Poids moléculaire	: Donnée non disponible
COV (composés organiques volatils)	: Donnée non disponible

SECTION 10. STABILITÉ ET RÉACTIVITÉ

Stabilité chimique	: Stable dans des conditions normales.
Possibilité de réactions dangereuses	: Pas de réactions dangereuses connues dans les conditions normales d'utilisation.
Conditions à éviter	: Températures de congélation Aucun(e) à notre connaissance.
Matières incompatibles	: Le contact avec des acides forts (p. ex., acide sulfurique, phosphorique, nitrique, chlorhydrique, chromique ou sulfonique) peut provoquer un dégagement de chaleur, un bouillonnement et un dégagement de vapeurs toxiques. Acides forts
Produits de décomposition dangereux	: Les produits de décomposition peuvent éventuellement comprendre les substances suivantes: Oxydes de carbone Oxydes d'azote (NOx)

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

Oxydes de soufre
Oxydes de phosphore

SECTION 11. INFORMATIONS TOXICOLOGIQUES

Informations sur les voies d'exposition probables : Inhalation, Contact avec les yeux, Contact avec la peau

Effets potentiels sur la santé

Yeux : Provoque des lésions oculaires graves.
Peau : Provoque des brûlures graves de la peau.
Ingestion : Provoque des brûlures de l'appareil digestif.
Inhalation : Peut provoquer une irritation du nez, de la gorge et des poumons.
Exposition chronique : Aucun risque pour la santé n'est connu ni prévisible dans les conditions normales d'utilisation.

Expérience de l'exposition humaine

Contact avec les yeux : Rougeur, Douleur, Corrosion
Contact avec la peau : Rougeur, Douleur, Corrosion
Ingestion : Corrosion, Douleur abdominale
Inhalation : Irritation respiratoire, Toux

Toxicité

Produit

Toxicité aiguë par voie orale : Estimation de la toxicité aiguë: > 5,000 mg/kg
Toxicité aiguë par inhalation : Donnée non disponible
Toxicité aiguë par voie cutanée : Estimation de la toxicité aiguë: > 5,000 mg/kg
Corrosion cutanée/irritation cutanée : Donnée non disponible
Lésions oculaires graves/irritation oculaire : Donnée non disponible
Sensibilisation respiratoire ou cutanée : Donnée non disponible
Cancérogénicité : Aucun composant de ce produit présent à des concentrations plus grandes que ou égales à 0,1% n'a été identifié comme cancérigène probable, possible ou reconnu pour l'homme par IARC.
Effets sur la reproduction : Donnée non disponible
Mutagénicité sur les cellules germinales : Donnée non disponible

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

Tératogénicité : Donnée non disponible

Toxicité spécifique pour certains organes cibles - exposition unique : Donnée non disponible

Toxicité spécifique pour certains organes cibles - exposition répétée : Donnée non disponible

Toxicité par aspiration : Donnée non disponible

Identification Des Dangers Pour Les Humains

Selon notre évaluation , les dangers potentiels pour les humains sont les suivants: Élevé

SECTION 12. INFORMATIONS ÉCOLOGIQUES

Écotoxicité

Effets sur l'environnement : Ce produit n'est associé à aucun effet écotoxicologique connu.

Produit

Toxicité pour les poissons : CL50 Oncorhynchus mykiss (Truite arc-en-ciel): > 5,000 mg/l
Durée d'exposition: 96 Heure
Substance d'essai: Produit
Type de Test: Statique

NOEC Oncorhynchus mykiss (Truite arc-en-ciel): 5,000 mg/l
Durée d'exposition: 96 Heure
Substance d'essai: Produit
Type de Test: Statique

Toxicité pour la daphnie et les autres invertébrés aquatiques. : CE50 Daphnia magna (Grande daphnie): 3,536 mg/l
Durée d'exposition: 48 Heure
Substance d'essai: Produit
Type de Test: Statique

NOEC Daphnia magna (Grande daphnie): 2,500 mg/l
Durée d'exposition: 48 Heure
Substance d'essai: Produit
Type de Test: Statique

Toxicité pour les algues : Donnée non disponible

Persistance et dégradabilité

Donnée non disponible

Mobilité

Donnée non disponible

Potentiel de bioaccumulation

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

Donnée non disponible

Autres informations

Donnée non disponible

EFFETS SUR L'ENVIRONNEMENT

Selon notre évaluation des dangers, le danger potentiel pour l'environnement est le suivant: Faible

Selon les caractéristiques du produit et l'application que nous recommandons, le danger potentiel pour l'environnement est le suivant : Faible

SECTION 13. CONSIDÉRATIONS RELATIVES À L'ÉLIMINATION

Selon le règlement 347 en Ontario, les déchets appartiennent à la classe : 148C

Méthodes d'élimination : Dans la mesure du possible le recyclage est préférable à l'élimination ou à l'incinération. Si le recyclage n'est pas possible, éliminer conformément aux réglementations locales. Disposer des déchets dans une installation approuvée pour le traitement des déchets.

Considérations relatives à l'élimination : Éliminer comme produit non utilisé. Les conteneurs vides doivent être acheminés vers un site agréé pour le traitement des déchets à des fins de recyclage ou d'élimination. Ne pas réutiliser des récipients vides.

SECTION 14. INFORMATIONS RELATIVES AU TRANSPORT

L'expéditeur est responsable de s'assurer que l'emballage, l'étiquetage, et les inscriptions sont conformes au mode de transport sélectionné.

TDG

Nom d'expédition des Nations unies : HYDROXYDE DE SODIUM, EN SOLUTION
Nom(s) technique(s) :
UN/ID No. : ONU1824
Classe(s) de danger pour le transport : 8
Groupe d'emballage : III

Transport aérien (IATA)

Nom d'expédition des Nations unies : HYDROXYDE DE SODIUM, EN SOLUTION
Nom(s) technique(s) :
UN/ID No. : ONU 1824
Classe(s) de danger pour le transport : 8
Groupe d'emballage : III

Transport maritime (IMDG/IMO)

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

Nom d'expédition des Nations unies : HYDROXYDE DE SODIUM, EN SOLUTION
Nom(s) technique(s) :
UN/ID No. : ONU 1824
Classe(s) de danger pour le transport : 8
Groupe d'emballage : III

SECTION 15. INFORMATIONS RELATIVES À LA RÉGLEMENTATION

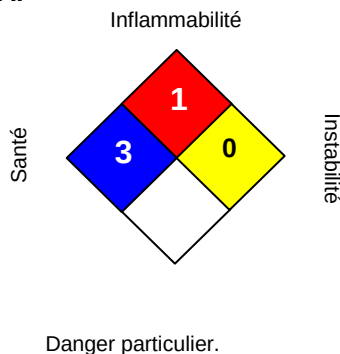
Ce produit a été classé selon les critères de risque du RPH et la FDS contient toutes les informations exigées par le RPH.

LOI CANADIENNE SUR LA PROTECTION DE L'ENVIRONNEMENT (LCPE/CEPA) :

La substance (les substances) dans cette préparation sont inclus dans ou a exempté de la Liste de Substance Domestique (le DSL).

SECTION 16. AUTRES INFORMATIONS

NFPA:



HMIS III:

SANTÉ	3
INFLAMMABILITÉ	1
DANGER PHYSIQUE	0

0 = non significatif(ve), 1 = Léger,
2 = Modéré, 3 = Elevé
4 = Extrême, * = Chronique

Du fait de notre engagement dans la gestion responsable des produits, nous avons évalué les risques que ce produit pose pour l'homme et pour l'environnement, ainsi que les types d'exposition. Nous avons caractérisé les risques généraux du produit en fonction de l'usage que nous recommandons pour ce produit. Cette information devrait vous servir de guide dans vos propres pratiques de gestion des risques. Nous avons évalué les risques du produit comme suit :

* Le risque pour l'homme est le suivant : Faible

* Le risque pour l'environnement est le suivant : Faible

Tout usage non conforme à nos recommandations peut influencer sur la caractérisation des risques. Nos représentants techniques vous aideront à déterminer si l'application que vous faites du produit est conforme à nos recommandations. Ensemble, nous pouvons mettre en place un processus valable pour la gestion des risques.

Date de révision : 2016/06/22
Nombre De Version : 1.0
Rédigé par : Regulatory Affairs (905)633-1000

FICHE DE DONNÉES DE SÉCURITÉ

NALCO BT-3011 BOILER WATER TREATMENT

INFORMATIONS RÉVISÉES : Les modifications importantes apportées aux informations réglementaires et aux informations de santé sont signalées dans cette révision par un trait dans la marge gauche de la fiche de données de sécurité.

Les informations contenues dans la présente fiche de sécurité ont été établies sur la base de nos connaissances à la date de publication de ce document. Ces informations ne sont données qu'à titre indicatif en vue de permettre des opérations de manipulation, fabrication, stockage, transport, distribution, mise à disposition, utilisation et élimination dans des conditions satisfaisantes de sécurité, et ne sauraient donc être interprétées comme une garantie ou considérées comme des spécifications de qualité. Ces informations ne concernent en outre que le produit nommément désigné et, sauf indication contraire spécifique, peuvent ne pas être applicables en cas de mélange dudit produit avec d'autres substances ou utilisables pour tout procédé de fabrication. Pour des copies additionnelles d'une fiche de données de sécurité, veuillez visiter le site www.nalco.com et demander un accès

Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: **NALCO ELIMIN-OX™**
Substance type: CLP Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Use of the Substance/Mixture : OXYGEN SCAVENGER
Identified uses : Boiler treatment under 1T per day
Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

COMPANY IDENTIFICATION
NALCO EUROPE B.V.
Postbus 627
2300 AP Leiden, The Netherlands
TEL: 0031 71 5241100

LOCAL COMPANY IDENTIFICATION
Nalco Ltd.
P.O. BOX 11, WINNINGTON AVENUE
NORTHWICH, CHESHIRE, U.K. CW8 4DX
TEL: +44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

1.4 Emergency telephone number:

Emergency telephone number : +32-(0)3-575-5555 Trans-European

Date of Compilation/Revision: 19.04.2018
Version Number: 1.4

Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitization, Category 1 H317

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H317 May cause an allergic skin reaction.

Precautionary Statements : **Prevention:**
P260 Do not breathe
dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be
allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/
eye protection/ face protection.

NALCO ELIMIN-OX™**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P363 Wash contaminated clothing before reuse.

Hazardous components which must be listed on the label:
 Carbohydrazide

2.3 Other hazards

None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS**3.2 Mixtures****Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Carbohydrazide	497-18-7 207-837-2 01-2119965166-31	Skin sensitization Sub-category 1A; H317	5 - < 10

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES**4.1 Description of first aid measures**

If inhaled : Get medical attention if symptoms occur.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
 Use a mild soap if available.
 Wash clothing before reuse.
 Thoroughly clean shoes before reuse.
 Get medical attention.

In case of eye contact : Rinse with plenty of water.
 Get medical attention if symptoms occur.

If swallowed : Rinse mouth.
 Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action.
 Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

NALCO ELIMIN-OX™

Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)

5.3 Advice for firefighters

Special protective equipment for firefighters : Use personal protective equipment.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Flush away traces with water.
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

NALCO ELIMIN-OX™**Section: 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

- Advice on safe handling : Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, CPVC (rigid), HDPE (high density polyethylene), Plexiglass, Polypropylene, PVC, PTFE, Polyvinylidene difluoride, Perfluoroelastomer, EPDM, Fluoroelastomer, Nitrile, Plasite 7122, Buna-N
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Mild steel, Neoprene, Nylon

7.3 Specific end uses

- Specific use(s) : OXYGEN SCAVENGER

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Contains no substances with occupational exposure limit values.

DNEL

Carbohydrazide	:	End Use: Workers Exposure routes: Inhalation Value: 2.64 mg/m ³
	:	End Use: Workers Exposure routes: Dermal Value: 0.75 mg/cm ²
	:	End Use: Consumers Exposure routes: Ingestion Value: 0.38 ppm

PNEC

Carbohydrazide	:	Fresh water Value: 0.0015 mg/l
	:	Marine water Value: 0.00015 mg/l
	:	Intermittent use/release Value: 0.015 mg/l

NALCO ELIMIN-OX™

		Sewage treatment plant Value: 2.5 mg/l

8.2 Exposure controls**Appropriate engineering controls**

Effective exhaust ventilation system.

Maintain air concentrations below occupational exposure standards.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Safety glasses

Hand protection (EN 374) : Recommended preventive skin protection
Gloves
Nitrile rubber
butyl-rubber
Breakthrough time: 1 – 4 hours
Minimum thickness for butyl-rubber 0.7 mm for nitrile rubber 0.4 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605) : Wear suitable protective clothing.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, 89/686/EEC), or equivalent, with filter type:P

Environmental exposure controls

General advice : Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance : Liquid

Colour : colourless

Odour : odourless

Flash point :
Will not burn: inorganic or water-based product

NALCO ELIMIN-OX™

pH	: 8.5 - 10, 1 % Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: FREEZING POINT: -2 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 12 mm Hg (20 °C)
Relative vapour density	: no data available
Relative density	: 1.02 (20 °C)
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity	
Viscosity, dynamic	: 2.9 mPa.s (15.6 °C)
Viscosity, kinematic	: no data available
Explosive properties	: no data available
Oxidizing properties	: no data available

9.2 Other information

no data available

Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

NALCO ELIMIN-OX™

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity	: LD50 rat: > 5,000 mg/kg Test substance: Product
Acute inhalation toxicity	: There is no data available for this product.
Acute dermal toxicity	: LD50 rabbit: > 2,000 mg/kg Test substance: Product
Acute dermal toxicity	: There is no data available for this product.
Skin corrosion/irritation	: Species: Rabbit Result: 0.2 Method: Draize Test Test substance:Product
Serious eye damage/eye irritation	: Species: rabbit Result: 0.3 Method: Draize Test Test substance: Product
Respiratory or skin sensitization	: Result: May cause an allergic skin reaction.
Carcinogenicity	: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive effects	: No toxicity to reproduction
Germ cell mutagenicity	: Not mutagenic in Ames Test.
Teratogenicity	: There is no data available for this product.
STOT - single exposure	: Based on available data, the classification criteria are not met.

NALCO ELIMIN-OX™

STOT - repeated exposure : There is no data available for this product.

Aspiration toxicity : No aspiration toxicity classification

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.

Skin : May cause allergic skin reaction.

Ingestion : Health injuries are not known or expected under normal use.

Inhalation : Health injuries are not known or expected under normal use.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : No symptoms known or expected.

Skin contact : Redness, Irritation, Allergic reactions

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

No symptoms known or expected.

Further information : no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Product

Environmental Effects : This product has no known ecotoxicological effects.

Toxicity to fish : 96 hrs LC50 Oncorhynchus mykiss (rainbow trout): 360 mg/l
Test substance: Product

96 hrs LC50 Lepomis macrochirus (Bluegill sunfish):
190 mg/l
Test substance: Product

96 hrs LC50 Pimephales promelas (fathead minnow):
400 mg/l
Test substance: Product

96 hrs LC50 Flatfish, flounder: 156 mg/l
Test substance: Product
Test Type: Static
Method: OSPARCOM 1995
GLP: yes

NALCO ELIMIN-OX™

96 hrs NOEC Pimephales promelas (fathead minnow):
100 mg/l
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : 48 hrs LC50 Acartia tonsa: 70 mg/l
Test substance: Product
Test Type: Static
Method: ISO TC147SC5WG2
GLP: yes

240 hrs LC50 Corophium volutator: > 10,000 mg/l
Test substance: Product
Test Type: Static
GLP: yes

Toxicity to algae : 72 hrs EC50 Skeletonema costatum (marine diatom):
45 mg/l
Test substance: Product
Method: ISO 10253 part B
GLP: yes

Components

Toxicity to fish : Carbohydrazide
96 h LC50: 17.93 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates : Carbohydrazide
48 h EC50: 8.3 mg/l

Components

Toxicity to algae : Carbohydrazide
72 h EC50: 1.5 mg/l

Components

Toxicity to bacteria : Carbohydrazide
230 mg/l
Method: OECD Test Guideline 209

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Carbohydrazide
7 d NOEC: 0.98 mg/l

12.2 Persistence and degradability

Product

Biodegradability : Greater than 95% of this product consists of inorganic substances for which a biodegradation value is not applicable.

Chemical Oxygen Demand (COD): 24,000 mg/l

BOD/COD Ratio: 100 % (Active Substance)

Components

NALCO ELIMIN-OX™

Biodegradability : Carbohydrazide
Result: Readily biodegradable.

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

Product

This substance is water soluble and is expected to remain primarily in water.

12.5 Results of PBT and vPvB assessment

Product

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No adverse effects expected.

Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

- | | |
|-----------------------------------|---|
| Product | : Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.
Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers. |
| Guidance for Waste Code selection | : Inorganic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations. |

Section: 14. TRANSPORT INFORMATION

NALCO ELIMIN-OX™

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Air transport (IATA)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.

Sea transport (IMDG/IMO)

14.1 UN number:	Not applicable.
14.2 UN proper shipping name:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es):	Not applicable.
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	No
14.6 Special precautions for user:	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

Section: 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

INTERNATIONAL REGULATIONS

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act
 When use situations necessitate compliance with FDA regulations, this product is acceptable under: 21 CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods., the following use conditions.

For use only in pulp and papermill boilers where the steam is used to treat pulp and paper in the manufacture of paper and paperboard that may be used to package food. Limitations: no more than required to produce intended technical effect.

KOSHER

This product has been certified as KOSHER/PAREVE for year-round use EXCEPT FOR THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

NSF NON-FOOD COMPOUNDS REGISTRATION PROGRAM (former USDA List of Proprietary Substances & Non-Food Compounds):

NSF Registration number for this product is: 145925

This product is acceptable for treatment of cooling and retort water (G5) in and around food processing areas. This product is acceptable for treating boilers, steam lines, and/or cooling systems (G7) where

NALCO ELIMIN-OX™

neither the treated water nor the steam produced may contact edible products in and around food processing areas.

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

NATIONAL REGULATIONS GERMANY

Water contaminating class : WGK 1

(Germany) Classification according VwVwS, Annex 4.

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out.

Section: 16. OTHER INFORMATION

Procedure used to derive the classification according to REGULATION (EC) No 1272/2008

Classification	Justification
Skin sensitization 1, H317	Calculation method

Full text of H-Statements

H317 May cause an allergic skin reaction.

Full text of other abbreviations

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of

NALCO ELIMIN-OX™

Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERICards, Non European official regulatory data and other data sources.

Prepared By : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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.

Annex: Exposure Scenarios

Exposure Scenario: Boiler treatment under 1T per day

Life Cycle Stage : Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU23** Electricity, steam, gas water supply and sewage treatment

Contributing scenario controlling environmental exposure for:

Environmental release category : **ERC4** Industrial use of processing aids in processes and products, not becoming part of articles

Daily amount per site : 1000 kg

Type of Sewage Treatment Plant : none

Contributing scenario controlling worker exposure for:

Process category : **PROC15** Use as laboratory reagent

NALCO ELIMIN-OX™

Exposure duration : 60.00 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation with 90% efficiency is required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

Contributing scenario controlling worker exposure for:

Process category : **PROC1** Use in closed process, no likelihood of exposure

Exposure duration : 60 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

Contributing scenario controlling worker exposure for:

Process category : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

Exposure duration : 15 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

Contributing scenario controlling worker exposure for:

Process category : **PROC28** Manual maintenance (cleaning and repair) of machinery

Exposure duration : 240 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

NALCO ELIMIN-OX™

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

SAFETY DATA SHEET

NALCO® TRAC115

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® TRAC115

Other means of identification : Not applicable.

Recommended use : CLOSED LOOP TREATMENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/28/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Skin irritation : Category 2

Eye irritation : Category 2A

Specific target organ toxicity - single exposure (Oral) : Category 1 (Blood)

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
Causes damage to organs (Blood) if swallowed.

Precautionary Statements : **Prevention:**
Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/ eye protection/ face protection.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed: Call a POISON CENTER or doctor/ physician.

SAFETY DATA SHEET

NALCO® TRAC115

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Nitrite	7632-00-0	10 - 30
Sodium Tetraborate	1330-43-4	1 - 5
Sodium Hydroxide	1310-73-2	1 - 5

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.

SAFETY DATA SHEET

NALCO® TRAC115

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Isolate absorbed wastes contaminated with this product from other waste streams containing combustible materials (paper, wood fibers, cloth, etc.). Combustible materials exposed to this product should be rinsed immediately with large amounts of water to ensure that all product is removed. Residual product which is allowed to dry on organic materials such as rags, cloths, paper, fabrics, cotton, leather, wood, or other combustibles may spontaneously ignite and result in a fire.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Avoid contact with skin and eyes. Do not ingest. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep in a cool, well-ventilated place. Do not store near acids. Keep away from reducing agents. Keep away from combustible material. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : Keep in properly labelled containers.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

SAFETY DATA SHEET

NALCO® TRAC115

Skin protection	: Wear suitable protective clothing.
Respiratory protection	: No personal respiratory protective equipment normally required.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: yellow
Odour	: hydrocarbon-like
Flash point	: Not applicable.
pH	: 11.5, (25 °C)
Odour Threshold	: no data available
Melting point/freezing point	: no data available
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.220, (25 °C),
Density	: no data available
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

SAFETY DATA SHEET

NALCO® TRAC115

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Amines Strong acids Reducing agents
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes serious eye irritation.
Skin	: Causes skin irritation.
Ingestion	: Harmful if swallowed.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: May cause damage to organs.

Experience with human exposure

Eye contact	: Redness, Pain, Irritation
Skin contact	: Redness, Irritation
Ingestion	: No information available.
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: 731.71 mg/kg
Acute inhalation toxicity	: no data available

SAFETY DATA SHEET

NALCO® TRAC115

Acute dermal toxicity	: no data available
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: Causes damage to organs if swallowed.
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): 384 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

NOEC Oncorhynchus mykiss (rainbow trout): 125 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

Toxicity to daphnia and other aquatic invertebrates : LC50 Ceriodaphnia dubia: 159 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

NOEC Ceriodaphnia dubia: 62.5 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

Persistence and degradability

no data available

Mobility

no data available

SAFETY DATA SHEET

NALCO® TRAC115

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

- Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name(s) : Sodium Nitrite
UN/ID No. : UN 3082
Transport hazard class(es) : 9
Packing group : III
Reportable Quantity (per package) : 406 lbs
RQ Component : Sodium Nitrite

Air transport (IATA)

- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name(s) : Sodium Nitrite
UN/ID No. : UN 3082
Transport hazard class(es) : 9
Packing group : III
Reportable Quantity (per package) : 406 lbs
RQ Component : Sodium Nitrite

Sea transport (IMDG/IMO)

- Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

SAFETY DATA SHEET

NALCO® TRAC115

TSCA list : The following substance(s) is/are subject to a Significant New Use Rule: Sodium Nitrite

The following substance(s) is/are subject to TSCA 12(b) export notification requirements: Sodium Nitrite

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Nitrite	7632-00-0	100	406

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Specific target organ toxicity (single or repeated exposure)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Sodium Nitrite	7632-00-0	20 - 30 %
----------------	-----------	-----------

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Industrial Chemical (Notification and Assessment) Act

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory
not determined

Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

China Inventory of Existing Chemical Substances

On the inventory, or in compliance with the inventory.

SAFETY DATA SHEET

NALCO® TRAC115

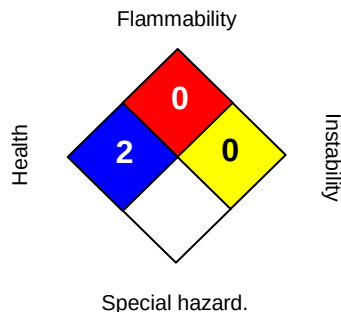
Taiwan Chemical Substance Inventory
not determined

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/28/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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. For additional copies of an SDS visit www.nalco.com and request access.

SAFETY DATA SHEET

Tri-ACT™ 1800

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Tri-ACT™ 1800

Other means of identification : Not applicable.

Recommended use : CORROSION INHIBITOR

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630)305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 11/10/2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Dermal) : Category 4

Skin corrosion : Category 1

Serious eye damage : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
Harmful if swallowed or in contact with skin
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment. Take precautionary measures

SAFETY DATA SHEET

Tri-ACT™ 1800

against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. 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. Immediately call a POISON CENTER/doctor. 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 or doctor/ physician.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Monoethanolamine	141-43-5	10 - 30
Methoxypropylamine	5332-73-0	10 - 30
Cyclohexylamine	108-91-8	5 - 10

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
In case of skin contact	: Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
If swallowed	: Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
If inhaled	: Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Foam Carbon dioxide Dry powder Other extinguishing agent suitable for Class B fires
------------------------------	--

SAFETY DATA SHEET

Tri-ACT™ 1800

For large fires, use water spray or fog, thoroughly drenching the burning material.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
nitrogen oxides (NOx)

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Do not store near acids. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

SAFETY DATA SHEET

Tri-ACT™ 1800

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: HDPE (high density polyethylene), Polypropylene (rigid), Stainless Steel 304, Surface-modified HDPE (high density polyethylene), Perfluoroelastomer, Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Carbon Steel C1018, Epoxyresin coating

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Monoethanolamine	141-43-5	TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH
		TWA	3 ppm 8 mg/m ³	NIOSH REL
		STEL	6 ppm 15 mg/m ³	NIOSH REL
		TWA	3 ppm 6 mg/m ³	OSHA Z1
Methoxypropylamine	5332-73-0	TWA	5 ppm	AIHA WEEL
		STEL	15 ppm	AIHA WEEL
Cyclohexylamine	108-91-8	TWA	10 ppm	ACGIH
		TWA	10 ppm 40 mg/m ³	NIOSH REL

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

SAFETY DATA SHEET

Tri-ACT™ 1800

Appearance	: Liquid
Colour	: colourless
Odour	: amine-like
Flash point	: 57 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: 12.4 - 13.4,(100 %), Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: FREEZING POINT: -13.3 °C, ASTM D-1177
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 28 mm Hg, (37.7 °C), 11 mm Hg, (68 °C),
Relative vapour density	: no data available
Relative density	: 0.99 - 1.0, (25 °C), ASTM D-1298
Density	: 8.2 - 8.3 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: 5 mPa.s (25 °C), Method: ASTM D 2983
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents Strong acids

SAFETY DATA SHEET

Tri-ACT™ 1800

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NO_x)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Harmful in contact with skin. Causes severe skin burns. May cause allergic skin reaction.

Ingestion : Harmful if swallowed. Causes digestive tract burns.

Inhalation : May cause respiratory tract irritation. May cause nose, throat, and lung irritation.

Chronic Exposure : Suspected of damaging fertility or the unborn child.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions

Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : no data available

Acute inhalation toxicity : Acute toxicity estimate: 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : rabbit: > 2,000 mg/kg
Test substance: Product
Acute toxicity estimate: 1,723 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : no data available

Reproductive effects : Prolonged exposure to cyclohexylamine in the diet has produced reproductive effects in rats. The relevance to humans is unknown.

SAFETY DATA SHEET

Tri-ACT™ 1800

Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : no data available

Components

Acute oral toxicity : Monoethanolamine
LD50 rat: 1,089 mg/kg
Methoxypropylamine
LD50 rat: 688 mg/kg
Cyclohexylamine
LD50 rat: 432 mg/kg

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): 194 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Oncorhynchus mykiss (rainbow trout): 200 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Inland Silverside: 1,464.3 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Pimephales promelas (fathead minnow): 150 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Oncorhynchus mykiss (rainbow trout): 150 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): 326 mg/l
Exposure time: 48 hrs
Test substance: Product

LC50 Mysid Shrimp (Mysidopsis bahia): 614.0 mg/l
Exposure time: 96 hrs
Test substance: Product

EC50 Daphnia magna (Water flea): 250 - 400 mg/l
Exposure time: 48 hrs

SAFETY DATA SHEET

Tri-ACT™ 1800

Test substance: Product

NOEC Daphnia magna (Water flea): 250 mg/l

Exposure time: 48 hrs

Test substance: Product

NOEC Mysid Shrimp (Mysidopsis bahia): 250 mg/l

Exposure time: 96 hrs

Test substance: Product

Components

Toxicity to algae : Methoxypropylamine
EC50 : 31 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Chemical Oxygen Demand (COD): 524,000 mg/l

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D001, D002

Disposal methods : Where possible recycling is preferred to disposal or

SAFETY DATA SHEET

Tri-ACT™ 1800

incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.
Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Air transport (IATA)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.
Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Sea transport (IMDG/IMO)

Proper shipping name : AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.
Technical name(s) : METHOXYPROPYLAMINE, CYCLOHEXYLAMINE
UN/ID No. : UN 2734
Transport hazard class(es) : 8, 3
Packing group : II

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Cyclohexylamine	108-91-8	10000	100503

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SAFETY DATA SHEET

Tri-ACT™ 1800

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:
Cyclohexylamine 108-91-8

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

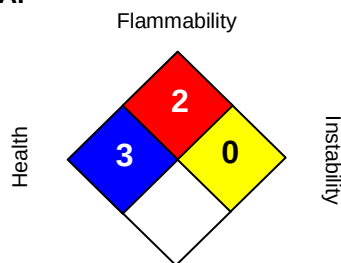
All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

Tri-ACT™ 1800

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 11/10/2017
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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. For additional copies of an SDS visit www.nalco.com and request access.

SAFETY DATA SHEET

NALSPERSE™ 73550

Section: 1. IDENTIFICATION

Product name : NALSPERSE™ 73550

Other means of identification : Not applicable.

Recommended use : CLEAN TOWER BIODETERGENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Canada ULC
1055 Truman Street
Burlington, Ontario L7R 3Y9
Canada
TEL: (905) 633-1000

Emergency telephone number : (800) 463-3216 (24 Hours) CHEMTREC

Issuing date : 2022/10/19

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes serious eye damage.

Precautionary Statements : **Prevention:**
Wear eye protection/face protection.
Response:
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 or doctor/ physician.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name/Common Name/Synonyms	CAS-No.	Concentration: (%) (w/w) *
C8-10 Polyglycoside	68515-73-1	30 - 60

SAFETY DATA SHEET

NALSPERSE™ 73550

C10-16 Polyglycoside

110615-47-9

10 - 30

* Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed :

Potential Health Effects

- Eyes : Causes serious eye damage.
- Skin : Health injuries are not known or expected under normal use.
- Ingestion : Health injuries are not known or expected under normal use.
- Inhalation : Health injuries are not known or expected under normal use.
- Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

- Eye contact : Redness, Pain, Corrosion
- Skin contact : No symptoms known or expected.
- Ingestion : No symptoms known or expected.
- Inhalation : No symptoms known or expected.

Additional information on delayed, immediate or chronic effects from short or long term exposure is not available.

SAFETY DATA SHEET

NALSPERSE™ 73550

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
- Special protective equipment and precautions for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer also to safe handling in Section 7 and personal protective equipment in Section 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

SAFETY DATA SHEET

NALSPERSE™ 73550

- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Buna-N, HDPE (high density polyethylene), Polypropylene, Polyethylene, Stainless Steel 304, Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Brass, Neoprene, Mild steel, Epoxy phenolic resin

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : No personal respiratory protective equipment normally required.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Human Exposure Characterization :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : clear
- Odour : Mild
- Flash point : > 93.3 °C
- pH : 8 - 10, Concentration: 50.00 g/l, (20 °C)
- Odour Threshold : no data available

SAFETY DATA SHEET

NALSPERSE™ 73550

Melting point/freezing point	: POUR POINT: -5 °C
Initial boiling point and boiling range	: > 100 °C, (760 mm Hg)
Evaporation rate	: not determined
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: < 0.1 hPa, (20 °C),
Relative vapour density	: no data available
Relative density	: 1.090 - 1.130, (25 °C),
Density	: 1.1 g/cm ³ , 9.2 lb/gal
Water solubility	: dispersible
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: > 300 °C
Thermal decomposition	: no data available
Viscosity, dynamic	: 210 mPa.s (40 °C)
Viscosity, kinematic	: 190 mm ² /s (40 °C)
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact, Ingestion

Potential Health Effects

SAFETY DATA SHEET

NALSPERSE™ 73550

Eyes	: Causes serious eye damage.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: Redness, Pain, Corrosion
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: LD50 rat: > 5,000 mg/kg Test substance: Similar Product
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: LD50 rabbit: > 2,000 mg/kg Test substance: Similar Product
Skin corrosion/irritation	: Species: Rabbit Result: 1.3 Method: Draize Test Test substance: Similar Product
Serious eye damage/eye irritation	: Species: rabbit Result: 59 - 92 Method: Draize Test Test substance: Similar Product
Respiratory or skin sensitization	: no data available
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available
Further information	: Additional information on delayed, immediate or chronic effects from short or long term exposure is not available.

Human Hazard Characterization

SAFETY DATA SHEET

NALSPERSE™ 73550

Based on our hazard characterization, the potential human hazard is: Moderate

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Harmful to aquatic life.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): 19 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Inland Silverside: 19 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Leuciscus idus (Golden orfe): 30 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Pimephales promelas (fathead minnow): 21.35 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Oncorhynchus mykiss (rainbow trout): 15 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Inland Silverside: 15 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Leuciscus idus (Golden orfe): 10 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): 76 mg/l
Exposure time: 48 hrs
Test substance: Product

LC50 Mysid Shrimp (Mysidopsis bahia): 5.9 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Ceriodaphnia dubia: 28.3 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 Daphnia magna (Water flea): 76 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 Mysid Shrimp (Mysidopsis bahia): 5.4 mg/l

SAFETY DATA SHEET

NALSPERSE™ 73550

Exposure time: 96 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 25 mg/l
Exposure time: 48 hrs
Test substance: Product

Toxicity to algae : no data available
Toxicity to daphnia and other : LOEC: 40 mg/l
aquatic invertebrates Exposure time: 7 Days
(Chronic toxicity) Species: Ceriodaphnia dubia
Test substance: Product

EC25 / IC25: 24.2 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product

NOEC: 20 mg/l
Exposure time: 7 Days
Species: Ceriodaphnia dubia
Test substance: Product

Components

Toxicity to algae : C8-10 Polyglycoside
EC50 : 18 mg/l
Exposure time: 72 h
C10-16 Polyglycoside
EC50 Desmodesmus subspicatus (green algae): 12.5 mg/l
Exposure time: 72 h

Components

Toxicity to fish (Chronic : C10-16 Polyglycoside
toxicity) NOEC: 1.8 mg/l
Exposure time: 28 d
Species: Danio rerio (zebra fish)

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Total Organic Carbon (TOC) : 250,000 mg/l

Chemical Oxygen Demand (COD): 850,000 mg/l

Biochemical Oxygen Demand (BOD):

Incubation Period

Value

400,000 mg/l

Test Descriptor

Mobility

SAFETY DATA SHEET

NALSPERSE™ 73550

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	10 - 30%
Soil	:	50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Moderate

Section: 13. DISPOSAL CONSIDERATIONS

In Ontario, the waste class under Regulation 347 is: 263L

Disposal methods	:	Do not contaminate storm water drains, natural waterways or soil with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
------------------	---	---

Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
-------------------------	---	--

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (TDG)

Proper shipping name	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
----------------------	---	--

Air transport (IATA)

Proper shipping name	:	PRODUCT IS NOT REGULATED DURING TRANSPORTATION
----------------------	---	--

SAFETY DATA SHEET

NALSPERSE™ 73550

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

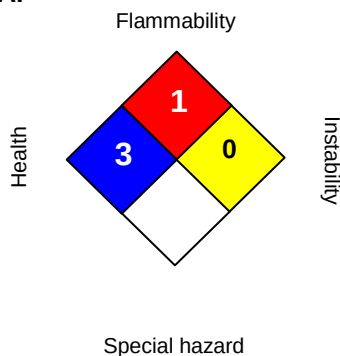
This product has been classified according to the hazard criteria of the HPR and the SDS contains all of the information required by the HPR.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Moderate

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

Revision Date : 2022/10/19
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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

SAFETY DATA SHEET

NALSPERSE™ 73550

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. For additional copies of an SDS visit www.ecolab.com/sds and request access.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

SECTION 1. IDENTIFICATION

Product name : NOROX MEKP-925H FRED

Manufacturer or supplier's details

Company name of supplier : United Initiators GmbH

Address : Dr.-Gustav-Adolph-Str. 3
Pullach 09 D-82049

Emergency telephone : +49 / 89 / 74422 – 0 (24 h)

E-mail address of person responsible for the SDS : contact@united-in.com

Recommended use of the chemical and restrictions on use

Recommended use : Hardener

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids : Category 4
Organic peroxides : Type D
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Reproductive toxicity : Category 1B
Acute aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H227 Combustible liquid.
H242 Heating may cause a fire.
H302 + H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H360 May damage fertility or the unborn child.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

H401 Toxic to aquatic life.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234 Keep only in original packaging.
P240 Ground and bond container and receiving equipment.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 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.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage:

P403 Store in a well-ventilated place.
P405 Store locked up.
P410 Protect from sunlight.
P411 Store at temperatures not exceeding < 100 °F/ < 38 °C.
P420 Store separately.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Substance / Mixture : Mixture

Chemical nature : Organic Peroxide
Liquid

Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Dimethyl phthalate	131-11-3	>= 45 - < 50
2-Butanone, peroxide	1338-23-4	>= 30 - < 35
Trimethylpentanediol isobutyrate	6846-50-0	>= 15 - < 20
Butanone	78-93-3	>= 1 - < 5
Hydrogen peroxide	7722-84-1	>= 1 - < 5
N-Methyl-2-pyrrolidone	872-50-4	>= 1 - < 5

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.
Call a physician immediately.

If inhaled : Call a physician or poison control center immediately.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
Call a physician immediately.
If breathed in, move person into fresh air.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash contaminated clothing before re-use.
If on skin, rinse well with water.
If on clothes, remove clothes.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Call a physician immediately.
Rinse mouth thoroughly with water.

Most important symptoms : Harmful if swallowed or if inhaled.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version 1.1	Revision Date: 09/22/2017	SDS Number: 600000000118	Print Date: 09/26/2017
----------------	------------------------------	-----------------------------	---------------------------

and effects, both acute and delayed		Causes serious eye damage. May damage fertility or the unborn child. Causes severe burns.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing
Notes to physician	:	Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite. Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Cool closed containers exposed to fire with water spray.
Specific extinguishing methods	:	Do not use a solid water stream as it may scatter and spread fire. Remove undamaged containers from fire area if it is safe to do so. Use water spray to cool unopened containers.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Remove all sources of ignition. Follow safe handling advice and personal protective equipment recommendations. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
---	---	--

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Never return spills in original containers for re-use.
Treat recovered material as described in the section "Disposal considerations".

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.
Clear spills immediately.
Suppress (knock down) gases/vapors/mists with a water spray jet.
To clean the floor and all objects contaminated by this material, use plenty of water.
Soak up with inert absorbent material.
Isolate waste and do not reuse.
Non-sparking tools should be used.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from combustible material.

Advice on safe handling : Do not swallow.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Avoid formation of aerosol.
Take precautionary measures against static discharges.
Never return any product to the container from which it was originally removed.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid confinement.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.
For personal protection see section 8.
Protect from contamination.

Conditions for safe storage : Avoid impurities (e.g. rust, dust, ash), risk of decomposition.
Electrical installations / working materials must comply with

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

the technological safety standards.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Store in original container.
Keep containers tightly closed in a cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid : Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : < 38 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dimethyl phthalate	131-11-3	TWA	5 mg/m ³	CA AB OEL
		TWA	5 mg/m ³	CA BC OEL
		TWAEV	5 mg/m ³	CA QC OEL
		TWA	5 mg/m ³	ACGIH
2-Butanone, peroxide	1338-23-4	(c)	0.2 ppm 1.4 mg/m ³	CA AB OEL
		C	0.2 ppm	CA BC OEL
		C	0.2 ppm 1.5 mg/m ³	CA QC OEL
		C	0.2 ppm	ACGIH
Butanone	78-93-3	TWA	200 ppm 590 mg/m ³	CA AB OEL
		STEL	300 ppm 885 mg/m ³	CA AB OEL
		TWA	50 ppm	CA BC OEL
		STEL	100 ppm	CA BC OEL
		TWAEV	50 ppm 150 mg/m ³	CA QC OEL
		STEV	100 ppm 300 mg/m ³	CA QC OEL
		TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH
Hydrogen peroxide	7722-84-1	TWA	1 ppm 1.4 mg/m ³	CA AB OEL
		TWA	1 ppm	CA BC OEL
		TWAEV	1 ppm 1.4 mg/m ³	CA QC OEL
		TWA	1 ppm	ACGIH
N-Methyl-2-pyrrolidone	872-50-4	TWA	400 mg/m ³	CA ON OEL

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Biological occupational exposure limits

Ingredients	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Butanone	78-93-3	methyl ethyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI
N-Methyl-2-pyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

Engineering measures : Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter

Hand protection

Material : butyl-rubber
Break through time : > 480 min
Glove thickness : 0.5 mm

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work.
For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove Wash hands before breaks and at the end of workday.

Eye protection : Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Hygiene measures : Keep away from food and drink.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	red
Odor	:	slight
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	not determined
Flash point	:	> 76 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	> 1
Density	:	1.1 g/cm ³
Solubility(ies)	:	
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	60 °C SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.
Viscosity	:	
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	not determined

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide
----------------------	---	--

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Vapors may form explosive mixture with air.
Conditions to avoid	:	Protect from contamination. Contact with incompatible substances can cause decomposition at or below SADT. Heat, flames and sparks. Avoid confinement.
Incompatible materials	:	Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,468 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 4.37 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Ingredients:

Dimethyl phthalate:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 12,000 mg/kg

2-Butanone, peroxide:

Acute oral toxicity	:	Acute toxicity estimate: 500 mg/kg Method: Expert judgment
Acute inhalation toxicity	:	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgment

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Assessment: The component/mixture is moderately toxic after short term inhalation.

Remarks: Based on data from similar materials

Acute dermal toxicity : Acute toxicity estimate: 2,500 mg/kg
Method: Expert judgment

Trimethylpentanediol isobutyrate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: Expert judgment
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LCLo (Rat): > 5.30 mg/l
Exposure time: 6 h
Test atmosphere: vapor
Method: Expert judgment
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Guinea pig): > 18,530 mg/kg
Method: Expert judgment
Assessment: The substance or mixture has no acute dermal toxicity

Butanone:

Acute oral toxicity : LD50 (Rat): 2,193 mg/kg
Method: OECD Test Guideline 423

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

Hydrogen peroxide:

Acute oral toxicity : LD50 (Rat, male): 1,026 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 0.17 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : LD50 (Rabbit): > 6,500 mg/kg

N-Methyl-2-pyrrolidone:

Acute oral toxicity : LD50 (Rat): 4,150 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: Extremely corrosive and destructive to tissue.

Ingredients:

Dimethyl phthalate:

Species: Rabbit
Method: Draize Test
Result: No skin irritation

2-Butanone, peroxide:

Species: Rabbit
Result: Causes burns.

Trimethylpentanediol isobutyrate:

Species: Guinea pig
Result: Mild skin irritation

Butanone:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Hydrogen peroxide:

Result: Corrosive after 3 minutes or less of exposure

N-Methyl-2-pyrrolidone:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Irritating to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Ingredients:

Dimethyl phthalate:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

2-Butanone, peroxide:

Result: Irreversible effects on the eye

Trimethylpentanediol isobutyrate:

Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Butanone:

Species: Rabbit
Result: Eye irritation
Method: OECD Test Guideline 405

Hydrogen peroxide:

Result: Irreversible effects on the eye

N-Methyl-2-pyrrolidone:

Species: Rabbit
Result: Eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Dimethyl phthalate:

Species: Mouse
Method: OECD Test Guideline 429
Result: Does not cause skin sensitization.

2-Butanone, peroxide:

Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitization.

Assessment: Harmful if swallowed., Harmful if inhaled.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Trimethylpentanediol isobutyrate:

Species: Guinea pig

Result: Does not cause skin sensitization.

Butanone:

Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitization.

N-Methyl-2-pyrrolidone:

Species: Mouse

Method: OECD Test Guideline 429

Result: Does not cause skin sensitization.

Remarks: Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Dimethyl phthalate:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative

: Method: OECD Test Guideline 473
Result: negative

: Method: OECD Test Guideline 476
Result: positive

Genotoxicity in vivo : Test Type: Chromosomal aberration
Species: Rat
Application Route: Intraperitoneal
Result: negative

Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

2-Butanone, peroxide:

Genotoxicity in vitro : Method: OECD Test Guideline 473
Result: negative

: Method: OECD Test Guideline 471
Result: negative

: Method: OECD Test Guideline 476
Result: negative

Trimethylpentanediol isobutyrate:

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Genotoxicity in vitro : Method: OECD Test Guideline 476
Result: negative
: Test Type: Ames test
Result: negative
: Method: OECD Test Guideline 473
Result: negative

Butanone:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative
: Method: OECD Test Guideline 476
Result: negative
: Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Species: Mouse
Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative

Hydrogen peroxide:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse
Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:

Dimethyl phthalate:

Species: Rat
Application Route: Skin contact
Method: OECD Test Guideline 451
Result: negative
Remarks: Based on data from similar materials

2-Butanone, peroxide:

Remarks: This information is not available.

Reproductive toxicity

May damage fertility or the unborn child.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Ingredients:

Dimethyl phthalate:

Effects on fertility : Species: Rat
Application Route: oral (gavage)
Method: OECD Test Guideline 440
Result: negative

Effects on fetal development : Species: Rat
Application Route: Ingestion
General Toxicity Maternal: NOAEL: 840 mg/kg body weight
Developmental Toxicity: NOAEL: 3,570 mg/kg body weight
Method: OECD Test Guideline 414

2-Butanone, peroxide:

Effects on fertility : Species: Rat
Application Route: oral (gavage)
General Toxicity Parent: NOAEL: 50 mg/kg body weight
Method: OECD Test Guideline 421
Result: negative

Butanone:

Effects on fertility : Species: Rat
Application Route: oral (drinking water)
General Toxicity Parent: NOAEL: 10,000 mg/l
General Toxicity F1: NOAEL: 10,000 mg/l
Method: OECD Test Guideline 416
Remarks: Based on data from similar materials

Species: Rat
Application Route: oral (drinking water)
General Toxicity Parent: LOAEL: 20,000 mg/l
Method: OECD Test Guideline 416
Remarks: Based on data from similar materials

Effects on fetal development : Species: Rat
Application Route: Inhalation
General Toxicity Maternal: NOAEC: ca. 1,002 mg/kg body weight
Teratogenicity: NOAEC Parent: ca. 1,002 mg/kg body weight
Method: OECD Test Guideline 414
Result: negative

N-Methyl-2-pyrrolidone:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT-single exposure

Not classified based on available information.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Ingredients:

Hydrogen peroxide:

Assessment: May cause respiratory irritation.

N-Methyl-2-pyrrolidone:

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Ingredients:

Dimethyl phthalate:

Species: Rat

NOAEL: 770 mg/kg

Application Route: Oral

Exposure time: 16 w

Method: OECD Test Guideline 408

2-Butanone, peroxide:

Species: Rat

NOAEL: 200 mg/kg

Application Route: oral (gavage)

Exposure time: 28 d

Method: OECD Test Guideline 407

Repeated dose toxicity - : Harmful if swallowed., Harmful if inhaled.
Assessment

Hydrogen peroxide:

Species: Mouse

Application Route: Ingestion

Exposure time: 90 d

Symptoms: No adverse effects.

N-Methyl-2-pyrrolidone:

Species: Rat

NOAEL: 0.5 mg/l

LOAEL: 1 mg/l

Application Route: inhalation (vapor)

Exposure time: 90 d

Method: OECD Test Guideline 413

Species: Rat

NOAEL: 3,000 mg/kg

LOAEL: 7,500 mg/kg

Application Route: Ingestion

Exposure time: 90 d

Method: OECD Test Guideline 408

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Species: Rat
NOAEL: 6,000 mg/kg
LOAEL: 18,000 mg/kg
Application Route: oral (feed)
Exposure time: 28 d
Method: OECD Test Guideline 407

Species: Rabbit
NOAEL: 826 mg/kg
Application Route: Skin contact
Exposure time: 20 d
Method: OECD Test Guideline 410

Aspiration toxicity

Not classified based on available information.

Ingredients:

Dimethyl phthalate:

No aspiration toxicity classification

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Dimethyl phthalate:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 39 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 52 mg/l
Exposure time: 48 h
- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 260 mg/l
Exposure time: 72 h
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 11 mg/l
Exposure time: 102 d
Method: OECD Test Guideline 210
- LOEC (Oncorhynchus mykiss (rainbow trout)): 24 mg/l
Exposure time: 102 d
Method: OECD Test Guideline 210
- Toxicity to daphnia and other aquatic invertebrates (Chron- : NOEC (Daphnia magna (Water flea)): 9.6 mg/l
Exposure time: 21 d

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

ic toxicity)

LOEC (Daphnia magna (Water flea)): 23 mg/l
Exposure time: 21 d

Toxicity to microorganisms : EC50: 4,100 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209

2-Butanone, peroxide:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

NOEC (Poecilia reticulata (guppy)): 18 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

NOEC (Daphnia magna (Water flea)): 26.7 mg/l
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 5.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 2.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 48 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209

Trimethylpentanediol isobutyrate:

Toxicity to fish : NOEC (Lepomis macrochirus (Bluegill sunfish)): >= 6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Pimephales promelas (fathead minnow)): > 1.55 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): >= 1.46 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)): > 7.49 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version 1.1	Revision Date: 09/22/2017	SDS Number: 600000000118	Print Date: 09/26/2017
----------------	------------------------------	-----------------------------	---------------------------

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC (Daphnia magna (Water flea)): 0.7 mg/l
Exposure time: 21 d

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Butanone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,993 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 2,029 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Pseudomonas putida): 1,150 mg/l
Exposure time: 16 h
Method: DIN 38 412 Part 8

Hydrogen peroxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 16.4 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia pulex (Water flea)): 2.4 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Skeletonema costatum (marine diatom)): 1.38 mg/l
Exposure time: 72 h

NOEC (Skeletonema costatum (marine diatom)): 0.63 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.63 mg/l
Exposure time: 21 d

Toxicity to microorganisms : EC50: Method: OECD Test Guideline 209

N-Methyl-2-pyrrolidone:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 24 h
Method: DIN 38412

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

	EC50 (Palaeomonetes vulgaris (Grass shrimp)): 1,107 mg/l Exposure time: 96 h
Toxicity to algae	: EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 500 mg/l Exposure time: 72 h
	NOEC (Desmodesmus subspicatus (green algae)): 125 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 12.5 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
	LOEC (Daphnia magna (Water flea)): 25 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
Toxicity to microorganisms	: EC50: > 600 mg/l Exposure time: 0.5 h Method: ISO 8192

Persistence and degradability

Ingredients:

Dimethyl phthalate:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301E

2-Butanone, peroxide:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

Trimethylpentanediol isobutyrate:

Biodegradability : Result: rapidly biodegradable
Method: OECD Test Guideline 301B

Butanone:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

Hydrogen peroxide:

Biodegradability : Result: Readily biodegradable.

N-Methyl-2-pyrrolidone:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301C

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

Bioaccumulative potential

Ingredients:

Dimethyl phthalate:

Bioaccumulation : Bioconcentration factor (BCF): 57
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 1.54

2-Butanone, peroxide:

Partition coefficient: n-octanol/water : log Pow: < 0.3 (25 °C)

Trimethylpentanediol isobutyrate:

Partition coefficient: n-octanol/water : log Pow: 4.48

Butanone:

Partition coefficient: n-octanol/water : log Pow: 0.3 (40 °C)

Hydrogen peroxide:

Partition coefficient: n-octanol/water : log Pow: -1.57
Remarks: Calculation

N-Methyl-2-pyrrolidone:

Partition coefficient: n-octanol/water : log Pow: -0.46 (25 °C)

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : **An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.**

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version	Revision Date:	SDS Number:	Print Date:
1.1	09/22/2017	600000000118	09/26/2017

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3105
Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S))
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2

IATA-DGR

UN/ID No. : UN 3105
Proper shipping name : Organic peroxide type D, liquid
(Methyl ethyl ketone peroxide(s))
Class : 5.2
Packing group : Not assigned by regulation
Labels : Organic Peroxides, Keep Away From Heat
Packing instruction (cargo aircraft) : 570
Packing instruction (passenger aircraft) : 570

IMDG-Code

UN number : UN 3105
Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S))
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2
EmS Code : F-J, S-R
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

TDG

UN number : UN 3105
Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S))
Class : 5.2
Packing group : II
Labels : 5.2
ERG Code : 145
Marine pollutant : no

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

SECTION 15. REGULATORY INFORMATION

NPRI Ingredients : Dimethyl phthalate
Butanone
N-Methyl-2-pyrrolidone

The ingredients of this product are reported in the following inventories:

AICS (AU) : On the inventory, or in compliance with the inventory
NZIoC (NZ) : On the inventory, or in compliance with the inventory
ENCS (JP) : On the inventory, or in compliance with the inventory
ISHL (JP) : On the inventory, or in compliance with the inventory
KECI (KR) : On the inventory, or in compliance with the inventory
PICCS (PH) : On the inventory, or in compliance with the inventory
IECSC (CN) : On the inventory, or in compliance with the inventory
TCSI (TW) : On the inventory, or in compliance with the inventory
TSCA (US) : On TSCA Inventory

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Preven-

SAFETY DATA SHEET

NOROX MEKP-925H FRED



Version
1.1

Revision Date:
09/22/2017

SDS Number:
600000000118

Print Date:
09/26/2017

tion; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 09/22/2017

The information provided in this Material 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.

CA / Z8



SAFETY DATA SHEET

NOVUS* CE2667

1. Identification

Product identifier NOVUS CE2667
Other means of identification None.
Recommended use Flocculant
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Specific target organ toxicity, single exposure Category 3 narcotic effects
OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response If on skin: Wash with plenty of water. 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. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNO) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Distillates (petroleum), hydrotreated light	64742-47-8	20 - 40
PEHA/ACRYLAMIDE/AETAC COPOLYMER	149778-23-4	20 - 40
Ammonium chloride	12125-02-9	1 - 2.5
Poly(oxy-1,2-ethanediyl),alpha-tridecyl-omega-hydroxy-	24938-91-8	1 - 2.5

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

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. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Powder. Dry chemicals. 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 Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

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. Avoid breathing mist or vapor. 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 Use water spray to reduce vapors or divert vapor cloud drift.

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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Clean spill immediately. Wash contaminated skin promptly.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat and sources of ignition. Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS). Store away from oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	PEL	400 mg/m3
		100 ppm

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Ammonium chloride (CAS 12125-02-9)	STEL	20 mg/m3	Fume.
	TWA	10 mg/m3	Fume.
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m3	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

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.

9. Physical and chemical properties

Appearance

Color White to off-white

Physical state Emulsion

Odor Slight hydrocarbon

Odor threshold Not available.

pH in aqueous solution 5 (0.5% SOL.)

Melting point/freezing point < 23 °F (< -5 °C)

Initial boiling point and boiling range Not available.

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

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 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density > 1 (Air = 1)

Relative density 1.03

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 1500 cps

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Pour point < 28 °F (< -2 °C)

Specific gravity 1.034

VOC 30 % (Estimated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Oxides of carbon and nitrogen, ammonia and volatile amines. Oxides of sulfur.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects. May cause respiratory irritation.

Product	Species	Test Results
NOVUS CE2667 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Ammonium chloride (CAS 12125-02-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	1410 mg/kg

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.2 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

PEHA/ACRYLAMIDE/AETAC COPOLYMER (CAS 149778-23-4)

Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

Poly(oxy-1,2-ethanediyl),alpha-tridecyl-omega-hydroxy- (CAS 24938-91-8)

Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg

Components	Species	Test Results
Oral LD50	Rat	> 2000 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	This product is not expected to cause respiratory sensitization.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
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	May cause respiratory irritation. May cause drowsiness and dizziness.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Based on available data, the classification criteria are not met.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity

Product	Species	Test Results
NOVUS CE2667 (CAS Mixture)	LC50	Fathead Minnow 2.5 mg/L, Static Renewal Bioassay, 96 hour
	NOEL	Fathead Minnow 1.3 mg/L, Static Renewal Bioassay, 96 hour
Aquatic		
Crustacea	35% Mortality	Daphnia magna 0.078 mg/L, Static Renewal Bioassay, 48 hour
	LC50	Daphnia magna 0.14 mg/L, Static Renewal Bioassay, 48 hour

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)		
Distillates (petroleum), hydrotreated light		3 - 6
Bioconcentration factor (BCF)		
Distillates (petroleum), hydrotreated light		207.7

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO2/g)	1290
- BOD 5 (mgO2/g)	29
- BOD 28 (mgO2/g)	238
- Closed Bottle Test (%)	18
Degradation in 28 days	

- Zahn-Wellens Test (% Degradation in 28 days)	25
- TOC (mg C/g)	450

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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	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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
-------------------------------	--

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ammonium chloride (CAS 12125-02-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
--------------------------	---

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
--	-----

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ammonium chloride	12125-02-9	1 - 2.5

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.
---------------------------------------	----------------

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Ammonium chloride (CAS 12125-02-9)

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US - Pennsylvania RTK - Hazardous Substances

Ammonium chloride (CAS 12125-02-9)

Listed.

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Listed.

US - Rhode Island RTK

Ammonium chloride (CAS 12125-02-9)

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. New Jersey Worker and Community Right-to-Know Act

Ammonium chloride (CAS 12125-02-9)

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

Hazardous substance

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Dec-05-2014

Revision date Jan-23-2018

Version # 2.2

List of abbreviations

CAS: Chemical Abstract Service Registration Number

TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

ACGIH: American Conference of Governmental Industrial Hygienists

NOEL: No Observed Effect Level

STEL: Short Term Exposure Limit

LC50: Lethal Concentration, 50%

LD50: Lethal Dose, 50%

TWA: Time Weighted Average

BOD: Biochemical Oxygen Demand

COD: Chemical Oxygen Demand

TOC: Total Organic Carbon

IATA: International Air Transport Association

IMDG: International Maritime Dangerous Goods Code

References: No data available

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.

Revision information

Other information, including date of preparation or last revision: Disclaimer

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* ADJ0350

1. Identification

Product identifier	OPTISPERSE ADJ0350
Other means of identification	None.
Version #	1.0
Prepared by	This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
Revision date	29/04/2016
Recommended use	Alkaline cleaner Alkaline cleaner
Recommended restrictions	None known.

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Oxidizing liquids	Category 3
	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Label elements



Signal word Danger

Hazard statement May intensify fire; oxidizer. May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take any precaution to avoid mixing with combustibles. Keep only in original packaging. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. 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. 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. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish. Absorb spillage to prevent material-damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N-hydroxyethylenediamine triacetic acid trisodium salt	139-89-9	2.5 - 10
Non-ionic linear polyether surfactant	61702-77-0	2.5 - 10
Poly(oxy-ethanediyl)phenyl hydroxy phosphate	39464-70-5	2.5 - 10
Potassium hydroxide	1310-58-3	2.5 - 10
Sodium nitrate	7631-99-4	2.5 - 10
Tetrapotassium pyrophosphate	7320-34-5	2.5 - 10

Composition comments Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
Skin contact	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Call a physician or poison control center immediately.
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. Immediately flush eyes with plenty of low-pressure water for at least 30 minutes while removing contact lenses. Keep eyelids apart.
Ingestion	Call a physician or poison control center immediately. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
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. No specific antidotes are recommended.
General information	Take off all contaminated clothing immediately. Contact with combustible material may cause fire. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). 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	Flood with water from a distance. Dry chemical, CO ₂ , water spray or regular foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Extinguish fires started by molten material by using appropriate method for the burning material.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from clothing and other combustible materials. Avoid all personal contact. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. When using, do not eat, drink or smoke. Use personal protective equipment as required. No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product. See Section 8 of the SDS for Personal Protective Equipment. Corrosive liquid.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary. Not applicable.
General hygiene considerations	Observe any medical surveillance requirements. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. 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.

9. Physical and chemical properties

Appearance	Liquid
Color	Colorless to yellow
Odor	None
Odor threshold	Not available.
pH (concentrated product)	> 13
pH in aqueous solution	12.8 (5% SOL.)
pH	Not available.
Melting point/freezing point	2 °F (-17 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	Not available.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.24
Relative density temperature	70 °F (21 °C)

Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	23 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	May intensify fire; oxidizer.
Percent volatile	0 (Estimated)
Pour point	40 °F (4 °C)
Shelf life	720 days
Specific gravity	1.24

10. Stability and reactivity

Reactivity	Greatly increases the burning rate of combustible materials. May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat. Contact with strong acids may cause a violent reaction releasing heat.
Incompatible materials	Acids. Strong oxidizing agents. Combustible material. Reducing agents. Strong oxidizing substances. Metals. Maleic anhydride.
Hazardous decomposition products	Oxides of carbon, nitrogen and phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
OPTISPERSE ADJ0350 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LC50	Rabbit	> 5000, (Calculated according to the GHS additivity formula)
<i>Oral</i>		
LD50	Rat	2489 g/kg, (Calculated according to the GHS additivity formula)
Components	Species	Test Results
N-hydroxyethylenediamine triacetic acid trisodium salt (CAS 139-89-9)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 10.054 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1780 mg/kg

Components	Species	Test Results
Non-ionic linear polyether surfactant (CAS 61702-77-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	840 mg/kg
Poly(oxy-ethanediyl)phenyl hydroxy phosphate (CAS 39464-70-5)		
Acute		
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg
Potassium hydroxide (CAS 1310-58-3)		
Acute		
<i>Oral</i>		
LD50	Rat	333 mg/kg
Sodium nitrate (CAS 7631-99-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3236 mg/kg
Tetrapotassium pyrophosphate (CAS 7320-34-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	2440 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Canada - Alberta OELs: Irritant	
Potassium hydroxide (CAS 1310-58-3)	Irritant
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity		
Product	Species	Test Results
OPTISPERSE ADJ0350 (CAS Mixture)		
	IC25	Ceriodaphnia
		17 mg/l, Static Renewal Bioassay, 7 day

Product		Species	Test Results
Aquatic Crustacea	LC50	Ceriodaphnia	57 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Fathead Minnow	59.3 mg/l, Static Acute Bioassay, 96 hour, (pH adjusted)
	NOEL	Ceriodaphnia	25 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Fathead Minnow	50 mg/l, Static Acute Bioassay, 96 hour, (pH adjusted)
	LC50	Daphnia magna	51.8 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	25 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

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.

Persistence and degradability No data is available on the degradability of this product.

13. Disposal considerations

Disposal instructions Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

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). Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

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

TDG

UN number UN1760
UN proper shipping name CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards Not available.

DOT

UN number UN1760
UN proper shipping name CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT), RQ (POTASSIUM HYDROXIDE)

Transport hazard class(es)

Class 8

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

UN number UN1760

UN proper shipping name	CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT), RQ (POTASSIUM HYDROXIDE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG; TDG



15. Regulatory information

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets Not applicable.

USDA (according to 1998 guidelines):

16. Other Information

Issue date Apr-29-2016

Revision date	29/04/2016
Version #	1.0
List of abbreviations	CAS: Chemical Abstract Service Registration Number ACGIH: American Conference of Governmental Industrial Hygienists NOEL: No Observed Effect Level STEL: Short Term Exposure Limit LC50: Lethal Concentration, 50% TWA: Time Weighted Average BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code LD50: Lethal Dose, 50% TSRN indicates a Trade Secret Registry Number is used in place of the CAS number. TLV: Threshold Limit Value
References:	No data available
Disclaimer	Not available.
Revision information	Product and Company Identification: Product and Company Identification Composition / Information on Ingredients: Ingredients Toxicological Information: Toxicological Data Transport Information: Material Transportation Information Regulatory Information: United States HazReg Data: North America GHS: Classification

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* ADJ0350

1. Identification

Product identifier	OPTISPERSE ADJ0350
Other means of identification	None.
Version #	1.0
Prepared by	This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
Revision date	29/04/2016
Recommended use	Alkaline cleaner Alkaline cleaner
Recommended restrictions	None known.

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Oxidizing liquids	Category 3
	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Label elements



Signal word Danger

Hazard statement May intensify fire; oxidizer. May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take any precaution to avoid mixing with combustibles. Keep only in original packaging. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. 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. 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. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish. Absorb spillage to prevent material-damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N-hydroxyethylenediamine triacetic acid trisodium salt	139-89-9	2.5 - 10
Non-ionic linear polyether surfactant	61702-77-0	2.5 - 10
Poly(oxy-ethanediyl)phenyl hydroxy phosphate	39464-70-5	2.5 - 10
Potassium hydroxide	1310-58-3	2.5 - 10
Sodium nitrate	7631-99-4	2.5 - 10
Tetrapotassium pyrophosphate	7320-34-5	2.5 - 10

Composition comments Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
Skin contact	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Call a physician or poison control center immediately.
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. Immediately flush eyes with plenty of low-pressure water for at least 30 minutes while removing contact lenses. Keep eyelids apart.
Ingestion	Call a physician or poison control center immediately. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
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. No specific antidotes are recommended.
General information	Take off all contaminated clothing immediately. Contact with combustible material may cause fire. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). 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	Flood with water from a distance. Dry chemical, CO ₂ , water spray or regular foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Extinguish fires started by molten material by using appropriate method for the burning material.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

May intensify fire; oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from clothing and other combustible materials. Avoid all personal contact. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. When using, do not eat, drink or smoke. Use personal protective equipment as required. No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product. See Section 8 of the SDS for Personal Protective Equipment. Corrosive liquid.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)

Components	Type	Value
Potassium hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m ³

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary. Not applicable.
General hygiene considerations	Observe any medical surveillance requirements. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. 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.

9. Physical and chemical properties

Appearance	Liquid
Color	Colorless to yellow
Odor	None
Odor threshold	Not available.
pH (concentrated product)	> 13
pH in aqueous solution	12.8 (5% SOL.)
pH	Not available.
Melting point/freezing point	2 °F (-17 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	Not available.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.24
Relative density temperature	70 °F (21 °C)

Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	23 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	May intensify fire; oxidizer.
Percent volatile	0 (Estimated)
Pour point	40 °F (4 °C)
Shelf life	720 days
Specific gravity	1.24

10. Stability and reactivity

Reactivity	Greatly increases the burning rate of combustible materials. May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat. Contact with strong acids may cause a violent reaction releasing heat.
Incompatible materials	Acids. Strong oxidizing agents. Combustible material. Reducing agents. Strong oxidizing substances. Metals. Maleic anhydride.
Hazardous decomposition products	Oxides of carbon, nitrogen and phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
OPTISPERSE ADJ0350 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LC50	Rabbit	> 5000, (Calculated according to the GHS additivity formula)
<i>Oral</i>		
LD50	Rat	2489 g/kg, (Calculated according to the GHS additivity formula)
Components	Species	Test Results
N-hydroxyethylenediamine triacetic acid trisodium salt (CAS 139-89-9)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 10.054 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1780 mg/kg

Components	Species	Test Results
Non-ionic linear polyether surfactant (CAS 61702-77-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	840 mg/kg
Poly(oxy-ethanediyl)phenyl hydroxy phosphate (CAS 39464-70-5)		
Acute		
<i>Oral</i>		
LD50	Rat	> 2000 mg/kg
Potassium hydroxide (CAS 1310-58-3)		
Acute		
<i>Oral</i>		
LD50	Rat	333 mg/kg
Sodium nitrate (CAS 7631-99-4)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3236 mg/kg
Tetrapotassium pyrophosphate (CAS 7320-34-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	2440 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Canada - Alberta OELs: Irritant	
Potassium hydroxide (CAS 1310-58-3)	Irritant
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity		
Product	Species	Test Results
OPTISPERSE ADJ0350 (CAS Mixture)		
	IC25	Ceriodaphnia
		17 mg/l, Static Renewal Bioassay, 7 day

Product		Species	Test Results
Aquatic Crustacea	LC50	Ceriodaphnia	57 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Fathead Minnow	59.3 mg/l, Static Acute Bioassay, 96 hour, (pH adjusted)
	NOEL	Ceriodaphnia	25 mg/l, Static Renewal Bioassay, 48 hour, (pH adjusted)
		Fathead Minnow	50 mg/l, Static Acute Bioassay, 96 hour, (pH adjusted)
	LC50	Daphnia magna	51.8 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	25 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

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.

Persistence and degradability No data is available on the degradability of this product.

13. Disposal considerations

Disposal instructions Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

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). Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

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

TDG

UN number UN1760
UN proper shipping name CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards Not available.

DOT

UN number UN1760
UN proper shipping name CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT), RQ (POTASSIUM HYDROXIDE)

Transport hazard class(es)

Class 8

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

UN number UN1760

UN proper shipping name	CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT), RQ (POTASSIUM HYDROXIDE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (POTASSIUM HYDROXIDE, N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG; TDG



15. Regulatory information

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets Not applicable.

USDA (according to 1998 guidelines):

16. Other Information

Issue date Apr-29-2016

Revision date	29/04/2016
Version #	1.0
List of abbreviations	CAS: Chemical Abstract Service Registration Number ACGIH: American Conference of Governmental Industrial Hygienists NOEL: No Observed Effect Level STEL: Short Term Exposure Limit LC50: Lethal Concentration, 50% TWA: Time Weighted Average BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code LD50: Lethal Dose, 50% TSRN indicates a Trade Secret Registry Number is used in place of the CAS number. TLV: Threshold Limit Value
References:	No data available
Disclaimer	Not available.
Revision information	Product and Company Identification: Product and Company Identification Composition / Information on Ingredients: Ingredients Toxicological Information: Toxicological Data Transport Information: Material Transportation Information Regulatory Information: United States HazReg Data: North America GHS: Classification

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* HP54433

1. Identification

Product identifier OPTISPERSE HP54433
Other means of identification None.
Recommended use Water based internal boiler treatment chemical.
Recommended restrictions None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Not classified.
OSHA defined hazards Not classified.

Label elements

Hazard symbol None.
Signal word None.
Hazard statement The mixture does not meet the criteria for classification.
Precautionary statement
Prevention Observe good industrial hygiene practices.
Response Wash hands after handling.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Polyphosphoric acids, sodium salts		68915-31-1	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Remove contaminated clothing. Get medical attention if irritation develops and persists.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Rinse mouth. Dilute contents of stomach using 3-4 glasses milk or water. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical powder. Carbon dioxide (CO ₂). Foam or water create a slippery condition. Spread sand or grit.
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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. 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. Cover with plastic sheet to prevent spreading. 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. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection	Splash proof chemical goggles.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
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.

9. Physical and chemical properties**Appearance**

Color	Colorless
Physical state	Liquid
Odor	None
Odor threshold	Not available.
pH (concentrated product)	6.9
pH in aqueous solution	7.7 (5% SOL.)
Melting point/freezing point	31 °F (-1 °C)
Initial boiling point and boiling range	210 °F (99 °C)
Flash point	> 200 °F (> 93 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.

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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.02
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	5 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Percent volatile	0
Pour point	36 °F (2 °C)
Specific gravity	1.02

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Elemental oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Mists or aerosols cause irritation to upper respiratory tract.
Skin contact	Prolonged or repeated contact may cause irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause slight gastrointestinal irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
OPTISPERSE HP54433 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
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	Based on available data, the classification criteria are not met. May be harmful if swallowed and enters airways.
Further information	This product has no known adverse effect on human health.

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.

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.
Environmental fate	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.
Persistence and degradability	No data is available on the degradability of this product.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	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	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

Some containers may be DOT exempt, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
-------------------------------	--

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
--------------------------	--

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
--	-----

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

US state regulations**US - Massachusetts RTK - Substance List**

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision**Issue date** Feb-03-2015**Revision date** Feb-03-2015**Version #** 1.0**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TLV: Threshold Limit Value
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

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.

Revision Information

Product and Company Identification: Physical States
Toxicological Information: Toxicological Data
HazReg Data: North America
GHS: Classification

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* HP54434

1. Identification

Product identifier	OPTISPERSE HP54434
Other means of identification	None.
Recommended use	Internal boiler water treatment
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. 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/. Specific treatment (see on this label). Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant/ container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of contents/container to approved local facility.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Polyphosphoric acids, sodium salts		68915-31-1	2.5 - 10
Sodium hydroxide		1310-73-2	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. Rinse immediately with plenty of water for at least 20 minutes
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. May cause respiratory irritation.
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.

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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. 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. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational 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/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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

Splash proof chemical goggles. Face shield.

Skin protection

Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

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.

9. Physical and chemical properties

Appearance

Color Colorless to light yellow

Physical state Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 13

pH in aqueous solution 12.3 (5% SOL.)

Melting point/freezing point 29 °F (-2 °C)

Initial boiling point and boiling range 210 °F (99 °C)

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

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 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.07

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 8 cps

Viscosity temperature 70 °F (21 °C)

Other information

Percent volatile 0 (Calculated)

Pour point 34 °F (1 °C)

Specific gravity 1.07

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur. Contact with strong acids may cause a violent reaction releasing heat.

Conditions to avoid Protect from freezing.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Oxides of carbon evolved in fire.

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.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
OPTISPERSE HP54434 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg
<i>Oral</i>		
LD50	Rabbit	> 500 mg/kg

* Estimates for product may be based on additional component data not shown.

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 available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be harmful if swallowed and enters airways. Based on available data, the classification criteria are not met.

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
OPTISPERSE HP54434 (CAS Mixture)	NOEL	Fathead Minnow	5000 mg/L, Acute Toxicity, 96 hour, (Estimated)
	Aquatic		
Crustacea	LC50	Daphnia magna	> 5000 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna	4950 mg/L, Acute Toxicity, 48 hour, (Estimated)

* Estimates for product may be based on additional component data not shown.

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.
Environmental fate	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.
Persistence and degradability	No data is available on the degradability of this product.

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	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE RQ = 28571 LBS, SODIUM PHOSPHATES)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	
IATA	
UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE, SODIUM PHOSPHATES)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE, SODIUM PHOSPHATES), RQ (SODIUM HYDROXIDE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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.
All components are on the U.S. EPA TSCA Inventory List.

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 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

US state regulations

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.

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Dec-05-2014

Revision date May-01-2015

Version # 2.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

TLV: Threshold Limit Value
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References:

No data available

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. The information in the sheet was written based on the best knowledge and experience currently available.

Revision Information

Product and Company Identification: Physical States
Handling and storage: Precautions for safe handling
Stability and reactivity: Reactivity
Toxicological information: Reproductive toxicity
Transport Information: Material Transportation Information
GHS: Classification

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department
(1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* HTP73301

1. Identification

Product identifier	OPTISPERSE HTP73301
Other means of identification	None.
Recommended use	Water based internal boiler treatment chemical.
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container to approved local facility.

Hazard(s) not otherwise classified (HNOC)	None known.
---	-------------

Supplemental information	None.
--------------------------	-------

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
----------------------	--

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with water for 15 minutes.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water. 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	Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Do not freeze. If frozen, thaw completely and mix thoroughly prior to use. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) 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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.

Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
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.

9. Physical and chemical properties

Appearance	
Color	Yellow to amber
Physical state	Liquid
Odor	Slight
Odor threshold	Not available.
pH (concentrated product)	9.6
pH in aqueous solution	10.2 (5% SOL.)
Melting point/freezing point	28 °F (-2 °C)
Initial boiling point and boiling range	210 °F (99 °C)
Flash point	> 200 °F (> 93 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.04
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	6 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Calculated)
Pour point	33 °F (1 °C)
Specific gravity	1.04

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Not available.

Conditions to avoid	Protect from freezing.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire. No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. Mists/aerosols may cause irritation to upper respiratory tract.
Skin contact	Prolonged or repeated contact may cause transient irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause slight gastrointestinal irritation.

Symptoms related to the physical, chemical and toxicological characteristics Prolonged and repetitive exposure, depending on the route(s), may develop transient irritation on skin, eyes, ingestion tract, and/or respiratory tract.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
OPTISPERSE HTP73301 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
	Not available.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
	Not listed.
US. National Toxicology Program (NTP) Report on Carcinogens	
	Not available.
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	Based on available data, the classification criteria are not met. May be harmful if swallowed and enters airways.
Chronic effects	Prolonged inhalation may be harmful.
Further information	This product has no known adverse effect on human health.

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
OPTISPERSE HTP73301 (CAS Mixture)	LC50	Fathead Minnow
		> 5000 mg/L, Acute Toxicity, 96 hour, (Estimated)
	NOEL	Fathead Minnow
		3460 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic Crustacea	LC50	Daphnia magna
		4360 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna
		910 mg/L, Acute Toxicity, 48 hour, (Estimated)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

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.

Environmental fate

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.

Persistence and degradability

No data is available on the degradability of this product.

- COD (mgO₂/g) 57 (calculated data)
- BOD 5 (mgO₂/g) 6 (calculated data)
- BOD 28 (mgO₂/g) 6 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 10 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days) 17 (calculated data)
- TOC (mg C/g) 15 (calculated data)

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

All components are on the U.S. EPA TSCA Inventory List.
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

No

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
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).

Food and drug administration

All ingredients in this product are authorized in 21 CFR176.170 for use in boilers where the steam will be used for manufacturing paper or paperboard.

US state regulations

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Nov-25-2014

Revision date Nov-10-2015

Version # 2.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

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. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

OPTISPERSE* HTP73611

1. Identification

Product identifier	OPTISPERSE HTP73611
Other means of identification	None.
Recommended use	Water based internal boiler treatment chemical.
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear 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. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in a corrosive resistant container with a resistant inner liner.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium hydroxide	1310-73-2	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. Get medical attention 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. May cause respiratory irritation.
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	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Carbon dioxide (CO2). Foam. Dry chemical powder.
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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	Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Alkaline. Do not mix with acidic material. Provide adequate ventilation. Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Do not breathe mist or vapor. Avoid prolonged exposure. Do not get in eyes, on skin, or on clothing. Use care in handling/storage.
--------------------------------------	--

**Conditions for safe storage,
including any incompatibilities**

Do not freeze. If frozen, thaw completely and mix thoroughly prior to use. Store locked up. Store away from incompatible materials (see Section 10 of the SDS). Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection**Occupational 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/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash facilities and emergency shower must be available when handling this product. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present. Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

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.

9. Physical and chemical properties**Appearance**

Color Yellow to amber

Physical state Liquid

Odor Slight

Odor threshold Not available.

pH (concentrated product) 13

pH in aqueous solution 12.3 (5% SOL.)

Melting point/freezing point 25 °F (-4 °C)

Initial boiling point and boiling range 210 °F (99 °C)

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.08
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	6 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Calculated)
Pour point	30 °F (-1 °C)
Specific gravity	1.076

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	None under normal conditions.
Incompatible materials	Avoid contact with strong acids and oxidisers. Strong acids. Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire.

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.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
----------------	-----------------------------------

Product	Species	Test Results
OPTISPERSE HTP73611 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Product	Species	Test Results
<i>Inhalation</i> LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i> LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

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 This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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** May cause respiratory irritation.

**Specific target organ toxicity
- repeated exposure** Not classified.

Aspiration hazard Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
OPTISPERSE HTP73611 (CAS Mixture)		
NOEL	Fathead Minnow	5000 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic		
Crustacea	Daphnia magna	> 5000 mg/L, Acute Toxicity, 48 hour, (Estimated)
NOEL	Daphnia magna	3050 mg/L, Acute Toxicity, 48 hour, (Estimated)

* Estimates for product may be based on additional component data not shown.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO₂/g) 56 (calculated data)

- BOD 5 (mgO₂/g) 6 (calculated data)

- BOD 28 (mgO₂/g) 6 (calculated data)

- Closed Bottle Test (%) 11 (calculated data)

Degradation in 28 days

- Zahn-Wellens Test (% Degradation in 28 days)	18 (calculated data)
- TOC (mg C/g)	15 (calculated data)

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	UN1824
UN proper shipping name	Sodium hydroxide solution, RQ
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN1824
UN proper shipping name	Sodium hydroxide solution
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	154
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION, RQ
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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.

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 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

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.

Inventory status

Country(s) or region

Canada

Canada

Inventory name

Domestic Substances List (DSL)

Non-Domestic Substances List (NDSL)

On inventory (yes/no)*

Yes

No

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).

US state regulations

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

NICKEL (CAS 7440-02-0)

Listed: October 1, 1989

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Nov-25-2014

Revision date Sep-27-2016

Version # 3.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

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.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020
Supercedes Version: 2.1

SDS Number 300000000110
Print Date 21.08.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier : Oxygen

CAS No. : 7782-44-7

Chemical formula : O₂

Synonyms : Oxygen, Oxygen gas, Gaseous Oxygen, GOX

REACH Registration Number: Listed in Annex IV / V REACH, exempted from registration.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Industrial and professional use. Perform risk assessment prior to use.
Restrictions on Use : None.

1.3. Details of the supplier of the safety data sheet : Air Products Plc
2 Millennium Gate
Westmere Drive
Crewe
Cheshire

Email Address – Technical Information : GASTECH@airproducts.com

Telephone : +44(0)3457 020202

1.4. Emergency telephone number : +44(0)8085 020202
NHS Direct in England or Wales 0845 46 47 or NHS 24 in Scotland 08454 24 24

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Oxidizing gases - Category 1 H270: May cause or intensify fire; oxidiser.
Gases under pressure - Compressed gas. H280: Contains gas under pressure; may explode if heated.

2.2. Label elements

Hazard pictograms/symbols

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021



Signal Word: Danger

Hazard Statements:

H270: May cause or intensify fire; oxidiser.
H280: Contains gas under pressure; may explode if heated.

Precautionary Statements:

Prevention : P220: Keep away from clothing and other combustible materials.
P244: Keep valves and fittings free from oil and grease.

Response : P370+P376 : In case of fire: Stop leak if safe to do so.

Storage : P403: Store in a well-ventilated place.

2.3. Other hazards

High pressure, oxidizing gas.
Vigorously accelerates combustion.
Keep oil, grease, and combustibles away.
May react violently with combustible materials.
Substance does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

Components	EINECS / ELINCS Number	CAS Number	Concentration (Volume)
Oxygen	231-956-9	7782-44-7	100 %

Components	Classification (CLP)	REACH Reg. #
Oxygen	Ox. Gas 1 ; H270 Press. Gas (Comp.) ; H280	*1

*1: Listed in Annex IV / V REACH, exempted from registration.

*2: Registration not required: substance manufactured or imported < 1 t/y.

*3: Registration not required: substance manufactured or imported < 1 t/y for non-intermediate uses.

Refer to section 16 for full text of each relevant hazard statement (H).

Concentration is nominal. For the exact product composition, please refer to technical specifications.

3.2. Mixtures : Not applicable.

SECTION 4: First aid measures

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

4.1. Description of first aid measures

- General advice : Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- Eye contact : IF exposed or concerned: Get medical advice/attention.
- Skin contact : Adverse effects not expected from this product. IF exposed or concerned: Get medical advice/attention.
- Ingestion : Ingestion is not considered a potential route of exposure.
- Inhalation : Consult a physician after significant exposure. Move to fresh air. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms : No data available.

4.3. Indication of any immediate medical attention and special treatment needed

- Treatment : If exposed or concerned: Get medical attention/advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : The product itself does not burn.
Use extinguishing media appropriate for surrounding fire.

- Extinguishing media which must not be used for safety reasons. : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

- : Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Oxidant. Strongly supports combustion. May react violently with combustible materials. Some materials which are noncombustible in air may burn in the presence of an oxidizer. Move away from container and cool with water from a protected position. Keep adjacent cylinders cool by spraying with large amounts of water until the fire burns itself out. If possible, stop flow of product.

5.3. Advice for firefighters

- : Wear self contained breathing apparatus for fire fighting if necessary. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.
- Further information : Some materials that are noncombustible in air will burn in the presence of an oxygen enriched atmosphere (greater than 23.5%). Fire resistant clothing may burn and offer no protection in oxygen rich atmospheres.

SECTION 6: Accidental release measures

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

- 6.1. Personal precautions, protective equipment and emergency procedures : Clothing exposed to high concentrations may retain oxygen 30 minutes or longer and become a potential fire hazard. Stay away from ignition sources. Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ventilate the area.
- 6.2. Environmental precautions : Do not discharge into any place where its accumulation could be dangerous. Prevent further leakage or spillage if safe to do so.
- 6.3. Methods and material for containment and cleaning up : Ventilate the area.
- Additional advice : If possible, stop flow of product. Increase ventilation to the release area and monitor concentrations. If leak is from cylinder or cylinder valve, call the emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.
- 6.4. Reference to other sections : For more information refer to Sections 8 & 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

All gauges, valves, regulators, piping and equipment to be used in oxygen service must be cleaned for oxygen service. Oxygen is not to be used as a substitute for compressed air. Never use an oxygen jet for cleaning purposes of any sort, especially clothing, as it increases the likelihood of an engulfing fire. Only experienced and properly instructed persons should handle compressed gases/cryogenic liquids. Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never permit oil, grease, or other readily combustible substances to come into contact with valves or containers containing oxygen or other oxidants. Do not use rapidly opening valves (e.g. ball valves). Open valve slowly to avoid pressure shock. Never pressurize the entire system at once. Use only with equipment cleaned for oxygen service and rated for cylinder pressure. Never use direct flame or electrical heating devices to raise the pressure of

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

a container. Containers should not be subjected to temperatures above 50°C (122°F).

7.2. Conditions for safe storage, including any incompatibilities

Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Full containers should be stored so that oldest stock is used first. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Display "No Smoking or Open Flames" signs in the storage areas. Return empty containers in a timely manner.

Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations.

7.3. Specific end use(s)

Refer to section 1 or the extended SDS if applicable.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

If applicable, refer to the extended section of the SDS for further information on CSA.

DNEL: Derived no effect level (Workers)
None available.

PNEC: predicted no effect concentration
None available.

8.2. Exposure controls

Engineering measures

Ensure adequate ventilation.

Personal protective equipment

- | | | |
|------------------------|---|---|
| Respiratory protection | : | Not required under normal use. Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere.
Users of breathing apparatus must be trained. |
| Hand protection | : | Wear work gloves when handling gas containers.
Gloves must be clean and free of oil and grease.
Standard EN 388 - Protective gloves against mechanical risk. |
| Eye/face Protection | : | Safety glasses recommended when handling cylinders.
Standard EN 166 - Personal eye-protection. |

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

Skin and body protection	: Safety shoes are recommended when handling cylinders. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
Special instructions for protection and hygiene	: Ensure adequate ventilation, especially in confined areas.
Environmental Exposure Controls	: If applicable, refer to the extended section of the SDS for further information on CSA.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a/b) Physical state/Colour	: Compressed gas. Colorless gas
(c) Odour	: No odor warning properties.
(d) Density	: 0.0013 g/cm ³ (0.081 lb/ft ³) at 21 °C (70 °F) Note: (as vapor)
(e) Relative Density	: 1.1 (water = 1)
(f) Melting point / freezing point	: -362 °F (-219 °C)
(g) Boiling point/range	: -297 °F (-183 °C)
(h) Vapor pressure	: Not applicable.
(i) Water solubility	: 0.039 g/l
(j) Partition coefficient: n-octanol/water [log Kow]	: Not applicable for inorganic gases.
(k) pH	: Not applicable for gases and gas mixtures.
(l) Viscosity	: No reliable data available.
(m) Particle characteristics	: Not applicable for gases and gas mixtures.
(n) Upper and lower explosion / flammability limits	: Non flammable.
(o) Flash point	: Not applicable for gases and gas mixtures.
(p) Autoignition temperature	: Non flammable.
(q) Decomposition temperature	: Not applicable.

9.2. Other information

Explosive properties	: Not applicable.
Oxidizing properties	: Ci =1

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

Molecular Weight	: 32 g/mol
Odor threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
Evaporation rate	: Not applicable for gases and gas mixtures.
Flammability (solid, gas)	: Refer to product classification in Section 2
Specific Volume	: 0.7540 m ³ /kg (12.08 ft ³ /lb) at 21 °C (70 °F)
Upper flammability limit	: Not applicable.
Relative vapor density	: 1.105 (air = 1) Heavier than air.

SECTION 10: Stability and reactivity

10.1. Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
10.2. Chemical stability	: Stable under normal conditions.
10.3. Possibility of hazardous reactions	: Violently oxidises organic material.
10.4. Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
10.5. Incompatible materials	: Flammable materials. Organic materials. Avoid oil, grease and all other combustible materials.
10.6. Hazardous decomposition products	: No data available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure

Effects on Eye	: In case of direct contact with eyes, seek medical advice.
Effects on Skin	: Adverse effects not expected from this product.
Inhalation Effects	: Breathing 75% or more oxygen at atmospheric pressure for more than a few hours may cause nasal stuffiness, cough, sore throat, chest pain and breathing difficulty. Breathing pure oxygen under pressure may cause lung damage and also central nervous system effects.
Ingestion Effects	: Ingestion is not considered a potential route of exposure.
Symptoms	: No data available.

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

Acute toxicity

Acute Oral Toxicity	: No data is available on the product itself.
Acute Inhalation Toxicity	: No data is available on the product itself.
Acute Dermal Toxicity	: No data is available on the product itself.
Skin corrosion/irritation	: No data available.
Serious eye damage/eye irritation	: No data available.
Sensitization.	: No data available.

Chronic toxicity or effects from long term exposures

Carcinogenicity	: No data available.
Reproductive toxicity	: No data is available on the product itself.
Germ cell mutagenicity	: No data is available on the product itself.
Specific target organ systemic toxicity (single exposure)	: No data available.
Specific target organ systemic toxicity (repeated exposure)	: Premature infants exposed to high oxygen concentrations may suffer delayed retinal damage that can progress to retinal detachment and blindness. Retinal damage may also occur in adults exposed to 100% oxygen for extended periods (24 to 48 hr). At two or more atmospheres central nervous system (CNS) toxicity occurs. Symptoms include nausea, vomiting, dizziness or vertigo, muscle twitching, vision changes and loss of consciousness and generalized seizures. At three atmospheres, CNS toxicity occurs in less than two hours and at six atmospheres in only a few minutes.
Aspiration hazard	: No data available.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity	: No data is available on the product itself.
Toxicity to other organisms	: No data is available on the product itself.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

Refer to Section 9 "Partition Coefficient (n-octanol/water)".

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

12.4. Mobility in soil

Because of its high volatility, the product is unlikely to cause ground pollution.

12.5. Results of PBT and vPvB assessment

If applicable, refer to the extended section of the SDS for further information on CSA.

12.6. Other adverse effects

No ecological damage caused by this product.

Effect on the ozone layer	:	No known effects from this product.
Ozone Depleting Potential	:	None
Effect on global warming	:	No known effects from this product.
Global Warming Potential	:	None

SECTION 13: Disposal considerations

13.1. Waste treatment methods : Return unused product in original cylinder to supplier. Contact supplier if guidance is required. Refer to the EIGA code of practice Doc. 30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods. List of hazardous waste codes: 16 05 04*: gases in pressure containers (including halons) containing hazardous substances.

Contaminated packaging : Return cylinder to supplier.

SECTION 14: Transport information

14.1. UN number

UN/ID No. : UN1072

14.2. UN proper shipping name

Transport by road/rail (ADR/RID)	: OXYGEN, COMPRESSED
Transport by air (ICAO-TI / IATA-DGR)	: Oxygen, compressed
Transport by sea (IMDG)	: OXYGEN, COMPRESSED

14.3. Transport hazard class(es)

Label(s) : 2.2 (5.1)

Transport by road/rail (ADR/RID)	
Class or Division	: 2
ADR/RID Hazard ID no.	: 25
Tunnel Code	: (E)

Transport by air (ICAO-TI / IATA-DGR)	
Class or Division	: 2.2

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

Transport by sea (IMDG)
Class or Division : 2.2

14.4. Packing group

Transport by road/rail (ADR/RID) : Not applicable.
Transport by air (ICAO-TI / IATA-DGR) : Not applicable.
Transport by sea (IMDG) : Not applicable.

14.5. Environmental hazards

Transport by road/rail (ADR/RID)
Marine Pollutant : No

Transport by air (ICAO-TI / IATA-DGR)
Marine Pollutant : No

Transport by sea (IMDG)
Marine Pollutant : No
Segregation Group : None

14.6. Special precautions for user

Transport by air (ICAO-TI / IATA-DGR)
Passenger and Cargo Aircraft : Transport allowed
Cargo Aircraft only : Transport allowed

Further Information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact customer service.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on Inventory.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.
Japan	ENCS	Included on Inventory.

Other Regulations

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT
AND OF THE COUNCIL of 18 December 2006 concerning the Registration,
Evaluation, Authorisation and Restriction of Chemicals (REACH),

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) No 1272/2008 the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Control of Substances Hazardous to Health Regulations 2002 (as amended)

Health and Safety at Work etc. Act 1974

Management of Health and Safety at Work Regulations (Northern Ireland) 2000 c.388, and as amended

Management of Health and Safety at Work Regulations 1999 (S.I. number 3242)

The Health and Safety at Work etc. Act 1974 (Application to Environmentally Hazardous Substances) Regulations 2002 (England and Wales and Scotland) 11 March 2002 c.282, and as amended

Health and Safety at Work Order (Application to Environmentally Hazardous Substances) Regulations (Northern Ireland) 2003 (Northern Ireland) 14 March 2003 c52, and as amended

The Control of Major Accident Hazards Regulations 2015 c483

The Control of Major Accident Hazards Regulations (Northern Ireland) 2015 c325

The Pressure Systems Safety Regulations 2000 (S.I. number 128) link to Pressure Equipment Directive (97/23/EC)

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2011 c1885, and as amended

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations with amendments (Northern Ireland) 2011 c365

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 c.407

The Water Environment Regulations (Northern Ireland) 2017 c.81

Pollution Prevention and Control Act 1999 c.24

The Fluorinated Greenhouse Gases Regulations 2015 c.310

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

The Fluorinated Greenhouse Gases Regulations (Northern Ireland) 2015
c.425

The Acetylene Safety (England and Wales and Scotland) Regulations 2014
c.1639

The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations
1972 c.917

The Highly Flammable Liquids and Liquefied Petroleum Gases Regulations
(Northern Ireland) 1975 c.256

Dangerous Substances and Explosive Atmospheres Regulations (Northern
Ireland) 2003 c.152

The Dangerous Substances and Explosive Atmospheres Regulations 2002
c.2776

Pollution Prevention and Control Act 1999

The Environmental Permitting (England and Wales) Regulations 2016

Ozone Depleting Substances Regulations 2015

15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

SECTION 16: Other information

Ensure all national/local regulations are observed.

Hazard Statements:

H270 May cause or intensify fire; oxidiser.

H280 Contains gas under pressure; may explode if heated.

Indication of Method:

Oxidizing gases Category 1 May cause or intensify fire; oxidiser. Calculation method

Gases under pressure Compressed gas. Contains gas under pressure; may explode if heated. Calculation method

Abbreviations and acronyms:

ATE - Acute Toxicity Estimate

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

EINECS - European Inventory of Existing Commercial Chemical Substances

ELINCS - European List of Notified Chemical Substances

CAS# - Chemical Abstract Service number

PPE - Personal Protection Equipment

Kow - octanol-water partition coefficient

DNEL - Derived No Effect Level

LC50 - Lethal Concentration to 50 % of a test population

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)

SAFETY DATA SHEET

Version 2.2
Revision Date 24.03.2020

SDS Number 300000000110
Print Date 21.08.2021

NOEC - No Observed Effect Concentration
PNEC - Predicted No Effect Concentration
RMM - Risk Management Measure
OEL - Occupational Exposure Limit
PBT - Persistent, Bioaccumulative and Toxic
vPvB - Very Persistent and Very Bioaccumulative
STOT - Specific Target Organ Toxicity
CSA - Chemical Safety Assessment
EN - European Standard
UN - United Nations
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
WGK - Water Hazard Class

Key literature references and sources for data:
ECHA - Guidance on the compilation of safety data sheets
ECHA - Guidance on the application of the CLP Criteria
ARIEL database

Prepared by : Air Products and Chemicals, Inc. Global EH&S Department

For additional information, please visit our Product Stewardship web site at
<http://www.airproducts.com/productstewardship/>

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws. COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.



SAFETY DATA SHEET

POLYFLOC* AE1115

1. Identification

Product identifier POLYFLOC AE1115
Other means of identification None.
Recommended use Flocculant
Recommended restrictions None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes serious eye irritation.

Precautionary statement

Prevention Wash thoroughly after handling. Wear eye protection/face protection.

Response If in 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.

Storage Store away from incompatible materials.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Distillates (petroleum), hydrotreated light	64742-47-8	20 - 40
Alcohols, C10-16, ethoxylated	68002-97-1	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower.
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. If eye irritation persists: Get medical advice/attention.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. 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.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Powder. Dry chemicals. Carbon dioxide (CO ₂).
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Cool containers / tanks with water spray.
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 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	Use water spray to reduce vapors or divert vapor cloud drift. 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	Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
Conditions for safe storage, including any incompatibilities	Keep away from heat and sources of ignition. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Provide eyewash station. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Splash proof chemical goggles. Chemical goggles are recommended.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

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.

9. Physical and chemical properties

Appearance

Color White

Physical state Emulsion

Odor Not available.

Odor threshold Not available.

pH in aqueous solution 7 (1% SOL.)

Melting point/freezing point 23 °F (-5 °C)

Initial boiling point and boiling range Not available.

Flash point > 212 °F (> 100 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

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 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density > 1 (Air = 1)

Relative density 1.02

Relative density temperature 70 °F (21 °C)

Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	1000 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	22.4 (Estimated)
Specific gravity	1.019

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	May cause slight gastrointestinal irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
POLYFLOC AE1115 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Alcohols, C10-16, ethoxylated (CAS 68002-97-1)		
Acute		
<i>Oral</i>		
LD50	Rat	384 mg/kg

Components	Species	Test Results
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.2 mg/l, 4 Hour
Oral		
LD50	Rat	> 5000 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	This product is not expected to cause respiratory sensitization.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
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	Based on available data, the classification criteria are not met.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity

Product		Species	Test Results
POLYFLOC AE1115 (CAS Mixture)			
	25% Mortality	Fathead Minnow	15 mg/L, Static Renewal Bioassay, 96 hour
	LC50	Bluegill Sunfish	89 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	2.8 mg/L, Static Acute Bioassay, 48 hour
		Fathead Minnow	25 mg/L, Static Renewal Bioassay, 96 hour
		Zebra Fish	> 100 mg/l, 96 Hour, Fresh water. Based on test data for structurally similar materials.
	NOEL	Bluegill Sunfish	18 mg/L, Static Acute Bioassay, 96 hour
		Ceriodaphnia	2.06 mg/L, Static Acute Bioassay, 48 hour
Other	IC50	Selenastrum capricornutum (new name Pseudokirchnerella subca	> 100 mg/l, 72 Hour, Based on test data for structurally similar materials.
Aquatic			
Crustacea	5% Mortality	Daphnia magna	1.6 mg/L, Static Renewal Bioassay, 48 hour
	EC50	Ceriodaphnia dubia	> 100 mg/l, 48 Hour, Based on test data for structurally similar materials.
		Daphnia magna	> 100 mg/l, 48 Hour, Fresh water. Based on test data for structurally similar materials.

Product		Species	Test Results
Fish	LC50	Rainbow Trout	3.9 mg/L, Static Renewal Bioassay, 48 hour
			> 100 mg/l, 96 Hour, Fresh water. Based on test data for structurally similar materials.
	NOEL	Rainbow Trout	75 mg/L, Static Acute Bioassay, 96 hour
			10 mg/L, Static Acute Bioassay, 96 hour
Bioaccumulative potential			
Partition coefficient n-octanol / water (log Kow)			
Distillates (petroleum), hydrotreated light		3 - 6	
Bioconcentration factor (BCF)			
Distillates (petroleum), hydrotreated light		207.7	
Mobility in soil		No data available.	
Other adverse effects		Not available.	
Persistence and degradability			

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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	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.
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	Not regulated as dangerous goods. Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	
Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	
Not listed.	
SARA 304 Emergency release notification	
Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

Food and drug administration 21 CFR 176.110 (acrylamide - acrylic acid resins)

US state regulations**US - Massachusetts RTK - Substance List**

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US - Pennsylvania RTK - Hazardous Substances

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US - Rhode Island RTK

Not regulated.

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. New Jersey Worker and Community Right-to-Know Act

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. Pennsylvania Worker and Community Right-to-Know Law

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Acrylamide (CAS 79-06-1) Listed: January 1, 1990

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Acrylamide (CAS 79-06-1) Listed: February 25, 2011

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Acrylamide (CAS 79-06-1) Listed: February 25, 2011

16. Other information, including date of preparation or last revision

Issue date Jul-11-2014
Revision date Dec-07-2016
Version # 4.0

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information Physical & Chemical Properties: Multiple Properties

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SODIUM BICARBONATE

Safety Data Sheet

Page 1 of 3

1. IDENTIFICATION

Product name: Sodium bicarbonate

Synonyms: Baking soda; Bicarbonate of soda; Sodium acid carbonate; Carbonic acid, monosodium salt.

Manufacturer:

Natrium Products, Inc.
58 Pendleton Street
Cortland, NY 13045
USA

Telephone numbers:

General inquiries: (607) 753-9829
Emergencies (US and Canada):
CHEMTREC (Customer Number 724993)
(800) 424-9300 or 703-527-3887 (collect)

Recommended uses:

Food additive; pharmaceutical ingredient; water treatment; raw material for paper and chemical manufacturing; animal feed additive; pH control.

2. HAZARD IDENTIFICATION

2.1 GHS classification of the substance: Not a hazardous substance.

2.2 GHS label elements, including precautionary statements: Not applicable.

2.3 Other hazards:

Eyes: Direct contact may cause irritation due to abrasion.

Skin: Not a skin irritant.

Inhalation: No known effects.

2.4 Unknown acute toxicity (GHS US): Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name: Sodium hydrogen carbonate

Chemical formula: NaHCO_3

Synonyms: Baking soda; Bicarbonate of soda; Sodium acid carbonate; Carbonic acid, monosodium salt.

CAS Number: 144-55-8

Concentration (% by Weight): 100%

4. FIRST AID MEASURES

Eye contact: Irrigate with flowing water immediately and continuously for 15 minutes. Consult a physician if necessary.

Skin contact: Wash off in flowing water or shower. If necessary, consult physician.

Ingestion: Do not induce vomiting. Seek medical attention immediately if overdose is taken.

Note to physician: Large doses, particularly in patients with renal insufficiency, have produced systemic alkalosis and/or expansion in the extra-cellular fluid volume with edema.

Inhalation: Remove to fresh air. Seek medical attention if discomfort persists.

5. FIRE-FIGHTING MEASURES

Product is non-combustible. Thermal decomposition products are carbon dioxide and sodium carbonate (soda ash). Carbon dioxide is an asphyxiant, and soda ash is an irritant.

Protective equipment: Self-contained breathing apparatus is necessary if large quantities are involved.

Extinguishing media: Use extinguishing material that is appropriate for fire in the surrounding area.



SODIUM BICARBONATE

Safety Data Sheet

Page 2 of 3

6. ACCIDENTAL RELEASE MEASURES

Sweep up into clean, dry containers for salvage or disposal. Wash away uncontaminated residue with water.

7. HANDLING AND STORAGE

Avoid contact with eyes and skin. Keep separated from acids. Store in a cool, dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits: Not established.

Engineering controls: Provide general and/or local exhaust ventilation to control airborne dust.

Personal Protection:

Eyes & Face: Safety glasses for dusty conditions.

Respiratory: NIOSH approved dust mask.

Miscellaneous: Full cover clothing, general purpose gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White crystalline powder or granules.

Flammability: None.

Upper/lower flammability/explosive limits: Not applicable.

Odor: None.

Odor threshold: Not applicable.

Vapor pressure: Not applicable.

Vapor density: Not applicable.

pH of 0.1 M solution (0.84% w/v): 8.3 @ 25°C

Density: 2.2 g/cm³.

Melting point: Not applicable (thermal decomposition occurs on heating).

Solubility in water: 86 g/L @ 20°C.

Boiling point: Not applicable.

Flash point: Not applicable.

Evaporation rate: Not applicable.

Partition coefficient, n-octanol/water: No data available.

Auto-ignition temperature: Not applicable.

Decomposition temperature: Starts to decompose when heated above 50°C (122°F).

Viscosity: Not applicable.

10. STABILITY AND REACTIVITY

Reactivity: Hazardous reactions or polymerization will not occur under normal conditions.

Chemical stability: Stable under recommended handling and storage conditions. (See Section 7.)

Conditions to avoid: Temperatures above 50°C (122°F).

Incompatible materials: Reacts with acids, releasing carbon dioxide.

Hazardous decomposition products: Carbon dioxide and sodium carbonate (soda ash).



SODIUM BICARBONATE

Safety Data Sheet

Page 3 of 3

11. TOXICOLOGICAL INFORMATION

Acute Oral: LD₅₀ (rat) > 4000 mg/kg.

Acute Inhalation: LC₅₀ (rat) > 4.74 mg/L.

Eyes: Minimally irritating (rabbit, EPA TSCA 40 CFR 798.4500); Irritating (rabbit, Draize test, dose of 220 mg).

Skin: Slightly irritating (rabbit).

Carcinogenicity: Not listed as a carcinogen or potential carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), or the U.S. Occupational Safety and Health Administration (OSHA).

12. ECOLOGICAL INFORMATION

Aquatic toxicity:

Fish: LC₅₀ = 7700 mg/L (Rainbow trout, 96-hr. exposure).

Fish: LC₅₀ = 7100 mg/L (Bluegill sunfish, 96-hr. exposure).

Invertebrates: EC₅₀ > 1000 mg/L (*Daphnia magna*, 48-hr. exposure).

Persistence/Bioaccumulation potential: Not expected to persist or bioaccumulate in the environment.

Biodegradation: Not applicable.

Mobility: High potential for movement from soil to groundwater is expected based on aqueous solubility.

13. DISPOSAL CONSIDERATIONS

Not a hazardous material. Dispose in a landfill in accordance with pertinent federal, state and local regulations. Empty containers may be incinerated or discarded as ordinary waste.

14. TRANSPORT INFORMATION

Not regulated by the U.S. Department of Transportation.

15. REGULATORY INFORMATION

CERCLA (40 CFR 302.4): Not a hazardous substance.

RCRA (40 CFR 261): Not a hazardous waste.

TSCA (40 CFR 710): Listed.

OSHA (29 CFR 1910.1200): Not hazardous.

SARA. Title III Sections 302 (40 CFR 355), 313 (40 CFR 372): Not a hazardous or toxic chemical.

European Inventory (EINECS): 205-633-8.

Japanese Inventory (MITI): 1-164.

U.S. Food and Drug Administration: Generally recognized as safe (GRAS) direct food additive (21 CFR 184.1736).

16. OTHER INFORMATION

Maximum use level for drinking water corrosion and scale control: 100mg/L per NSF/ANSI 60.

Issue Date: 07/15/2020

Supersedes: 02/14/2017

This Safety Data Sheet is offered solely for your information, consideration, and investigation. Natrium Products, Inc. provides no warranties, either expressed or implied, and assumes no responsibility for the accuracy or the completeness of the data contained herein.



SAFETY DATA SHEET

Revision Date 10-Apr-2017

Version 4

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Salt, Sodium Chloride (No YPS)

Other means of identification

Product Code(s) SALT, SODIUM CHLORIDE (NO YPS)

Synonyms Industrial Grade Sodium Chloride

Recommended use of the chemical and restrictions on use

Recommended Use Industrial (not for food or food contact use)

Details of the supplier of the safety data sheet

Manufacturer Address United Salt Baytown LLC - Evaporated Salt, Pelletized Salt
7901 FM 1405
Baytown, Texas 77523

United Salt Carlsbad LLC - Solar Salt
1434 Potash Mines Road
Carlsbad, New Mexico 88220

United Salt Hockley LLC - Rock Salt
14002 Warren Ranch Road
Hockley, Texas 77447

Emergency telephone number

Company Phone Number United Salt Corporation
800-554-8658
713-877-2677

Emergency Contact: CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation	Category 2B
-----------------------------------	-------------

GHS Label elements, including precautionary statements

Warning

Hazard Statements

Causes eye irritation

Appearance
White, crystalline.

Physical state
Solid.

Odor
Odorless.

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

General Hazards

Although not required to be classified under GHS, this product has been self-classified.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Industrial Grade Sodium Chloride.

Chemical Name	CAS-No	Weight %
Sodium Chloride	7647-14-5	60-100

4. FIRST AID MEASURES

First aid measures for different exposure routes

Eye contact	Burning feeling and temporary redness. May cause irritation and redness. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. If symptoms persist, call a physician.
Skin contact	May cause dryness to skin. Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. Irritating to mucous membranes. May cause throat irritation. If symptoms persist, call a physician.
Ingestion	Drink plenty of water. Rinse mouth with water. If symptoms persist, call a physician. Not intended for human or animal consumption.
Protection of First-aiders	Use personal protective equipment.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Keep patient under observation. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

<u>Suitable Extinguishing Media</u>	Material is non-flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Unsuitable Extinguishing Media</u>	No unsuitable extinguishing media known.
<u>Specific hazards arising from the chemical</u>	No data available.
<u>Hazardous Combustion Products</u>	Carbon monoxide. Carbon dioxide (CO ₂).
<u>Explosion data</u>	
<u>Sensitivity to Mechanical Impact</u>	None.
<u>Sensitivity to Static Discharge</u>	None.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment. Avoid dust formation. Avoid contact with the skin and the eyes.

Other information See Section 12 for additional information.

Environmental Precautions

Environmental Precautions See Section 12 for additional Ecological Information.

Methods and Materials for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so. Avoid generation and spreading of dust.

Methods for Cleaning Up Use personal protective equipment. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically and collect in suitable container for disposal. Avoid dust formation. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not ingest.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products Bromine Trifluoride, Lithium.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines Treat as a nuisance dust.
Exposure controls

Engineering Measures Showers
Eyewash stations
Ventilation systems. Ensure adequate ventilation to remove vapors, fumes, dust, etc. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields or Tightly fitting safety goggles for dusty conditions

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear latex or Nitrile gloves.

Respiratory protection Effective dust mask. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state Solid.

Appearance	White, crystalline.	Odor	Odorless.
Color	No data available	Odor Threshold	No data available

<u>Property</u>	<u>Values</u>	<u>Note • Method</u>
pH @ 20 °C	No data available	
Melting/freezing point	800 °C / 1472 °F.	
Boiling point/boiling range	1413 °C / 2575 °F.	
Flash Point	Not Determined	
Evaporation rate	N/A	
Flammability (solid, gas)	No data available	
Flammability Limits in Air		
Upper Flammability Limit	No data available.	
Lower Flammability Limit	No data available.	
Vapor pressure	1 MM@ 855 deg	
Vapor density	N/A	
Specific Gravity	2.165	
Water solubility	Appreciable (26.43 % by weight at 20C)	
Solubility in other solvents	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Viscosity, kinematic	No data available	
Viscosity, dynamic	No data available	
Explosive properties	No data available.	
Oxidizing Properties	No data available	

Other information

Softening point	No data available
Molecular Weight	No data available
VOC Content	No data available.
Density	No data available
Bulk Density	No data available.

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

No data available.

Incompatible Materials

Bromine Trifluoride, Lithium.

Hazardous Decomposition Products

When heated to decomposition (above 1413 C) may emit toxic fumes of Na₂O and Cl₂.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact	May cause irritation.
Skin contact	Irritating to skin. Prolonged contact may cause redness and irritation.
Inhalation	May cause irritation of respiratory tract. Inhalation of dust in high concentration may cause irritation of respiratory system.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium Chloride 7647-14-5	= 3 g/kg (Rat)	= 10 g/kg (Rabbit)	> 42 g/m ³ (Rat) 1 h

Information on toxicological effects

Symptoms No data available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No data available.

Mutagenic Effects No data available.

Carcinogenicity There are no known carcinogenic chemicals in this product.

Reproductive Toxicity No data available.

Specific target organ systemic toxicity (single exposure) No information available.

Specific target organ systemic toxicity (repeated exposure) No information available.

Target Organ Effects Skin, Eyes, Gastrointestinal tract (GI).

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 3000 mg/kg

LD50 Oral (mg/kg) 3000 mg/kg (rat) Estimated

LD50 Dermal 10000 mg/kg (rat) Estimated

LC50 Inhalation (DUST) 17572 mg/l (mist) (dust) mg/m³ 4 hour Estimated

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium Chloride 7647-14-5	-	5560 - 6080 mg/L: 96 h Lepomis macrochirus LC50 flow-through 12946 mg/L: 96 h Lepomis macrochirus LC50 static 6020 - 7070 mg/L: 96 h Pimephales promelas LC50 static 7050 mg/L: 96 h Pimephales promelas LC50 semi-static 6420 - 6700 mg/L: 96 h Pimephales promelas LC50 static 4747 - 7824 mg/L: 96 h Oncorhynchus mykiss LC50 flow-through	1000 mg/L: 48 h Daphnia magna EC50 340.7 - 469.2 mg/L: 48 h Daphnia magna EC50 Static

Persistence and degradability No data available.

Bioaccumulation No data available.

Other adverse effects No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements. Dispose of in accordance with federal, state, and local regulations.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. TRANSPORT INFORMATION

Harmonized Tariff Schedule / Schedule B

HTS/Schedule B Code 2501.00.0000

DOT Not regulated.

TDG Not regulated.

MEX Not regulated.

ICAO Not regulated.

ICAO/IATA Not regulated.

IMDG/IMO Not regulated.

RID Not regulated.

ADR/RID Not regulated.

ADN Not regulated.

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information

EPA Pesticide registration number Not applicable.

16. OTHER INFORMATION

Technical Contact Tom Ellis
Technical Manager
7901 FM 1405
Baytown, Texas 77523
Office: 281-303-1101 ext 1104

Prepared By HSE Department
4800 San Felipe St.
Houston, TX 77056

Revision Date 10-Apr-2017

Reason for Revision: SDS sections updated 1

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



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

1. Identification

Product identifier	Sodium Hydroxide, Solid
CAS number	01310-73-2
Synonyms	Caustic Soda Micropearls, Caustic Soda Prills.
Recommended use	Raw Material
Recommended restrictions	None known

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Formosa Plastics Corporation
Factory Address	100 Shui-Guan RD, Jen-wu Shiang, Kaohsiung County, Taiwan
Telephone	
Emergency phone number	+886-7-3711411 ext 5406
Product Information	+886-2-2712-2211 ext 6098
E-mail	Evenwang@fpc.com.tw

Distributor

Company name	Connection Chemical, LP
Address	104 Pheasant Run, Suite 104 Newtown, PA 18940
Telephone	
Emergency phone number	Chemtrec – Domestic +1-800-424-9300
Product Information	+1-215-493-4240
E-mail	Orders@connectionchemical.com



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

2. HAZARDS IDENTIFICATION

Physical hazards	Corrosive to Metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific Target Organ Toxicity (Single Exposure)	Category 3

OSHA defined hazards Not classified.

GHS Label elements, including precautionary statements

Pictogram:



Signal word

Danger

Hazard statement(s)

May be corrosive to metals.
Causes severe skin burns and serious eye damage.
May cause respiratory irritation.

Precautionary statement(s)

Prevention

Keep only in original packaging.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash skin thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

Use only outdoors or in a well-ventilated area.
If swallowed: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Immediately call a POISON CENTER or doctor/physician.
Store in corrosive resistant container with a resistant inner liner.
Store locked up.

Disposal	Store in a well ventilated place. Keep container tightly closed. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

3. Composition/information on ingredients

Substances

Chemical name	CAS No.	Wt. %
Sodium Hydroxide, Solid	1310-73-2	Approx. 99

Percentage ranges of composition to protect confidentiality or due to batch variation.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with 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.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

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

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. 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

Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

7. Handling and storage

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

8. Exposure controls/personal protection

Occupational exposure limits

1. US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
Sodium Hydroxide, Solid (CAS 1310-73-2)	PEL	2 mg/m ³

2. US. ACGIH Threshold Limit Values

Material	Type	Value
Sodium Hydroxide, Solid (CAS 1310-73-2)	Ceiling	2 mg/m ³

3. US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Sodium Hydroxide, Solid (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

Appropriate engineering controls

No biological exposure limits noted for the ingredient(s).
Good general ventilation (typically 10 air changes per hour) 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.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

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.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Solid.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

12 0.05% wt/wt solution

Melting point/freezing point

613.4 °F (323 °C)

Initial boiling point and boiling range

2530.4 °F (1388 °C)

Flash point

Not available.

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

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

< 0.0000001 kPa at 25 °C

Vapor density

Not available.

Relative density

Not available.

Solubility(ies)

Solubility (water)

1110 g/l

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity

Not available.

Other information

Density

2.13 g/cm³ estimated

Dynamic viscosity

4 mPa.s

Dynamic viscosity temperature

662 °F (350 °C)

Kinematic viscosity

1.878 mm²/s estimated

Molecular formula

H-Na-O

Molecular weight

40 g/mol

Specific gravity

2.13 at 25 °C



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

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	Do not mix with other chemicals. Contact with incompatible materials.
Incompatible materials	Acids. Oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

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.
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 available.

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 available.

Skin sensitization

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated

Substances (29 CFR

1910.1001-1050)

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 available.

Chronic effects

Prolonged inhalation may be harmful.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

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.

Persistence and degradability

No data is available on the degradability of this product.

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.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

13. Disposal considerations

Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents and container in accordance with government regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

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

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

14. Transport information

DOT

UN number	UN1823
UN proper shipping name	Sodium hydroxide, solid
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	IB8, IP2, IP4, T3, TP33
Packaging exceptions	154
Packaging non bulk	212
Packaging bulk	240

IATA

UN number	UN1823
UN proper shipping name	Sodium hydroxide, solid
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1823
UN proper shipping name	SODIUM HYDROXIDE, SOLID
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B

Special precautions for user

**Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code
DOT**



Read safety instructions, SDS and emergency
procedures before handling.
Not applicable.

IATA; IMDG





Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium Hydroxide, Solid (CAS 1310-73-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

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.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

Food and Drug

Total food additive

Administration (FDA)

Direct food additive , GRAS food additive

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Sodium Hydroxide, Solid (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium Hydroxide, Solid (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium Hydroxide, Solid (CAS 1310-73-2)

US. Rhode Island RTK

Sodium Hydroxide, Solid (CAS 1310-73-2)

US. 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.



Formosa Plastics Corporation

Plastics Division, RM.061, 4FL., 201, Tung Hwa N. RD., Taipei, Taiwan

Tel: +886-2-2712-2211 Fax: +886-2-2713-7012

Safety Data Sheet

16. Other information, including date of preparation or last revision

Issue date August 3, 2017

Version # Ver.1.1

Disclaimer This information was developed from information on the constituent materials. No warranty is expressed or implied regarding the completeness or continuing accuracy of the information contained herein, and FPC disclaims all liability for reliance thereon. The user should satisfy himself that he has all current data relevant to his particular use.

1. Identification

Other means of identification None known.
 Product identifier **SODIUM HYDROXIDE 50% MEM NSF**
 Recommended use ALL PROPER AND LEGAL PURPOSES
 Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Southwest, Inc.
 Address 610 Fisher Road
 Longview, TX 75604
 Telephone 903-759-7151
 E-mail Not available.
 Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.
 Health hazards Acute toxicity, oral Category 3
 Skin corrosion/irritation Category 1
 Serious eye damage/eye irritation Category 1
 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
 Environmental hazards Not classified.
 OSHA defined hazards Not classified.

Label elements



Signal word Danger
 Hazard statement Toxic if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
 Precautionary statement
 Prevention Avoid breathing mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
 Response If swallowed: Immediately call a poison center/doctor. Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Storage Store in a well-ventilated place. Keep container tightly closed. 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 None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
SODIUM HYDROXIDE (NA(OH))		1310-73-2	50 - 60

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
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. May cause respiratory irritation.
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 warm. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

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. Avoid breathing 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 get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing mist/vapors. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	IDLH	10 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (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

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep away from food and drink. 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.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color CLEAR

Odor ODORLESS

Odor threshold Not available.

pH 14

Melting point/freezing point 41 °F (5 °C)

Initial boiling point and boiling range 1371.2 °F (744 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

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 Not available.

Other information

Density 12.76 lbs/gal
1.53 g/ml

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Percent volatile 50 % estimated

Specific gravity 1.53

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong acids.

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.

Eye contact Causes serious eye damage.

Ingestion Toxic if swallowed. 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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Toxic if swallowed.

Product	Species	Test Results
SODIUM HYDROXIDE 50% MEM NSF		
<u>Acute</u>		
Dermal		
ATEmix		2700 mg/kg bw
Oral		
ATEmix		280 mg/kg bw

Components	Species	Test Results
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rat	140 - 340 mg/kg
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	Due to partial or complete lack of data the classification is not possible.	
Skin sensitization	Due to partial or complete lack of data the classification is not possible.	
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.	
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Not listed.		
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.	
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.	
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.
--------------------	--

Components	Species	Test Results
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)		
Aquatic		
<i>Acute</i>		
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 this product.	
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	Dispose of this material and its container to hazardous or special waste collection point. 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	UN1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed.

DOT**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 (NA(OH)) (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)
-------------------------------------	--

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****US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

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.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
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
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).

16. Other information, including date of preparation or last revision

Issue date	10-12-2021
Revision date	07-27-2023
Version #	05
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 3 Flammability: 0 Instability: 1
Disclaimer	While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.



SAFETY DATA SHEET

1. Identification

Product identifier SODIUM HYDROXIDE 50% MEM NSF
Other means of identification None.
Recommended use ALL PROPER AND LEGAL PURPOSES
Recommended restrictions None known.
Manufacturer/Importer/Supplier/Distributor information
Manufacturer
Company name Red Bird Supply, Inc.
Address 3770 Victory Circle
Orange, Texas 77630
Telephone 409-735-2551
E-mail
Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 1A
Serious eye damage/eye irritation 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. Causes serious eye damage.

Precautionary statement

Prevention Do not breathe mist or vapor. Wash thoroughly after handling. 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. 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 None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
SODIUM HYDROXIDE (NA(OH))		1310-73-2	50
Other components below reportable levels			50

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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 or vapor. 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 or vapor. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing.

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.

9. Physical and chemical properties

Appearance

Physical state Liquid.
Form Liquid.
Color Colorless to slightly colored

Odor ODORLESS

Odor threshold Not available.

pH Not available.

Melting point/freezing point 53 °F (11.67 °C)

Initial boiling point and boiling range 1371.2 °F (744 °C) estimated

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	Not available.
Other information	
Density	12.76 lbs/gal
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	50 % estimated
Specific gravity	1.53

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong acids.
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.
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 available.
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	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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.
--------------------	--

Components	Species	Test Results
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)		
Aquatic		
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

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
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. 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	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	UN1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION DOT-SP 12412
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154
DOT information on packaging may be different from that listed.	

IATA

UN number	UN1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION DOT-SP 12412
Transport hazard class(es)	
Class	8

Material name: SODIUM HYDROXIDE 50% MEM NSF

363472 Version #: 06 Revision date: 07-28-2016 Issue date: 05-03-2016

SDS US

5 / 8

Subsidiary risk -
Packing group II
Environmental hazards No.
ERG Code 154
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1824
UN proper shipping name SODIUM HYDROXIDE SOLUTION (SODIUM HYDROXIDE (NA(OH)))
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

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.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

US. Massachusetts RTK - Substance List

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

US. Pennsylvania Worker and Community Right-to-Know Law

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

US. Rhode Island RTK

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)

US. 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.

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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).

16. Other information, including date of preparation or last revision

Issue date 05-03-2016
Revision date 07-28-2016
Version # 06
HMIS® ratings Health: 3
 Flammability: 0
 Physical hazard: 0

NFPA ratings

Health: 3
Flammability: 0
Instability: 1

1. Identification

Product identifier	Sodium Hypochlorite 12.5%
Other means of identification	
SDS Number	320222-08
Product registration number	EPA 148-1288
Recommended use	Bleaching agent; water treatment; disinfectant; detergent; cleaning agent.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Company name	Harcros Chemicals Inc
Address	5200 Speaker Rd. Kansas City, KS 66106 United States
Main Telephone Number	1-913-321-3131
Website	www.harcros.com
E-mail	custserv@harcros.com
Emergency #: CHEMTREC	1-800-424-9300
Emergency #: CHEMTREC	1-703-741-5970 (International Number - Call collect)

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Skin corrosion/irritation Category 1 Serious eye damage/eye irritation Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard Category 1 Hazardous to the aquatic environment, long-term hazard Category 1
OSHA defined hazards	Not classified.

Label elements



Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. Causes serious eye damage. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Do not breathe mist or vapors. Avoid release to the environment. Wear eye protection/face protection. Wear protective impervious 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. Wash contaminated clothing before reuse.
Storage	Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in accordance with local, regional, national, and international regulations.
Disposal	Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

22.4% of the mixture consists of component(s) of unknown acute dermal toxicity. 12.5% of the mixture consists of component(s) of unknown acute inhalation toxicity. 9.9% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 9.9% 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	%
Water		7732-18-5	75 - 80
Sodium Hypochlorite		7681-52-9	11.9 - 15.6
Sodium Hydroxide		1310-73-2	0.1 - 2
Sodium Chloride		7647-14-5	≤ 12.5

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. 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.

5. Fire-fighting measures

Suitable extinguishing media

Foam. 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

Absorb/clean with appropriate and compatible material. Stop flow of material if without risk. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not breathe mist or vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

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

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium Hypochlorite (CAS 7681-52-9)	STEL	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Not available.

Individual protection measures, such as personal protective equipment

General

It is recommended that users of this product perform a risk assessment to determine the appropriate PPE.

Eye/face protection

Do not get in eyes. Wear chemical goggles and face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin protection

Hand protection

Wear appropriate chemical resistant, impervious gloves. Wear protective gloves. For prolonged or repeated skin contact use suitable protective and impervious gloves.

Other

Wear appropriate chemical resistant clothing.

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.

9. Physical and chemical properties

Appearance

Clear.

Physical state

Liquid.

Form

Liquid.

Color

Clear to pale yellow.

Odor

Chlorine.

Odor threshold

Not available.

pH

12 - 14 (1% in DI Water)

Melting point/freezing point

-4 - 3 °F (-20 - -16.11 °C)

Initial boiling point and boiling range	> 230 °F (> 110 °C)
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	12 mm Hg @ 20°C
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	1.209 @ 20°C

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	Reacts violently with strong acids. This product may react with oxidizing agents. Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.
Incompatible materials	Strong acids. Bases, alkalis (organic). Oxidizing agents.
Hazardous decomposition products	Chlorine. Hydrogen chloride.

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.
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.
-----------------------	------------

Components	Species	Test Results
Sodium Chloride (CAS 7647-14-5)		
Acute		
Oral		
LD50	Rat	3000 mg/kg

Components	Species	Test Results
Sodium Hydroxide (CAS 1310-73-2)		
<u>Acute</u>		
Dermal		
LD50	Rat	1350 mg/kg
Oral		
LD50	Rat	140 - 340 mg/kg
Sodium Hypochlorite (CAS 7681-52-9)		
<u>Acute</u>		
Oral		
LD50	Rat	8.91 g/kg
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	Due to partial or complete lack of data the classification is not possible.	
Skin sensitization	Due to partial or complete lack of data the classification is not possible.	
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.	
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Sodium Hypochlorite (CAS 7681-52-9)		3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.	
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.	
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.	
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity		Very toxic to aquatic life with long lasting effects.	
Product	Species		Test Results
Sodium Hypochlorite 12.5%			
Aquatic Crustacea	EC50		40 mg/l, 96 hours Nittocra Spinipes Fasciatus
			4 mg/l, 96 hours Gammarus Fasciatus
	EC50	Daphnia	2519.1724 mg/l, 48 hours estimated
			0.07 - 0.7 mg/l, 24 hours magna
Fish			0.006 mg/l, 24 hours Ceriodaphina sp.
	LC50	Fish	12.5131 mg/l, 96 hours estimated
Components	Species		Test Results
Sodium Chloride (CAS 7647-14-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	340.7 - 469.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	6020 - 7070 mg/l, 96 hours

Components	Species		Test Results
Sodium Hydroxide (CAS 1310-73-2)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/l, 48 hours
	LC50	Common shrimp, sand shrimp (Crangon crangon)	33 - 100 mg/l, 48 hours
Fish	LC50	Bony fish superclass (Osteichthyes)	33 - 100 mg/l, 48 hours
		Western mosquitofish (Gambusia affinis)	125 mg/l, 96 hours
Sodium Hypochlorite (CAS 7681-52-9)			
Aquatic			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.038 - 0.065 mg/l, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
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. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
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	UN1791
UN proper shipping name	Hypochlorite solutions (Sodium Hypochlorite), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241
Reportable Quantity for Sodium Hypochlorite = 100 lbs.	
Not a Marine Pollutant by DOT in containers of 119 gallons or less.	

IATA

UN number	UN1791
UN proper shipping name	Hypochlorite solution (Sodium Hypochlorite)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1791
UN proper shipping name	Hypochlorite solution (Sodium Hypochlorite), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Environmental hazards	
Marine pollutant	Yes
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

Not established.

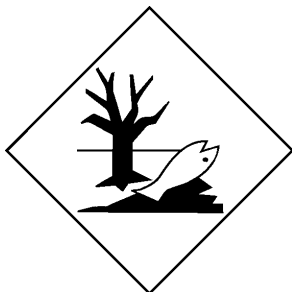
DOT



IATA; IMDG



Marine pollutant



General information

IMDG Regulated Marine Pollutant.

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) All components of the mixture on the TSCA 8(b) inventory are designated "active".

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.

Sodium Hypochlorite (CAS 7681-52-9)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

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

SARA 313 (TRI reporting)

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
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
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).

16. Other information, including date of preparation or last revision

Issue date	05-05-2014
Revision date	11-19-2019
Version #	16
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 1
NFPA ratings	Health: 3 Flammability: 0 Instability: 1

Disclaimer

The information provided in this Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc., knows of no medical condition, other than those noted on this Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

Revision information

Product and Company Identification: Product and Company Identification

Hazard(s) identification: Disposal

Hazard(s) identification: Prevention

Hazard(s) identification: Storage

Accidental release measures: Personal precautions, protective equipment and emergency procedures

Accidental release measures: Methods and materials for containment and cleaning up

Handling and storage: Precautions for safe handling

Exposure controls/personal protection: Appropriate engineering controls

Exposure controls/personal protection: General

Exposure controls/personal protection: Hand protection

Physical & Chemical Properties: Multiple Properties

Transport Information: Material Transportation Information

Other information, including date of preparation or last revision: Disclaimer

GHS: Classification

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

*** Section 1 - Identification ***

Chemical Name: Sodium Nitrite, Technical Grade

Product Use: For Commercial Use

RESTRICTIONS on USE

NOT TO BE USED AS A PESTICIDE. THIS PRODUCT IS NOT TO BE USED IN VIOLATION OF ANY PATENTS. CHEM ONE LTD. DISCLAIMS ANY AND ALL WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR APPLICATION. IN NO EVENT SHALL CHEM ONE LTD. OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER INCLUDING DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LOSS OF BUSINESS PROFITS OR SPECIAL DAMAGES, EVEN IF CHEM ONE LTD. OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES SO THE FOREGOING LIMITATION MAY NOT APPLY.

Supplier Information

Chem One Ltd.
14140 Westfair East Drive
Houston, Texas 77041-1104

Phone: (713) 896-9966
Fax: (713) 896-7540
Emergency # (800) 424-9300 or (703) 527-3887

General Comments: NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 – Hazard(s) Identification ***

GHS HAZARDS

Hazard Classes

Oxidizing solids
Acute toxicity, Oral
Eye irritation
Acute aquatic toxicity

Hazard Categories

Category 3
Category 3
Category 2A
Category 1

Signal Word: Danger



Pictograms:

Hazard Statements

PHYSICAL HAZARDS:

H272: May intensify fire; oxidizer

HEALTH HAZARDS:

H301 Toxic if swallowed
H319 Causes serious eye irritation.

ENVIRONMENTAL HAZARDS:

H400: Very toxic to aquatic life

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces. No

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

smoking.
P220: Keep/Store away from clothing/combustible materials.
P221: Take any precaution to avoid mixing with combustibles
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear eye protection/face protection/protective gloves.

RESPONSE STATEMENTS:

P301+P330+P310: IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor.
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.
P391: Collect spillage.

STORAGE STATEMENTS:

P405: Store locked up.

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations.

Hazards not otherwise classified (HNOC):

No data available

*** Section 3 – Composition/Information on Ingredients ***

CAS #	Component	Percent
7632-00-0	Sodium Nitrite	> 98%

*** Section 4 - First Aid Measures ***

Emergency Overview

Sodium Nitrite is a white granular or crystalline solid. Harmful if inhaled. May be fatal if swallowed. May be absorbed through the skin. Overexposure may produce symptoms such as palpitations, headache, blood pressure drop, and visual disturbances. This product reacts with amines to produce carcinogenic nitrosamines. Sodium Nitrite is deliquescent and will adsorb moisture from the air. Sodium Nitrite is not combustible, however, as an organic solid, dusts of this product may create an explosion hazard in the presence of a source of ignition. Sodium Nitrite is an oxidizer, which can increase the intensity of fire. Toxic fumes may be produced in fire. Firefighters should wear full protective equipment and clothing.

Potential Health Effects: Eyes

Exposure to particulates or solution of this product may cause irritation of the eyes with symptoms such as stinging, tearing, redness and pain.

Potential Health Effects: Skin

Product may be absorbed through the skin. Prolonged or repeated contact with this product may cause irritation and possibly dermatitis. Skin may become flushed or turn blue.

Potential Health Effects: Ingestion

May be fatal if swallowed. May cause discomfort, nausea or vomiting. Symptoms may include palpitations, headache, blood pressure drop, cyanosis and visual disturbance. Product may cause methemoglobinemia if swallowed.

Potential Health Effects: Inhalation

Breathing dusts or particulates generated by this product can lead to irritation of the nose, throat or respiratory system. Symptoms of such exposure could include coughing, sneezing, and chest discomfort.

First Aid: Eyes

In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Seek immediate medical attention.

First Aid: Skin

Remove all contaminated clothing. For skin contact, wash extremely thoroughly with soap and water. Seek immediate medical attention if irritation develops or persists.

First Aid: Ingestion

DO NOT INDUCE VOMITING. If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

Material is non-combustible but will accelerate the burning of combustible materials. Contact with organic matter will ignite by friction. Toxic nitrogen oxides will be released in fire involving this material. If large quantities are involved, or the material is finely divided, an explosion may result. Sodium Nitrite explodes at temperatures above 1000 deg F or when in contact with cyanides, ammonia salts, cellulose, lithium, potassium and ammonia, or sodium thiosulfate. Containers may explode in fire.

Hazardous Combustion Products

Nitrogen oxides and oxygen.

Extinguishing Media

Do not use dry chemicals, CO₂, Halon or foams. Use water in very large amounts of water as needed.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Prevent the spread of any released product to combustible objects.

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 3 Other: Oxidizer

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information). DO NOT USE SAWDUST.

Clean-Up Procedures

Small releases can be cleaned-up wearing gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. If a vacuum is used for spill clean-up, only an explosion-proof vacuum should be used, due to the potential for dust explosion. Do not allow the spilled product to enter public drainage system or open water courses. Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up. Avoid contamination of soil, and prevent spill residue from running to groundwater or storm drains.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials which can burn away from spilled material. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Avoid accumulation of dusts of this product. Wherever dust clouds may be generated, eliminate sparks, flames and other ignition sources. Periodically wash-down areas where this product is used to avoid dust accumulation. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Sodium Nitrite at 460 deg F in contact with a combustible container in which it is shipped undergoes vigorous decomposition reaction producing propellant-type burning until container is consumed. Keep container tightly closed when not in use. If this product is transferred into another container, only use portable containers and tools approved for oxidizing solids. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

Reactivity). Store containers away from wood, cardboard boxes, and other combustible materials. Storage areas should be made of corrosion and fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Refer to NFPA 43A, *Liquid, Solid Oxidizers*, for additional information on storage.

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

The exposure limits given are for Particulates Not Otherwise Classified.

ACGIH: 10 mg/m³ TWA (Inhalable fraction)

3 mg/m³ TWA (Respirable fraction)

OSHA: 15 mg/m³ TWA (Total dust)

5 mg/m³ TWA (Respirable fraction)

DFG MAKs 4 mg/m³ TWA (Inhalable fraction)

1.5 mg/m³ TWA (Respirable fraction)

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent Standards of Canada. Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields (or goggles) and a face shield, if this material is made into solution. If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

No specific guidelines are available. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. An approved dust and mist air-purifying respirator may be adequate. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area.

Protective Clothing Pictograms:



Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

*** Section 9 - Physical & Chemical Properties ***

Physical Properties: Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance:	White, granular or crystalline solid	Odor:	Odorless
Physical State:	Solid	Bulk Density:	Not available
Vapor Pressure:	Negligible.	Vapor Density:	Not applicable
Initial boiling point and boiling range:	Not applicable	pH:	Aqueous solutions are alkaline
Solubility (H₂O):	Readily soluble	Specific Gravity:	2.17 (H ₂ O = 1)
Softening Point:	Not available	Particle Size:	Not available
Molecular Weight:	69.0	Freezing/Melting Point:	519 deg F (271 deg C)
Flash Point:	Not applicable	Chemical Formula:	NaNO ₂
Odor threshold:	Not applicable	Auto Ignition temperature:	Not available
Upper Flammable Limit (UEL):	Not applicable	Lower Flammable Limit (LEL) :	Not applicable
Rate of Burning:	Not applicable	Flammability (solid, gas):	Not flammable
Evaporation rate:	Not applicable	Partition coefficient: n-octanol/water:	Not available
Decomposition temperature:	Not available	Viscosity:	Not applicable
Relative density:	Not available		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Sodium Nitrite very slowly oxidizes to nitrate in air. Solutions of sodium nitrite are unstable and should be prepared directly before use.

Chemical Stability: Conditions to Avoid

Avoid high temperatures and ignition sources. Keep away from materials which can burn.

Incompatibility

This product is incompatible with amines, acids, organic materials, permanganates, cyanides, chlorates, iodides, sulfates, urea and ammonium compounds. Incompatible with aminoguanidine salts, butadiene, phthalic acid, phthalic anhydride, reductants, sodium amide, sodium disulfite, sodium thiocyanate, urea wood. Addition of Solid Nitrite to molten amide causes immediate gas evolution, followed by violent explosion. Mixture of sodium nitrite and sodium thiocyanate explodes on heating. Interaction of nitrites when heated with metal aminosulfates ('sulfamates') may become explosively violent owing to liberation of nitrogen & steam. Mixtures with ammonium sulfamate form ammonium nitrate which decomposes violently around 80 deg C. Violent explosion occurs if an ammonium salt is melted with nitrite salt. When sodium nitrite & thiosulfate mixture was heated to evaporate to dryness, violent explosion occurred. Solutions of potassium and sodium nitrite in liquid ammonia form disodium nitrite, which is very reactive & easily explosive. Lithium reacts with sodium nitrite to form lithium sodium hydronitrite, a compound which decomposes violently around 100-130 deg C.

Hazardous Decomposition

Upon heating, nitrogen oxides, and oxygen are released, which increases potential of fire. In contact with all acids, Sodium Nitrite decomposes to form nitrogen oxides.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Sodium Nitrite is toxic by ingestion causing a reduction in oxygen carrying blood cells (methemoglobinemia), reduced blood pressure and cardiac effects. **WARNING!** Do Not Add Nitrites to Metalworking Fluids under Penalty of Federal Law. Addition of nitrites leads to formation of a substance known to cause cancer.

B: Component Analysis - LD₅₀/LC₅₀

Sodium Nitrite (7632-00-0)

Oral-Mouse LD₅₀: 175 mg/kg; Subcutaneous-rat LD₅₀: 96,600 µg/kg; Intraperitoneal-Mouse LD₅₀: 158 mg/kg; Oral-Rat LD₅₀: 85

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

mg/kg; Inhalation-Rat LC₅₀: 5500 mg/m³

B: Component Analysis - TClO

Sodium Nitrite (7632-00-0)

Inhalation-rat TClO: 125 µg/m³/22 weeks-intermittent: Brain and Coverings: recordings from specific areas of CNS; Blood: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases;

B: Component Analysis - TD/TDL0/LDL0

Sodium Nitrite (7632-00-0)

Oral-Man TDLo: 1714 mg/kg/70 minutes: Cardiovascular effects; Oral-Human LDLo: 71 mg/kg; Central nervous system effects, Gastrointestinal tract effects, Blood effects; Oral-Human TDLo: 14 mg/kg; Behavioral: changes in motor activity (specific assay); Vascular: regional or general arteriolar or venous dilation; Gastrointestinal: nausea or vomiting; Oral-man LDLo: 321 mg/kg; Behavioral: coma; Lungs, Thorax, or Respiration: cyanosis; Blood: methemoglobinemia-carboxyhemoglobin; Oral-man TDLo: 1714 µg/kg/70 minutes: Cardiac: pulse rate increase, without fall in BP; Vascular: BP lowering not characterized in autonomic section; Oral-Child LDLo: 22 mg/kg; Oral-rat TDLo: 6080 mg/kg; lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: growth statistics (e.g. %, reduced weight gain), other postnatal measures or effects; Oral-rat TDLo: 22,500 mg/kg/90 days-continuous: Liver: other changes; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: other transferases; Oral-rat TDLo: 17,080 mg/kg/61 days-continuous: Brain and Coverings: changes in surface EEG; Behavioral: somnolence (general depressed activity); Blood: methemoglobinemia-carboxyhemoglobin; Oral-rat TDLo: 4477 mg/kg/26 weeks-intermittent: Blood: methemoglobinemia-carboxyhemoglobin, Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases, Enzyme inhibition, induction, or change in blood or tissue levels: transaminases; Oral-rat TDLo: 134 gm/kg/64 weeks-continuous: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Oral-Rat TDLo: 2190 g/kg/2 years-continuous: Carcinogenic effects; Oral-Rat TDLo: 185 gm/kg/61 weeks-continuous: Lungs, Thorax, or Respiration: changes in lung weight; Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain; Oral-Rat TD: 63 g/kg/95 weeks-continuous: Equivocal tumorigenic agent; Oral-Rat TD: 91 g/kg/2 years-continuous: Equivocal tumorigenic agent, Reproductive effects; Oral-Rat TD: 183 g/kg/2 years-continuous: Equivocal tumorigenic agent, Reproductive effects; Oral-Rat TD: 100 g/kg/2 years-intermittent: Neoplastic effects; Oral-Rat TD: 40 g/kg/56 weeks-continuous: Neoplastic effects; Oral-Rat TD: 365 gm/kg/2 years-intermittent: Tumorigenic: Carcinogenic by RTECS criteria; Gastrointestinal: tumors; Oral-Dog, adult LDLo: 330 mg/kg; Oral-Cat, adult LDLo: 1500 mg/kg; Oral-Rabbit, adult LD₅₀: 186 mg/kg; Inhalation-rat TClO: 300 µg/m³/4 hours/30 days-intermittent: Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: phosphatases: catalyses; Subcutaneous-Rat LDLo: 10 mg/kg; Subcutaneous-Mouse LDLo: 150 mg/kg; Subcutaneous-Dog, adult LDLo: 60 mg/kg; Subcutaneous-Cat, adult LDLo: 35 mg/kg; Subcutaneous-rabbit LDLo: 60 mg/kg; Intravenous-Dog, adult LDLo: 15 mg/kg; Intraperitoneal-rat TDLo: 960 mg/kg/30 days-intermittent: Liver: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: catalyses; Related to Chronic Data: death; Intravenous-rabbit LDLo: 80 mg/kg; Peripheral Nerve and Sensation: spastic paralysis with or without sensory change; Behavioral: coma; Kidney, Urethra, Bladder: urine volume increased; Subcutaneous-frog LDLo: 1 gm/kg

Carcinogenicity

A: General Product Information

Sodium nitrite is not considered a carcinogen. However, when this material comes in contact with secondary and tertiary amines, nitrosamines are produced. Nitrosamines are potentially carcinogenic.

B: Component Carcinogenicity

Sodium Nitrite (7632-00-0)

Sodium Nitrite is not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology

No information available.

Neurotoxicity

Animal studies indicate Sodium Nitrite may cause peripheral nerve effects, convulsions or effects on seizure threshold.

Mutagenicity

Sodium Nitrite has tested positive in mammalian and non-mammalian in vitro assays.

Teratogenicity

In reproductive studies, after female mice were fed sodium nitrite there was an increased number of fetal deaths.

Reproductive Data:

Sodium Nitrite (7632-00-0)

Intravenous-cattle TDLo: 36 mg/kg; female 30-31 week(s) after conception: Reproductive: Effects on Embryo or Fetus: other effects to embryo; Oral-mouse TDLo: 1680 mg/kg; male 14 day(s) pre-mating: Reproductive: Fertility: male fertility index (e.g. # males impregnating females per # males exposed to fertile non-pregnant females); Oral-mouse TDLo: 840 mg/kg; male 14 day(s) pre-mating: Reproductive: Oral-mouse TDLo: 2149 mg/kg; male 2 week(s) pre-mating; female 2 week(s) pre-mating 3 week(s) post-birth: Tumorigenic: Carcinogenic by RTECS criteria; Reproductive: Tumorigenic effects: transplacental tumorigenesis; Lungs,

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

Thorax, or Respiration: tumors; Oral-mouse TDLo: 280 mg/kg: female 1-14 day(s) after conception: Reproductive: Specific Developmental Abnormalities: blood and lymphatic systems (including spleen and marrow); Oral-mouse TDLo: 1200 mg/kg: female 6-15 day(s) after conception: Reproductive: Fertility: pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea), Effects on Embryo or Fetus: fetal death; Oral-Rat TDLo: 10,280 mg/kg: female 1-22 day(s) after conception lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: weaning or lactation index (e.g., # alive at weaning per # alive at day 4); Oral-rat TDLo: 6080 mg/kg: lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: growth statistics (e.g. %, reduced weight gain), other postnatal measures or effects; Oral-Rat TDLo: 660 mg/kg (1-22 days preg): Teratogenic effects; Oral-Rat TDLo: 11 g/kg (1-22 days preg/21 days post): Reproductive effects; Oral-Mouse TDLo: 2149 mg/(pre-post-birth): Carcinogenic effects, Teratogenic effects; Oral-mouse TDLo: 280 mg/kg: female 1-14 day(s) after conception: Reproductive: Specific Developmental Abnormalities: blood and lymphatic systems (including spleen and marrow); Oral-Rat TDLo: 10,280 mg/kg: female 1-22 day(s) after conception lactating female 20 day(s) post-birth: Reproductive: Effects on Newborn: weaning or lactation index (e.g., # alive at weaning per # alive at day 4);

Other Toxicological Information

None.

*** Section 12 - Ecological Information ***

Ecotoxicity

Product Name	Results	Species	Exposure
Sodium Nitrite	LC50 7.7mg/l	Fish	96 hours
Sodium Nitrite	LC50 12.5 mg/l.	Daphnia	48 hours

Toxicity: Harmful to aquatic organisms, contain runoff. Harmful to aquatic life in very low concentrations.

Persistence and Degradability: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation/ Accumulation: No information available

Mobility: No information available

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

This product may be considered an EPA Waste D001 (Ignitable-Oxidizer) or D003 (reactivity).

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces.

This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

*** Section 14 – Transportation Information Ground ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under 49 CFR, IATA and IMDG to assure regulatory compliance.

US DOT 49 CFR 100-185 Revised April 10,2014 Information



UN/NA #: UN 1500

Shipping Name: Sodium nitrite

Hazard Class: 5.1

Packing Group: III

Required Label(s): 5.1 (Oxidizer) (6.1) (Toxic)

Special Provision: IB8, IP3

Packaging: 172.213

RQ Quantity: For a single package less than the RQ of 100lb (45.4 kg), the RQ designation should be not be used.

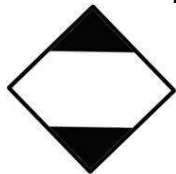
Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

Marking: Marine Pollutant when shipping ground greater than 882 pounds single container or any quantity by water

Additional Shipping Information



Limited Quantity Shipments: Shipments, except for air, need not be marked with the Proper Shipping Name of the contents, but shall be marked with a diamond. The top and bottom portions of the square-on-point must be black and the center white or of a suitable contrasting background. The mark must be at least 2 mm. Each side must have a minimum dimension of 100 mm. Small packages which cannot reasonably accommodate a 100 mm square-on-point mark may be marked with a square-on-point mark with a minimum side dimension of 50 mm. The total weight of each outer packaging cannot exceed 30 kg (66 pounds).

Small Quantities for Highway and Rail: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle. The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement of the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test requirements of 173.4(6) (i). The outside of the package must be marked with the statement **"This package conforms to 49 CFR 173.4 for domestic highway or rail transport only."**

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 1000 g (2.2 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet a drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce. For highway or rail transportation no shipping paper is required. The package must be legibly marked with the following marking:



NOTE: The "" must be replaced 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce. For highway or rail transportation no shipping paper is required. The package must be legibly marked with the following marking:

NOTE: The "" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm (3.9 inches) x 100 mm (3.9 inches), and must be durable and clearly visible.

De minimis Exceptions: The maximum quantity of this material per inner receptacle is limited to 1g (0.04 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 100 g (0.22 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce and may be transported by aircraft. If all of the above requirements are met, then this material is not regulated.

*** Section 14 – Transportation Information Air ***

Please refer to the most recent edition of the "International Air Transport Association (IATA)" Regulations

*** SECTION 14 – Transportation Information Vessel ***

Please refer to the most recent Amendment of the "International Maritime Dangerous Goods (IMDG) Code"

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

EPA Section 12 (b) export notification is required for applicable shipments of Sodium Nitrite.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4):

Sodium Nitrite (7632-00-0)

SARA 313 form R reporting required for 1.0% de minimus concentration

CERCLA final RQ = 100 pounds (45.4 kg)

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Nitrite	7632-00-0	Yes	Yes	No	Yes	Yes

State Regulations

A: General Product Information

California Proposition 65

Sodium Nitrite is not on the California Proposition 65 chemical lists.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sodium Nitrite	7632-00-0	Yes	No	Yes	No	Yes	Yes

Other Regulations

A: General Product Information

Sodium Nitrite is considered a hazardous substance under Section 311 of the Federal Water Pollution Control Act (Clean Water Act).

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Sodium Nitrite	7632-00-0	Yes Active	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Sodium Nitrite	7632-00-0	1%

*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Safety Data Sheet

Material Name: Sodium Nitrite

ID: C1-174

* * * Section 16 - Other Information (Continued) * * *

Revision Log

08/28/00 4:31 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.
06/02/01 9:31 AM HDF Checked exposure limits; made changes to Sect 9; overall review, add SARA 311/312 Haz Ratings.
08/20/01 4:17 PM CLJ Changed contact to Sue, non-800 Chemtrec Num.
01/16/02 11:59 AM SEP Changed fiber drum and carton, Section 7, to combustible container, and container, respectively.
02/18/02 11:13 AM HDF Up-date of SARA Hazard Ratings
06/24/02 13:00 PM HDF Revision of text to shipping section for clarification of Placarding and Labeling requirements.
07/31/03 12:00 pm HDF General review of entire MSDS. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
10/21/03 710 AM HDF Addition of statement to Section 1 that this material may not be added to metal working fluids. Addition of warning in Section 11 on formation of carcinogenic substance if added to metal working fluids. Addition of EPA Section 12 (b) Export Notification requirement in Section 15.
06/22/05 1:26PM SEP Update IATA Section 14
09/05/06 4:11 pm sep Update DOT and IMO Section 14
10/15/08 9:40 AM DLY Changed Chem One Physical Address, Section 1
09/18/09 MMK Updated Section 14 limited and excepted quantities and exceptions
4/1/2014 GHS revision all sections

This is the end of SDS # C1-174

Revised By:
SJC Compliance Education, Inc.
16516 El Camino Real Suite 417
Houston, TX 77062

09/27/2018 Melanie Koch removed IMDG and IATA specific shipping information and added a refer to latest edition statement.
Nothing else was changed during this revision.
06/17/2019 Revised Sections 2, 4 and 9, removed ANSI Labeling.



SAFETY DATA SHEET

SPECTRUS* BD1501E

1. Identification

Product identifier SPECTRUS BD1501E
Other means of identification None.
Recommended use Biodispersant
Recommended restrictions Industrial use only.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 1
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Wear eye/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of soap and water. 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 or doctor/physician. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. 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 None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Alcohols, C10, alkoxylated	166736-08-9	10 - 20

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Call a POISON CENTER or doctor/physician if you feel unwell. If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.
Skin contact	Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.
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. Get medical attention immediately.
Ingestion	Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. 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.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. 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. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. 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. Ventilate area, use specified protective equipment. Flush area with water. Wet area may be slippery.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not get this material in contact with eyes. Avoid contact with skin. Avoid contact with clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in cool, well ventilated area. Store away from oxidizers.

8. Exposure controls/personal protection

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.

Skin protection

Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Impervious gloves. Wash off after each use. Replace as necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary. Not applicable.

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.

9. Physical and chemical properties

Appearance

Color

Colorless

Physical state

Liquid

Odor

Mild

Odor threshold

Not available.

pH (concentrated product)

6.7

pH in aqueous solution

Not available.

Melting point/freezing point

31 °F (-1 °C)

Initial boiling point and boiling range

220 °F (104 °C)

Flash point

Not applicable.

Evaporation rate

< 1 (Ether = 1)

Flammability (solid, gas)

Not available.

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

18 mm Hg

Vapor pressure temp.

70 °F (21 °C)

Vapor density

< 1 (Air = 1)

Relative density	1.02
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	110 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	36 °F (2 °C)
Specific gravity	1.019
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
Conditions to avoid	Avoid contact with strong oxidizers. Protect from freezing.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
-----------------------	-----------------------------------

Product	Species	Test Results
SPECTRUS BD1501E (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	3570 mg/kg, (Calculated according to GHS additivity formula (Category 5))
Components	Species	Test Results
Alcohols, C10, alkoxylated (CAS 166736-08-9)		
Acute		
<i>Oral</i>		
LD50	Rat	500 - 2000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
----------------------------------	--

Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)	
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	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species		Test Results
SPECTRUS BD1501E (CAS Mixture)			
Aquatic			
Crustacea	IC25	Ceriodaphnia	39.9 mg/l, Chronic Bioassay, 7 day
		Ceriodaphnia	200 mg/l, Static Renewal Bioassay, 48 hour
		Daphnia magna	38.2 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Ceriodaphnia	100 mg/l, Static Renewal Bioassay, 48 hour
			25 mg/l, Chronic Bioassay, 7 day
		Daphnia magna	12.5 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	Fathead Minnow	82.5 mg/l, Static Renewal Bioassay, 96 hour
		Rainbow Trout	141.4 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Fathead Minnow	31.3 mg/l, Static Renewal Bioassay, 96 hour
		Rainbow Trout	100 mg/l, Static Renewal Bioassay, 96 hour

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO2/g)	647 (calculated data)
- BOD 5 (mgO2/g)	0 (calculated data)
- BOD 28 (mgO2/g)	0 (calculated data)
- TOC (mg C/g)	0 (calculated data)

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. 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	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). Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
-------------------------------	--

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

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
Specific target organ toxicity (single or repeated exposure)

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.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)	Hazardous substance
---	---------------------

Safe Drinking Water Act (SDWA)	Not regulated.
---------------------------------------	----------------

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

NSF Registered and/or meets USDA (according to 1998 guidelines):

Registration No. – 141060
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (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 Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-27-2014
Revision date Feb-24-2020
Version # 3.0
NFPA ratings Health: 3
Flammability: 0
Instability: 0

NFPA ratings



List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
NFPA: National Fire Protection Association
ACGIH: American Conference of Governmental Industrial Hygienists
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
DOT: Department of Transportation (49 CFR 172.101).
IARC: International Agency for Research on Cancer.
OSHA: Occupational Safety & Health Administration.
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

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.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

SPECTRUS* NX1100

1. Identification

Product identifier	SPECTRUS NX1100
Other means of identification	None.
Recommended use	Biocide
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention

Wear eye/face protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wash hands thoroughly after handling. Keep only in original container. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

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 or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	2.5 - 10
Magnesium nitrate	10377-60-3	2.5 - 10
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	2.5 - 10
Magnesium chloride	7786-30-3	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
-----------------------------	--

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
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	Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. 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. May cause respiratory irritation.
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 warm. Keep victim under observation. Symptoms may be delayed. Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. 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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Cool containers / tanks with water spray.
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 or vapor. 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 Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment.

7. Handling and storage

Precautions for safe handling Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Corrosive liquid. Do not breathe vapors or spray mist.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place. Store at temperatures below 35°C Use approved containers only. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. 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

Color	Colorless to yellow green
Physical state	Liquid
Odor	None
Odor threshold	Not available.
pH (concentrated product)	3
pH in aqueous solution	3.7 (5% SOL.)
Melting point/freezing point	24 °F (-4 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.11
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Percent volatile	0
Pour point	29 °F (-2 °C)
Specific gravity	1.107

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen bromide, bromine gas, hydrogen chloride, chlorine gas, oxides of carbon and nitrogen evolved in fire. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.

Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Harmful if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
-----------------------	--

Product	Species	Test Results
SPECTRUS NX1100 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1030 mg/kg
Components	Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)		
Acute		
<i>Dermal</i>		
LD50	Rat	1600 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 0.59 mg/l, 4 Hour, (Aerosol toxicity)
<i>Oral</i>		
LD50	Rat	324 mg/kg
Magnesium chloride (CAS 7786-30-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Magnesium nitrate (CAS 10377-60-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	5400 mg/kg
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (CAS 55965-84-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	90 mg/kg
<i>Inhalation</i>		
LC50	Rat	0.33 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	67 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin burns.
Serious eye damage/eye irritation	Corrosive to eyes. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.

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 classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
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	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
SPECTRUS NX1100 (CAS Mixture)			
	LC50	Ceriodaphnia	4.7 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	3.5 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	15.9 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	40.5 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	26.7 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Ceriodaphnia	0.63 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	1.8 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	12.5 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	18 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	15.5 mg/l, Static Renewal Bioassay, 96 hour

Aquatic

Crustacea	LC50	Daphnia magna	5 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Daphnia magna	2.5 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	Rainbow Trout	7.2 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	3.1 mg/l, Static Renewal Bioassay, 96 hour

Components		Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)			
	EC50	Daphnia Magna	1.4 mg/l, 48 hour
Aquatic			
Fish	LC50	Rainbow Trout	41 mg/l, 96 hour

Bioaccumulative potential Not bioaccumulating (Refers to active component) 2-Bromo-2-nitropropane-1,3-diol

Partition coefficient n-octanol / water (log Kow)

Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one 0.486

Mobility in soil	No data available.
Other adverse effects	Nutrients: N = 8.03 mg/g
Persistence and degradability	
- COD (mgO2/g)	78 (calculated data)
- BOD 5 (mgO2/g)	2 (calculated data)
- BOD 28 (mgO2/g)	4 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	8 (calculated data)
- TOC (mg C/g)	29 (calculated data)

13. Disposal considerations

Disposal instructions	Dispose of in approved pesticide facility or according to label instructions. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company. D002= Corrosive
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Dispose of in approved pesticide facility or according to label instructions. 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	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	153
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	
IATA	
UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	153
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
IMDG	
UN number	UN3265
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Environmental hazards

Marine pollutant

EmS

Special precautions for user

Yes

F-A, S-B

Read safety instructions, SDS and emergency procedures before handling.

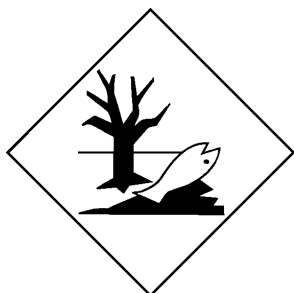
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

This is an EPA registered biocide and is exempt from TSCA inventory requirements. See FIFRA registry number. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Magnesium nitrate	10377-60-3	2.5 - 10

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.

Clean Water Act (CWA) Hazardous substance
Section 112(r) (40 CFR 68.130)

Safe Drinking Water Act Not regulated.
(SDWA)

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

FIFRA registration number 3876-151

TSCA This is an EPA registered biocide and is exempt from TSCA inventory requirements.

FIFRA hazard statement This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
 Corrosive
 Causes irreversible eye damage
 Causes skin burns
 Harmful if swallowed or absorbed through the skin
 Harmful if inhaled
 Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals
 This pesticide is toxic to fish and aquatic organisms

Food and drug administration 21 CFR 176.300 & 176.170 (slimicides and as a preservative)

NSF Registered and/or meets Registration No. – 141064

USDA (according to 1998 Category Code(s):
guidelines): G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Magnesium nitrate (CAS 10377-60-3)

US - Pennsylvania RTK - Hazardous Substances

Magnesium nitrate (CAS 10377-60-3)

US - Rhode Island RTK

Magnesium nitrate (CAS 10377-60-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Magnesium chloride (CAS 7786-30-3)

Magnesium nitrate (CAS 10377-60-3)

US. New Jersey Worker and Community Right-to-Know Act

Magnesium nitrate (CAS 10377-60-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Magnesium nitrate (CAS 10377-60-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Sulphuric acid (CAS 7664-93-9)

Listed: March 14, 2003

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Jul-03-2014

Revision date Dec-19-2016

Version # 10.0

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: CNS 15030
UN Transportation Regulations Safety data sheets of raw materials.

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.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

SPECTRUS* OX4000

1. Identification

Product identifier	SPECTRUS OX4000
Other means of identification	None.
Recommended use	Biocide
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Oxidizing liquids	Category 1
	Corrosive to metals	Category 1
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement May cause fire or explosion; strong oxidizer. May be corrosive to metals. Causes skin irritation. Causes serious eye damage. Harmful if inhaled. May cause respiratory irritation.

Precautionary statement

Prevention

Keep away from heat. Take any precaution to avoid mixing with combustibles. Wear fire/flame resistant/retardant clothing. Keep/Store away from clothing and other combustible materials. Avoid breathing mist or vapor. Wear protective gloves/eye protection/face protection. Keep only in original container. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response

If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. 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 on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. If inhaled: Remove person to fresh air and keep comfortable for breathing. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. In case of fire: Use water to extinguish. Absorb spillage to prevent material damage.

Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodiumchlorate	7775-09-9	40 - 60
Hydrogen peroxide	7722-84-1	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
-----------------------------	--

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. 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. Get medical attention immediately.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). 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	Flood with water.
Unsuitable extinguishing media	Carbon dioxide (CO2). Dry chemicals. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. In case of fire: Stop leak if safe to do so. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May cause fire or explosion; strong oxidizer. Contact with combustible material may cause fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. 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

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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. Wear appropriate protective equipment and clothing during clean-up.

Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Keep away from heat. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Do not get this material in contact with eyes. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	PEL	1.4 mg/m ³ 1 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	TWA	1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hydrogen peroxide (CAS 7722-84-1)	TWA	1.4 mg/m ³ 1 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) 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. Splash proof chemical goggles.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other

Respiratory protection

Wear appropriate chemical resistant clothing. Wear fire/flammable resistant/retardant clothing.

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. 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.

9. Physical and chemical properties

Appearance

Color	Light blue to colorless
Physical state	Liquid

Odor Mild

Odor threshold Not available.

pH (concentrated product) 5

Melting point/freezing point Not available.

Initial boiling point and boiling range 219 °F (104 °C)

Flash point Not applicable.

Evaporation rate > 1 (Butyl acetate = 1)

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 < 0.75 mm Hg

Vapor pressure temp. 104 °F (40 °C)

Vapor density (Air = 1)

Relative density 1.38

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Viscosity temperature 70 °F (21 °C)

Other information

Percent volatile 0 (Estimated)

Specific gravity 1.38

10. Stability and reactivity

Reactivity May ignite or explode on contact with combustible materials. May be corrosive to metals.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Heat. Contact with incompatible materials. None under normal conditions.

Incompatible materials Acids. Strong oxidizing agents. Combustible material. Reducing agents. Metals.

Hazardous decomposition products Chlorine compounds. chlorine dioxide

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful if inhaled. May cause respiratory irritation.

Product	Species	Test Results
---------	---------	--------------

SPECTRUS OX4000 (CAS Mixture)

Acute

Dermal

LD50	Rabbit	> 2000 mg/kg
------	--------	--------------

Inhalation

LC50	Rat	> 5.6 mg/l, 4 hours
------	-----	---------------------

Oral

LD50	Rat	> 5000 mg/kg
------	-----	--------------

Components	Species	Test Results
------------	---------	--------------

Hydrogen peroxide (CAS 7722-84-1)

Acute

Dermal

LD50	Rabbit	> 2000 mg/kg
------	--------	--------------

Inhalation

LC50	Rat	2 mg/l, 4 Hours
------	-----	-----------------

Oral

LD50	Rat	693.7 mg/kg
------	-----	-------------

Sodiumchlorate (CAS 7775-09-9)

Acute

Dermal

LD50	Rabbit	> 10000 mg/kg
------	--------	---------------

Inhalation

LC50	Rat	28 gm/m3/h
------	-----	------------

Oral

LD50	Rat	1200 mg/kg
------	-----	------------

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Hydrogen peroxide (CAS 7722-84-1)	3 Not classifiable as to carcinogenicity to humans.
-----------------------------------	---

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
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	No ecotoxicity data noted for the ingredient(s).
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Not available.

13. Disposal considerations

Disposal instructions	Dispose of in approved pesticide facility or according to label instructions. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not incinerate sealed containers. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	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.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN3139
UN proper shipping name	Oxidizing liquid, n.o.s. (Sodium Chlorate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	140
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN3139
UN proper shipping name	Oxidizing liquid, n.o.s. (Sodium Chlorate)
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	140
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3139
UN proper shipping name	OXIDIZING LIQUID, N.O.S. (Sodium Chlorate), MARINE POLLUTANT
Transport hazard class(es)	
Class	5.1
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes

EmS
Special precautions for user

F-A, S-Q
Read safety instructions, SDS and emergency procedures before handling.

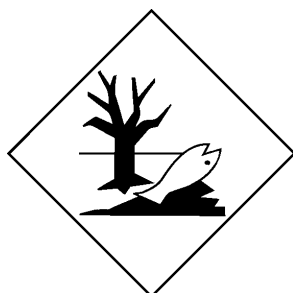
DOT



IATA; IMDG



Marine pollutant



General information

IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Hydrogen peroxide (CAS 7722-84-1) 1000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Hydrogen peroxide	7722-84-1	1000	1000 lbs		

SARA 311/312 Hazardous chemical Yes

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.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

FIFRA registration number 88341-3-3876

TSCA This is an EPA registered biocide and is exempt from TSCA inventory requirements.

FIFRA hazard statement This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
Corrosive
Causes irreversible eye damage
Harmful if absorbed through skin or inhaled
This pesticide is toxic to fish and aquatic organisms

US state regulations

US - Massachusetts RTK - Substance List

Hydrogen peroxide (CAS 7722-84-1)
Sodiumchlorate (CAS 7775-09-9)

US - Pennsylvania RTK - Hazardous Substances

Hydrogen peroxide (CAS 7722-84-1)
Sodiumchlorate (CAS 7775-09-9)

US - Rhode Island RTK

Hydrogen peroxide (CAS 7722-84-1)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen peroxide (CAS 7722-84-1)
Sodiumchlorate (CAS 7775-09-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrogen peroxide (CAS 7722-84-1)
Sodiumchlorate (CAS 7775-09-9)

US. 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.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-22-2015

Revision date Oct-22-2015

Version # 1.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%

References: No data available

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.

Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

STEAMATE* HRSG08

1. Identification

Product identifier	STEAMATE HRSG08
Other means of identification	None.
Recommended use	Steam condensate treatment.
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity (fertility)	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure (oral)	Category 1
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. Suspected of damaging fertility. Causes damage to organs through prolonged or repeated exposure by ingestion.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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. Specific treatment (see on this label). Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container to an approved facility.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Cyclohexylamine	108-91-8	10 - 20
Ethanolamine	141-43-5	10 - 20
Alkyl diaminopropane	7173-62-8	2.5 - 10

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
-----------------------------	--

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. May cause respiratory irritation. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal 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. 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 warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Alcohol resistant 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	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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

Use water spray to reduce vapors or divert vapor cloud drift. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. 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 handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store and maintain at 40F or above in order to maintain stability and prevent separation. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). Do not store in aluminum containers.

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
Ethanolamine (CAS 141-43-5)	PEL	6 mg/m ³ 3 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm
Ethanolamine (CAS 141-43-5)	STEL	6 ppm
	TWA	3 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Cyclohexylamine (CAS 108-91-8)	TWA	40 mg/m ³ 10 ppm
Ethanolamine (CAS 141-43-5)	STEL	15 mg/m ³ 6 ppm
	TWA	8 mg/m ³ 3 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Eye wash facilities and emergency shower must be available when handling this product. 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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. 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.

9. Physical and chemical properties

Appearance	
Color	Light yellow
Physical state	Liquid
Odor	Amine
pH (concentrated product)	12.8
pH in aqueous solution	11.9 (5% DISP.)
Initial boiling point and boiling range	Not available.
Flash point	138 °F (59 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	0.98
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	40 (Estimated)
Specific gravity	0.985

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.

Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Protect from freezing.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns. Harmful in contact with skin. Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns. Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure by ingestion.

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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Harmful in contact with skin. Harmful if swallowed.

Product	Species	Test Results
STEAMATE HRSG08 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1097 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	678 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Alkyl diaminopropane (CAS 7173-62-8)		
Acute		
<i>Oral</i>		
LD50	Rat	500 mg/kg
Cyclohexylamine (CAS 108-91-8)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	277 mg/kg
<i>Oral</i>		
LD50	Rat	156 mg/kg
Ethanolamine (CAS 141-43-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1025 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1720 mg/kg

* Estimates for product may be based on additional component data not shown.

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	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
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 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	Suspected of damaging fertility.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure by ingestion.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Causes damage to organs through prolonged or repeated exposure. May be harmful if absorbed through skin. Prolonged inhalation may be harmful.
	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
STEAMATE HRSG08 (CAS Mixture)		
LC50	Fathead Minnow	3.2 mg/l, Acute Toxicity, 96 hour, (Estimated)
Aquatic		
Crustacea	Daphnia magna	2.56 mg/l, Acute Toxicity, 48 hour, (Estimated)

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
Cyclohexylamine	1.49
Ethanolamine	-1.31
Bioconcentration factor (BCF)	
Ethanolamine	3

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

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. Do not incinerate sealed containers. If discarded, this product is considered a RCRA ignitable waste, D001. 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	D001: Waste Flammable material with a flash point <140 F 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	UN2734
UN proper shipping name	Amines, Liquid, Corrosive, Flammable, N.O.S. (Cyclohexylamine; Monoethanolamine)
Transport hazard class(es)	
Class	8
Subsidiary risk	3
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	132
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN2734
UN proper shipping name	Amines, liquid, corrosive, flammable, n.o.s. (Monoethanolamine, Cyclohexylamine)
Transport hazard class(es)	
Class	8
Subsidiary risk	3
Packing group	II
Environmental hazards	No.
ERG Code	132
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN2734
UN proper shipping name	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (Monoethanolamine, Cyclohexylamine)
Transport hazard class(es)	
Class	8
Subsidiary risk	3
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-C
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Cyclohexylamine (CAS 108-91-8)

10000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - Yes

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Cyclohexylamine	108-91-8	10000	10000		

SARA 311/312 Hazardous chemical

Yes

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)

Cyclohexylamine (CAS 108-91-8)

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
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).

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Aniline (CAS 62-53-3)

Listed: January 1, 1990

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date	Oct-05-2015
Revision date	Mar-08-2017
Version #	7.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References:

No data available

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.

Revision information

Handling and storage: Conditions for safe storage, including any incompatibilities
Physical & Chemical Properties: Multiple Properties

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

STEAMATE* NA0880

1. Identification

Product identifier	STEAMATE NA0880
Other means of identification	None.
Version #	1.0
Prepared by	This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
Revision date	Oct-26-2016
Supersedes date	--
Recommended use	Blend of neutralizing amines
Recommended restrictions	None known.

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Label elements



Signal word

Danger

Hazard statement

Harmful if swallowed. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child.

Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should 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. 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. Take off contaminated clothing and wash it before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent (wt/wt)
Ethanolamine	141-43-5	20 - 40
Dimethylaminopropylamine (DMAPA)	109-55-7	10 - 20
Diethanolamine	111-42-2	0.1 - 1

Composition comments	Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
-----------------------------	--

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
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. May cause respiratory irritation.
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 warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. 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	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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 or vapor. 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

Use water spray to reduce vapors or divert vapor cloud drift.

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. Put material in suitable, covered, labeled containers. 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**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Diethanolamine (CAS 111-42-2)	TWA	1 mg/m ³	Inhalable fraction and vapor.
Ethanolamine (CAS 141-43-5)	STEL	6 ppm	
	TWA	3 ppm	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Diethanolamine (CAS 111-42-2)	TWA	2 mg/m ³
Ethanolamine (CAS 141-43-5)	STEL	15 mg/m ³
		6 ppm
	TWA	7.5 mg/m ³ 3 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Diethanolamine (CAS 111-42-2)	TWA	2 mg/m ³
Ethanolamine (CAS 141-43-5)	STEL	6 ppm
	TWA	3 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Diethanolamine (CAS 111-42-2)	TWA	1 mg/m ³	Inhalable fraction and vapor.
Ethanolamine (CAS 141-43-5)	STEL	6 ppm	
	TWA	3 ppm	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Diethanolamine (CAS 111-42-2)	TWA	1 mg/m ³	Inhalable fraction and vapor.
Dimethylaminopropylamine (DMAPA) (CAS 109-55-7)	TWA	2 mg/m ³	
		0.5 ppm	
Ethanolamine (CAS 141-43-5)	STEL	6 ppm	
	TWA	3 ppm	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Diethanolamine (CAS 111-42-2)	TWA	13 mg/m ³
		3 ppm
Ethanolamine (CAS 141-43-5)	STEL	15 mg/m ³
		6 ppm
	TWA	7.5 mg/m ³
		3 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines**Canada - Alberta OELs: Skin designation**

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Dimethylaminopropylamine (DMAPA) (CAS 109-55-7) Can be absorbed through the skin.

Canada - Quebec OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Diethanolamine (CAS 111-42-2) Can be absorbed through the skin.

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Splash proof chemical goggles. Face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Keep away from food and drink. 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 Liquid

Color	Colorless to yellow
Odor	Slight
Odor threshold	Not available.
pH (concentrated product)	12.7
pH in aqueous solution	11.7 (5% SOL.)
Melting point/freezing point	< -30 °F (< -34 °C)
Initial boiling point and boiling range	220 °F (104 °C)
Flash point	> 212 °F (> 100 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg / 2.4 kPa
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	1
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	14 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	60 (Estimated)
Pour point	< -30 °F (< -34 °C)
Specific gravity	1.002

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Not available.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong acids. Strong oxidizing agents. Peroxides. Phenols.
Hazardous decomposition products	Oxides of carbon and nitrogen evolved in fire.

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. Harmful in contact with skin. May cause an allergic skin reaction. Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
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. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful in contact with skin. Harmful if swallowed. May cause respiratory irritation. May cause an allergic skin reaction.
-----------------------	--

Product	Species	Test Results
STEAMATE NA0880 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1300 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	3.22 mg/l, 4 Hour, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	1400 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Diethanolamine (CAS 111-42-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	4000 mg/kg
<i>Oral</i>		
LD50	Rat	1600 mg/kg
Dimethylaminopropylamine (DMAPA) (CAS 109-55-7)		
Acute		
<i>Inhalation</i>		
LC50	Rat	> 4.3 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	410 mg/kg

Ethanolamine (CAS 141-43-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1025 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1720 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin burns.

Serious eye damage/eye irritation Corrosive to eyes.

Respiratory or skin sensitization

Canada - Alberta OELs: Irritant

Ethanolamine (CAS 141-43-5) Irritant

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer.
ACGIH Carcinogens	
Diethanolamine (CAS 111-42-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Canada - Manitoba OELs: carcinogenicity	
DIETHANOLAMINE, INHALABLE FRACTION AND VAPOR (CAS 111-42-2)	Confirmed animal carcinogen with unknown relevance to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Diethanolamine (CAS 111-42-2)	2B Possibly carcinogenic to humans.
Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	May be harmful if absorbed through skin. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.
	Prolonged or repeated exposure may cause liver and kidney damage. These effects have not been observed in humans.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
STEAMATE NA0880 (CAS Mixture)	LC50	Fathead Minnow	440 mg/L, Acute Toxicity, 96 hour, (Estimated)
	NOEL	Fathead Minnow	260 mg/L, Acute Toxicity, 96 hour, (Estimated)
	Aquatic		
	Crustacea		
	LC50	Daphnia magna	160 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna	49 mg/L, Acute Toxicity, 48 hour, (Estimated)

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Diethanolamine	-1.43
Ethanolamine	-1.31

Bioconcentration factor (BCF)

Diethanolamine	3
Ethanolamine	3

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.

Persistence and degradability

No data is available on the degradability of this product.

- COD (mgO2/g)	768 (calculated data)
- BOD 5 (mgO2/g)	252 (calculated data)
- BOD 28 (mgO2/g)	252 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	30 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	65 (calculated data)

- TOC (mg C/g)

266 (calculated data)

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
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

TDG

UN number	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (Monoethanolamine, Dimethylaminopropylamine (Dmapa))
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Not available.
The goods described above have been classified using a combination of testing, technical data, calculations and manufacturer knowledge in accordance with Part 2, Classification.	

DOT

UN number	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (DIMETHYLAMINOPROPYLAMINE, MONOETHANOLAMINE)
Transport hazard class(es)	
Class	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	153
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IMDG

UN number	UN2735
UN proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S. (Monoethanolamine, Dimethylaminopropylamine (Dmapa))
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Monoethanolamine, Dimethylaminopropylamine (Dmapa))
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	153
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG; TDG



15. Regulatory information

Canadian regulations

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

16. Other information

Issue date Oct-26-2016

Revision date Oct-26-2016

Version # 1.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information

Product and Company Identification: Product and Company Identification
Composition / Information on Ingredients: Disclosure Overrides
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
Ecological Information: Ecotoxicity
Transport Information: Material Transportation Information
Regulatory Information: Risk Phrases - Labeling
HazReg Data: Europe - EU
GHS: Classification

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

SULFURIC ACID 66 BE CMD

1. Product and Company Identification

Material name	SULFURIC ACID 66 BE CMD
Version #	1.0
Revision date	May-20-2015
Supersedes date	Jun-12-2012
Prepared by	This MSDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
CAS #	Mixture
Product application	Commodity chemical

Company/undertaking identification

GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone

(800) 877-1940

2. Hazards Identification

Emergency overview	Corrosive to skin. Corrosive to the eyes. Mists/aerosols cause irritation to the upper respiratory tract
Potential health effects	
Eyes	Corrosive to eyes
Skin	Primary route of exposure Corrosive to skin
Inhalation	Mists/aerosols cause irritation to the upper respiratory tract
Ingestion	May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in very large doses.
Target organs	Prolonged or repeated exposures may cause tissue necrosis.
Signs and symptoms	Causes severe irritation, burns or tissue ulceration with subsequent scarring.
Medical conditions aggravated by exposure	None known.

3. Composition / Information on Ingredients

Components	CAS #	Percent (wt/wt)
Sulfuric Acid	7664-93-9	60 - 100

Composition comments	Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.
----------------------	---

4. First Aid Measures

First aid procedures	
Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Get medical attention immediately.

Skin contact	URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.
Eye contact	URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. Call a physician immediately. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.
Notes to physician	Corrosive material It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media Carbon dioxide, dry chemicals, foam. Avoid water if possible.

Protection of firefighters

Protective equipment for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting

equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

Explosion data

Sensitivity to static discharge Not available.

Sensitivity to mechanical impact Not available.

6. Accidental Release Measures

Personal precautions

Wear appropriate protective equipment and clothing during clean-up. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

Methods for cleaning up

Ventilate area, use specified protective equipment. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Flush with plenty of water. Spread sand/grit. Neutralise with bicarbonate.

7. Handling and Storage

Handling

Acidic, corrosive to the eyes corrosive to skin Do not breathe mist or vapour. Do not mix with alkaline material.

Storage

Keep tightly closed in a dry, cool and well-ventilated place. Use approved containers only. Contact with metals may release flammable hydrogen gas.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	PEL	1 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Engineering controls	Adequate ventilation to maintain air contaminants below exposure limits.
Personal protective equipment	
Eye/face protection	Chemical goggles are recommended. Splash proof chemical goggles. Face shield.
Skin protection	Wear suitable protective clothing. Chemical resistant apron. Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present. Gauntlet-type neoprene gloves. Wash off after each use. Replace as necessary.
Respiratory protection	If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters.

9. Physical & Chemical Properties

Appearance	
Physical state	Liquid
Color	Colorless
Odor	Slight acid
pH (concentrated product)	1
pH in aqueous solution	1 (5% SOL.)
Vapor pressure	< 0 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Boiling point	Not available.
Melting point/Freezing point	-17 °F (-27 °C)
Solubility (water)	100 %
Specific gravity (70°F, 21°C)	1.83
Flash point	> 200 °F (> 93 °C) P-M(CC)
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Evaporation rate	< 1 (Ether = 1)
Viscosity	22 cps
Viscosity temperature	70 °F (21 °C)
Percent volatile	0 (Estimated)
Pour point	-12 °F (-24 °C)

10. Chemical Stability & Reactivity Information

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Not available.
Incompatible materials	Strong oxidizing substances. Contact with strong bases may cause a violent reaction releasing heat.
Hazardous decomposition products	Sulfur oxides.

Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
SULFURIC ACID 66 BE CMD (CAS Mixture)		
Acute		
<i>Inhalation</i>		
LC50	Rat	510 mg/m3, 2 Hour
<i>Oral</i>		
LD50	Rat	2140 mg/kg
Components	Species	Test Results
Sulfuric Acid (CAS 7664-93-9)		
Acute		
<i>Inhalation</i>		
LC50	Rat	0.375 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	2140 mg/kg

Carcinogenicity

ACGIH Carcinogens

Sulfuric Acid (CAS 7664-93-9)

A2 Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sulfuric Acid (CAS 7664-93-9)

1 Carcinogenic to humans.

12. Ecological Information

Ecotoxicity	No data available			
Product	Species		Test Results	
SULFURIC ACID 66 BE CMD (CAS Mixture)				
Aquatic	0% Mortality	Fathead Minnow	5000 mg/L, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)	
	Crustacea	0% Mortality	Daphnia magna	2000 mg/L, Static Screen, 48 hour, (pH adjusted)
		30% Mortality	Daphnia magna	5000 mg/L, Static Screen, 48 hour, (pH adjusted)
Ecotoxicity	No data available			
Persistence and degradability	No data available			

13. Disposal Considerations

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

TDG	
UN number	UN2796
UN proper shipping name	SULPHURIC ACID SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Not available.

DOT

UN1830
SULFURIC ACID, RQ
8
II
137

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IMDG

UN number	UN1830
UN proper shipping name	SULPHURIC ACID
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Not available.

IATA

UN number	UN1830
UN proper shipping name	SULPHURIC ACID
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
Special precautions for user	Not available.

DOT



IATA; IMDG; TDG



15. Regulatory Information

WHMIS status	Controlled
WHMIS classification	D1B - Immediate/Serious-TOXIC E - Corrosive

WHMIS labeling



16. Other Information

List of abbreviations

Not available.

HMIS® ratings

Health: 3
Flammability: 0
Physical hazard: 2
Personal protection: D

NFPA ratings

Health: 3
Flammability: 0
Instability: 2
Special hazards: CORR

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.

* **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1 Product identifier

Trade name: Therm-O-Signal Type 7H44

Article number: 7H44

1.2 Relevant identified uses of the substance or mixture and uses advised against

For professional use only.

Application of the substance / the mixture Coating compound/ Surface coating/ paint

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Lakfabriek Korthals B.V.

Maxwellstraat 2

1976 AD IJmuiden

The Netherlands

Phone: ++31-255-53 35 54

Fax: ++31-255-51 71 71

e-mail: info@korthals.nl

1.4 Emergency telephone number:

Emergency phonenumber

National Poison Information Centrum (NL)

+31(0)30 - 274 88 88

* **SECTION 2: Hazards identification**

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

Hazard pictograms GHS02, GHS07

Signal word Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

(Contd. on page 2)

GB

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 1)

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT:

CAS: 1330-20-7 Xyleen

vPvB: Does not apply.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 1330-20-7	Xyleen	10 - 50%
EINECS: 215-535-7	Flam. Liq. 3, H226	
Reg.nr.: 01-2119488216-32-xxxx	Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	
	Note: C	
	PBT	
CAS: 7727-43-7	barium sulfate	2.5 - 10%
EINECS: 231-784-4	substance with a Community workplace exposure limit	
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	2.5 - 10%
EINECS: 203-603-9	Flam. Liq. 3, H226	
CAS: 13463-67-7	titanium dioxide	0.1 - < 2.5%
EINECS: 236-675-5	Carc. 2, H351	
Reg.nr.: 01-2119489379-17-0014	Note: V, W, 10	
CAS: 78-83-1	butanol	1 - < 2.5%
EINECS: 201-148-0	Flam. Liq. 3, H226	
Reg.nr.: 01-2119484609-23-XXXX	Eye Dam. 1, H318	
	Skin Irrit. 2, H315; STOT SE 3, H335	
	STOT SE 3, H336	
CAS: 67-56-1	methanol	0 - < 2.5%
EINECS: 200-659-6	Flam. Liq. 2, H225	
	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331	
	STOT SE 1, H370	

(Contd. on page 3)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 2)

Additional information For the wording of the listed hazard phrases refer to section 16.

* **SECTION 4: First aid measures**

4.1 Description of first aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation In case of unconsciousness place patient stably in side position for transportation.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

After eye contact

Rinse opened eye for several minutes under running water.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing If symptoms persist consult doctor.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* **SECTION 5: Firefighting measures**

5.1 Extinguishing media

Suitable extinguishing agents Use fire extinguishing methods suitable to surrounding conditions.

For safety reasons unsuitable extinguishing agents Water with full jet.

5.2 Special hazards arising from the substance or mixture

No further relevant information available.

5.3 Advice for firefighters

Protective equipment: No special measures required.

* **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions:

Prevent seepage into sewage system, workpits and cellars.

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

* **SECTION 7: Handling and storage**

7.1 Precautions for safe handling No special precautions are necessary if used correctly.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 3)

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Does not apply

Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Additional information about design of technical facilities: No further data; see item 7.

Ingredients with limit values that require monitoring at the workplace:

CAS: 1330-20-7 Xyleen

WEL Short-term value: 441 mg/m³, 100 ppm

Long-term value: 220 mg/m³, 50 ppm

Sk; BMGV

CAS: 7727-43-7 barium sulfate

WEL Long-term value: 10* 4** mg/m³

*inhalable dust **respirable dust

CAS: 108-65-6 2-methoxy-1-methylethyl acetate

WEL Short-term value: 548 mg/m³, 100 ppm

Long-term value: 274 mg/m³, 50 ppm

Sk

CAS: 78-83-1 butanol

WEL Short-term value: 231 mg/m³, 75 ppm

Long-term value: 154 mg/m³, 50 ppm

CAS: 67-56-1 methanol

WEL Short-term value: 333 mg/m³, 250 ppm

Long-term value: 266 mg/m³, 200 ppm

Sk

CAS: 1330-20-7 Xyleen

WEL Short-term value: 441 mg/m³, 100 ppm

Long-term value: 220 mg/m³, 50 ppm

Sk; BMGV

CAS: 7727-43-7 barium sulfate

WEL Long-term value: 10* 4** mg/m³

*inhalable dust **respirable dust

CAS: 108-65-6 2-methoxy-1-methylethyl acetate

WEL Short-term value: 548 mg/m³, 100 ppm

Long-term value: 274 mg/m³, 50 ppm

Sk

(Contd. on page 5)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 4)

CAS: 78-83-1 butanol

WEL Short-term value: 231 mg/m³, 75 ppm
Long-term value: 154 mg/m³, 50 ppm

CAS: 67-56-1 methanol

WEL Short-term value: 333 mg/m³, 250 ppm
Long-term value: 266 mg/m³, 200 ppm
Sk

DNELs**CAS: 1330-20-7 Xyleen***Inhalative DNEL (hum)*

Werknemers - Inhalatie; Korte termijn systemische effecten: 289 mg/m³
Werknemers - Inhalatie; Korte termijn locale effecten: 289 mg/m³
Werknemers - Dermaal; lange termijn systemische effecten: 180 mg/kg lg/dag
Werknemers - Inhalatie; lange termijn systemische effecten: 77 mg/m³
Werknemers - Inhalatie; lange termijn locale effecten: 77 mg/m³
Algemene bevolking - Inhalatie; Korte termijn systemische effecten: 174 mg/m³
Algemene bevolking - Inhalatie; Korte termijn locale effecten: 174 mg/m³
Algemene bevolking - Dermaal; lange termijn systemische effecten: 108 mg/kg lg/dag
Algemene bevolking - Inhalatie; lange termijn systemische effecten: 14.8 mg/m³
Algemene bevolking - Oraal; lange termijn systemische effecten: 1.6 mg/kg lg/dag

CAS: 7727-43-7 barium sulfate*Inhalative DNEL (hum)*

DNEL 10 mg/m³ (long-term inhalativ consumer systemic)
13000 mg/m³ (long-term oral consumer systemic)
10 mg/m³ (long-term inhalativ worker systemic)

CAS: 108-65-6 2-methoxy-1-methylethyl acetate*Inhalative DNEL (hum)*

Werknemers - Inhalatie; lange termijn systemische effecten: 275 mg/m³
Werknemers - Dermaal; lange termijn systemische effecten: 796 mg/kg lg/dag
Werknemers - Inhalatie; Korte termijn locale effecten: 550 mg/m³
Gebruiker - Inhalatie; lange termijn systemische effecten: 33 mg/m³
Gebruiker - Dermaal; lange termijn systemische effecten: 320 mg/kg lg/dag
Gebruiker - Oraal; lange termijn systemische effecten: 36 mg/kg lg/dag
Gebruiker - Inhalatie; lange termijn locale effecten: 33 mg/m³

CAS: 13463-67-7 titanium dioxide*Inhalative DNEL (hum)*

DNEL 10 mg/m³

CAS: 78-83-1 butanol*Inhalative DNEL (hum)*

Werknemers - Inhalatie; Lange termijn locale effecten: 310 mg/m³
Algemene bevolking - Inhalatie; Lange termijn locale effecten: 55 mg/m³

(Contd. on page 6)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 5)

CAS: 67-56-1 methanol

Inhalative DNEL (hum)

Werknemers Huid- Acute effecten systemisch, lange termijn - systematische effecten; 40 mg/kg lichaamsgewicht/dag

Werknemers inademing Acute effecten systemisch, lange termijn - systematische effecten; 260 mg/m³

Werknemers inademing Acute effecten lokaal, lange termijn - lokale effecten; 260 mg/m³

algemene bevolking Huid- Acute effecten systemisch, lange termijn - systematische effecten; 8 mg/kg lichaamsgewicht/dag

algemene bevolking inademing Acute effecten systemisch, lange termijn - systematische effecten; 50 mg/m³

algemene bevolking Oraal Acute effecten systemisch, lange termijn - systematische effecten; 8 mg/kg lichaamsgewicht/dag

algemene bevolking inademing Acute effecten lokaal, lange termijn - lokale effecten; 50 mg/m³

PNECs

CAS: 1330-20-7 Xyleen

PNEC (hum)

Zoetwater; 0.327 mg/l

- Zoutwater; 0.327 mg/l

- Onderbroken vrijkoming; 0.327 mg/l

- RZI; 6.58 mg/l

- Sediment (Zoetwater); 12.46 mg/kg

- Sediment (Zoutwater); 12.46 mg/kg

- Bodem; 2.31 mg/kg

CAS: 7727-43-7 barium sulfate

PNEC (hum)

PNEC 115 µg/L (freshwater)

600.4 mg/kg (sediment - freshwater)

assessment factor: 1

207.7 mg/kg (soil)

assessment factor: 2

62.2 mg/L (sewage treatment plant)

assessment factor: 10

CAS: 108-65-6 2-methoxy-1-methylethyl acetate

PNEC (hum)

- Zoetwater; 0.635 mg/l

- Zoutwater; 0.0635 mg/l

- Onderbroken vrijkoming; 6.35 mg/l

- RZI; 100 mg/l

- Sediment (Zoetwater); 3.29 mg/kg

- Sediment (Zoutwater); 0.329 mg/kg

- Bodem; 0.29 mg/kg

(Contd. on page 7)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 6)

CAS: 13463-67-7 titanium dioxide

PNEC (hum)

PNEC

Freshwater: > 0.127 mg/L

Freshwater deposits: > 1000 mg/kg

Sea water: > 0.62 mg/L

Sea water deposits: > 100 mg/kg

Soil: > 100 mg/kg

Wastewater treatment plant: > 100 mg/kg

CAS: 78-83-1 butanol

PNEC (hum)

Zoetwater; 0.4

- Zoutwater; 0.04 mg/l

- Onderbroken vrijkoming; 11 mg/l

- RZI; 10 mg/l

- Sediment (Zoetwater); 1.56 mg/kg

- Bodem; 0.0756 mg/kg

- Sediment (Zoutwater); 0.156 mg/kg

CAS: 67-56-1 methanol

PNEC (hum)

Zoetwater 20,8 mg/

zeewater 2,08 mg/l

Water - tijdelijk vrijkomen 1540 mg/l

zoetwatersediment 77 mg/kg (drooggewicht)

Zeewatersedimenten 7,7 mg/kg (drooggewicht) grond 100 mg/kg (drooggewicht)

afvalwaterzuiveringsinst allatie 100 mg/l

oraal (secundaire vergiftiging) Een blootstelling is niet te verwachten

Ingredients with biological limit values:**CAS: 1330-20-7 Xyleen**

BMGV 650 mmol/mol creatinine

Medium: urine

Sampling time: post shift

Parameter: methyl hippuric acid

Additional information: The lists valid during the making were used as basis.**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Respiratory protection: Not required.**Protection of hands:**

Not required.

(Contd. on page 8)

GB

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 7)



Protective gloves.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:


Tightly sealed goggles.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information

Appearance:	Void
Form:	Fluid
Colour:	According to product specification
Odour:	Like aromatic solvents
Odour threshold:	Not determined.
pH-value:	Not determined.

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	135 - 145 °C
Flash point:	21 °C (Calculation method)
Flammability (solid, gaseous)	Highly flammable.
Ignition temperature:	460 °C

Decomposition temperature: does not apply

Auto-ignition temperature: Product is not selfigniting.
Not determined.

Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:

Lower:	1.1 Vol %
Upper:	7 Vol %

Vapour pressure at 20 °C: 7 - 9 hPa

(Contd. on page 9)

GB

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 8)

Density at 20 °C:	> 1.17216 - 1.17718 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Solvent content:	
Organic solvents:	22.2 - < 42.1 %
Solids content:	> 57.2 - < 77.2 %
9.2 Other information	No further relevant information available.

* **SECTION 10: Stability and reactivity**

- 10.1 Reactivity** No further relevant information available.
10.3 Possibility of hazardous reactions No dangerous reactions known
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known

* **SECTION 11: Toxicological information**

- 11.1 Information on toxicological effects**
Acute toxicity Based on available data, the classification criteria are not met.
LD/LC50 values relevant for classification:
ATE (Acute Toxicity Estimates)
 Dermal LD50 > 4,953 - 10,935 mg/kg
 Inhalative LC50/4 h > 421 - 4,210 mg/l
CAS: 1330-20-7 Xyleen
 Oral LD50 8,700 mg/kg (rat)
 Dermal LD50 2,000 mg/kg (rbt)
 Inhalative LC50/4 h 6,350 mg/l (rat)
CAS: 7727-43-7 barium sulfate
 Oral LD50 15,000 mg/kg (rat)
CAS: 108-65-6 2-methoxy-1-methylethyl acetate
 Oral LD50 8,500 mg/kg (rat)
 Inhalative LC50/4 h 35.7 mg/l (rat)

 (Contd. on page 10)
 GB

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 9)

CAS: 13463-67-7 titanium dioxide

Oral LD50 > 20,000 mg/kg (rat)

Dermal LD50 > 10,000 mg/kg (rbt)

Inhalative LC50/4 h > 6.82 mg/l (rat)

CAS: 78-83-1 butanol

Oral LD50 2,460 mg/kg (rat)

Dermal LD50 4,200 mg/kg (rbt)

CAS: 67-56-1 methanol

Oral LD50 13,000 mg/kg (rat)

Dermal LD50 300 mg/kg (ATE)

Inhalative LC50/4 h 3 mg/l (ATE)

Primary irritant effect:
Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Additional toxicological information:
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT-single exposure Based on available data, the classification criteria are not met.

STOT-repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

*

SECTION 12: Ecological information
12.1 Toxicity
Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

Additional ecological information:
General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

12.5 Results of PBT and vPvB assessment
PBT:

CAS: 1330-20-7 Xyleen

vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

GB

(Contd. on page 11)

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 10)

SECTION 13: Disposal considerations
--

13.1 Waste treatment methods
Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information
--

14.1 UN-Number

ADR, IMDG, IATA

UN1263

14.2 UN proper shipping name

ADR

UN1263 PAINT (vapour pressure at 50°C not more than 110 kPa)

IMDG, IATA

PAINT

14.3 Transport hazard class(es)

ADR



Class

Label

3 (F1) Flammable liquids.

3

IMDG, IATA



Class

Label

3 Flammable liquids.

3

14.4 Packing group

ADR, IMDG, IATA

II

14.5 Environmental hazards:

Marine pollutant:

No

14.6 Special precautions for user

Warning: Flammable liquids.

Hazard identification number (Kemler code): 33

EMS Number:

F-E, S-E

Stowage Category

B

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

(Contd. on page 12)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 11)

Transport/Additional information:**ADR****Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

Transport category

2

Tunnel restriction code

D/E

IMDG**Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":UN 1263 PAINT (VAPOUR PRESSURE AT 50°C
NOT MORE THAN 110 KPA), 3, II**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

Hazard pictograms GHS02, GHS07**Signal word** Danger**Hazard statements**

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Directive 2012/18/EU**Named dangerous substances - ANNEX I** None of the ingredients is listed.**Seveso category** P5c FLAMMABLE LIQUIDS**Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

(Contd. on page 13)

GB

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 12)

National regulations
Technical instructions (air):
Class Share in %

I	0.7
NK	41.4

Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H370 Causes damage to organs.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

(Contd. on page 14)

GB

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 18.10.2022

Version number 14

Revision: 18.10.2022

Trade name: Therm-O-Signal Type 7H44

(Contd. of page 13)

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* **Data compared to the previous version altered.**

Annex: Exposure scenario

Description of the activities / processes covered in the Exposure Scenario

See section 1 of the annex to the Safety Data Sheet.

Conditions of use

Duration and frequency 5 workdays/week.

Physical parameters

Physical state Fluid

Concentration of the substance in the mixture The substance is main component.

Other operational conditions

Other operational conditions affecting environmental exposure No special measures required.

Other operational conditions affecting worker exposure

Avoid contact with eyes.

Avoid contact with the skin.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

Other operational conditions affecting consumer exposure No special measures required.

Other operational conditions affecting consumer exposure during the use of the product

Not applicable.

Risk management measures

Worker protection

Organisational protective measures No special measures required.

Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

Personal protective measures

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes.

Tightly sealed goggles.

Not required.

Protective gloves.

Measures for consumer protection Ensure adequate labelling.

Environmental protection measures

Water No special measures required.

Disposal measures Ensure that waste is collected and contained.

Disposal procedures

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Waste type Partially emptied and uncleaned packaging

Exposure estimation

Consumer Not relevant for this Exposure Scenario.

Guidance for downstream users No further relevant information available.



SAFETY DATA SHEET

TRUESENSE ONLINE 2.0 REAGENT 1A

1. Identification

Product identifier TRUESENSE ONLINE 2.0 REAGENT 1A

Other means of identification

L code L1227

Recommended use Field test reagent

Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash thoroughly with soap and water. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Carbon dioxide, dry chemicals, foam, water spray (fog).
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	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
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. For personal protection, see section 8 of the SDS. Wear protective clothing, gloves and safety goggles. See Section 8 of the SDS for Personal Protective Equipment.
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. Cover with plastic sheet to prevent spreading. 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. Ventilate the area. Contain and absorb on absorbent material (e.g. sand). Place in waste disposal container. Flush with plenty of water.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Normal chemical handling. Avoid prolonged exposure. Wear personal protective equipment.
Conditions for safe storage, including any incompatibilities	Keep container closed when not in use. Reasonable and safe chemical storage. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Adequate ventilation to maintain air contaminants below exposure limits. Good general ventilation (typically 10 air changes per hour) 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.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles.

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing. Wash off after each use. Replace as necessary.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
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.

9. Physical and chemical properties

Appearance

Color	Blue
Physical state	Liquid
Odor	Acetic acid.
Odor threshold	Not available.
pH (concentrated product)	4.3
Melting point/freezing point	< 32 °F (< 0 °C)
Initial boiling point and boiling range	Not available.
Flash point	> 213 °F (> 101 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
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	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	Not available.
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
-------------------	---

Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
TRUESENSE ONLINE 2.0 REAGENT 1A (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Not available.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not classified.

Chronic effects Prolonged inhalation may be harmful.

Further information This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	No ecotoxicity data noted for the ingredient(s).
Bioaccumulative potential	
Mobility in soil	No data available.
Other adverse effects	Not available.
Persistence and degradability	No data is available on the degradability of this product.

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. 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

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
-------------------------------	--

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
--------------------------	--

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No
--	----

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.**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	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).

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

16. Other information, including date of preparation or last revision**Issue date** Apr-13-2015**Revision date** Dec-27-2017**Version #** 5.1

List of abbreviations

IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

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.

Revision information Regulatory information: US state regulations**Prepared by** This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

ULTRION™ 8186

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ULTRION™ 8186

Other means of identification : Not applicable.

Recommended use : CLARIFICATION AID

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 12/19/2023

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Warning

Hazard Statements : May be corrosive to metals.

Precautionary Statements : **Prevention:**
Keep only in original container.
Response:
Absorb spillage to prevent material damage.
Storage:
Store in corrosive resistant container with a resistant inner liner.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Aluminum Chloride Hydroxide	12042-91-0	10 - 30

SAFETY DATA SHEET

ULTRION™ 8186

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
- In case of skin contact : Wash off with soap and plenty of water. Get medical attention if symptoms occur.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Hydrogen chloride
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : No special environmental precautions required.
- Do not allow contact with soil, surface or ground water.

SAFETY DATA SHEET

ULTRION™ 8186

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8. Wash hands after handling.
Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : Keep in properly labelled containers.Keep in properly labelled containers.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Aluminum Chloride Hydroxide	12042-91-0	TWA	2 mg/m ³ (Aluminium)	NIOSH REL

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile-rubber, Butyl-Rubber and Neoprene gloves.
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SAFETY DATA SHEET

ULTRION™ 8186

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: Light yellow
Odour	: odourless
Flash point	: does not flash
pH	: 4.0,(100 %), Method: ASTM E 70
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -5.6 °C, ASTM D-1177
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 1.14 - 1.23, (25 °C), ASTM D-1298
Density	: 9.5 - 10.2 lb/gal
Water solubility	: completely soluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: 300 - 500 mPa.s (25 °C), Method: ASTM D 2983
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.

SAFETY DATA SHEET

ULTRION™ 8186

Conditions to avoid	: Freezing temperatures.
Incompatible materials	: Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors.
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx) Hydrogen chloride

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact, Ingestion

Potential Health Effects

Eyes	: Health injuries are not known or expected under normal use.
Skin	: Health injuries are not known or expected under normal use.
Ingestion	: Health injuries are not known or expected under normal use.
Inhalation	: Health injuries are not known or expected under normal use.
Chronic Exposure	: Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	: No symptoms known or expected.
Skin contact	: No symptoms known or expected.
Ingestion	: No symptoms known or expected.
Inhalation	: No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available

SAFETY DATA SHEET

ULTRION™ 8186

Carcinogenicity : no data available
Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): 3.61 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Pimephales promelas (fathead minnow): 8.57 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Inland Silverside: > 10,000 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Oncorhynchus mykiss (rainbow trout): 2.5 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Pimephales promelas (fathead minnow): 5.0 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Inland Silverside: 2,500 mg/l
Exposure time: 96 hrs
Test substance: Product

LC50 Oncorhynchus mykiss (rainbow trout): 70.7 mg/l
Exposure time: 96 h
Test substance: Tested with 20 mg/L Humic Acid

NOEC Oncorhynchus mykiss (rainbow trout): 50 mg/l
Exposure time: 96 h
Test substance: Tested with 20 mg/L Humic Acid

Toxicity to daphnia and other aquatic invertebrates : LC50 Mysid Shrimp (Mysidopsis bahia): 770 mg/l
Exposure time: 48 hrs
Test substance: Product

SAFETY DATA SHEET

ULTRION™ 8186

EC50 Daphnia magna (Water flea): 22.7 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 12.5 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Mysid Shrimp (Mysidopsis bahia): 78 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 Daphnia magna (Water flea): 44 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

NOEC Daphnia magna (Water flea): 13 mg/l
Exposure time: 48 h
Test substance: Tested with 20 mg/L Humic Acid

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC25 / IC25: 2.1 mg/l
End point: Reproduction
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

LOEC: 2.5 mg/l
End point: Reproduction
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

NOEC: 1.3 mg/l
End point: Reproduction
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

Components

Toxicity to bacteria : Aluminum Chloride Hydroxide
> 4.4 mg/l

Components

Toxicity to fish (Chronic toxicity) : Aluminum Chloride Hydroxide
NOEC: 0.013 mg/l
Exposure time: 60 d

Persistence and degradability

Biodegradability : Result: Poorly biodegradable

The organic portion of this preparation is expected to be poorly biodegradable.

Chemical Oxygen Demand (COD): 93,400 mg/l

SAFETY DATA SHEET

ULTRION™ 8186

Biochemical Oxygen Demand (BOD):

Incubation Period
5 d

Value
600 mg/l

Test Descriptor

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	: <5%
Water	: 30 - 50%
Soil	: 30 - 50%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

No bioaccumulation will occur. The large size of the polymer is incompatible with transport across the cellular membranes.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods	: Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.
------------------	---

Disposal considerations	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
-------------------------	--

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s)	: Aluminum Chloride Hydroxide

SAFETY DATA SHEET

ULTRION™ 8186

UN/ID No. : UN 3264
Transport hazard class(es) : 8
Packing group : III

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s) : Aluminum Chloride Hydroxide
UN/ID No. : UN 3264
Transport hazard class(es) : 8
Packing group : III

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name(s) : Aluminum Chloride Hydroxide
UN/ID No. : UN 3264
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Corrosive to metals

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

SAFETY DATA SHEET

ULTRION™ 8186

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory.

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Korea. Korean Existing Chemicals Inventory (KECI)

On the Korea Existing Chemicals Inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

China Inventory of Existing Chemical Substances

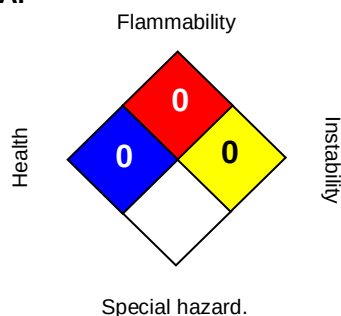
On the inventory, or in compliance with the inventory.

Taiwan Chemical Substance Inventory

On the inventory, or in compliance with the inventory.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 12/19/2023
Version Number : 2.1
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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

SAFETY DATA SHEET

ULTRION™ 8186

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. For additional copies of an SDS visit www.ecolab.com/sds and request access.



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

Product name: VERSENE™ Diammonium EDTA Chelating Agent

Issue Date: 06/07/2018

Print Date: 06/11/2018

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: VERSENE™ Diammonium EDTA Chelating Agent

Recommended use of the chemical and restrictions on use

Identified uses: A chelating agent - Cleaning products. Metal working fluids. Scale removal and prevention. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY
2030 DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number:

800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: CHEMTREC +1 800-424-9300

Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Acute toxicity - Category 4 - Inhalation

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

Label elements

Hazard pictograms



Signal word: **WARNING!**

Hazards

Harmful if inhaled.

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements**Prevention**

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Use only outdoors or in a well-ventilated area.

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

Get medical advice/ attention if you feel unwell.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: EDTA diammonium salt

This product is a substance.

Component	CASRN	Concentration
Water	7732-18-5	55.0%
Diammonium EDTA	20824-56-0	45.0%

4. FIRST AID MEASURES

Description of first aid measures**General advice:**

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Wash off with plenty of water.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Small spills: Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Non-combustible material. Collect in suitable

and properly labeled open containers. Large spills: Dike area to contain spill. Water may be used for final cleaning of affected area. Wash water should be disposed of in accordance with local regulations. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin and clothing. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Do not store in: Opened or unlabeled containers. Zinc. Aluminum and its alloys. Carbon steel. Copper. Copper alloys. Galvanized containers. Nickel. Store in original unopened container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

Storage stability

Storage temperature:	Shelf life: Use within
-6 - 49 °C (21 - 120 °F)	24 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Exposure controls

Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne

concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

The following should be effective types of air-purifying respirators: Particulate filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	Liquid.
Color	Colorless
Odor	Slightly ammoniacal
Odor Threshold	No test data available
pH	4 - 5 1% <i>Literature</i>
Melting point/range	Not applicable to liquids
Freezing point	-14 °C (7 °F) <i>Literature</i>
Boiling point (760 mmHg)	104 °C (219 °F) <i>Literature</i>
Flash point	closed cup <i>Pensky-Martens Closed Cup ASTM D 93</i> No measurable flash point
Evaporation Rate (Butyl Acetate = 1)	< 0.8 <i>Estimated.</i>
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Same as water
Relative Vapor Density (air = 1)	Same as water
Relative Density (water = 1)	1.21 at 25 °C (77 °F) / 25 °C <i>Literature</i>
Water solubility	completely miscible with water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No test data available
Kinematic Viscosity	33 cSt at 20 °C (68 °F) <i>Literature</i>
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	328.2 g/mol <i>Literature</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Ammonia. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat, > 2,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.
The dermal LD50 has not been determined.

Acute inhalation toxicity

Prolonged excessive exposure to mist may cause adverse effects.
The LC50 has not been determined.

Skin corrosion/irritation

Prolonged contact may cause moderate skin irritation with local redness.
May cause more severe response if skin is abraded (scratched or cut).

Serious eye damage/eye irritation

May cause pain disproportionate to the level of irritation to eye tissues.
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Sensitization

For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on information for a similar material:
In animals, effects have been reported on the following organs:

Respiratory tract.

Carcinogenicity

The trisodium salt of EDTA did not cause cancer in laboratory animals.

Teratogenicity

EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

Reproductive toxicity

Limited data in laboratory animals suggest that the material does not affect reproduction.

Mutagenicity

Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelating by EDTA.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:**Diammonium EDTA****Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

The dermal LD50 has not been determined.

Acute inhalation toxicity

Prolonged excessive exposure to mist may cause adverse effects.

The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity**Acute toxicity to fish**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 Hour, 2,340 mg/l

Persistence and degradability

Biodegradability: Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Theoretical Oxygen Demand: 56 mg/mg

Chemical Oxygen Demand: 0.31 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	0 %
10 d	0 %
20 d	0 %

Bioaccumulative potential

Bioaccumulation: No bioconcentration is expected because of the relatively high water solubility.

Mobility in soil

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

**Transport in bulk
according to Annex I or II
of MARPOL 73/78 and the
IBC or IGC Code**

Not regulated for transport
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service

representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute toxicity (any route of exposure)

Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System

NFPA

Health	Flammability	Instability
1	0	0

Revision

Identification Number: 40365 / A001 / Issue Date: 06/07/2018 / Version: 6.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule;

ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US

ATTACHMENT 16

Attachment 16. Analytical Lab Reports



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

17 May 2024

EAS NO.: 4D22046

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 001 - Week 1

Enclosed are the results of analyses for samples received by the laboratory on 04/22/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 001 - Grab	4D22046-01	Wastewater	3.1	04/22/24 11:43	04/22/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Case Narrative

Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.
Subcontracted analysis performed by Summit. Certificate of Analysis is attached.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order #: 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	7.3	0.1	mg/L	04/22/24 11:46	04/22/24 11:46	SM 4500-O G-2016	E1	TT	
pH (on-site)	8.3		pH/°C	04/22/24 11:46	04/22/24 11:46	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	26.2		pH/°C	04/22/24 11:46	04/22/24 11:46	SM 4500-H+ B-2011	E1	TT	
Sulfite	<2.0	2.0	mg/L	04/22/24 12:49	04/22/24 12:49	SM 4500-SO3 B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	0.03	0.02	mg/L	04/22/24 11:53	04/22/24 11:53	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	79.2		°F	04/22/24 11:46	04/22/24 11:46	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO3	211	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	11.0	0.20	mg/L	04/23/24 16:00	04/23/24 16:00	SM 4500-NH3 D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L	04/22/24 11:20	04/22/24 11:20	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	<4.0	4.0	mg/L	04/22/24 11:25	04/22/24 11:25	SM 5210B-2016		CDR	
Chloride	92.0	10.0	mg/L	04/23/24 11:30	04/23/24 11:30	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	72	5	mg/L	04/23/24 10:55	04/23/24 10:55	HACH 8000		CLB	
Fluoride	<0.10	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/22/24 15:40	04/22/24 15:40	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.2	2.2	mg/L	04/23/24 08:00	04/23/24 08:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO4	8.43	1.55	mg/L	04/26/24 09:25	04/26/24 09:25	SM 4500-P B/E-2011		ZAC	Q8
Sulfide	<0.010	0.010	mg/L	04/29/24 10:00	04/29/24 10:00	SM 4500-S2 D-2011		CLB	Q8
Total Dissolved Solids (TDS)	696	40	mg/L	04/22/24 15:00	04/22/24 15:00	SM 2540C-2015		CLB	
Total Organic Carbon	22.3	2.00	mg/L	04/24/24 09:30	04/24/24 09:30	SM 5310C-2014		ZAC	
Total Organic Nitrogen	2.80	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	<0.003	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	5.3	2.5	mg/L	04/23/24 08:30	04/23/24 08:30	SM 2540D-2015		CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order # : 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate+Nitrite-Nitrogen	<0.40	0.40	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Nitrate-Nitrogen	0.38	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Sulfate	807	25.0	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Bromide	1.37	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Total Metals by ICP-MS - EPA Method 200.8/6020									
Boron	125	20.0	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Aluminum	75.4	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Iron	209	7.00	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Magnesium	4540	20.0	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Titanium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Chromium	<3.00	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Manganese	165	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Cobalt	0.33	0.30	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Nickel	6.81	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Copper	13.8	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Zinc	21.5	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Arsenic	1.06	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Molybdenum	<1.00	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Silver	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Tin	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Barium	121	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order #: 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Volatiles by EPA 624.1									
Vinyl chloride	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Bromomethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Chloroform	0.007	0.004	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Acrolein	<0.020	0.020	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Acetone	<0.010	0.010	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,1-Dichloroethene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Acrylonitrile	<0.020	0.020	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Methylene chloride	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
trans-1,2-Dichloroethene	<0.004	0.004	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,1-Dichloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Methyl-t-butyl ether (MTBE)	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Chloromethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
2-Butanone (MEK)	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,1,1-Trichloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,2-Dichloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Benzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Carbon tetrachloride	<0.002	0.002	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,2-Dichloropropane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Trichloroethene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Dibromomethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1	E1	SEA	
Bromodichloromethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
cis-1,3-Dichloropropene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Epichlorohydrin	<0.100	0.100	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1	E1	SEA	
trans-1,3-Dichloropropene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Toluene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,1,2-Trichloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Chloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Dibromochloromethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Tetrachloroethene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Chlorobenzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,2-Dibromoethane (EDB)	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Ethyl benzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Bromoform	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
m,p-Xylene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
o-Xylene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,1,2,2-Tetrachloroethane	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,3-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,4-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
1,2-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
TTHM (Total Trihalomethanes)	0.007	0.005	mg/L	04/23/24 13:49	04/23/24 13:49	EPA 624.1		SEA	
Surrogate: Dibromofluoromethane		118 %		82-118	04/23/24 13:49	EPA 624.1		SEA	
Surrogate: Toluene-d8		100 %		88-110	04/23/24 13:49	EPA 624.1		SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order #: 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
---------	--------	-----------------	-------	----------	----------	--------	------	---------	-------

Toxic Pollutant Volatiles by EPA 624.1

Surrogate: 4-Bromofluorobenzene	96 %	86-115	04/23/24 13:49	EPA 624.1	SEA
---------------------------------	------	--------	----------------	-----------	-----

Toxic Pollutant Semivolatiles by EPA 625.1

N-Nitrosodimethylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Phenol	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2-Chlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Pyridine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
bis(2-Chloroethyl)ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
n-Decane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	E1 BDS
bis(2-Chloroisopropyl)ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
o-Cresol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
N-Nitroso-n-ethyl-ethanamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	E1 BDS
m,p-Cresol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
N-Nitroso-di-n-propylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Hexachloroethane	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Nitrobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Isophorone	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2-Nitrophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4-Dimethylphenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
bis(2-Chloroethoxy)methane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4-Dichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
1,2,4-Trichlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Naphthalene	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Hexachlorobutadiene	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
4-Chloro-3-methylphenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Hexachlorocyclopentadiene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4,6-Trichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2-Chloronaphthalene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
1,2,4,5-Tetrachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Dimethylphthalate	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4,5-Trichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,6-Dinitrotoluene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Acenaphthylene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Acenaphthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4-Dinitrophenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
4-Nitrophenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
2,4-Dinitrotoluene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Pentachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Diethylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
Fluorene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
4-Chlorophenyl-phenyl ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
4,6-Dinitro-2-methylphenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS
N-Nitrosodiphenylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	BDS

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order #: 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
Diphenylhydrazine(as Azobenzene)	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
4-Bromophenyl-phenyl ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Hexachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Pentachlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
n-Octadecane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	E1	BDS	
Phenanthrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Di-n-butylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Carbazole	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1	E1	BDS	
Benzidine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzylbutylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzo(a)anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
3,3'-Dichlorobenzidine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Chrysene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
N-Nitroso-di-n-butylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
bis(2-Ethylhexyl)phthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Di-n-octylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzo(b)fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzo(k)fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzo(a)pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Indeno(1,2,3-cd)pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Dibenz(a,h)anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Benzo(g,h,i)perylene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: 2-Fluorophenol		28 %		21-100	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: Phenol-d6		18 %		10-94	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: 2,4,6-Tribromophenol		56 %		10-123	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: Nitrobenzene-d5		55 %		35-114	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: 2-Fluorobiphenyl		50 %		43-116	04/29/24 16:58	EPA 625.1		BDS	
Surrogate: p-Terphenyl-d14		63 %		33-141	04/29/24 16:58	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Outfall 001 - Grab

Work Order #: 4D22046-01 Collection Date & Time : 4/22/2024 11:43:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Organochlorine Pesticides by EPA Method 608.3									
Aldrin	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
alpha-BHC	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
beta-BHC	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
delta-BHC	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
gamma-BHC	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
alpha-Chlordane	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
gamma-Chlordane	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
4,4'-DDD	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
4,4'-DDE	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
4,4'-DDT	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Dieldrin	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endosulfan I	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endosulfan II	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endosulfan Sulfate	<0.100	0.100	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endrin	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endrin Aldehyde	<0.050	0.050	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Heptachlor	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Heptachlor Epoxide	<0.100	0.100	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Endrin Ketone	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Methoxychlor	<0.150	0.150	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Toxaphene	<0.500	0.500	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Chlordane, Technical	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:14	EPA 608.3		BDS	
Surrogate: Decachlorobiphenyl		48 %		10-140	05/16/24 22:14	EPA 608.3		BDS	
Surrogate: Tetrachloro-m-xylene		40 %		10-140	05/16/24 22:14	EPA 608.3		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0086 - Field Service Prep											
Blank (B4E0086-BLK1)				Prepared & Analyzed: 04/22/24							
Sulfite	<2.0	2.0	mg/L							TT	
LCS (B4E0086-BS1)				Prepared & Analyzed: 04/22/24							
Sulfite	470	20.0	mg/L	500		94	80-120			TT	
Matrix Spike (B4E0086-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	47.0	2.0	mg/L	50.0	ND	94	80-120			TT	
Matrix Spike Dup (B4E0086-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	46.0	2.0	mg/L	50.0	ND	92	80-120	2	20	TT	
Batch B4E0102 - Field Service Prep											
LCS (B4E0102-BS1)				Prepared & Analyzed: 04/22/24							
pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
Duplicate (B4E0102-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Temperature, F.	32.0		°F		79.2			85	200	TT	
pH (on-site)	8.3		pH/°C		8.3			0	20	TT	
Temperature by Field Meter	26.2		pH/°C		26.2			0	20	TT	
Batch B4E0112 - Field Service Prep											
Duplicate (B4E0112-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Dissolved Oxygen	7.0	0.1	mg/L		7.3			4	20	TT	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Field Services Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0115 - Field Service Prep

Duplicate (B4E0115-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Chlorine, Total Residual (Low Range)	0.03	0.02	mg/L		0.03			0	20	TT	
--------------------------------------	------	------	------	--	------	--	--	---	----	----	--

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0438 - Wet Chem Prep

Blank (B4D0438-BLK1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
---------------------	--------	-------	------	--	--	--	--	--	--	-----	--

LCS (B4D0438-BS1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400		98	80-110			CLB	
---------------------	-------	-------	------	--------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0438-MS1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400	ND	98	80-120			CLB	
---------------------	-------	-------	------	--------	----	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0438-MSD1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.041	0.003	mg/L	0.0400	ND	102	80-120	5	20	CLB	
---------------------	-------	-------	------	--------	----	-----	--------	---	----	-----	--

Batch B4D0439 - Wet Chem Prep

Blank (B4D0439-BLK1)

Prepared & Analyzed: 04/22/24

Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	
------------------------------	-----	----	------	--	--	--	--	--	--	-----	--

LCS (B4D0439-BS1)

Prepared & Analyzed: 04/22/24

Total Dissolved Solids (Source)	4050	40	mg/L	4000		101	80-120			CLB	
---------------------------------	------	----	------	------	--	-----	--------	--	--	-----	--

Matrix Spike (B4D0439-MS1)

Source: 4D22040-08 Prepared & Analyzed: 04/22/24

Total Dissolved Solids (Source)	2680	40	mg/L	2000	556	106	80-120			CLB	
---------------------------------	------	----	------	------	-----	-----	--------	--	--	-----	--

Matrix Spike (B4D0439-MS2)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Total Dissolved Solids (Source)	2430	40	mg/L	2000	268	108	80-120			CLB	
---------------------------------	------	----	------	------	-----	-----	--------	--	--	-----	--

Matrix Spike Dup (B4D0439-MSD1)

Source: 4D22040-08 Prepared & Analyzed: 04/22/24

Total Dissolved Solids (Source)	2680	40	mg/L	2000	556	106	80-120	0	20	CLB	
---------------------------------	------	----	------	------	-----	-----	--------	---	----	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0439 - Wet Chem Prep

Matrix Spike Dup (B4D0439-MSD2) Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Total Dissolved Solids (Source)	2360	40	mg/L	2000	268	105	80-120	3	20	CLB	
---------------------------------	------	----	------	------	-----	-----	--------	---	----	-----	--

Batch B4D0440 - Wet Chem Prep

Blank (B4D0440-BLK1) Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
---	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0440-BS1) Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	193	2.0	mg/L	198		97	85-115			CDR	
---	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0440-DUP1) Source: 4D22044-01 Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	7.6	6.6	mg/L		7.9			4	20	CDR	
---	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0442 - Wet Chem Prep

Blank (B4D0442-BLK1) Prepared & Analyzed: 04/22/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0442-BS1) Prepared & Analyzed: 04/22/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	208	2.0	mg/L	198		105	85-115			CDR	
--	-----	-----	------	-----	--	-----	--------	--	--	-----	--

Duplicate (B4D0442-DUP1) Source: 4D22037-01 Prepared & Analyzed: 04/22/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	8.8	4.0	mg/L		9.6			9	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0448 - Wet Chem Prep

Blank (B4D0448-BLK1) Prepared & Analyzed: 04/23/24

Oil & Grease (HEM)	<2.0	2.0	mg/L							HNR	
--------------------	------	-----	------	--	--	--	--	--	--	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0448 - Wet Chem Prep											
LCS (B4D0448-BS1)				Prepared & Analyzed: 04/23/24							
Oil & Grease (HEM)	40.2	2.0	mg/L	40.0		100	78-114			HNR	
Matrix Spike (B4D0448-MS1)				Source: 4D17033-01 Prepared & Analyzed: 04/23/24							
Oil & Grease (HEM)	40.8	2.2	mg/L	43.5	ND	94	78-114			HNR	
Matrix Spike (B4D0448-MS2)				Source: 4D22046-01 Prepared & Analyzed: 04/23/24							
Oil & Grease (HEM)	40.8	2.2	mg/L	43.5	ND	94	78-114			HNR	
Matrix Spike Dup (B4D0448-MSD1)				Source: 4D17033-01 Prepared & Analyzed: 04/23/24							
Oil & Grease (HEM)	41.1	2.2	mg/L	44.0	ND	94	78-114	0.7	18	HNR	
Matrix Spike Dup (B4D0448-MSD2)				Source: 4D22046-01 Prepared & Analyzed: 04/23/24							
Oil & Grease (HEM)	41.3	2.2	mg/L	44.0	ND	94	78-114	1	18	HNR	
Batch B4D0455 - Wet Chem Prep											
Blank (B4D0455-BLK1)				Prepared & Analyzed: 04/23/24							
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4D0455-BS1)				Prepared & Analyzed: 04/23/24							
Chloride	893	40.0	mg/L	886		101	80-120			DGL	
Matrix Spike (B4D0455-MS1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	298	10.0	mg/L	222	86.0	96	80-120			DGL	
Matrix Spike Dup (B4D0455-MSD1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	297	10.0	mg/L	222	86.0	95	80-120	0.3	20	DGL	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0460 - Wet Chem Prep

Blank (B4D0460-BLK1)

Prepared & Analyzed: 04/23/24

Chemical Oxygen Demand	<5	5	mg/L							CLB	
------------------------	----	---	------	--	--	--	--	--	--	-----	--

LCS (B4D0460-BS1)

Prepared & Analyzed: 04/23/24

Chemical Oxygen Demand	52	5	mg/L	50.0		104	80-120			CLB	
------------------------	----	---	------	------	--	-----	--------	--	--	-----	--

Matrix Spike (B4D0460-MS1)

Source: 4D22043-01

Prepared & Analyzed: 04/23/24

Chemical Oxygen Demand	214	10	mg/L	95.2	110	109	80-120			CLB	
------------------------	-----	----	------	------	-----	-----	--------	--	--	-----	--

Matrix Spike Dup (B4D0460-MSD1)

Source: 4D22043-01

Prepared & Analyzed: 04/23/24

Chemical Oxygen Demand	220	10	mg/L	95.2	110	116	80-120	3	20	CLB	
------------------------	-----	----	------	------	-----	-----	--------	---	----	-----	--

Batch B4D0462 - Wet Chem Prep

Blank (B4D0462-BLK1)

Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
------------------------------	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0462-BS1)

Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	19.0	2.0	mg/L	20.0		95	80-120			CLB	
------------------------------	------	-----	------	------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0462-MS1)

Source: 4D22033-01

Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	40.0	5.0	mg/L	25.0	14.0	104	80-120			CLB	
------------------------------	------	-----	------	------	------	-----	--------	--	--	-----	--

Matrix Spike (B4D0462-MS2)

Source: 4D23012-02

Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	87.0	10.0	mg/L	50.0	32.0	110	80-120			CLB	
------------------------------	------	------	------	------	------	-----	--------	--	--	-----	--

Matrix Spike Dup (B4D0462-MSD1)

Source: 4D22033-01

Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	38.0	5.0	mg/L	25.0	14.0	96	80-120	5	20	CLB	
------------------------------	------	-----	------	------	------	----	--------	---	----	-----	--



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0462 - Wet Chem Prep											
Matrix Spike Dup (B4D0462-MSD2)			Source: 4D23012-02 Prepared & Analyzed: 04/23/24								
Total Suspended Solids (TSS)	89.0	10.0	mg/L	50.0	32.0	114	80-120	2	20	CLB	
Batch B4D0467 - Wet Chem Prep											
Blank (B4D0467-BLK1)			Prepared & Analyzed: 04/23/24								
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
LCS (B4D0467-BS1)			Prepared & Analyzed: 04/23/24								
Ammonia-Nitrogen	0.99	0.10	mg/L	1.00		99	80-120			AC	
Matrix Spike (B4D0467-MS1)			Source: 4D22044-01 Prepared & Analyzed: 04/23/24								
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120			AC	
Matrix Spike Dup (B4D0467-MSD1)			Source: 4D22044-01 Prepared & Analyzed: 04/23/24								
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120	0	20	AC	
Batch B4D0468 - Wet Chem Prep											
Blank (B4D0468-BLK1)			Prepared & Analyzed: 04/24/24								
Total Organic Carbon	<1.00	1.00	mg/L							ZAC	
LCS (B4D0468-BS1)			Prepared & Analyzed: 04/24/24								
Total Organic Carbon	25.1	1.00	mg/L	25.0		100	80-120			ZAC	
Matrix Spike (B4D0468-MS1)			Source: 4D12026-01 Prepared & Analyzed: 04/24/24								
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0468 - Wet Chem Prep											
Matrix Spike Dup (B4D0468-MSD1)			Source: 4D12026-01		Prepared & Analyzed: 04/24/24						
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120	0	20	ZAC	
Batch B4D0552 - Wet Chem Prep											
Blank (B4D0552-BLK1)			Prepared & Analyzed: 04/26/24								
Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8
LCS (B4D0552-BS1)			Prepared & Analyzed: 04/26/24								
Phosphorus, Total as PO4	1.04	0.31	mg/L	1.00		104	80-120			ZAC	Q8
Matrix Spike (B4D0552-MS1)			Source: 4D25023-01		Prepared & Analyzed: 04/26/24						
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120			ZAC	Q8
Matrix Spike Dup (B4D0552-MSD1)			Source: 4D25023-01		Prepared & Analyzed: 04/26/24						
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120	0	20	ZAC	Q8
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)			Prepared & Analyzed: 04/30/24								
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)			Prepared & Analyzed: 04/30/24								
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)			Source: 4D22046-01		Prepared & Analyzed: 04/30/24						
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0595 - Wet Chem Prep											
Matrix Spike Dup (B4D0595-MSD1)			Source: 4D22046-01 Prepared & Analyzed: 04/30/24								
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0603 - Wet Chem Prep											
Blank (B4D0603-BLK1)			Prepared & Analyzed: 04/29/24								
Sulfide	<0.010	0.010	mg/L							CLB	Q8
LCS (B4D0603-BS1)			Prepared & Analyzed: 04/29/24								
Sulfide	0.293	0.010	mg/L	0.300		98	80-120			CLB	Q8
Matrix Spike (B4D0603-MS1)			Source: 4D22044-02 Prepared & Analyzed: 04/29/24								
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120			CLB	Q8
Matrix Spike Dup (B4D0603-MSD1)			Source: 4D22044-02 Prepared & Analyzed: 04/29/24								
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120	0	20	CLB	Q8
Batch B4E0025 - Wet Chem Prep											
Blank (B4E0025-BLK1)			Prepared & Analyzed: 05/01/24								
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)			Prepared & Analyzed: 05/01/24								
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
Matrix Spike (B4E0025-MS1)			Source: 4D22046-01 Prepared & Analyzed: 05/01/24								
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0025 - Wet Chem Prep

Matrix Spike Dup (B4E0025-MSD1) Source: 4D22046-01 Prepared & Analyzed: 05/01/24

Total Alkalinity as CaCO3	585	20	mg/L	376	211	99	80-120	0.7	20	AC	
---------------------------	-----	----	------	-----	-----	----	--------	-----	----	----	--

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0420 - Wet Chem Prep

Blank (B4D0420-BLK1) Prepared & Analyzed: 04/22/24

Nitrate+Nitrite-Nitrogen	<0.20	0.20	mg/L							ZAC	
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
Bromide	<0.10	0.10	mg/L							ZAC	

LCS (B4D0420-BS1) Prepared & Analyzed: 04/22/24

Nitrate+Nitrite-Nitrogen	10.1		mg/L	10.0		101	90-110			ZAC	
Nitrate-Nitrogen	4.99		mg/L	5.00		100	90-110			ZAC	
Sulfate	20.3		mg/L	20.0		101	90-110			ZAC	
Bromide	5.19		mg/L	5.00		104	90-110			ZAC	

Matrix Spike (B4D0420-MS1) Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110			ZAC	
Nitrate-Nitrogen	23.7	0.50	mg/L	25.0	ND	95	90-110			ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110			ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110			ZAC	

Matrix Spike Dup (B4D0420-MSD1) Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110	0.1	20	ZAC	
Nitrate-Nitrogen	23.6	0.50	mg/L	25.0	ND	95	90-110	0.01	20	ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110	0.002	20	ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110	0.04	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Blank (B4D0444-BLK1) Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Magnesium	<20.0	20.0	ug/L							ZAC	
Titanium	<5.00	5.00	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Manganese	<0.50	0.50	ug/L							ZAC	
Cobalt	<0.30	0.30	ug/L							ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Blank (B4D0444-BLK1)

Prepared: 04/22/24 Analyzed: 04/25/24

Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Molybdenum	<1.00	1.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Tin	<5.00	5.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4D0444-BS1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	26.3	0.50	ug/L	27.8		95	85-115			ZAC	
Magnesium	1060	20.0	ug/L	1110		95	85-115			ZAC	
Titanium	269	5.00	ug/L	278		97	85-115			ZAC	
Chromium	158	3.00	ug/L	167		95	85-115			ZAC	
Manganese	26.9	0.50	ug/L	27.8		97	85-115			ZAC	
Cobalt	16.0	0.30	ug/L	16.7		96	85-115			ZAC	
Nickel	107	2.00	ug/L	111		96	85-115			ZAC	
Copper	106	2.00	ug/L	111		96	85-115			ZAC	
Zinc	265	5.00	ug/L	278		95	85-115			ZAC	
Arsenic	26.4	0.50	ug/L	27.8		95	85-115			ZAC	
Selenium	268	5.00	ug/L	278		96	85-115			ZAC	
Molybdenum	54.4	1.00	ug/L	55.6		98	85-115			ZAC	
Silver	26.9	0.50	ug/L	27.8		97	85-115			ZAC	
Cadmium	52.6	1.00	ug/L	55.6		95	85-115			ZAC	
Tin	283	5.00	ug/L	278		102	85-115			ZAC	
Antimony	261	5.00	ug/L	278		94	85-115			ZAC	
Barium	162	3.00	ug/L	167		97	85-115			ZAC	
Thallium	26.8	0.50	ug/L	27.8		96	85-115			ZAC	
Lead	26.6	0.50	ug/L	27.8		96	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Matrix Spike (B4D0444-MS1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1410	25.0	ug/L	1390	ND	101	70-130			ZAC	
Magnesium	61900	1000	ug/L	55600	3190	106	70-130			ZAC	
Titanium	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Chromium	7860	150	ug/L	8330	ND	94	70-130			ZAC	
Manganese	1360	25.0	ug/L	1390	27.5	96	70-130			ZAC	
Cobalt	800	15.0	ug/L	833	ND	96	70-130			ZAC	
Nickel	5270	100	ug/L	5560	ND	95	70-130			ZAC	
Copper	5250	100	ug/L	5560	ND	95	70-130			ZAC	
Zinc	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Arsenic	1270	25.0	ug/L	1390	ND	92	70-130			ZAC	
Selenium	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130			ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130			ZAC	
Cadmium	2790	50.0	ug/L	2780	ND	100	70-130			ZAC	
Tin	14900	250	ug/L	13900	ND	107	70-130			ZAC	
Antimony	14800	250	ug/L	13900	ND	106	70-130			ZAC	
Barium	9270	150	ug/L	8330	55.0	111	70-130			ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130			ZAC	

Matrix Spike Dup (B4D0444-MSD1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1430	25.0	ug/L	1390	ND	103	70-130	2	20	ZAC	
Magnesium	62600	1000	ug/L	55600	3190	107	70-130	1	20	ZAC	
Titanium	13300	250	ug/L	13900	ND	95	70-130	0.9	20	ZAC	
Chromium	7920	150	ug/L	8330	ND	95	70-130	0.7	20	ZAC	
Manganese	1350	25.0	ug/L	1390	27.5	95	70-130	0.9	20	ZAC	
Cobalt	794	15.0	ug/L	833	ND	95	70-130	0.6	20	ZAC	
Nickel	5240	100	ug/L	5560	ND	94	70-130	0.6	20	ZAC	
Copper	5200	100	ug/L	5560	ND	94	70-130	1	20	ZAC	
Zinc	12600	250	ug/L	13900	ND	90	70-130	0.4	20	ZAC	
Arsenic	1280	25.0	ug/L	1390	ND	92	70-130	0.7	20	ZAC	
Selenium	12600	250	ug/L	13900	ND	90	70-130	0.8	20	ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130	0.2	20	ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130	0.2	20	ZAC	
Cadmium	2830	50.0	ug/L	2780	ND	102	70-130	2	20	ZAC	
Tin	15300	250	ug/L	13900	ND	110	70-130	3	20	ZAC	
Antimony	14700	250	ug/L	13900	ND	106	70-130	0.6	20	ZAC	
Barium	9230	150	ug/L	8330	55.0	110	70-130	0.5	20	ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130	0.002	20	ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130	0.08	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0076 - 3015A											
Blank (B4E0076-BLK1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	<20.0	20.0	ug/L							ZAC	
Aluminum	<2.50	2.50	ug/L							ZAC	
Iron	<7.00	7.00	ug/L							ZAC	
LCS (B4E0076-BS1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	998	20.0	ug/L	1110		90	85-115			ZAC	
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Iron	380	7.00	ug/L	389		98	85-115			ZAC	
Matrix Spike (B4E0076-MS1)				Source: 4D22047-01		Prepared: 05/06/24 Analyzed: 05/14/24					
Boron	57400	1000	ug/L	55600	ND	103	70-130			ZAC	
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
Iron	19400	350	ug/L	19400	127	99	70-130			ZAC	
Matrix Spike (B4E0076-MS2)				Source: 4D29024-05		Prepared: 05/06/24 Analyzed: 05/14/24					
Boron	59000	1000	ug/L	55600	ND	106	70-130			ZAC	
Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
Iron	19500	350	ug/L	19400	186	99	70-130			ZAC	
Matrix Spike Dup (B4E0076-MSD1)				Source: 4D22047-01		Prepared: 05/06/24 Analyzed: 05/14/24					
Boron	58800	1000	ug/L	55600	ND	106	70-130	2	20	ZAC	
Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
Iron	19300	350	ug/L	19400	127	99	70-130	0.4	20	ZAC	
Matrix Spike Dup (B4E0076-MSD2)				Source: 4D29024-05		Prepared: 05/06/24 Analyzed: 05/14/24					
Boron	60800	1000	ug/L	55600	ND	110	70-130	3	20	ZAC	
Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
Iron	19900	350	ug/L	19400	186	101	70-130	2	20	ZAC	

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0453 - EPA 5030C/624											
Blank (B4D0453-BLK1)				Prepared & Analyzed: 04/23/24							
Vinyl chloride	<0.0008	0.0008	mg/L							SEA	
Bromomethane	<0.0006	0.0006	mg/L							SEA	
Chloroform	<0.0009	0.0009	mg/L							SEA	
Acrolein	<0.001	0.001	mg/L							SEA	
Acetone	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethene	<0.0009	0.0009	mg/L							SEA	
Acrylonitrile	<0.002	0.002	mg/L							SEA	
Methylene chloride	<0.0007	0.0007	mg/L							SEA	
trans-1,2-Dichloroethene	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Methyl-t-butyl ether (MTBE)	<0.0005	0.0005	mg/L							SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0453 - EPA 5030C/624											
Blank (B4D0453-BLK1)				Prepared & Analyzed: 04/23/24							
2-Butanone (MEK)	<0.001	0.001	mg/L							SEA	
Chloromethane	<0.0006	0.0006	mg/L							SEA	
1,1,1-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
1,2-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Benzene	<0.001	0.001	mg/L							SEA	
Carbon tetrachloride	<0.0009	0.0009	mg/L							SEA	
1,2-Dichloropropane	<0.0009	0.0009	mg/L							SEA	
Trichloroethene	<0.0009	0.0009	mg/L							SEA	
Dibromomethane	<0.0009	0.0009	mg/L							SEA	
Bromodichloromethane	<0.0007	0.0007	mg/L							SEA	
2-Chloroethyl vinyl ether	<0.0007	0.0007	mg/L							SEA	
cis-1,3-Dichloropropene	<0.0006	0.0006	mg/L							SEA	
trans-1,3-Dichloropropene	<0.0007	0.0007	mg/L							SEA	
Epichlorohydrin	<0.005	0.005	mg/L							SEA	
Toluene	<0.0007	0.0007	mg/L							SEA	
1,1,2-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
Chloroethane	<0.0007	0.0007	mg/L							SEA	
Dibromochloromethane	<0.0005	0.0005	mg/L							SEA	
Tetrachloroethene	0.002	0.001	mg/L							SEA	J
Chlorobenzene	<0.001	0.001	mg/L							SEA	
1,2-Dibromoethane (EDB)	<0.001	0.001	mg/L							SEA	
Ethyl benzene	<0.0006	0.0006	mg/L							SEA	
Bromoform	<0.0008	0.0008	mg/L							SEA	
m,p-Xylene	<0.001	0.001	mg/L							SEA	
o-Xylene	<0.0005	0.0005	mg/L							SEA	
1,1,2,2-Tetrachloroethane	<0.0009	0.0009	mg/L							SEA	
1,3-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,4-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,2-Dichlorobenzene	<0.0006	0.0006	mg/L							SEA	
TTHM (Total Trihalomethanes)	<0.005	0.005	mg/L							SEA	
Surrogate: Dibromofluoromethane	0.0600		mg/L	0.0500		120	82-118				OS2
Surrogate: Toluene-d8	0.0502		mg/L	0.0500		100	88-110				
Surrogate: 4-Bromofluorobenzene	0.0462		mg/L	0.0500		92	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0453 - EPA 5030C/624											
LCS (B4D0453-BS1)				Prepared & Analyzed: 04/23/24							
Vinyl chloride	0.077	0.005	mg/L	0.0500		154	5-195			SEA	
Bromomethane	0.055	0.005	mg/L	0.0500		109	15-185			SEA	
Chloroform	0.059	0.004	mg/L	0.0500		118	70-135			SEA	
Acrolein	0.512	0.020	mg/L	0.200		256	60-140			SEA	OQ1
Acetone	0.046	0.010	mg/L	0.0500		91	70-130			SEA	
1,1-Dichloroethene	0.077	0.005	mg/L	0.0500		154	50-150			SEA	OQ1
Acrylonitrile	0.227	0.020	mg/L	0.200		114	60-140			SEA	
Methylene chloride	0.052	0.005	mg/L	0.0500		105	60-140			SEA	
trans-1,2-Dichloroethene	0.061	0.004	mg/L	0.0500		123	70-130			SEA	
1,1-Dichloroethane	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
Methyl-t-butyl ether (MTBE)	0.049	0.005	mg/L	0.0500		98	70-130			SEA	
2-Butanone (MEK)	0.046	0.005	mg/L	0.0500		92	70-130			SEA	
Chloromethane	0.072	0.005	mg/L	0.0500		144	0.1-205			SEA	
1,1,1-Trichloroethane	0.057	0.005	mg/L	0.0500		114	70-130			SEA	
1,2-Dichloroethane	0.049	0.005	mg/L	0.0500		99	70-130			SEA	
Benzene	0.062	0.005	mg/L	0.0500		124	65-135			SEA	
Carbon tetrachloride	0.060	0.002	mg/L	0.0500		120	70-130			SEA	
1,2-Dichloropropane	0.055	0.005	mg/L	0.0500		109	35-165			SEA	
Trichloroethene	0.059	0.005	mg/L	0.0500		118	65-135			SEA	
Dibromomethane	0.052	0.005	mg/L	0.0500		104	70-130			SEA	
Bromodichloromethane	0.053	0.005	mg/L	0.0500		106	65-135			SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	0.0500			0.1-225			SEA	OQ1
cis-1,3-Dichloropropene	0.052	0.005	mg/L	0.0500		103	25-175			SEA	
trans-1,3-Dichloropropene	0.047	0.005	mg/L	0.0500		95	50-150			SEA	
Epichlorohydrin	0.031	0.100	mg/L	0.0500		63	70-130			SEA	OQ1
Toluene	0.060	0.005	mg/L	0.0500		120	70-130			SEA	
1,1,2-Trichloroethane	0.053	0.005	mg/L	0.0500		106	70-130			SEA	
Chloroethane	0.068	0.005	mg/L	0.0500		135	40-160			SEA	
Dibromochloromethane	0.050	0.005	mg/L	0.0500		100	70-135			SEA	
Tetrachloroethene	0.057	0.005	mg/L	0.0500		113	70-130			SEA	
Chlorobenzene	0.056	0.005	mg/L	0.0500		111	65-135			SEA	
1,2-Dibromoethane (EDB)	0.048	0.005	mg/L	0.0500		96	70-130			SEA	
Ethyl benzene	0.057	0.005	mg/L	0.0500		115	60-140			SEA	
Bromoform	0.043	0.005	mg/L	0.0500		87	70-130			SEA	
m,p-Xylene	0.117	0.005	mg/L	0.100		117	70-130			SEA	
o-Xylene	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
1,1,2,2-Tetrachloroethane	0.051	0.005	mg/L	0.0500		103	60-140			SEA	
1,3-Dichlorobenzene	0.053	0.005	mg/L	0.0500		107	75-144			SEA	
1,4-Dichlorobenzene	0.050	0.005	mg/L	0.0500		101	59-174			SEA	
1,2-Dichlorobenzene	0.050	0.005	mg/L	0.0500		100	59-174			SEA	
TTHM (Total Trihalomethanes)	0.209	0.005	mg/L	0.200		105	65-135			SEA	
Surrogate: Dibromofluoromethane	0.0579		mg/L	0.0500		116	82-118				
Surrogate: Toluene-d8	0.0495		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0479		mg/L	0.0500		96	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0453 - EPA 5030C/624

Matrix Spike (B4D0453-MS1)

Source: 4D22048-01 Prepared & Analyzed: 04/23/24

Vinyl chloride	7.68	0.500	mg/L	5.00	ND	154	0.1-251			SEA	
Bromomethane	5.36	0.500	mg/L	5.00	ND	107	0.1-242			SEA	
Chloroform	6.17	0.400	mg/L	5.00	ND	123	51-138			SEA	
Acrolein	17.0	2.00	mg/L	20.0	ND	85	40-160			SEA	
Acetone	4.15	1.00	mg/L	5.00	ND	83	70-130			SEA	
1,1-Dichloroethene	7.02	0.500	mg/L	5.00	ND	140	0.1-234			SEA	
Acrylonitrile	20.1	2.00	mg/L	20.0	ND	101	40-160			SEA	
Methylene chloride	6.02	0.500	mg/L	5.00	ND	120	0.1-221			SEA	
trans-1,2-Dichloroethene	6.14	0.400	mg/L	5.00	ND	123	54-156			SEA	
1,1-Dichloroethane	6.18	0.500	mg/L	5.00	ND	124	59-155			SEA	
Methyl-t-butyl ether (MTBE)	5.20	0.500	mg/L	5.00	ND	104	70-130			SEA	
2-Butanone (MEK)	4.32	0.500	mg/L	5.00	ND	86	70-130			SEA	
Chloromethane	6.70	0.500	mg/L	5.00	ND	134	0.1-273			SEA	
1,1,1-Trichloroethane	5.74	0.500	mg/L	5.00	ND	115	52-162			SEA	
1,2-Dichloroethane	4.89	0.500	mg/L	5.00	ND	98	49-155			SEA	
Benzene	6.12	0.500	mg/L	5.00	ND	122	37-151			SEA	
Carbon tetrachloride	5.82	0.200	mg/L	5.00	ND	116	70-140			SEA	
1,2-Dichloropropane	5.42	0.500	mg/L	5.00	ND	108	0.1-210			SEA	
Trichloroethene	5.82	0.500	mg/L	5.00	ND	116	70-157			SEA	
Dibromomethane	5.43	0.500	mg/L	5.00	ND	109	70-130			SEA	
Bromodichloromethane	5.48	0.500	mg/L	5.00	ND	110	35-155			SEA	
2-Chloroethyl vinyl ether	0.306	0.500	mg/L	5.00	ND	6	0.1-305			SEA	
cis-1,3-Dichloropropene	5.33	0.500	mg/L	5.00	ND	107	0.1-227			SEA	
trans-1,3-Dichloropropene	5.05	0.500	mg/L	5.00	ND	101	17-183			SEA	
Epichlorohydrin	4.14	10.0	mg/L	5.00	ND	83	70-130			SEA	
Toluene	6.01	0.500	mg/L	5.00	ND	120	47-150			SEA	
1,1,2-Trichloroethane	5.39	0.500	mg/L	5.00	ND	108	52-150			SEA	
Chloroethane	6.24	0.500	mg/L	5.00	ND	125	14-230			SEA	
Dibromochloromethane	5.02	0.500	mg/L	5.00	ND	100	53-149			SEA	
Tetrachloroethene	5.83	0.500	mg/L	5.00	ND	117	64-148			SEA	
Chlorobenzene	5.78	0.500	mg/L	5.00	ND	116	37-160			SEA	
1,2-Dibromoethane (EDB)	4.90	0.500	mg/L	5.00	ND	98	70-130			SEA	
Ethyl benzene	5.86	0.500	mg/L	5.00	ND	117	37-162			SEA	
Bromoform	4.52	0.500	mg/L	5.00	ND	90	45-169			SEA	
m,p-Xylene	12.1	0.500	mg/L	10.0	ND	121	70-130			SEA	
o-Xylene	6.16	0.500	mg/L	5.00	ND	123	70-130			SEA	
1,1,2,2-Tetrachloroethane	5.46	0.500	mg/L	5.00	ND	109	46-157			SEA	
1,3-Dichlorobenzene	5.91	0.500	mg/L	5.00	ND	118	59-156			SEA	
1,4-Dichlorobenzene	5.80	0.500	mg/L	5.00	ND	116	18-190			SEA	
1,2-Dichlorobenzene	5.77	0.500	mg/L	5.00	ND	115	18-190			SEA	
TTHM (Total Trihalomethanes)	22.2	0.500	mg/L	20.0	0.014	111	35-169			SEA	
Surrogate: Dibromofluoromethane	5.32		mg/L	5.00		106	82-118				
Surrogate: Toluene-d8	5.00		mg/L	5.00		100	88-110				
Surrogate: 4-Bromofluorobenzene	4.97		mg/L	5.00		99	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0453 - EPA 5030C/624

Matrix Spike Dup (B4D0453-MSD1)

Source: 4D22048-01 Prepared & Analyzed: 04/23/24

Vinyl chloride	7.73	0.500	mg/L	5.00	ND	155	0.1-251	0.6	66	SEA	
Bromomethane	5.46	0.500	mg/L	5.00	ND	109	0.1-242	2	61	SEA	
Chloroform	6.17	0.400	mg/L	5.00	ND	123	51-138	0.08	54	SEA	
Acrolein	17.5	2.00	mg/L	20.0	ND	88	40-160	3	60	SEA	
Acetone	4.05	1.00	mg/L	5.00	ND	81	70-130	3	20	SEA	
1,1-Dichloroethene	7.09	0.500	mg/L	5.00	ND	142	0.1-234	1	32	SEA	
Acrylonitrile	20.8	2.00	mg/L	20.0	ND	104	40-160	3	60	SEA	
Methylene chloride	5.84	0.500	mg/L	5.00	ND	117	0.1-221	3	28	SEA	
trans-1,2-Dichloroethene	6.22	0.400	mg/L	5.00	ND	124	54-156	1	45	SEA	
1,1-Dichloroethane	6.15	0.500	mg/L	5.00	ND	123	59-155	0.5	40	SEA	
Methyl-t-butyl ether (MTBE)	5.24	0.500	mg/L	5.00	ND	105	70-130	0.8	20	SEA	
2-Butanone (MEK)	4.58	0.500	mg/L	5.00	ND	92	70-130	6	20	SEA	
Chloromethane	6.83	0.500	mg/L	5.00	ND	137	0.1-273	2	60	SEA	
1,1,1-Trichloroethane	5.81	0.500	mg/L	5.00	ND	116	52-162	1	36	SEA	
1,2-Dichloroethane	4.83	0.500	mg/L	5.00	ND	97	49-155	1	49	SEA	
Benzene	6.17	0.500	mg/L	5.00	ND	123	37-151	0.8	61	SEA	
Carbon tetrachloride	5.96	0.200	mg/L	5.00	ND	119	70-140	3	41	SEA	
1,2-Dichloropropane	5.47	0.500	mg/L	5.00	ND	109	0.1-210	0.9	55	SEA	
Trichloroethene	5.98	0.500	mg/L	5.00	ND	120	70-157	3	48	SEA	
Dibromomethane	5.28	0.500	mg/L	5.00	ND	106	70-130	3	20	SEA	
Bromodichloromethane	5.41	0.500	mg/L	5.00	ND	108	35-155	1	56	SEA	
2-Chloroethyl vinyl ether	0.423	0.500	mg/L	5.00	ND	8	0.1-305	32	71	SEA	
cis-1,3-Dichloropropene	5.54	0.500	mg/L	5.00	ND	111	0.1-227	4	58	SEA	
trans-1,3-Dichloropropene	5.12	0.500	mg/L	5.00	ND	102	17-183	1	86	SEA	
Epichlorohydrin	4.40	10.0	mg/L	5.00	ND	88	70-130	6	20	SEA	
Toluene	6.04	0.500	mg/L	5.00	ND	121	47-150	0.5	41	SEA	
1,1,2-Trichloroethane	5.59	0.500	mg/L	5.00	ND	112	52-150	4	45	SEA	
Chloroethane	6.17	0.500	mg/L	5.00	ND	123	14-230	1	78	SEA	
Dibromochloromethane	5.14	0.500	mg/L	5.00	ND	103	53-149	2	50	SEA	
Tetrachloroethene	5.90	0.500	mg/L	5.00	ND	118	64-148	1	39	SEA	
Chlorobenzene	5.96	0.500	mg/L	5.00	ND	119	37-160	3	53	SEA	
1,2-Dibromoethane (EDB)	4.97	0.500	mg/L	5.00	ND	99	70-130	1	20	SEA	
Ethyl benzene	6.04	0.500	mg/L	5.00	ND	121	37-162	3	63	SEA	
Bromoform	4.57	0.500	mg/L	5.00	ND	91	45-169	0.9	42	SEA	
m,p-Xylene	12.4	0.500	mg/L	10.0	ND	124	70-130	2	20	SEA	
1,1,2,2-Tetrachloroethane	5.53	0.500	mg/L	5.00	ND	111	46-157	1	61	SEA	
o-Xylene	6.22	0.500	mg/L	5.00	ND	124	70-130	0.9	20	SEA	
1,3-Dichlorobenzene	6.15	0.500	mg/L	5.00	ND	123	59-156	4	43	SEA	
1,4-Dichlorobenzene	5.95	0.500	mg/L	5.00	ND	119	18-190	3	57	SEA	
1,2-Dichlorobenzene	5.80	0.500	mg/L	5.00	ND	116	18-190	0.4	57	SEA	
TTHM (Total Trihalomethanes)	22.3	0.500	mg/L	20.0	0.014	111	35-169	0.4	56	SEA	
Surrogate: Dibromofluoromethane	5.29		mg/L	5.00		106	82-118				
Surrogate: Toluene-d8	5.11		mg/L	5.00		102	88-110				
Surrogate: 4-Bromofluorobenzene	5.00		mg/L	5.00		100	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Blank (B4D0572-BLK1)				Prepared & Analyzed: 04/29/24							
N-Nitrosodimethylamine	<0.0002	0.0002	mg/L							BDS	
Phenol	<0.0001	0.0001	mg/L							BDS	
2-Chlorophenol	<0.0004	0.0004	mg/L							BDS	
Pyridine	<0.0003	0.0003	mg/L							BDS	
bis(2-Chloroethyl)ether	<0.0002	0.0002	mg/L							BDS	
n-Decane	<0.0009	0.0009	mg/L							BDS	
bis(2-Chloroisopropyl)ether	<0.0004	0.0004	mg/L							BDS	
o-Cresol	<0.0004	0.0004	mg/L							BDS	
N-Nitroso-n-ethyl-ethanamine	<0.0005	0.0005	mg/L							BDS	
m,p-Cresol	<0.0003	0.0003	mg/L							BDS	
N-Nitroso-di-n-propylamine	<0.0005	0.0005	mg/L							BDS	
Hexachloroethane	<0.0004	0.0004	mg/L							BDS	
Nitrobenzene	<0.0004	0.0004	mg/L							BDS	
Isophorone	<0.0007	0.0007	mg/L							BDS	
2-Nitrophenol	<0.0005	0.0005	mg/L							BDS	
2,4-Dimethylphenol	<0.0005	0.0005	mg/L							BDS	
bis(2-Chloroethoxy)methane	<0.0005	0.0005	mg/L							BDS	
2,4-Dichlorophenol	<0.0007	0.0007	mg/L							BDS	
1,2,4-Trichlorobenzene	<0.0003	0.0003	mg/L							BDS	
Naphthalene	<0.0004	0.0004	mg/L							BDS	
Hexachlorobutadiene	<0.0004	0.0004	mg/L							BDS	
4-Chloro-3-methylphenol	<0.0008	0.0008	mg/L							BDS	
Hexachlorocyclopentadiene	<0.0006	0.0006	mg/L							BDS	
2,4,6-Trichlorophenol	<0.0007	0.0007	mg/L							BDS	
2-Chloronaphthalene	<0.0005	0.0005	mg/L							BDS	
1,2,4,5-Tetrachlorobenzene	<0.0003	0.0003	mg/L							BDS	
Dimethylphthalate	<0.0007	0.0007	mg/L							BDS	
2,4,5-Trichlorophenol	<0.0004	0.0004	mg/L							BDS	
2,6-Dinitrotoluene	<0.0004	0.0004	mg/L							BDS	
Acenaphthylene	<0.0005	0.0005	mg/L							BDS	
Acenaphthene	<0.0005	0.0005	mg/L							BDS	
2,4-Dinitrophenol	<0.0004	0.0004	mg/L							BDS	
4-Nitrophenol	<0.0004	0.0004	mg/L							BDS	
2,4-Dinitrotoluene	<0.0005	0.0005	mg/L							BDS	
Pentachlorobenzene	<0.0004	0.0004	mg/L							BDS	
Diethylphthalate	<0.0005	0.0005	mg/L							BDS	
Fluorene	<0.0007	0.0007	mg/L							BDS	
4-Chlorophenyl-phenyl ether	<0.0007	0.0007	mg/L							BDS	
4,6-Dinitro-2-methylphenol	<0.0004	0.0004	mg/L							BDS	
N-Nitrosodiphenylamine	<0.0007	0.0007	mg/L							BDS	
Diphenylhydrazine(as Azobenzene)	<0.001	0.001	mg/L							BDS	
4-Bromophenyl-phenyl ether	<0.0006	0.0006	mg/L							BDS	
Hexachlorobenzene	<0.0005	0.0005	mg/L							BDS	
Pentachlorophenol	<0.0005	0.0005	mg/L							BDS	
n-Octadecane	<0.001	0.001	mg/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0572 - 3510C/625

Blank (B4D0572-BLK1)

Prepared & Analyzed: 04/29/24

Phenanthrene	<0.0006	0.0006	mg/L							BDS	
Anthracene	<0.0008	0.0008	mg/L							BDS	
Di-n-butylphthalate	<0.001	0.001	mg/L							BDS	
Fluoranthene	<0.0005	0.0005	mg/L							BDS	
Carbazole	<0.001	0.001	mg/L							BDS	
Benzidine	<0.0003	0.0003	mg/L							BDS	
Pyrene	<0.0005	0.0005	mg/L							BDS	
Benzylbutylphthalate	<0.0005	0.0005	mg/L							BDS	
Benzo(a)anthracene	<0.0008	0.0008	mg/L							BDS	
3,3'-Dichlorobenzidine	<0.0008	0.0008	mg/L							BDS	
Chrysene	<0.0005	0.0005	mg/L							BDS	
N-Nitroso-di-n-butylamine	<0.0007	0.0007	mg/L							BDS	
bis(2-Ethylhexyl)phthalate	<0.001	0.001	mg/L							BDS	
Di-n-octylphthalate	<0.001	0.001	mg/L							BDS	
Benzo(b)fluoranthene	<0.001	0.001	mg/L							BDS	
Benzo(k)fluoranthene	<0.0008	0.0008	mg/L							BDS	
Benzo(a)pyrene	<0.001	0.001	mg/L							BDS	
Indeno(1,2,3-cd)pyrene	<0.001	0.001	mg/L							BDS	
Dibenz(a,h)anthracene	<0.001	0.001	mg/L							BDS	
Benzo(g,h,i)perylene	<0.001	0.001	mg/L							BDS	
Surrogate: 2-Fluorophenol	0.0432		mg/L	0.100		43	21-100				
Surrogate: Phenol-d6	0.0262		mg/L	0.100		26	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0869		mg/L	0.100		87	10-123				
Surrogate: Nitrobenzene-d5	0.0804		mg/L	0.100		80	35-114				
Surrogate: 2-Fluorobiphenyl	0.0699		mg/L	0.100		70	43-116				
Surrogate: p-Terphenyl-d14	0.0917		mg/L	0.100		92	33-141				

LCS (B4D0572-BS1)

Prepared & Analyzed: 04/29/24

N-Nitrosodimethylamine	0.027	0.005	mg/L	0.0500		53	21-85			BDS	
Phenol	0.019	0.002	mg/L	0.0500		38	17-120			BDS	
2-Chlorophenol	0.049	0.005	mg/L	0.0500		98	36-120			BDS	
Pyridine	0.007	0.005	mg/L	0.0500		13	3-81			BDS	
bis(2-Chloroethyl)ether	0.050	0.005	mg/L	0.0500		100	43-126			BDS	
n-Decane	0.037	0.005	mg/L	0.0500		73	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.050	0.005	mg/L	0.0500		101	63-139			BDS	
o-Cresol	0.039	0.005	mg/L	0.0500		78	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.052	0.005	mg/L	0.0500		104	30-120			BDS	
m,p-Cresol	0.071	0.005	mg/L	0.100		71	27-120			BDS	
N-Nitroso-di-n-propylamine	0.048	0.005	mg/L	0.0500		96	14-198			BDS	
Hexachloroethane	0.032	0.002	mg/L	0.0500		64	55-120			BDS	
Nitrobenzene	0.048	0.005	mg/L	0.0500		95	54-158			BDS	
Isophorone	0.046	0.005	mg/L	0.0500		93	47-180			BDS	
2-Nitrophenol	0.050	0.005	mg/L	0.0500		99	45-167			BDS	
2,4-Dimethylphenol	0.050	0.005	mg/L	0.0500		99	42-120			BDS	
bis(2-Chloroethoxy)methane	0.047	0.005	mg/L	0.0500		94	49-165			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
LCS (B4D0572-BS1)				Prepared & Analyzed: 04/29/24							
2,4-Dichlorophenol	0.051	0.005	mg/L	0.0500		103	53-122			BDS	
1,2,4-Trichlorobenzene	0.040	0.005	mg/L	0.0500		81	57-130			BDS	
Naphthalene	0.042	0.002	mg/L	0.0500		84	36-120			BDS	
Hexachlorobutadiene	0.040	0.002	mg/L	0.0500		79	38-120			BDS	
4-Chloro-3-methylphenol	0.050	0.005	mg/L	0.0500		101	41-128			BDS	
Hexachlorocyclopentadiene	0.048	0.005	mg/L	0.0500		96	10-98			BDS	
2,4,6-Trichlorophenol	0.051	0.005	mg/L	0.0500		102	52-129			BDS	
2-Chloronaphthalene	0.046	0.005	mg/L	0.0500		92	36-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
Dimethylphthalate	0.019	0.002	mg/L	0.0500		39	0-120			BDS	
2,4,5-Trichlorophenol	0.047	0.005	mg/L	0.0500		93	40-120			BDS	
2,6-Dinitrotoluene	0.048	0.005	mg/L	0.0500		95	68-137			BDS	
Acenaphthylene	0.019	0.005	mg/L	0.0500		38	54-126			BDS	OQ1
Acenaphthene	0.046	0.005	mg/L	0.0500		92	60-132			BDS	
2,4-Dinitrophenol	0.038	0.010	mg/L	0.0500		75	0-173			BDS	
4-Nitrophenol	0.024	0.010	mg/L	0.0500		49	13-129			BDS	
2,4-Dinitrotoluene	0.047	0.005	mg/L	0.0500		94	48-127			BDS	
Pentachlorobenzene	0.049	0.005	mg/L	0.0500		99	50-120			BDS	
Diethylphthalate	0.030	0.005	mg/L	0.0500		61	0-120			BDS	
Fluorene	0.047	0.005	mg/L	0.0500		94	70-120			BDS	
4-Chlorophenyl-phenyl ether	0.048	0.005	mg/L	0.0500		96	38-145			BDS	
4,6-Dinitro-2-methylphenol	0.047	0.010	mg/L	0.0500		94	53-130			BDS	
N-Nitrosodiphenylamine	0.049	0.005	mg/L	0.0500		98	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.026	0.005	mg/L	0.0500		52	2-79			BDS	
4-Bromophenyl-phenyl ether	0.047	0.005	mg/L	0.0500		94	65-120			BDS	
Hexachlorobenzene	0.038	0.005	mg/L	0.0500		76	8-142			BDS	
Pentachlorophenol	0.046	0.005	mg/L	0.0500		93	38-152			BDS	
n-Octadecane	0.047	0.005	mg/L	0.0500		94	20-120			BDS	
Phenanthrene	0.045	0.005	mg/L	0.0500		90	65-120			BDS	
Anthracene	0.045	0.005	mg/L	0.0500		89	43-120			BDS	
Di-n-butylphthalate	0.047	0.005	mg/L	0.0500		94	8-120			BDS	
Fluoranthene	0.045	0.005	mg/L	0.0500		90	43-121			BDS	
Carbazole	0.023	0.005	mg/L	0.0500		46	20-120			BDS	
Benzidine	0.001	0.005	mg/L	0.0500		2	1-75			BDS	
Pyrene	0.046	0.005	mg/L	0.0500		91	70-130			BDS	
Benzylbutylphthalate	0.047	0.005	mg/L	0.0500		95	0-140			BDS	
Benzo(a)anthracene	0.051	0.005	mg/L	0.0500		102	42-133			BDS	
3,3'-Dichlorobenzidine	0.051	0.005	mg/L	0.0500		102	8-213			BDS	
Chrysene	0.052	0.005	mg/L	0.0500		104	44-140			BDS	
N-Nitroso-di-n-butylamine	0.046	0.005	mg/L	0.0500		91	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.050	0.005	mg/L	0.0500		101	29-137			BDS	
Di-n-octylphthalate	0.048	0.005	mg/L	0.0500		96	19-132			BDS	
Benzo(b)fluoranthene	0.050	0.005	mg/L	0.0500		99	42-140			BDS	
Benzo(k)fluoranthene	0.050	0.005	mg/L	0.0500		100	25-146			BDS	
Benzo(a)pyrene	0.049	0.005	mg/L	0.0500		98	32-148			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0572 - 3510C/625

LCS (B4D0572-BS1)

Prepared & Analyzed: 04/29/24

Indeno(1,2,3-cd)pyrene	0.045	0.005	mg/L	0.0500		90	0-151			BDS	
Dibenz(a,h)anthracene	0.047	0.005	mg/L	0.0500		94	0-200			BDS	
Benzo(g,h,i)perylene	0.043	0.005	mg/L	0.0500		86	0-195			BDS	
Surrogate: 2-Fluorophenol	0.0488		mg/L	0.100		49	21-100				
Surrogate: Phenol-d6	0.0299		mg/L	0.100		30	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0946		mg/L	0.100		95	10-123				
Surrogate: Nitrobenzene-d5	0.0924		mg/L	0.100		92	35-114				
Surrogate: 2-Fluorobiphenyl	0.0782		mg/L	0.100		78	43-116				
Surrogate: p-Terphenyl-d14	0.102		mg/L	0.100		102	33-141				

Matrix Spike (B4D0572-MS1)

Source: 4D23023-02

Prepared & Analyzed: 04/29/24

N-Nitrosodimethylamine	0.011	0.005	mg/L	0.0500	ND	22	21-85			BDS	
Phenol	0.009	0.002	mg/L	0.0500	ND	18	5-120			BDS	
2-Chlorophenol	0.022	0.005	mg/L	0.0500	ND	43	23-134			BDS	
Pyridine	0.0004	0.005	mg/L	0.0500	ND	0.9	3-81			BDS	Q2
bis(2-Chloroethyl)ether	0.021	0.005	mg/L	0.0500	ND	43	12-158			BDS	
n-Decane	0.017	0.005	mg/L	0.0500	ND	35	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.022	0.005	mg/L	0.0500	ND	44	36-166			BDS	
o-Cresol	0.016	0.005	mg/L	0.0500	ND	33	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.021	0.005	mg/L	0.0500	ND	42	50-120			BDS	Q2
m,p-Cresol	0.029	0.005	mg/L	0.100	ND	29	27-120			BDS	
N-Nitroso-di-n-propylamine	0.020	0.005	mg/L	0.0500	ND	41	0.1-230			BDS	
Hexachloroethane	0.017	0.002	mg/L	0.0500	ND	33	40-120			BDS	Q2
Nitrobenzene	0.022	0.005	mg/L	0.0500	ND	44	35-180			BDS	
Isophorone	0.022	0.005	mg/L	0.0500	ND	43	21-196			BDS	
2-Nitrophenol	0.022	0.005	mg/L	0.0500	ND	44	29-182			BDS	
2,4-Dimethylphenol	0.022	0.005	mg/L	0.0500	ND	44	32-120			BDS	
bis(2-Chloroethoxy)methane	0.021	0.005	mg/L	0.0500	ND	42	33-184			BDS	
2,4-Dichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	39-135			BDS	
1,2,4-Trichlorobenzene	0.018	0.005	mg/L	0.0500	ND	36	44-142			BDS	Q2
Naphthalene	0.019	0.002	mg/L	0.0500	0.0006	36	21-133			BDS	
Hexachlorobutadiene	0.018	0.002	mg/L	0.0500	ND	36	24-120			BDS	
4-Chloro-3-methylphenol	0.023	0.005	mg/L	0.0500	ND	46	22-147			BDS	
Hexachlorocyclopentadiene	0.024	0.005	mg/L	0.0500	ND	47	10-98			BDS	
2,4,6-Trichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	37-144			BDS	
2-Chloronaphthalene	0.019	0.005	mg/L	0.0500	ND	38	60-120			BDS	Q2
1,2,4,5-Tetrachlorobenzene	0.019	0.005	mg/L	0.0500	ND	37	35-120			BDS	
Dimethylphthalate	0.018	0.002	mg/L	0.0500	ND	35	0.1-120			BDS	
2,4,5-Trichlorophenol	0.020	0.005	mg/L	0.0500	ND	41	40-120			BDS	
2,6-Dinitrotoluene	0.023	0.005	mg/L	0.0500	ND	46	50-158			BDS	Q2
Acenaphthylene	0.019	0.005	mg/L	0.0500	ND	37	33-145			BDS	
Acenaphthene	0.019	0.005	mg/L	0.0500	ND	37	47-145			BDS	Q2
2,4-Dinitrophenol	0.020	0.010	mg/L	0.0500	ND	39	0.1-191			BDS	
4-Nitrophenol	0.014	0.010	mg/L	0.0500	ND	28	0.1-132			BDS	
2,4-Dinitrotoluene	0.024	0.005	mg/L	0.0500	ND	49	39-139			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Matrix Spike (B4D0572-MS1)			Source: 4D23023-02			Prepared & Analyzed: 04/29/24					
Pentachlorobenzene	0.019	0.005	mg/L	0.0500	ND	38	50-120			BDS	OQ2
Diethylphthalate	0.020	0.005	mg/L	0.0500	ND	39	0.1-120			BDS	
Fluorene	0.019	0.005	mg/L	0.0500	ND	39	59-121			BDS	OQ2
4-Chlorophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	45	25-158			BDS	
4,6-Dinitro-2-methylphenol	0.023	0.010	mg/L	0.0500	ND	47	0.1-181			BDS	
N-Nitrosodiphenylamine	0.021	0.005	mg/L	0.0500	ND	42	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.012	0.005	mg/L	0.0500	ND	24	2-79			BDS	
4-Bromophenyl-phenyl ether	0.022	0.005	mg/L	0.0500	ND	44	53-127			BDS	OQ2
Hexachlorobenzene	0.018	0.005	mg/L	0.0500	ND	35	0.1-152			BDS	
Pentachlorophenol	0.020	0.005	mg/L	0.0500	ND	40	14-176			BDS	
n-Octadecane	0.022	0.005	mg/L	0.0500	ND	44	20-120			BDS	
Phenanthrene	0.019	0.005	mg/L	0.0500	ND	38	54-120			BDS	OQ2
Anthracene	0.018	0.005	mg/L	0.0500	ND	37	27-133			BDS	
Di-n-butylphthalate	0.023	0.005	mg/L	0.0500	ND	46	1-120			BDS	
Fluoranthene	0.019	0.005	mg/L	0.0500	ND	38	26-137			BDS	
Carbazole	0.007	0.005	mg/L	0.0500	ND	15	20-120			BDS	OQ2
Benzidine	<0.005	0.005	mg/L	0.0500	ND		1-75			BDS	OQ2
Pyrene	0.019	0.005	mg/L	0.0500	ND	38	52-120			BDS	OQ2
Benzylbutylphthalate	0.024	0.005	mg/L	0.0500	ND	47	0.1-152			BDS	
Benzo(a)anthracene	0.021	0.005	mg/L	0.0500	ND	42	33-143			BDS	
3,3'-Dichlorobenzidine	0.016	0.005	mg/L	0.0500	ND	31	0.1-262			BDS	
Chrysene	0.018	0.005	mg/L	0.0500	ND	37	17-168			BDS	
N-Nitroso-di-n-butylamine	0.020	0.005	mg/L	0.0500	ND	40	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.024	0.005	mg/L	0.0500	ND	48	8-158			BDS	
Di-n-octylphthalate	0.023	0.005	mg/L	0.0500	ND	46	4-146			BDS	
Benzo(b)fluoranthene	0.021	0.005	mg/L	0.0500	ND	42	24-159			BDS	
Benzo(k)fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	11-162			BDS	
Benzo(a)pyrene	0.019	0.005	mg/L	0.0500	ND	39	17-163			BDS	
Indeno(1,2,3-cd)pyrene	0.018	0.005	mg/L	0.0500	ND	36	0.1-171			BDS	
Dibenz(a,h)anthracene	0.021	0.005	mg/L	0.0500	ND	41	0.1-227			BDS	
Benzo(g,h,i)perylene	0.022	0.005	mg/L	0.0500	ND	45	0.1-219			BDS	
Surrogate: 2-Fluorophenol	0.0224		mg/L	0.100		22	21-100				
Surrogate: Phenol-d6	0.0149		mg/L	0.100		15	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0392		mg/L	0.100		39	10-123				
Surrogate: Nitrobenzene-d5	0.0353		mg/L	0.100		35	35-114				
Surrogate: 2-Fluorobiphenyl	0.0356		mg/L	0.100		36	43-116				OS4
Surrogate: p-Terphenyl-d14	0.0421		mg/L	0.100		42	33-141				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Matrix Spike Dup (B4D0572-MSD1)				Source: 4D23023-02		Prepared & Analyzed: 04/29/24					
N-Nitrosodimethylamine	0.011	0.005	mg/L	0.0500	ND	22	21-85	0.3	25	BDS	
Phenol	0.009	0.002	mg/L	0.0500	ND	19	5-120	4	64	BDS	
2-Chlorophenol	0.022	0.005	mg/L	0.0500	ND	44	23-134	2	61	BDS	
Pyridine	0.0009	0.005	mg/L	0.0500	ND	2	3-81	68	25	BDS	Q2, Q3
bis(2-Chloroethyl)ether	0.022	0.005	mg/L	0.0500	ND	44	12-158	3	108	BDS	
n-Decane	0.018	0.005	mg/L	0.0500	ND	35	20-120	3	25	BDS	
bis(2-Chloroisopropyl)ether	0.022	0.005	mg/L	0.0500	ND	45	36-166	1	76	BDS	
o-Cresol	0.017	0.005	mg/L	0.0500	ND	34	27-120	3	25	BDS	
N-Nitroso-n-ethyl-ethanamine	0.022	0.005	mg/L	0.0500	ND	43	50-120	2	25	BDS	Q2
m,p-Cresol	0.030	0.005	mg/L	0.100	ND	30	27-120	3	25	BDS	
N-Nitroso-di-n-propylamine	0.021	0.005	mg/L	0.0500	ND	42	0.1-230	4	87	BDS	
Hexachloroethane	0.017	0.002	mg/L	0.0500	ND	34	40-120	2	52	BDS	Q2
Nitrobenzene	0.022	0.005	mg/L	0.0500	ND	45	35-180	2	62	BDS	
Isophorone	0.022	0.005	mg/L	0.0500	ND	45	21-196	4	93	BDS	
2-Nitrophenol	0.023	0.005	mg/L	0.0500	ND	46	29-182	6	55	BDS	
2,4-Dimethylphenol	0.023	0.005	mg/L	0.0500	ND	46	32-120	6	58	BDS	
bis(2-Chloroethoxy)methane	0.022	0.005	mg/L	0.0500	ND	44	33-184	5	54	BDS	
2,4-Dichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	39-135	1	50	BDS	
1,2,4-Trichlorobenzene	0.019	0.005	mg/L	0.0500	ND	37	44-142	5	50	BDS	Q2
Naphthalene	0.019	0.002	mg/L	0.0500	0.0006	37	21-133	3	65	BDS	
Hexachlorobutadiene	0.019	0.002	mg/L	0.0500	ND	38	24-120	6	62	BDS	
4-Chloro-3-methylphenol	0.025	0.005	mg/L	0.0500	ND	49	22-147	8	73	BDS	
Hexachlorocyclopentadiene	0.024	0.005	mg/L	0.0500	ND	49	10-98	3	25	BDS	
2,4,6-Trichlorophenol	0.025	0.005	mg/L	0.0500	ND	50	37-144	5	58	BDS	
2-Chloronaphthalene	0.019	0.005	mg/L	0.0500	ND	38	60-120	0.7	24	BDS	Q2
1,2,4,5-Tetrachlorobenzene	0.020	0.005	mg/L	0.0500	ND	39	35-120	5	25	BDS	
Dimethylphthalate	0.018	0.002	mg/L	0.0500	ND	37	0.1-120	4	183	BDS	
2,4,5-Trichlorophenol	0.020	0.005	mg/L	0.0500	ND	39	40-120	4	25	BDS	
2,6-Dinitrotoluene	0.025	0.005	mg/L	0.0500	ND	50	50-158	8	48	BDS	
Acenaphthylene	0.020	0.005	mg/L	0.0500	ND	39	33-145	5	74	BDS	
Acenaphthene	0.019	0.005	mg/L	0.0500	ND	38	47-145	3	48	BDS	Q2
2,4-Dinitrophenol	0.021	0.010	mg/L	0.0500	ND	41	0.1-191	5	132	BDS	
4-Nitrophenol	0.013	0.010	mg/L	0.0500	ND	27	0.1-132	3	131	BDS	
2,4-Dinitrotoluene	0.025	0.005	mg/L	0.0500	ND	50	39-139	3	42	BDS	
Pentachlorobenzene	0.021	0.005	mg/L	0.0500	ND	41	50-120	8	25	BDS	Q2
Diethylphthalate	0.021	0.005	mg/L	0.0500	ND	41	0.1-120	4	100	BDS	
Fluorene	0.020	0.005	mg/L	0.0500	ND	40	59-121	4	38	BDS	Q2
4-Chlorophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	47	25-158	4	61	BDS	
4,6-Dinitro-2-methylphenol	0.023	0.010	mg/L	0.0500	ND	45	0.1-181	3	203	BDS	
N-Nitrosodiphenylamine	0.022	0.005	mg/L	0.0500	ND	44	25-120	5	25	BDS	
Diphenylhydrazine(as Azobenzene)	0.013	0.005	mg/L	0.0500	ND	25	2-79	7	25	BDS	
4-Bromophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	46	53-127	5	43	BDS	Q2
Hexachlorobenzene	0.019	0.005	mg/L	0.0500	ND	39	0.1-152	10	55	BDS	
Pentachlorophenol	0.021	0.005	mg/L	0.0500	ND	42	14-176	4	86	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0572 - 3510C/625

Matrix Spike Dup (B4D0572-MSD1)

Source: 4D23023-02 Prepared & Analyzed: 04/29/24

n-Octadecane	0.023	0.005	mg/L	0.0500	ND	46	20-120	3	25	BDS	
Phenanthrene	0.020	0.005	mg/L	0.0500	ND	39	54-120	5	39	BDS	OQ2
Anthracene	0.019	0.005	mg/L	0.0500	ND	39	27-133	5	66	BDS	
Di-n-butylphthalate	0.024	0.005	mg/L	0.0500	ND	49	1-120	6	47	BDS	
Fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	26-137	6	66	BDS	
Carbazole	0.008	0.005	mg/L	0.0500	ND	16	20-120	5	25	BDS	OQ2
Benzidine	<0.005	0.005	mg/L	0.0500	ND		1-75		25	BDS	OQ2
Pyrene	0.020	0.005	mg/L	0.0500	ND	40	52-120	6	49	BDS	OQ2
Benzylbutylphthalate	0.025	0.005	mg/L	0.0500	ND	50	0.1-152	7	60	BDS	
Benzo(a)anthracene	0.022	0.005	mg/L	0.0500	ND	44	33-143	4	53	BDS	
3,3'-Dichlorobenzidine	0.017	0.005	mg/L	0.0500	ND	35	0.1-262	11	108	BDS	
Chrysene	0.019	0.005	mg/L	0.0500	ND	39	17-168	5	87	BDS	
N-Nitroso-di-n-butylamine	0.021	0.005	mg/L	0.0500	ND	42	35-120	6	25	BDS	
bis(2-Ethylhexyl)phthalate	0.026	0.005	mg/L	0.0500	ND	51	8-158	7	82	BDS	
Di-n-octylphthalate	0.024	0.005	mg/L	0.0500	ND	48	4-146	5	69	BDS	
Benzo(b)fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	24-159	6	71	BDS	
Benzo(k)fluoranthene	0.020	0.005	mg/L	0.0500	ND	41	11-162	3	63	BDS	
Benzo(a)pyrene	0.021	0.005	mg/L	0.0500	ND	41	17-163	6	72	BDS	
Indeno(1,2,3-cd)pyrene	0.019	0.005	mg/L	0.0500	ND	37	0.1-171	3	99	BDS	
Dibenz(a,h)anthracene	0.021	0.005	mg/L	0.0500	ND	42	0.1-227	3	126	BDS	
Benzo(g,h,i)perylene	0.024	0.005	mg/L	0.0500	ND	47	0.1-219	5	97	BDS	
Surrogate: 2-Fluorophenol	0.0232		mg/L	0.100		23	21-100				
Surrogate: Phenol-d6	0.0150		mg/L	0.100		15	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0426		mg/L	0.100		43	10-123				
Surrogate: Nitrobenzene-d5	0.0373		mg/L	0.100		37	35-114				
Surrogate: 2-Fluorobiphenyl	0.0372		mg/L	0.100		37	43-116				OS4
Surrogate: p-Terphenyl-d14	0.0455		mg/L	0.100		45	33-141				

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	<0.004	0.004	ug/L							BDS	
alpha-BHC	<0.003	0.003	ug/L							BDS	
beta-BHC	<0.006	0.006	ug/L							BDS	
delta-BHC	<0.009	0.009	ug/L							BDS	
gamma-BHC	<0.004	0.004	ug/L							BDS	
alpha-Chlordane	<0.014	0.014	ug/L							BDS	
gamma-Chlordane	<0.014	0.014	ug/L							BDS	
4,4'-DDD	<0.011	0.011	ug/L							BDS	
4,4'-DDE	<0.004	0.004	ug/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

4,4'-DDT	<0.012	0.012	ug/L							BDS	
Dieldrin	<0.002	0.002	ug/L							BDS	
Endosulfan I	<0.014	0.014	ug/L							BDS	
Endosulfan II	<0.004	0.004	ug/L							BDS	
Endosulfan Sulfate	<0.066	0.066	ug/L							BDS	
Endrin	<0.006	0.006	ug/L							BDS	
Endrin Aldehyde	<0.023	0.023	ug/L							BDS	
Heptachlor	<0.003	0.003	ug/L							BDS	
Heptachlor Epoxide	<0.083	0.083	ug/L							BDS	
Endrin Ketone	<0.015	0.015	ug/L							BDS	
Methoxychlor	<0.126	0.126	ug/L							BDS	
Toxaphene	<0.240	0.240	ug/L							BDS	
Chlordane, Technical	<0.010	0.010	ug/L							BDS	

Surrogate: Decachlorobiphenyl 0.563 ug/L 1.00 56 10-140

Surrogate: Tetrachloro-m-xylene 0.358 ug/L 1.00 36 10-140

LCS (B4E0068-BS1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	0.358	0.005	ug/L	0.500		72	42-140			BDS	
alpha-BHC	0.383	0.005	ug/L	0.500		77	37-140			BDS	
beta-BHC	0.362	0.010	ug/L	0.500		72	17-147			BDS	
delta-BHC	0.453	0.010	ug/L	0.500		91	19-140			BDS	
gamma-BHC	0.401	0.005	ug/L	0.500		80	32-140			BDS	
alpha-Chlordane	0.357	0.020	ug/L	0.500		71	45-140			BDS	
gamma-Chlordane	0.416	0.020	ug/L	0.500		83	45-140			BDS	
4,4'-DDD	0.427	0.020	ug/L	0.500		85	31-141			BDS	
4,4'-DDE	0.428	0.005	ug/L	0.500		86	30-145			BDS	
4,4'-DDT	0.344	0.020	ug/L	0.500		69	25-160			BDS	
Dieldrin	0.452	0.005	ug/L	0.500		90	36-146			BDS	
Endosulfan I	0.432	0.020	ug/L	0.500		86	45-153			BDS	
Endosulfan II	0.338	0.005	ug/L	0.500		68	1-202			BDS	
Endosulfan Sulfate	0.384	0.100	ug/L	0.500		77	26-144			BDS	
Endrin	0.433	0.010	ug/L	0.500		87	30-147			BDS	
Endrin Aldehyde	0.331	0.050	ug/L	0.500		66	30-147			BDS	
Heptachlor	0.224	0.005	ug/L	0.500		45	34-140			BDS	
Heptachlor Epoxide	0.419	0.100	ug/L	0.500		84	37-142			BDS	
Endrin Ketone	0.386	0.020	ug/L	0.500		77	45-140			BDS	
Methoxychlor	0.330	0.150	ug/L	0.500		66	45-140			BDS	
Toxaphene	33.6	0.500	ug/L	50.0		67	41-140			BDS	
Chlordane, Technical	1.01	0.020	ug/L	1.00		101	45-140			BDS	

Surrogate: Decachlorobiphenyl 0.597 ug/L 1.00 60 10-140

Surrogate: Tetrachloro-m-xylene 0.426 ug/L 1.00 43 10-140

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike (B4E0068-MS1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.421	0.005	ug/L	0.500	ND	84	42-140			BDS	
alpha-BHC	0.352	0.005	ug/L	0.500	ND	70	37-140			BDS	
beta-BHC	0.094	0.010	ug/L	0.500	ND	19	17-147			BDS	
delta-BHC	0.351	0.010	ug/L	0.500	ND	70	19-140			BDS	
gamma-BHC	0.396	0.005	ug/L	0.500	ND	79	32-140			BDS	
alpha-Chlordane	0.186	0.020	ug/L	0.500	ND	37	45-140			BDS	OQ2, OQ4
gamma-Chlordane	0.359	0.020	ug/L	0.500	ND	72	45-140			BDS	
4,4'-DDD	0.413	0.020	ug/L	0.500	ND	83	31-141			BDS	
4,4'-DDE	0.413	0.005	ug/L	0.500	ND	83	30-145			BDS	
4,4'-DDT	0.306	0.020	ug/L	0.500	ND	61	25-160			BDS	
Dieldrin	0.391	0.005	ug/L	0.500	ND	78	36-146			BDS	
Endosulfan I	0.215	0.020	ug/L	0.500	ND	43	45-153			BDS	OQ2, OQ4
Endosulfan II	0.381	0.005	ug/L	0.500	ND	76	1-202			BDS	
Endosulfan Sulfate	0.338	0.100	ug/L	0.500	ND	68	26-144			BDS	
Endrin	0.389	0.010	ug/L	0.500	ND	78	30-147			BDS	
Endrin Aldehyde	0.224	0.050	ug/L	0.500	ND	45	30-147			BDS	
Heptachlor	0.307	0.005	ug/L	0.500	ND	61	34-140			BDS	
Heptachlor Epoxide	0.365	0.100	ug/L	0.500	ND	73	37-142			BDS	
Endrin Ketone	0.327	0.020	ug/L	0.500	ND	65	45-140			BDS	
Methoxychlor	0.363	0.150	ug/L	0.500	ND	73	45-140			BDS	
Toxaphene	21.5	0.500	ug/L	50.0	ND	43	41-140			BDS	
Chlordane, Technical	1.30	0.020	ug/L	1.00	ND	130	45-140			BDS	OQ4
Surrogate: Decachlorobiphenyl	0.612		ug/L	1.00		61	10-140				
Surrogate: Tetrachloro-m-xylene	0.476		ug/L	1.00		48	10-140				

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.396	0.005	ug/L	0.500	ND	79	42-140	6	35	BDS	
alpha-BHC	0.389	0.005	ug/L	0.500	ND	78	37-140	10	36	BDS	
beta-BHC	0.090	0.010	ug/L	0.500	ND	18	17-147	5	44	BDS	
delta-BHC	0.367	0.010	ug/L	0.500	ND	73	19-140	5	52	BDS	
gamma-BHC	0.425	0.005	ug/L	0.500	ND	85	32-140	7	39	BDS	
alpha-Chlordane	0.354	0.020	ug/L	0.500	ND	71	45-140	63	35	BDS	OQ3
gamma-Chlordane	0.378	0.020	ug/L	0.500	ND	76	45-140	5	35	BDS	
4,4'-DDD	0.421	0.020	ug/L	0.500	ND	84	31-141	2	39	BDS	
4,4'-DDE	0.371	0.005	ug/L	0.500	ND	74	30-145	11	35	BDS	
4,4'-DDT	0.293	0.020	ug/L	0.500	ND	59	25-160	4	42	BDS	
Dieldrin	0.173	0.005	ug/L	0.500	ND	35	36-146	77	49	BDS	OQ3, OQ4 OQ3
Endosulfan I	0.424	0.020	ug/L	0.500	ND	85	45-153	65	28	BDS	
Endosulfan II	0.384	0.005	ug/L	0.500	ND	77	1-202	0.8	53	BDS	
Endosulfan Sulfate	0.312	0.100	ug/L	0.500	ND	62	26-144	8	38	BDS	
Endrin	0.341	0.010	ug/L	0.500	ND	68	30-147	13	48	BDS	
Endrin Aldehyde	0.209	0.050	ug/L	0.500	ND	42	30-147	7	48	BDS	
Heptachlor	0.282	0.005	ug/L	0.500	ND	56	34-140	9	43	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Heptachlor Epoxide	0.373	0.100	ug/L	0.500	ND	75	37-142	2	26	BDS	
Endrin Ketone	0.294	0.020	ug/L	0.500	ND	59	45-140	10	35	BDS	
Methoxychlor	0.357	0.150	ug/L	0.500	ND	71	45-140	1	35	BDS	
Toxaphene	24.4	0.500	ug/L	50.0	ND	49	41-140	13	41	BDS	
Chlordane, Technical	1.57	0.020	ug/L	1.00	ND	157	45-140	19	35	BDS	OQ2, OQ4

Surrogate: Decachlorobiphenyl

0.508

ug/L

1.00

51

10-140

Surrogate: Tetrachloro-m-xylene

0.477

ug/L

1.00

48

10-140



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 1
Project Manager: Scott Kolb

Reported:
05/17/24 14:17

Qualifiers, Definitions & Notes

Q8	Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.		
OS4	The Surrogate Recovery for this sample cannot be accurately quantified due to matrix interferences.		
OS2	Surrogate % Recovery is greater than the maximum defined recovery level due to sample dilution and/or matrix interference.		
OQ4	The second column confirmation exceeded 50% difference.		
OQ3	The Relative Percent Difference (RPD) for one or more analytes is outside of acceptance criteria established for this analysis method.		
OQ2	The Matrix Spike Recovery (MS/MSD) limits for one or more analytes in this sample were outside of the method default acceptance criteria due to required dilutions and/or matrix interferences.		
OQ1	The Laboratory Control Sample (LCS) had one or more analytes outside of the QC acceptance limits.		
J	Estimated Value reported above the Method Detection Limit (MDL) but below the Reporting Limit (RL).		
E	Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory's initial calibration curve & adjusted for initial sample volume or weight.		
mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
 Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.# 422042-01

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 001
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

Analysis Requested

No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON / T. Phos.	Cl, F, S, O4, NO3, NO3+N, O2, Br-	Alkalinity, Cr6	O&G	TDS/TSS	200.8 Metals/Cr3 *	Low Level Hg	Available Cyanide	624-Tox. Poll. VOA	625-Tox. Poll. SVOA	608-Pesticides	Nonylphenol	Color	Sulfide	MBAS-Surfactant
01A3	Outfall 001	04/22/24	1143	X		2	1 L - P	WW	NONE	X																
01D	Outfall 001	04/22/24	1143	X		2	500 mL - P	WW	H2SO4		X															
01E	Outfall 001	04/22/24	1143	X		1	500 mL - P	WW	NONE				X													
01F	Outfall 001	04/22/24	1143	X		1	500 mL - P	WW	NONE					X												
01H2	Outfall 001	04/22/24	1143	X		3	1 L - G	WW	H2SO4						X											
01J	Outfall 001	04/22/24	1143	X		1	1 L - P	WW	NONE							X										
01K	Outfall 001	04/22/24	1143	X		1	250 mL - P	WW	HNO3								X									* Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni -2
01M	Outfall 001	04/22/24	1143	X		2	40 mL - V	WW	HCL									X								Se, Ag, Tl, Zn
01N	Outfall 001	04/22/24	1143	X		1	250 mL - AP	WW	NAOH										X							B, Co, Fe, Mn, Mg, Mo, Sn, Ti -6
01O	Outfall 001	04/22/24	1143	X		3	40 mL - V	WW	NONE											X						
01R	Outfall 001	04/22/24	1143	X		1	1 L - AG	WW	NONE												X					
01S	Outfall 001	04/22/24	1143	X		1	1 L - AG	WW	NONE													X				
01T	Outfall 001	04/22/24	1143	X		1	1 L - AG	WW	H2SO4														X			
01U	Outfall 001	04/22/24	1143	X		1	250 mL - P	WW	NONE														X			
01V	Outfall 001	04/22/24	1143	X		1	250 mL - P	WW	NAOH/ZnAce															X		
01W	Outfall 001	04/22/24	1143	X		2	1 L - AG	WW	NONE															X		

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or N

Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)

TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)

SAMPLED BY: J220

SAMPLED BY PRINT NAME: Tracy Tubbs

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY: J220

DATE: 04/22/24

RECEIVED AT LABORATORY BY:

ORGANIZATION: 60

TIME: 1335

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCl (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid

CHAIN OF CUSTODY RECORD

Project: **TPDES Wastewater Permit**
 Project #:
 Location:

Outfall 001	
--------------------	--

 P.O. #:
 Fax #:

**4825 Ward Drive
Beaumont, Texas 77705
Phone: (409) 842-0658 Fax: (409) 842-9793**

Analysis Requested

[illegible]**COMMENTS:**

LAB USE ONLY:

RECEIVED ON ICE: ☒ Y or ☐ N

Cooler Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr.(ASAP)

TAT - Working Days (TCLP): 10 Day(STD) 5 Day(RUSH) 2-3 Day(ASAP)

SAMPLED BY:

SAMPLED BY PRINT NAME:

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:

ORGANIZATION:

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:**ORGANIZATION:**

RELINQUISHED BY:

RECEIVED AT LABORATORY BY:

ORGANIZATION:

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H_2SO_4 (2) HNO_3 (3) NaOH/Zinc Acetate (4) HCl (5) $Na_2S_2O_3$ (6) NaOH (7) NaHSO₄ (8) $H_2SO_4/CuSO_4$ (9) NaOH/Ascorbic Acid

FRM-SC1

Revision 5

12-28-2009

Reviewed 1-13-2012

ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 4/25/2024 4:44:04 PM

JOB DESCRIPTION

4D22046-01

JOB NUMBER

180-172817-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Generated
4/25/2024 4:44:04 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14



Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D22046-01

Job ID: 180-172817-1

Job ID: 180-172817-1

Eurofins Pittsburgh

Job Narrative 180-172817-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/23/2024 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-172817-1	4D22046-01	Water	04/22/24 11:43	04/23/24 10:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Client Sample ID: 4D22046-01
Date Collected: 04/22/24 11:43
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172817-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	OrA - 1677		1			466468	04/24/24 16:19	SNR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: EET PIT

Batch Type: Analysis

SNR = Sabra Richart

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Client Sample ID: 4D22046-01
Date Collected: 04/22/24 11:43
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172817-1
Matrix: Water

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	0.032		a.aaAa	00016	mg/L			04/24/24 16:19	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-466468/25
Matrix: Water
Analysis Batch: 466468

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			04/24/24 15:53	1

Lab Sample ID: LCS 180-466468/26
Matrix: Water
Analysis Batch: 466468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0498		mg/L		99	82 - 132

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22046-01

Job ID: 180-172817-1

General Chemistry

Analysis Batch: 466468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-172817-1	4D22046-01	Total/NA	Water	OIA - 1677	
MB 180-466468/25	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-466468/26	Lab Control Sample	Total/NA	Water	OIA - 1677	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22046

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/02/24 11:00

State of Origin : TX

PO Number : 4D22046

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22046-01	Outfall 001 - Grab	Water	04/22/24 11:43	Containers and Unique ID: Analyses 250 mL - P, NAOH (N)	SUB. - Available Cyanide	



180-172817 Chain of Custody

Released By		Date/Time	4/22/24 11:30
Received By		Date/Time	4/23/24 10:00
Released By		Date/Time	
Received By		Date/Time	

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-172817-1

Login Number: 172817

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Rucker, Keenyn J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D22046

Dear Scott Boudreaux:

Order No.: 24041706

Summit Environmental Technologies, Inc. received 1 sample(s) on 4/23/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24041706
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D22046

WorkOrder Narrative:

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24041706
03-May-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D22046

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24041706-001	4D22046-01		4/22/2024 11:43:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041706-001	4D22046-01		4/22/2024 11:43:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041706-001	4D22046-01		4/22/2024 11:43:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041706-001	4D22046-01		4/22/2024 11:43:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: 24041706

Date Reported: 5/3/2024

Lab ID: 24041706-001

Collection Date: 4/22/2024 11:43:00 AM

Client Sample ID 4D22046-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	14.1	0.361	0.500		ng/L	1	R184375	4/25/2024 11:36:48 AM
STANDARD MASTER LIST-EXTRA (EPA 8270C)					EPA 8270 C			EPA 3510 Analyst: SAM
Nonylphenol	ND		0.00485		mg/L	1	74863	4/28/2024 6:19:00 PM
Surr: 2-Fluorophenol	65.9		14-110		%Rec	1	74863	4/28/2024 6:19:00 PM
Surr: Phenol-d6	43.6		10-110		%Rec	1	74863	4/28/2024 6:19:00 PM
Surr: 2,4,6-Tribromophenol	85.3		13-125		%Rec	1	74863	4/28/2024 6:19:00 PM
COLOR (SM2120B) 2011					SM 2120-B 2011			Analyst: KMS
Apparent Color	50.0	0	0		PCU (platinum-cobalt units)	1	R184276	4/23/2024 11:21:00 AM
MBAS - NPW 5540C 2011					SM 5540C 2000			Analyst: CXS
MBAS	0.21	0.038	0.20		mg/L 288.38 MW LAS	1	R184864	4/23/2024 5:00:00 PM
TKN (EPA351.2)					EPA 351MOD 2			EPA 351.2 Analyst: BJT
TKN	13.8	0.500	1.00		mg/L	1	74923	4/26/2024 12:00:00 PM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: 74863

Sample ID: MB-74863	SampType: MBLK	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: PBW	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002659						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0270		0.05000		54.0	10	130				
Surr: Phenol-d6	0.0187		0.05000		37.4	10	130				
Surr: Nitrobenzene-d5	0.0629		0.05000		126	10	130				
Surr: 2,4,6-Tribromophenol	0.0383		0.05000		76.6	19	151				
Surr: 2-Fluorobiphenyl	0.0581		0.05000		116	10	130				
Surr: p-Terphenyl-d14	0.0590		0.05000		118	20	181				

Sample ID: LCS-74863	SampType: LCS	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: LCSW	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002660						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0300		0.05000		59.9	10	130				
Surr: Phenol-d6	0.0224		0.05000		44.7	10	130				
Surr: Nitrobenzene-d5	0.0556		0.05000		111	10	130				
Surr: 2,4,6-Tribromophenol	0.0394		0.05000		78.9	19	151				
Surr: 2-Fluorobiphenyl	0.0512		0.05000		102	10	130				
Surr: p-Terphenyl-d14	0.0452		0.05000		90.5	20	181				

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: 74863

Sample ID: LCSD-74863	SampType: LCSD	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: LCSS02	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002661						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0279		0.05000		55.8	10	130		0		
Surr: Phenol-d6	0.0205		0.05000		41.0	10	130		0		
Surr: Nitrobenzene-d5	0.0508		0.05000		102	10	130		0		
Surr: 2,4,6-Tribromophenol	0.0360		0.05000		72.0	19	151		0		
Surr: 2-Fluorobiphenyl	0.0456		0.05000		91.2	10	130		0		
Surr: p-Terphenyl-d14	0.0422		0.05000		84.3	20	181		0		

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: 74923

Sample ID: MB-74923	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024				RunNo: 184460		
Client ID: PBW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000787		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-74923	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: LCSW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000791		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.8	1.00	10.00	0	108	90	110				

Sample ID: 24041763-008ADUP		SampType: DUP	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000810		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00						0	0	20		

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000812		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	18.7	1.00	10.00	8.232	105	90	110				

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: 74923

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35	Units: mg/L	Prep Date: 4/25/2024	RunNo: 184460						
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2	E351.2	Analysis Date: 4/26/2024	SeqNo: 5000812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041816-006AMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000813		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		18.9	1.00	10.00	8.232	106	90	110	18.74	0.702	20	

Sample ID: 24041879-003CMS		SampType: MS		TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 4/25/2024			RunNo: 184460	
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000824		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		10.4		1.00	10.00	1.091	93.2	90	110				

Sample ID: 24041879-003CMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460	
Client ID:	BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000825	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	11.2	1.00	10.00	1.091	101	90	110	10.41	7.00	20	

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184276

Sample ID: MB-R184276	SampType: MBLK	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:			RunNo: 184276		
Client ID: PBW	Batch ID: R184276	TestNo: A2120B				Analysis Date: 4/23/2024			SeqNo: 4995385		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	ND	0									

Sample ID: LCS-R184276	SampType: LCS	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:			RunNo: 184276		
Client ID: LCSW	Batch ID: R184276	TestNo: A2120B				Analysis Date: 4/23/2024			SeqNo: 4995386		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	50.0	0	50.00	0	100	85	115				

Sample ID: 24041707-001ADUP		SampType: DUP		TestCode: Color_NPW(2		Units: Color Units		Prep Date:		RunNo: 184276			
Client ID: BatchQC		Batch ID: R184276		TestNo: A2120B				Analysis Date: 4/23/2024		SeqNo: 4995389			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color		30.0		0						30.00	0	0	

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184375

Sample ID: mblank1	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998538		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998541		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	45.0	0.500	50.00	0	90.0	77	123					

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631			Analysis Date: 4/25/2024				SeqNo: 4998542		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998553		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184375

Sample ID: mblank3		SampType: MBLK		TestCode: HG-LL_NPW(Units: ng/L		Prep Date:			RunNo: 184375				
Client ID: PBW		Batch ID: R184375		TestNo: E1631		Analysis Date: 4/25/2024			SeqNo: 4998553				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998554		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.2	0.500	50.00	0	100	77	123				

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998555		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	46.7	0.500	50.00	0	93.5	77	123	50.25	7.21	24	

Sample ID: LCS2	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998557		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	53.2	0.500	50.00	0	106	77	123				

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184375

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998558		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.478	0.500									J	

Sample ID: mblank5	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998569		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998570		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	50.4	0.500	50.00	0	101	77	123					

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998571		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.6	0.500	50.00	0	101	77	123	50.38	0.499	24	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22046

BatchID: R184375

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L	Prep Date:				RunNo: 184375				
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631	Analysis Date: 4/25/2024				SeqNo: 4998571				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: mblank6	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998576		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998577		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	50.6	0.500	50.00	0	101	77	123					

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631			Analysis Date: 4/25/2024				SeqNo: 4998578		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	52.2	0.500	50.00	0	104	77	123	50.59	3.19	24	

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184864

Sample ID: MB-R184864	SampType: MBLK	TestCode: MBAS-NPW(5	Units: mg/L 288.38 M	Prep Date:	RunNo: 184864						
Client ID: PBW	Batch ID: R184864	TestNo: A5540C		Analysis Date: 4/23/2024	SeqNo: 5009979						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	ND	0.20									

Sample ID: LCS-R184864	SampType: LCS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: LCSW	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009981		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0	104	80	120				

Sample ID: 24041706-001AMS	SampType: MS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: 4D22046-01	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009984		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.2	0.20	1.000	0.2110	104	85	115				

Sample ID: 24041706-001AMSD		SampType: MSD	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864	
Client ID: 4D22046-01		Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009985	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.2	0.20	1.000	0.2110	103	85	115	1.247	0.644	20	

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041706

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22046

BatchID: R184864

Sample ID: 24041706-001AMSD		SampType: MSD		TestCode: MBAS-NPW(5		Units: mg/L 288.38 M		Prep Date:		RunNo: 184864		
Client ID: 4D22046-01		Batch ID: R184864		TestNo: A5540C				Analysis Date: 4/23/2024		SeqNo: 5009985		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041707-001ADUP		SampType: DUP		TestCode: MBAS-NPW(5			Units: mg/L 288.38 M			Prep Date:			RunNo: 184864	
Client ID: BatchQC		Batch ID: R184864		TestNo: A5540C			Analysis Date: 4/23/2024			SeqNo: 5009987				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS		0.14		0.20						0.1400	3.64	20	J	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24041706
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22046

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24041706-001A	4D22046-01	4/22/2024 11:43:00 AM	Non-Potable Water	Color (SM2120B) 2011			4/23/2024 11:21:00 AM
				MBAS - NPW 5540C 2011			4/23/2024 5:00:00 PM
24041706-001B				Standard Master List-Extra (EPA 8270		4/24/2024 3:45:00 PM	4/28/2024 6:19:00 PM
24041706-001C				TKN (EPA351.2)		4/25/2024 11:00:00 AM	4/26/2024 12:00:00 PM
24041706-001D				Low-Level Mercury (EPA 1631)			4/25/2024 11:36:48 AM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24041706
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D22046

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
MBAS - NPW 5540C 2011	Non-Potable Water	MBAS	N
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	AR	N	Not Accredited
A-NELA	A	Accredited	A-NELA	N	Not Accredited	CO	U	Unavailable
CT	A	Accredited	CT	N	Not Accredited	L-NELAI	A	Accredited
HI-DW	N	Not Accredited	ID	U	Unavailable	L-NELAF	A	Accredited
L-NELAF	N	Not Accredited	IN_DW	U	Unavailable	S - NELA	N	Not Accredited

Original #1

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22046

24041706

SENDING LABORATORY:

Earth Analytical Sciences, Inc.

4825 Ward Dr.

Beaumont, TX 77705

Phone: 409-842-0658

Fax: 409-842-9793

Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies

3310 Win Street

Cuyahoga Falls, OH 44223

Phone : (330) 253-8211

Fax: N/A

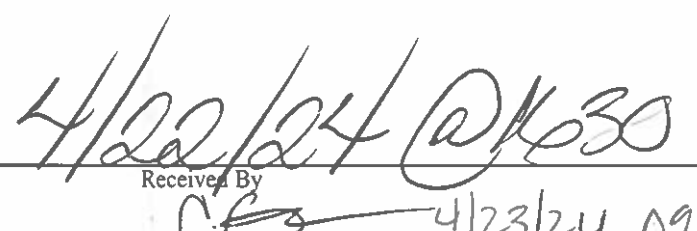
State of Origin : TX

Due Date: 05/02/24 11:00

STD

PO Number : 4D22046

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22046-01	Outfall 001 - Grab	Water	04/22/24 11:43	<i>Containers and Unique ID: Analyses</i> 500 mL, P, H2SO4 (D) SUB. - Color 40 mL, VOA, HCL (L) SUB. - Nonylphenol 40 mL, VOA, HCL (M) SUB. - Surfactants 1-Liter, AG, H2SO4 (T) SUB. - TKN 250 mL, P (U) SUB.-Low Level Mercury 1-Liter, AG (W) 1-Liter, AG (X)		

Released By	Date/Time	Received By	Date/Time
			
			4/22/24 @ 11:30
Released By	Date/Time	Received By	Date/Time
			4/23/24 0920

5.8-0.2=5.6
Fedex courier

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24041706

RcptNo: 1

Logged by: Christina N. Gemma 4/23/2024 9:20:00 AM

Completed By: Christina N. Gemma 4/23/2024 12:10:28 PM

Reviewed By: Holly Florea 4/24/2024 7:22:08 AM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

17 May 2024

EAS NO.: 4D29043

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 001 - Week 2

Enclosed are the results of analyses for samples received by the laboratory on 04/29/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 001 - Grab	4D29043-01	Wastewater	3.1	04/29/24 12:19	04/29/24 13:35
Outfall 001 - Grab	4D29043-02	Wastewater	3.1	04/29/24 13:02	04/29/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Case Narrative

Subcontracted analysis performed by Summit. Certificate of Analysis is attached.
Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time : 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	6.5	0.1	mg/L	04/29/24 12:22	04/29/24 12:22	SM 4500-O G-2016	E1	TT	
pH (on-site)	8.4		pH/°C	04/29/24 12:21	04/29/24 12:21	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	28.9		pH/°C	04/29/24 12:21	04/29/24 12:21	SM 4500-H+ B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L	04/29/24 12:29	04/29/24 12:29	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	84.0		°F	04/29/24 12:21	04/29/24 12:21	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO ₃	238	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	6.30	0.50	mg/L	04/30/24 13:35	04/30/24 13:35	SM 4500-NH ₃ D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	60.0	8.0	mg/L	04/29/24 11:15	04/29/24 11:15	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	61.0	8.0	mg/L	04/29/24 11:20	04/29/24 11:20	SM 5210B-2016		CDR	
Chloride	90.0	10.0	mg/L	05/02/24 14:00	05/02/24 14:00	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	164	5	mg/L	05/01/24 09:15	05/01/24 09:15	HACH 8000		CLB	
Fluoride	0.12	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/29/24 16:30	04/29/24 16:30	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.5	2.5	mg/L	04/30/24 06:00	04/30/24 06:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO ₄	12.3	1.55	mg/L	05/08/24 11:30	05/08/24 11:30	SM 4500-P B/E-2011		ZAC	Q8
Sulfide	0.487	0.010	mg/L	05/02/24 10:00	05/02/24 10:00	SM 4500-S ₂ D-2011		CLB	Q8
Total Dissolved Solids (TDS)	1460	20	mg/L	05/01/24 11:30	05/01/24 11:30	SM 2540C-2015		CLB	
Total Organic Carbon	83.3	2.00	mg/L	04/30/24 08:00	04/30/24 08:00	SM 5310C-2014		ZAC	
Total Organic Nitrogen	2.55	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	<0.003	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	6.0	3.3	mg/L	04/30/24 08:00	04/30/24 08:00	SM 2540D-2015		CLB	
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate+Nitrite-Nitrogen	<0.40	0.40	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Nitrate-Nitrogen	<0.20	0.20	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Sulfate	574	25.0	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Bromide	1.19	0.20	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time: 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Total Metals by ICP-MS - EPA Method 200.8/6020									
Boron	85.3	20.0	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Aluminum	154	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Iron	457	7.00	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Magnesium	5380	20.0	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	E
Titanium	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Chromium	<3.00	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Manganese	246	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	E
Cobalt	0.50	0.30	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Nickel	9.42	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Copper	22.5	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Zinc	57.1	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Arsenic	1.73	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Molybdenum	1.89	1.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Silver	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Tin	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Barium	143	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Toxic Pollutant Volatiles by EPA 624.1									
Vinyl chloride	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Bromomethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Chloroform	0.004	0.004	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Acrolein	<0.020	0.020	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Acetone	0.022	0.010	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,1-Dichloroethene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Acrylonitrile	<0.020	0.020	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Methylene chloride	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
trans-1,2-Dichloroethene	<0.004	0.004	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,1-Dichloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Methyl-t-butyl ether (MTBE)	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Chloromethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
2-Butanone (MEK)	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,1,1-Trichloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,2-Dichloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Benzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Carbon tetrachloride	<0.002	0.002	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,2-Dichloropropane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Trichloroethene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time : 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Volatiles by EPA 624.1									
Dibromomethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1	E1	SEA	
Bromodichloromethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
cis-1,3-Dichloropropene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Epichlorohydrin	<0.100	0.100	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1	E1	SEA	
trans-1,3-Dichloropropene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Toluene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,1,2-Trichloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Chloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Dibromochloromethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Tetrachloroethene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Chlorobenzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,2-Dibromoethane (EDB)	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Ethyl benzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Bromoform	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
m,p-Xylene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
o-Xylene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,1,2,2-Tetrachloroethane	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,3-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,4-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
1,2-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
TTHM (Total Trihalomethanes)	<0.005	0.005	mg/L	04/29/24 16:29	04/29/24 16:29	EPA 624.1		SEA	
Surrogate: Dibromofluoromethane		116 %		82-118	04/29/24 16:29	EPA 624.1		SEA	
Surrogate: Toluene-d8		100 %		88-110	04/29/24 16:29	EPA 624.1		SEA	
Surrogate: 4-Bromofluorobenzene		92 %		86-115	04/29/24 16:29	EPA 624.1		SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time : 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
N-Nitrosodimethylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Phenol	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2-Chlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Pyridine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
bis(2-Chloroethyl)ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
n-Decane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1	E1	BDS	
bis(2-Chloroisopropyl)ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
o-Cresol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
N-Nitroso-n-ethyl-ethanamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1	E1	BDS	
m,p-Cresol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
N-Nitroso-di-n-propylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Hexachloroethane	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Nitrobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Isophorone	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2-Nitrophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4-Dimethylphenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
bis(2-Chloroethoxy)methane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4-Dichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
1,2,4-Trichlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Naphthalene	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Hexachlorobutadiene	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
4-Chloro-3-methylphenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Hexachlorocyclopentadiene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4,6-Trichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2-Chloronaphthalene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
1,2,4,5-Tetrachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Dimethylphthalate	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4,5-Trichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,6-Dinitrotoluene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Acenaphthylene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Acenaphthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4-Dinitrophenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
4-Nitrophenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
2,4-Dinitrotoluene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Pentachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Diethylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Fluorene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
4-Chlorophenyl-phenyl ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
4,6-Dinitro-2-methylphenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
N-Nitrosodiphenylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Diphenylhydrazine(as Azobenzene)	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
4-Bromophenyl-phenyl ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Hexachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time : 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
Pentachlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
n-Octadecane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1	E1	BDS	
Phenanthrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Di-n-butylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Carbazole	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1	E1	BDS	
Benzidine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzylbutylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzo(a)anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
3,3'-Dichlorobenzidine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Chrysene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
N-Nitroso-di-n-butylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
bis(2-Ethylhexyl)phthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Di-n-octylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzo(b)fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzo(k)fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzo(a)pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Indeno(1,2,3-cd)pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Dibenz(a,h)anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Benzo(g,h,i)perylene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: 2-Fluorophenol		38 %		21-100	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: Phenol-d6		26 %		10-94	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: 2,4,6-Tribromophenol		67 %		10-123	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: Nitrobenzene-d5		58 %		35-114	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: 2-Fluorobiphenyl		59 %		43-116	04/30/24 19:44	EPA 625.1		BDS	
Surrogate: p-Terphenyl-d14		88 %		33-141	04/30/24 19:44	EPA 625.1		BDS	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Outfall 001 - Grab

Work Order #: 4D29043-01 Collection Date & Time: 4/29/2024 12:19:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Organochlorine Pesticides by EPA Method 608.3									
Aldrin	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
alpha-BHC	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
beta-BHC	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
delta-BHC	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
gamma-BHC	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
alpha-Chlordane	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
gamma-Chlordane	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
4,4'-DDD	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
4,4'-DDE	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
4,4'-DDT	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Dieldrin	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endosulfan I	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endosulfan II	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endosulfan Sulfate	<0.100	0.100	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endrin	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endrin Aldehyde	<0.050	0.050	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Heptachlor	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Heptachlor Epoxide	<0.100	0.100	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Endrin Ketone	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Methoxychlor	<0.150	0.150	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Toxaphene	<0.500	0.500	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Chlordane, Technical	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:12	EPA 608.3		BDS	
Surrogate: Decachlorobiphenyl		62 %		10-140	05/17/24 00:12	EPA 608.3		BDS	
Surrogate: Tetrachloro-m-xylene		47 %		10-140	05/17/24 00:12	EPA 608.3		BDS	

Outfall 001 - Grab

Work Order #: 4D29043-02 Collection Date & Time: 4/29/2024 1:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Sulfite	<2.0	2.0	mg/L	04/29/24 13:10	04/29/24 13:10	SM 4500-SO3 B-2011	E1	TT	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0089 - Field Service Prep											
Blank (B4E0089-BLK1)				Prepared & Analyzed: 04/29/24							
Sulfite	<2.0	2.0	mg/L							TT	
LCS (B4E0089-BS1)				Prepared & Analyzed: 04/29/24							
Sulfite	470	20.0	mg/L	500		94	80-120			TT	
Matrix Spike (B4E0089-MS1)				Source: 4D29043-02 Prepared & Analyzed: 04/29/24							
Sulfite	46.0	2.0	mg/L	50.0	ND	92	80-120			TT	
Matrix Spike Dup (B4E0089-MSD1)				Source: 4D29043-02 Prepared & Analyzed: 04/29/24							
Sulfite	47.0	2.0	mg/L	50.0	ND	94	80-120	2	20	TT	
Batch B4E0105 - Field Service Prep											
LCS (B4E0105-BS1)				Prepared & Analyzed: 04/29/24							
pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
Duplicate (B4E0105-DUP1)				Source: 4D29043-01 Prepared & Analyzed: 04/29/24							
Temperature, F.	84.0		°F		84.0			0	200	TT	
pH (on-site)	8.4		pH/°C		8.4			0	20	TT	
Temperature by Field Meter	28.9		pH/°C		28.9			0	20	TT	
Batch B4E0113 - Field Service Prep											
Duplicate (B4E0113-DUP1)				Source: 4D29043-01 Prepared & Analyzed: 04/29/24							
Dissolved Oxygen	6.1	0.1	mg/L		6.5			6	20	TT	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Field Services Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0117 - Field Service Prep

Duplicate (B4E0117-DUP1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L		ND				20	TT	
--------------------------------------	-------	------	------	--	----	--	--	--	----	----	--

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0561 - Wet Chem Prep

Blank (B4D0561-BLK1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	<1.00	1.00	mg/L							ZAC	
----------------------	-------	------	------	--	--	--	--	--	--	-----	--

LCS (B4D0561-BS1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	24.8	1.00	mg/L	25.0		99	80-120			ZAC	
----------------------	------	------	------	------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0561-MS1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.0	1.00	mg/L	20.0	6.93	95	80-120			ZAC	
----------------------	------	------	------	------	------	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0561-MSD1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.1	1.00	mg/L	20.0	6.93	96	80-120	0.4	20	ZAC	
----------------------	------	------	------	------	------	----	--------	-----	----	-----	--

Batch B4D0574 - Wet Chem Prep

Blank (B4D0574-BLK1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
---	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0574-BS1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	175	2.0	mg/L	198		88	85-115			CDR	
---	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0574-DUP1)

Source: 4D29012-01 Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	8.0	4.0	mg/L		8.0			0	20	CDR	
---	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0575 - Wet Chem Prep

Blank (B4D0575-BLK1)

Prepared & Analyzed: 04/29/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0575 - Wet Chem Prep											
LCS (B4D0575-BS1)				Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	178	2.0	mg/L	198		90	85-115			CDR	
Duplicate (B4D0575-DUP1)				Source: 4D29012-01 Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.8	4.0	mg/L		7.0			3	20	CDR	
Batch B4D0584 - Wet Chem Prep											
Blank (B4D0584-BLK1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	<2.1	2.1	mg/L							HNR	
LCS (B4D0584-BS1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	40.7	2.1	mg/L	40.0		102	78-114			HNR	
Matrix Spike (B4D0584-MS1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	43.5	2.3	mg/L	45.5	ND	96	78-114			HNR	
Matrix Spike Dup (B4D0584-MSD1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	45.6	2.4	mg/L	47.6	ND	96	78-114	5	18	HNR	
Batch B4D0587 - Wet Chem Prep											
Blank (B4D0587-BLK1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
LCS (B4D0587-BS1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400		95	80-110			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0587 - Wet Chem Prep											
Matrix Spike (B4D0587-MS1)		Source: 4D29048-01		Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.037	0.003	mg/L	0.0400	ND	92	80-120			CLB	
Matrix Spike Dup (B4D0587-MSD1)		Source: 4D29048-01		Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400	ND	95	80-120	3	20	CLB	
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)		Prepared & Analyzed: 04/30/24									
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)		Prepared & Analyzed: 04/30/24									
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)		Source: 4D22046-01		Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)		Source: 4D22046-01		Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0601 - Wet Chem Prep											
Blank (B4D0601-BLK1)		Prepared & Analyzed: 04/30/24									
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
LCS (B4D0601-BS1)		Prepared & Analyzed: 04/30/24									
Ammonia-Nitrogen	0.98	0.10	mg/L	1.00		98	80-120			AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0601 - Wet Chem Prep											
Matrix Spike (B4D0601-MS1)		Source: 4D24039-01		Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	2.42	0.20	mg/L	2.00	0.50	96	80-120			AC	
Matrix Spike Dup (B4D0601-MSD1)		Source: 4D24039-01		Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	2.48	0.20	mg/L	2.00	0.50	99	80-120	2	20	AC	
Batch B4D0604 - Wet Chem Prep											
Blank (B4D0604-BLK1)		Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4D0604-BS1)		Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	21.0	2.0	mg/L	20.0		105	80-120			CLB	
Matrix Spike (B4D0604-MS1)		Source: 4D29041-01		Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120			CLB	
Matrix Spike Dup (B4D0604-MSD1)		Source: 4D29041-01		Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120	0	20	CLB	
Batch B4E0016 - Wet Chem Prep											
Blank (B4E0016-BLK1)		Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	<5	5	mg/L							CLB	
LCS (B4E0016-BS1)		Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	50	5	mg/L	50.0		100	80-120			CLB	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0016 - Wet Chem Prep											
Matrix Spike (B4E0016-MS1)		Source: 4D29041-01 Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120			CLB	
Matrix Spike Dup (B4E0016-MSD1)		Source: 4D29041-01 Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120	0	20	CLB	
Batch B4E0025 - Wet Chem Prep											
Blank (B4E0025-BLK1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
Matrix Spike (B4E0025-MS1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
Matrix Spike Dup (B4E0025-MSD1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	
Batch B4E0026 - Wet Chem Prep											
Blank (B4E0026-BLK1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	
LCS (B4E0026-BS1)		Source: 4D22046-01 Prepared & Analyzed: 05/01/24									
Total Dissolved Solids (Source)	4010	40	mg/L	4000		100	80-120			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0026 - Wet Chem Prep											
Matrix Spike (B4E0026-MS1)		Source: 4D29043-01		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2800	20	mg/L	2000	730	104	80-120			CLB	
Matrix Spike Dup (B4E0026-MSD1)		Source: 4D29043-01		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2790	20	mg/L	2000	730	103	80-120	0.4	20	CLB	
Batch B4E0048 - Wet Chem Prep											
Blank (B4E0048-BLK1)		Prepared & Analyzed: 05/02/24									
Sulfide	<0.010	0.010	mg/L							CLB	Q8
LCS (B4E0048-BS1)		Prepared & Analyzed: 05/02/24									
Sulfide	0.312	0.010	mg/L	0.300		104	80-120			CLB	Q8
Matrix Spike (B4E0048-MS1)		Source: 4D29042-02		Prepared & Analyzed: 05/02/24							
Sulfide	0.390	0.010	mg/L	0.400	ND	97	80-120			CLB	Q8
Matrix Spike Dup (B4E0048-MSD1)		Source: 4D29042-02		Prepared & Analyzed: 05/02/24							
Sulfide	0.390	0.010	mg/L	0.400	ND	97	80-120	0	20	CLB	Q8
Batch B4E0050 - Wet Chem Prep											
Blank (B4E0050-BLK1)		Prepared & Analyzed: 05/02/24									
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4E0050-BS1)		Prepared & Analyzed: 05/02/24									
Chloride	876	2.0	mg/L	886		99	80-120			DGL	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0050 - Wet Chem Prep

Matrix Spike (B4E0050-MS1) Source: 4D29045-01 Prepared & Analyzed: 05/02/24

Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120			DGL	
----------	------	-----	------	------	-----	----	--------	--	--	-----	--

Matrix Spike Dup (B4E0050-MSD1) Source: 4D29045-01 Prepared & Analyzed: 05/02/24

Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120	0	20	DGL	
----------	------	-----	------	------	-----	----	--------	---	----	-----	--

Batch B4E0176 - Wet Chem Prep

Blank (B4E0176-BLK1) Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8
--------------------------	-------	------	------	--	--	--	--	--	--	-----	----

LCS (B4E0176-BS1) Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	1.01	0.31	mg/L	1.00		101	80-120			ZAC	Q8
--------------------------	------	------	------	------	--	-----	--------	--	--	-----	----

Matrix Spike (B4E0176-MS1) Source: 4E06054-01 Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	3.01	0.62	mg/L	2.00	1.04	98	80-120			ZAC	Q8
--------------------------	------	------	------	------	------	----	--------	--	--	-----	----

Matrix Spike Dup (B4E0176-MSD1) Source: 4E06054-01 Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	3.19	0.62	mg/L	2.00	1.04	108	80-120	6	20	ZAC	Q8
--------------------------	------	------	------	------	------	-----	--------	---	----	-----	----

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0585 - Wet Chem Prep

Blank (B4D0585-BLK1) Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	<0.20	0.20	mg/L							ZAC	
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
Bromide	<0.10	0.10	mg/L							ZAC	

LCS (B4D0585-BS1) Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	10.1		mg/L	10.0		101	90-110			ZAC	
Nitrate-Nitrogen	4.97		mg/L	5.00		99	90-110			ZAC	
Sulfate	20.4		mg/L	20.0		102	90-110			ZAC	
Bromide	5.11		mg/L	5.00		102	90-110			ZAC	

Matrix Spike (B4D0585-MS1) Source: 4D24045-01 Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	94.0	2.00	mg/L	100	ND	94	90-110			ZAC	
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110			ZAC	
Sulfate	221	10.0	mg/L	200	25.9	97	90-110			ZAC	
Bromide	50.2	1.00	mg/L	50.0	3.29	94	90-110			ZAC	

Matrix Spike Dup (B4D0585-MSD1) Source: 4D24045-01 Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	94.1	2.00	mg/L	100	ND	94	90-110	0.03	20	ZAC	
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110	0.08	20	ZAC	
Sulfate	220	10.0	mg/L	200	25.9	97	90-110	0.1	20	ZAC	
Bromide	50.2	1.00	mg/L	50.0	3.29	94	90-110	0.06	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0076 - 3015A											
Blank (B4E0076-BLK1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	<20.0	20.0	ug/L							ZAC	
Aluminum	<2.50	2.50	ug/L							ZAC	
Iron	<7.00	7.00	ug/L							ZAC	
LCS (B4E0076-BS1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	998	20.0	ug/L	1110		90	85-115			ZAC	
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Iron	380	7.00	ug/L	389		98	85-115			ZAC	
Matrix Spike (B4E0076-MS1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	57400	1000	ug/L	55600	ND	103	70-130			ZAC	
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
Iron	19400	350	ug/L	19400	127	99	70-130			ZAC	
Matrix Spike (B4E0076-MS2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	59000	1000	ug/L	55600	ND	106	70-130			ZAC	
Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
Iron	19500	350	ug/L	19400	186	99	70-130			ZAC	
Matrix Spike Dup (B4E0076-MSD1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	58800	1000	ug/L	55600	ND	106	70-130	2	20	ZAC	
Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
Iron	19300	350	ug/L	19400	127	99	70-130	0.4	20	ZAC	
Matrix Spike Dup (B4E0076-MSD2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	60800	1000	ug/L	55600	ND	110	70-130	3	20	ZAC	
Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
Iron	19900	350	ug/L	19400	186	101	70-130	2	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0080 - 3015A

Blank (B4E0080-BLK1)

Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Magnesium	<20.0	20.0	ug/L							ZAC	
Titanium	<5.00	5.00	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Manganese	<0.50	0.50	ug/L							ZAC	
Cobalt	<0.30	0.30	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Molybdenum	<1.00	1.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Tin	<5.00	5.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4E0080-BS1)

Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	29.4	0.50	ug/L	27.8		106	85-115			ZAC	
Magnesium	1150	20.0	ug/L	1110		104	85-115			ZAC	
Titanium	286	5.00	ug/L	278		103	85-115			ZAC	
Chromium	170	3.00	ug/L	167		102	85-115			ZAC	
Manganese	27.1	0.50	ug/L	27.8		98	85-115			ZAC	
Cobalt	17.3	0.30	ug/L	16.7		104	85-115			ZAC	
Nickel	115	2.00	ug/L	111		103	85-115			ZAC	
Copper	115	2.00	ug/L	111		104	85-115			ZAC	
Zinc	281	5.00	ug/L	278		101	85-115			ZAC	
Arsenic	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Selenium	280	5.00	ug/L	278		101	85-115			ZAC	
Molybdenum	55.3	1.00	ug/L	55.6		100	85-115			ZAC	
Silver	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Cadmium	55.7	1.00	ug/L	55.6		100	85-115			ZAC	
Tin	273	5.00	ug/L	278		98	85-115			ZAC	
Antimony	282	5.00	ug/L	278		101	85-115			ZAC	
Barium	168	3.00	ug/L	167		101	85-115			ZAC	
Thallium	28.3	0.50	ug/L	27.8		102	85-115			ZAC	
Lead	28.1	0.50	ug/L	27.8		101	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0080 - 3015A

Matrix Spike (B4E0080-MS1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Magnesium	63800	1000	ug/L	55600	5240	105	70-130			ZAC	
Titanium	13900	250	ug/L	13900	56.1	99	70-130			ZAC	
Chromium	8310	150	ug/L	8330	ND	100	70-130			ZAC	
Manganese	1370	25.0	ug/L	1390	62.9	94	70-130			ZAC	
Cobalt	853	15.0	ug/L	833	ND	102	70-130			ZAC	
Nickel	5740	100	ug/L	5560	ND	103	70-130			ZAC	
Copper	5660	100	ug/L	5560	ND	102	70-130			ZAC	
Zinc	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Arsenic	1340	25.0	ug/L	1390	ND	97	70-130			ZAC	
Selenium	13100	250	ug/L	13900	ND	94	70-130			ZAC	
Molybdenum	2730	50.0	ug/L	2780	9.69	98	70-130			ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130			ZAC	
Cadmium	2700	50.0	ug/L	2780	ND	97	70-130			ZAC	
Tin	13000	250	ug/L	13900	ND	94	70-130			ZAC	
Antimony	14200	250	ug/L	13900	ND	102	70-130			ZAC	
Barium	8350	150	ug/L	8330	34.0	100	70-130			ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130			ZAC	
Lead	1400	25.0	ug/L	1390	ND	101	70-130			ZAC	

Matrix Spike Dup (B4E0080-MSD1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1470	25.0	ug/L	1390	ND	106	70-130	1	20	ZAC	
Magnesium	63000	1000	ug/L	55600	5240	104	70-130	1	20	ZAC	
Titanium	14100	250	ug/L	13900	56.1	101	70-130	2	20	ZAC	
Chromium	8390	150	ug/L	8330	ND	101	70-130	1	20	ZAC	
Manganese	1360	25.0	ug/L	1390	62.9	93	70-130	1	20	ZAC	
Cobalt	846	15.0	ug/L	833	ND	102	70-130	0.8	20	ZAC	
Nickel	5620	100	ug/L	5560	ND	101	70-130	2	20	ZAC	
Copper	5600	100	ug/L	5560	ND	101	70-130	1	20	ZAC	
Zinc	13200	250	ug/L	13900	ND	95	70-130	0.2	20	ZAC	
Arsenic	1350	25.0	ug/L	1390	ND	97	70-130	0.5	20	ZAC	
Selenium	13200	250	ug/L	13900	ND	95	70-130	0.8	20	ZAC	
Molybdenum	2760	50.0	ug/L	2780	9.69	99	70-130	1	20	ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130	0.03	20	ZAC	
Cadmium	2730	50.0	ug/L	2780	ND	98	70-130	1	20	ZAC	
Tin	13200	250	ug/L	13900	ND	95	70-130	1	20	ZAC	
Antimony	14100	250	ug/L	13900	ND	102	70-130	0.5	20	ZAC	
Barium	8380	150	ug/L	8330	34.0	100	70-130	0.4	20	ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130	0.3	20	ZAC	
Lead	1410	25.0	ug/L	1390	ND	102	70-130	0.6	20	ZAC	

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0579 - EPA 5030C/624											
Blank (B4D0579-BLK1)				Prepared & Analyzed: 04/29/24							
Vinyl chloride	<0.0008	0.0008	mg/L							SEA	
Bromomethane	<0.0006	0.0006	mg/L							SEA	
Chloroform	<0.0009	0.0009	mg/L							SEA	
Acrolein	<0.001	0.001	mg/L							SEA	
Acetone	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethene	<0.0009	0.0009	mg/L							SEA	
Acrylonitrile	<0.002	0.002	mg/L							SEA	
Methylene chloride	<0.0007	0.0007	mg/L							SEA	
trans-1,2-Dichloroethene	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Methyl-t-butyl ether (MTBE)	<0.0005	0.0005	mg/L							SEA	
Chloromethane	<0.0006	0.0006	mg/L							SEA	
2-Butanone (MEK)	<0.001	0.001	mg/L							SEA	
1,1,1-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
1,2-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Benzene	<0.001	0.001	mg/L							SEA	
Carbon tetrachloride	<0.0009	0.0009	mg/L							SEA	
1,2-Dichloropropane	<0.0009	0.0009	mg/L							SEA	
Trichloroethene	<0.0009	0.0009	mg/L							SEA	
Dibromomethane	<0.0009	0.0009	mg/L							SEA	
Bromodichloromethane	<0.0007	0.0007	mg/L							SEA	
2-Chloroethyl vinyl ether	<0.0007	0.0007	mg/L							SEA	
cis-1,3-Dichloropropene	<0.0006	0.0006	mg/L							SEA	
Epichlorohydrin	<0.005	0.005	mg/L							SEA	
trans-1,3-Dichloropropene	<0.0007	0.0007	mg/L							SEA	
Toluene	<0.0007	0.0007	mg/L							SEA	
1,1,2-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
Chloroethane	<0.0007	0.0007	mg/L							SEA	
Dibromochloromethane	<0.0005	0.0005	mg/L							SEA	
Tetrachloroethene	0.003	0.001	mg/L							SEA	J
Chlorobenzene	<0.001	0.001	mg/L							SEA	
1,2-Dibromoethane (EDB)	<0.001	0.001	mg/L							SEA	
Ethyl benzene	<0.0006	0.0006	mg/L							SEA	
Bromoform	<0.0008	0.0008	mg/L							SEA	
m,p-Xylene	<0.001	0.001	mg/L							SEA	
o-Xylene	<0.0005	0.0005	mg/L							SEA	
1,1,2,2-Tetrachloroethane	<0.0009	0.0009	mg/L							SEA	
1,3-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,4-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,2-Dichlorobenzene	<0.0006	0.0006	mg/L							SEA	
TTHM (Total Trihalomethanes)	<0.005	0.005	mg/L							SEA	
Surrogate: Dibromofluoromethane	0.0580		mg/L	0.0500		116	82-118				
Surrogate: Toluene-d8	0.0496		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0478		mg/L	0.0500		96	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0579 - EPA 5030C/624											
LCS (B4D0579-BS1)				Prepared & Analyzed: 04/29/24							
Vinyl chloride	0.060	0.005	mg/L	0.0500		120	5-195			SEA	
Bromomethane	0.048	0.005	mg/L	0.0500		97	15-185			SEA	
Chloroform	0.067	0.004	mg/L	0.0500		133	70-135			SEA	
Acrolein	0.213	0.020	mg/L	0.200		106	60-140			SEA	
Acetone	0.043	0.010	mg/L	0.0500		86	70-130			SEA	
1,1-Dichloroethene	0.080	0.005	mg/L	0.0500		159	50-150			SEA	OQ1
Acrylonitrile	0.247	0.020	mg/L	0.200		123	60-140			SEA	
Methylene chloride	0.061	0.005	mg/L	0.0500		122	60-140			SEA	
trans-1,2-Dichloroethene	0.068	0.004	mg/L	0.0500		136	70-130			SEA	OQ1
1,1-Dichloroethane	0.067	0.005	mg/L	0.0500		134	70-130			SEA	OQ1
Methyl-t-butyl ether (MTBE)	0.059	0.005	mg/L	0.0500		117	70-130			SEA	
Chloromethane	0.062	0.005	mg/L	0.0500		125	0.1-205			SEA	
2-Butanone (MEK)	0.050	0.005	mg/L	0.0500		99	70-130			SEA	
1,1,1-Trichloroethane	0.063	0.005	mg/L	0.0500		126	70-130			SEA	
1,2-Dichloroethane	0.054	0.005	mg/L	0.0500		109	70-130			SEA	
Benzene	0.068	0.005	mg/L	0.0500		136	65-135			SEA	OQ1
Carbon tetrachloride	0.065	0.002	mg/L	0.0500		129	70-130			SEA	
1,2-Dichloropropane	0.060	0.005	mg/L	0.0500		120	35-165			SEA	
Trichloroethene	0.065	0.005	mg/L	0.0500		130	65-135			SEA	
Dibromomethane	0.058	0.005	mg/L	0.0500		116	70-130			SEA	
Bromodichloromethane	0.059	0.005	mg/L	0.0500		118	65-135			SEA	
2-Chloroethyl vinyl ether	0.001	0.005	mg/L	0.0500		3	0.1-225			SEA	
cis-1,3-Dichloropropene	0.057	0.005	mg/L	0.0500		113	25-175			SEA	
Epichlorohydrin	0.041	0.100	mg/L	0.0500		82	70-130			SEA	
trans-1,3-Dichloropropene	0.054	0.005	mg/L	0.0500		108	50-150			SEA	
Toluene	0.066	0.005	mg/L	0.0500		132	70-130			SEA	OQ1
1,1,2-Trichloroethane	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
Chloroethane	0.060	0.005	mg/L	0.0500		120	40-160			SEA	
Dibromochloromethane	0.055	0.005	mg/L	0.0500		111	70-135			SEA	
Tetrachloroethene	0.064	0.005	mg/L	0.0500		127	70-130			SEA	
Chlorobenzene	0.061	0.005	mg/L	0.0500		121	65-135			SEA	
1,2-Dibromoethane (EDB)	0.054	0.005	mg/L	0.0500		108	70-130			SEA	
Ethyl benzene	0.065	0.005	mg/L	0.0500		130	60-140			SEA	
Bromoform	0.050	0.005	mg/L	0.0500		100	70-130			SEA	
m,p-Xylene	0.133	0.005	mg/L	0.100		133	70-130			SEA	OQ1
1,1,2,2-Tetrachloroethane	0.059	0.005	mg/L	0.0500		117	60-140			SEA	
o-Xylene	0.066	0.005	mg/L	0.0500		132	70-130			SEA	OQ1
1,3-Dichlorobenzene	0.061	0.005	mg/L	0.0500		122	75-144			SEA	
1,4-Dichlorobenzene	0.057	0.005	mg/L	0.0500		115	59-174			SEA	
1,2-Dichlorobenzene	0.058	0.005	mg/L	0.0500		116	59-174			SEA	
TTHM (Total Trihalomethanes)	0.235	0.005	mg/L	0.200		118	65-135			SEA	
Surrogate: Dibromofluoromethane	0.0536		mg/L	0.0500		107	82-118				
Surrogate: Toluene-d8	0.0493		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0481		mg/L	0.0500		96	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0579 - EPA 5030C/624

Matrix Spike (B4D0579-MS1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Vinyl chloride	5.90	0.500	mg/L	5.00	ND	118	0.1-251			SEA	
Bromomethane	5.10	0.500	mg/L	5.00	ND	102	0.1-242			SEA	
Chloroform	6.22	0.400	mg/L	5.00	ND	124	51-138			SEA	
Acrolein	23.1	2.00	mg/L	20.0	ND	115	40-160			SEA	
Acetone	4.56	1.00	mg/L	5.00	ND	91	70-130			SEA	
1,1-Dichloroethene	7.79	0.500	mg/L	5.00	ND	156	0.1-234			SEA	
Acrylonitrile	22.8	2.00	mg/L	20.0	ND	114	40-160			SEA	
Methylene chloride	6.71	0.500	mg/L	5.00	ND	134	0.1-221			SEA	
trans-1,2-Dichloroethene	6.74	0.400	mg/L	5.00	ND	135	54-156			SEA	
1,1-Dichloroethane	6.29	0.500	mg/L	5.00	ND	126	59-155			SEA	
Methyl-t-butyl ether (MTBE)	5.42	0.500	mg/L	5.00	ND	108	70-130			SEA	
Chloromethane	6.00	0.500	mg/L	5.00	ND	120	0.1-273			SEA	
2-Butanone (MEK)	5.22	0.500	mg/L	5.00	ND	104	70-130			SEA	
1,1,1-Trichloroethane	6.06	0.500	mg/L	5.00	ND	121	52-162			SEA	
1,2-Dichloroethane	5.28	0.500	mg/L	5.00	ND	106	49-155			SEA	
Benzene	6.60	0.500	mg/L	5.00	ND	132	37-151			SEA	
Carbon tetrachloride	6.11	0.200	mg/L	5.00	ND	122	70-140			SEA	
1,2-Dichloropropane	5.89	0.500	mg/L	5.00	ND	118	0.1-210			SEA	
Trichloroethene	6.28	0.500	mg/L	5.00	ND	126	70-157			SEA	
Dibromomethane	5.53	0.500	mg/L	5.00	ND	111	70-130			SEA	
Bromodichloromethane	5.51	0.500	mg/L	5.00	ND	110	35-155			SEA	
2-Chloroethyl vinyl ether	0.403	0.500	mg/L	5.00	ND	8	0.1-305			SEA	
cis-1,3-Dichloropropene	5.49	0.500	mg/L	5.00	ND	110	0.1-227			SEA	
Epichlorohydrin	6.28	10.0	mg/L	5.00	ND	126	70-130			SEA	
trans-1,3-Dichloropropene	5.27	0.500	mg/L	5.00	ND	105	17-183			SEA	
Toluene	6.47	0.500	mg/L	5.00	ND	129	47-150			SEA	
1,1,2-Trichloroethane	5.80	0.500	mg/L	5.00	ND	116	52-150			SEA	
Chloroethane	5.88	0.500	mg/L	5.00	ND	118	14-230			SEA	
Dibromochloromethane	5.12	0.500	mg/L	5.00	ND	102	53-149			SEA	
Tetrachloroethene	6.21	0.500	mg/L	5.00	ND	124	64-148			SEA	
Chlorobenzene	6.03	0.500	mg/L	5.00	ND	121	37-160			SEA	
1,2-Dibromoethane (EDB)	5.31	0.500	mg/L	5.00	ND	106	70-130			SEA	
Ethyl benzene	6.45	0.500	mg/L	5.00	ND	129	37-162			SEA	
Bromoform	4.56	0.500	mg/L	5.00	ND	91	45-169			SEA	
m,p-Xylene	13.0	0.500	mg/L	10.0	ND	130	70-130			SEA	
o-Xylene	6.44	0.500	mg/L	5.00	ND	129	70-130			SEA	
1,1,2,2-Tetrachloroethane	5.76	0.500	mg/L	5.00	ND	115	46-157			SEA	
1,3-Dichlorobenzene	5.81	0.500	mg/L	5.00	ND	116	59-156			SEA	
1,4-Dichlorobenzene	5.52	0.500	mg/L	5.00	ND	110	18-190			SEA	
1,2-Dichlorobenzene	5.58	0.500	mg/L	5.00	ND	112	18-190			SEA	
TTHM (Total Trihalomethanes)	21.9	0.500	mg/L	20.0	0.004	109	35-169			SEA	
Surrogate: Dibromofluoromethane	5.12		mg/L	5.00		102	82-118				
Surrogate: Toluene-d8	5.10		mg/L	5.00		102	88-110				
Surrogate: 4-Bromofluorobenzene	5.09		mg/L	5.00		102	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0579 - EPA 5030C/624

Matrix Spike Dup (B4D0579-MSD1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Vinyl chloride	6.00	0.500	mg/L	5.00	ND	120	0.1-251	2	66	SEA	
Bromomethane	5.12	0.500	mg/L	5.00	ND	102	0.1-242	0.5	61	SEA	
Chloroform	6.42	0.400	mg/L	5.00	ND	128	51-138	3	54	SEA	
Acrolein	24.3	2.00	mg/L	20.0	ND	121	40-160	5	60	SEA	
Acetone	4.57	1.00	mg/L	5.00	ND	91	70-130	0.4	20	SEA	
1,1-Dichloroethene	8.10	0.500	mg/L	5.00	ND	162	0.1-234	4	32	SEA	
Acrylonitrile	22.3	2.00	mg/L	20.0	ND	111	40-160	2	60	SEA	
Methylene chloride	6.27	0.500	mg/L	5.00	ND	125	0.1-221	7	28	SEA	
trans-1,2-Dichloroethene	6.78	0.400	mg/L	5.00	ND	136	54-156	0.6	45	SEA	
1,1-Dichloroethane	6.53	0.500	mg/L	5.00	ND	131	59-155	4	40	SEA	
Methyl-t-butyl ether (MTBE)	5.70	0.500	mg/L	5.00	ND	114	70-130	5	20	SEA	
2-Butanone (MEK)	5.37	0.500	mg/L	5.00	ND	107	70-130	3	20	SEA	
Chloromethane	6.11	0.500	mg/L	5.00	ND	122	0.1-273	2	60	SEA	
1,1,1-Trichloroethane	6.25	0.500	mg/L	5.00	ND	125	52-162	3	36	SEA	
1,2-Dichloroethane	5.30	0.500	mg/L	5.00	ND	106	49-155	0.5	49	SEA	
Benzene	6.59	0.500	mg/L	5.00	ND	132	37-151	0.2	61	SEA	
Carbon tetrachloride	6.34	0.200	mg/L	5.00	ND	127	70-140	4	41	SEA	
1,2-Dichloropropane	5.96	0.500	mg/L	5.00	ND	119	0.1-210	1	55	SEA	
Trichloroethene	6.36	0.500	mg/L	5.00	ND	127	70-157	1	48	SEA	
Dibromomethane	5.78	0.500	mg/L	5.00	ND	116	70-130	4	20	SEA	
Bromodichloromethane	5.45	0.500	mg/L	5.00	ND	109	35-155	1	56	SEA	
2-Chloroethyl vinyl ether	0.421	0.500	mg/L	5.00	ND	8	0.1-305	4	71	SEA	
cis-1,3-Dichloropropene	5.44	0.500	mg/L	5.00	ND	109	0.1-227	1	58	SEA	
trans-1,3-Dichloropropene	5.23	0.500	mg/L	5.00	ND	105	17-183	0.8	86	SEA	
Epichlorohydrin	6.08	10.0	mg/L	5.00	ND	122	70-130	3	20	SEA	
Toluene	6.51	0.500	mg/L	5.00	ND	130	47-150	0.6	41	SEA	
1,1,2-Trichloroethane	5.75	0.500	mg/L	5.00	ND	115	52-150	0.8	45	SEA	
Chloroethane	6.13	0.500	mg/L	5.00	ND	123	14-230	4	78	SEA	
Dibromochloromethane	5.17	0.500	mg/L	5.00	ND	103	53-149	1	50	SEA	
Tetrachloroethene	6.32	0.500	mg/L	5.00	ND	126	64-148	2	39	SEA	
Chlorobenzene	5.98	0.500	mg/L	5.00	ND	120	37-160	0.9	53	SEA	
1,2-Dibromoethane (EDB)	5.31	0.500	mg/L	5.00	ND	106	70-130	0.06	20	SEA	
Ethyl benzene	6.44	0.500	mg/L	5.00	ND	129	37-162	0.2	63	SEA	
Bromoform	4.52	0.500	mg/L	5.00	ND	90	45-169	1	42	SEA	
m,p-Xylene	13.1	0.500	mg/L	10.0	ND	131	70-130	0.3	20	SEA	OQ2
o-Xylene	6.37	0.500	mg/L	5.00	ND	127	70-130	1	20	SEA	
1,1,2,2-Tetrachloroethane	5.82	0.500	mg/L	5.00	ND	116	46-157	1	61	SEA	
1,3-Dichlorobenzene	6.12	0.500	mg/L	5.00	ND	122	59-156	5	43	SEA	
1,4-Dichlorobenzene	5.88	0.500	mg/L	5.00	ND	118	18-190	6	57	SEA	
1,2-Dichlorobenzene	5.83	0.500	mg/L	5.00	ND	117	18-190	4	57	SEA	
TTHM (Total Trihalomethanes)	22.4	0.500	mg/L	20.0	0.004	112	35-169	2	56	SEA	
Surrogate: Dibromofluoromethane	5.20		mg/L	5.00		104	82-118				
Surrogate: Toluene-d8	4.98		mg/L	5.00		100	88-110				
Surrogate: 4-Bromofluorobenzene	5.04		mg/L	5.00		101	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
Blank (B4D0605-BLK1)				Prepared & Analyzed: 04/30/24							
N-Nitrosodimethylamine	<0.0002	0.0002	mg/L							BDS	
Phenol	<0.0001	0.0001	mg/L							BDS	
2-Chlorophenol	<0.0004	0.0004	mg/L							BDS	
Pyridine	<0.0003	0.0003	mg/L							BDS	
bis(2-Chloroethyl)ether	<0.0002	0.0002	mg/L							BDS	
n-Decane	<0.0009	0.0009	mg/L							BDS	
bis(2-Chloroisopropyl)ether	<0.0004	0.0004	mg/L							BDS	
o-Cresol	<0.0004	0.0004	mg/L							BDS	
N-Nitroso-n-ethyl-ethanamine	<0.0005	0.0005	mg/L							BDS	
m,p-Cresol	<0.0003	0.0003	mg/L							BDS	
N-Nitroso-di-n-propylamine	<0.0005	0.0005	mg/L							BDS	
Hexachloroethane	<0.0004	0.0004	mg/L							BDS	
Nitrobenzene	<0.0004	0.0004	mg/L							BDS	
Isophorone	<0.0007	0.0007	mg/L							BDS	
2-Nitrophenol	<0.0005	0.0005	mg/L							BDS	
2,4-Dimethylphenol	<0.0005	0.0005	mg/L							BDS	
bis(2-Chloroethoxy)methane	<0.0005	0.0005	mg/L							BDS	
2,4-Dichlorophenol	<0.0007	0.0007	mg/L							BDS	
1,2,4-Trichlorobenzene	<0.0003	0.0003	mg/L							BDS	
Naphthalene	<0.0004	0.0004	mg/L							BDS	
Hexachlorobutadiene	<0.0004	0.0004	mg/L							BDS	
4-Chloro-3-methylphenol	<0.0008	0.0008	mg/L							BDS	
Hexachlorocyclopentadiene	<0.0006	0.0006	mg/L							BDS	
2,4,6-Trichlorophenol	<0.0007	0.0007	mg/L							BDS	
2-Chloronaphthalene	<0.0005	0.0005	mg/L							BDS	
1,2,4,5-Tetrachlorobenzene	<0.0003	0.0003	mg/L							BDS	
Dimethylphthalate	<0.0007	0.0007	mg/L							BDS	
2,4,5-Trichlorophenol	<0.0004	0.0004	mg/L							BDS	
2,6-Dinitrotoluene	<0.0003	0.0003	mg/L							BDS	
Acenaphthylene	<0.0005	0.0005	mg/L							BDS	
Acenaphthene	<0.0005	0.0005	mg/L							BDS	
2,4-Dinitrophenol	<0.0004	0.0004	mg/L							BDS	
4-Nitrophenol	<0.0003	0.0003	mg/L							BDS	
2,4-Dinitrotoluene	<0.0005	0.0005	mg/L							BDS	
Pentachlorobenzene	<0.0004	0.0004	mg/L							BDS	
Diethylphthalate	<0.0005	0.0005	mg/L							BDS	
Fluorene	<0.0007	0.0007	mg/L							BDS	
4-Chlorophenyl-phenyl ether	<0.0007	0.0007	mg/L							BDS	
4,6-Dinitro-2-methylphenol	<0.0004	0.0004	mg/L							BDS	
N-Nitrosodiphenylamine	<0.0007	0.0007	mg/L							BDS	
Diphenylhydrazine(as Azobenzene)	<0.001	0.001	mg/L							BDS	
4-Bromophenyl-phenyl ether	<0.0006	0.0006	mg/L							BDS	
Hexachlorobenzene	<0.0005	0.0005	mg/L							BDS	
Pentachlorophenol	<0.0005	0.0005	mg/L							BDS	
n-Octadecane	<0.001	0.001	mg/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0605 - 3510C/625

Blank (B4D0605-BLK1)

Prepared & Analyzed: 04/30/24

Phenanthrene	<0.0006	0.0006	mg/L							BDS	
Anthracene	<0.0008	0.0008	mg/L							BDS	
Di-n-butylphthalate	<0.001	0.001	mg/L							BDS	
Fluoranthene	<0.0005	0.0005	mg/L							BDS	
Carbazole	<0.001	0.001	mg/L							BDS	
Benzidine	<0.0003	0.0003	mg/L							BDS	
Pyrene	<0.0005	0.0005	mg/L							BDS	
Benzylbutylphthalate	<0.0008	0.0008	mg/L							BDS	
Benzo(a)anthracene	<0.0008	0.0008	mg/L							BDS	
3,3'-Dichlorobenzidine	<0.0008	0.0008	mg/L							BDS	
Chrysene	<0.0005	0.0005	mg/L							BDS	
N-Nitroso-di-n-butylamine	<0.0007	0.0007	mg/L							BDS	
bis(2-Ethylhexyl)phthalate	<0.001	0.001	mg/L							BDS	
Di-n-octylphthalate	<0.001	0.001	mg/L							BDS	
Benzo(b)fluoranthene	<0.001	0.001	mg/L							BDS	
Benzo(k)fluoranthene	<0.0008	0.0008	mg/L							BDS	
Benzo(a)pyrene	<0.001	0.001	mg/L							BDS	
Indeno(1,2,3-cd)pyrene	<0.001	0.001	mg/L							BDS	
Dibenz(a,h)anthracene	<0.001	0.001	mg/L							BDS	
Benzo(g,h,i)perylene	<0.001	0.001	mg/L							BDS	
Surrogate: 2-Fluorophenol	0.0544		mg/L	0.100		54	21-100				
Surrogate: Phenol-d6	0.0317		mg/L	0.100		32	10-94				
Surrogate: 2,4,6-Tribromophenol	0.105		mg/L	0.100		105	10-123				
Surrogate: Nitrobenzene-d5	0.102		mg/L	0.100		102	35-114				
Surrogate: 2-Fluorobiphenyl	0.0881		mg/L	0.100		88	43-116				
Surrogate: p-Terphenyl-d14	0.141		mg/L	0.100		141	33-141				

LCS (B4D0605-BS1)

Prepared & Analyzed: 04/30/24

N-Nitrosodimethylamine	0.030	0.005	mg/L	0.0500		60	21-85			BDS	
Phenol	0.019	0.002	mg/L	0.0500		37	17-120			BDS	
2-Chlorophenol	0.048	0.005	mg/L	0.0500		96	36-120			BDS	
Pyridine	0.007	0.005	mg/L	0.0500		13	3-81			BDS	
bis(2-Chloroethyl)ether	0.048	0.005	mg/L	0.0500		96	43-126			BDS	
n-Decane	0.036	0.005	mg/L	0.0500		71	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.048	0.005	mg/L	0.0500		96	63-139			BDS	
o-Cresol	0.040	0.005	mg/L	0.0500		80	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.048	0.005	mg/L	0.0500		97	30-120			BDS	
m,p-Cresol	0.068	0.005	mg/L	0.100		68	27-120			BDS	
N-Nitroso-di-n-propylamine	0.048	0.005	mg/L	0.0500		95	14-198			BDS	
Hexachloroethane	0.032	0.002	mg/L	0.0500		64	55-120			BDS	
Nitrobenzene	0.046	0.005	mg/L	0.0500		92	54-158			BDS	
Isophorone	0.047	0.005	mg/L	0.0500		93	47-180			BDS	
2-Nitrophenol	0.053	0.005	mg/L	0.0500		105	45-167			BDS	
2,4-Dimethylphenol	0.050	0.005	mg/L	0.0500		101	42-120			BDS	
bis(2-Chloroethoxy)methane	0.048	0.005	mg/L	0.0500		95	49-165			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
LCS (B4D0605-BS1)				Prepared & Analyzed: 04/30/24							
2,4-Dichlorophenol	0.053	0.005	mg/L	0.0500		106	53-122			BDS	
1,2,4-Trichlorobenzene	0.042	0.005	mg/L	0.0500		83	57-130			BDS	
Naphthalene	0.043	0.002	mg/L	0.0500		86	36-120			BDS	
Hexachlorobutadiene	0.040	0.002	mg/L	0.0500		81	38-120			BDS	
4-Chloro-3-methylphenol	0.051	0.005	mg/L	0.0500		103	41-128			BDS	
Hexachlorocyclopentadiene	0.023	0.005	mg/L	0.0500		46	10-98			BDS	
2,4,6-Trichlorophenol	0.051	0.005	mg/L	0.0500		102	52-129			BDS	
2-Chloronaphthalene	0.047	0.005	mg/L	0.0500		95	36-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
Dimethylphthalate	0.019	0.002	mg/L	0.0500		38	0-120			BDS	
2,4,5-Trichlorophenol	0.046	0.005	mg/L	0.0500		92	40-120			BDS	
2,6-Dinitrotoluene	0.051	0.005	mg/L	0.0500		101	68-137			BDS	
Acenaphthylene	0.020	0.005	mg/L	0.0500		39	54-126			BDS	OQ1
Acenaphthene	0.044	0.005	mg/L	0.0500		89	60-132			BDS	
2,4-Dinitrophenol	0.014	0.010	mg/L	0.0500		29	0-173			BDS	
4-Nitrophenol	0.011	0.010	mg/L	0.0500		23	13-129			BDS	
2,4-Dinitrotoluene	0.051	0.005	mg/L	0.0500		102	48-127			BDS	
Pentachlorobenzene	0.050	0.005	mg/L	0.0500		99	50-120			BDS	
Diethylphthalate	0.032	0.005	mg/L	0.0500		64	0-120			BDS	
Fluorene	0.048	0.005	mg/L	0.0500		95	70-120			BDS	
4-Chlorophenyl-phenyl ether	0.050	0.005	mg/L	0.0500		100	38-145			BDS	
4,6-Dinitro-2-methylphenol	0.031	0.010	mg/L	0.0500		61	53-130			BDS	
N-Nitrosodiphenylamine	0.050	0.005	mg/L	0.0500		100	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.025	0.005	mg/L	0.0500		51	2-79			BDS	
4-Bromophenyl-phenyl ether	0.046	0.005	mg/L	0.0500		93	65-120			BDS	
Hexachlorobenzene	0.033	0.005	mg/L	0.0500		65	8-142			BDS	
Pentachlorophenol	0.037	0.005	mg/L	0.0500		74	38-152			BDS	
n-Octadecane	0.048	0.005	mg/L	0.0500		96	20-120			BDS	
Phenanthrene	0.045	0.005	mg/L	0.0500		91	65-120			BDS	
Anthracene	0.045	0.005	mg/L	0.0500		90	43-120			BDS	
Di-n-butylphthalate	0.048	0.005	mg/L	0.0500		96	8-120			BDS	
Fluoranthene	0.044	0.005	mg/L	0.0500		89	43-121			BDS	
Carbazole	0.023	0.005	mg/L	0.0500		47	20-120			BDS	
Benzidine	0.0008	0.005	mg/L	0.0500		2	1-75			BDS	
Pyrene	0.044	0.005	mg/L	0.0500		88	70-130			BDS	
Benzylbutylphthalate	0.056	0.005	mg/L	0.0500		111	0-140			BDS	
Benzo(a)anthracene	0.052	0.005	mg/L	0.0500		104	42-133			BDS	
3,3'-Dichlorobenzidine	0.044	0.005	mg/L	0.0500		87	8-213			BDS	
Chrysene	0.052	0.005	mg/L	0.0500		104	44-140			BDS	
N-Nitroso-di-n-butylamine	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.059	0.005	mg/L	0.0500		118	29-137			BDS	
Di-n-octylphthalate	0.054	0.005	mg/L	0.0500		108	19-132			BDS	
Benzo(b)fluoranthene	0.032	0.005	mg/L	0.0500		64	42-140			BDS	
Benzo(k)fluoranthene	0.035	0.005	mg/L	0.0500		71	25-146			BDS	
Benzo(a)pyrene	0.033	0.005	mg/L	0.0500		66	32-148			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0605 - 3510C/625

LCS (B4D0605-BS1)

Prepared & Analyzed: 04/30/24

Indeno(1,2,3-cd)pyrene	0.054	0.005	mg/L	0.0500		107	0-151			BDS	
Dibenz(a,h)anthracene	0.077	0.005	mg/L	0.0500		154	0-200			BDS	
Benzo(g,h,i)perylene	0.079	0.005	mg/L	0.0500		159	0-195			BDS	
Surrogate: 2-Fluorophenol	0.0484		mg/L	0.100		48	21-100				
Surrogate: Phenol-d6	0.0291		mg/L	0.100		29	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0938		mg/L	0.100		94	10-123				
Surrogate: Nitrobenzene-d5	0.0912		mg/L	0.100		91	35-114				
Surrogate: 2-Fluorobiphenyl	0.0809		mg/L	0.100		81	43-116				
Surrogate: p-Terphenyl-d14	0.122		mg/L	0.100		122	33-141				

Matrix Spike (B4D0605-MS1)

Source: 4D29044-01

Prepared & Analyzed: 04/30/24

N-Nitrosodimethylamine	0.028	0.005	mg/L	0.0500	ND	57	21-85			BDS	
Phenol	0.024	0.002	mg/L	0.0500	0.001	45	5-120			BDS	
2-Chlorophenol	0.046	0.005	mg/L	0.0500	ND	91	23-134			BDS	
Pyridine	0.0005	0.005	mg/L	0.0500	ND	0.9	3-81			BDS	QO2
bis(2-Chloroethyl)ether	0.055	0.005	mg/L	0.0500	ND	109	12-158			BDS	
n-Decane	0.040	0.005	mg/L	0.0500	ND	79	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.054	0.005	mg/L	0.0500	ND	108	36-166			BDS	
o-Cresol	0.044	0.005	mg/L	0.0500	ND	88	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.047	0.005	mg/L	0.0500	ND	94	50-120			BDS	
m,p-Cresol	0.077	0.005	mg/L	0.100	ND	77	27-120			BDS	
N-Nitroso-di-n-propylamine	0.049	0.005	mg/L	0.0500	ND	98	0.1-230			BDS	
Hexachloroethane	0.038	0.002	mg/L	0.0500	ND	76	40-120			BDS	
Nitrobenzene	0.047	0.005	mg/L	0.0500	ND	95	35-180			BDS	
Isophorone	0.047	0.005	mg/L	0.0500	ND	94	21-196			BDS	
2-Nitrophenol	0.050	0.005	mg/L	0.0500	ND	100	29-182			BDS	
2,4-Dimethylphenol	0.047	0.005	mg/L	0.0500	ND	93	32-120			BDS	
bis(2-Chloroethoxy)methane	0.052	0.005	mg/L	0.0500	ND	104	33-184			BDS	
2,4-Dichlorophenol	0.051	0.005	mg/L	0.0500	ND	101	39-135			BDS	
1,2,4-Trichlorobenzene	0.044	0.005	mg/L	0.0500	ND	88	44-142			BDS	
Naphthalene	0.043	0.002	mg/L	0.0500	ND	85	21-133			BDS	
Hexachlorobutadiene	0.045	0.002	mg/L	0.0500	ND	89	24-120			BDS	
4-Chloro-3-methylphenol	0.047	0.005	mg/L	0.0500	ND	93	22-147			BDS	
Hexachlorocyclopentadiene	0.022	0.005	mg/L	0.0500	ND	44	10-98			BDS	
2,4,6-Trichlorophenol	0.049	0.005	mg/L	0.0500	ND	99	37-144			BDS	
2-Chloronaphthalene	0.050	0.005	mg/L	0.0500	ND	99	60-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500	ND	93	35-120			BDS	
Dimethylphthalate	0.045	0.002	mg/L	0.0500	ND	90	0.1-120			BDS	
2,4,5-Trichlorophenol	0.050	0.005	mg/L	0.0500	ND	100	40-120			BDS	
2,6-Dinitrotoluene	0.052	0.005	mg/L	0.0500	ND	105	50-158			BDS	
Acenaphthylene	0.042	0.005	mg/L	0.0500	ND	84	33-145			BDS	
Acenaphthene	0.044	0.005	mg/L	0.0500	ND	88	47-145			BDS	
2,4-Dinitrophenol	0.022	0.010	mg/L	0.0500	ND	44	0.1-191			BDS	
4-Nitrophenol	0.031	0.010	mg/L	0.0500	ND	62	0.1-132			BDS	
2,4-Dinitrotoluene	0.052	0.005	mg/L	0.0500	ND	104	39-139			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0605 - 3510C/625

Matrix Spike (B4D0605-MS1)

Source: 4D29044-01 Prepared & Analyzed: 04/30/24

Pentachlorobenzene	0.050	0.005	mg/L	0.0500	ND	101	50-120			BDS	
Diethylphthalate	0.052	0.005	mg/L	0.0500	ND	104	0.1-120			BDS	
Fluorene	0.045	0.005	mg/L	0.0500	ND	90	59-121			BDS	
4-Chlorophenyl-phenyl ether	0.057	0.005	mg/L	0.0500	ND	115	25-158			BDS	
4,6-Dinitro-2-methylphenol	0.031	0.010	mg/L	0.0500	ND	61	0.1-181			BDS	
N-Nitrosodiphenylamine	0.050	0.005	mg/L	0.0500	ND	100	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.024	0.005	mg/L	0.0500	ND	48	2-79			BDS	
4-Bromophenyl-phenyl ether	0.056	0.005	mg/L	0.0500	ND	111	53-127			BDS	
Hexachlorobenzene	0.036	0.005	mg/L	0.0500	ND	72	0.1-152			BDS	
Pentachlorophenol	0.047	0.005	mg/L	0.0500	ND	94	14-176			BDS	
n-Octadecane	0.049	0.005	mg/L	0.0500	0.003	93	20-120			BDS	
Phenanthrene	0.044	0.005	mg/L	0.0500	ND	89	54-120			BDS	
Anthracene	0.042	0.005	mg/L	0.0500	ND	84	27-133			BDS	
Di-n-butylphthalate	0.058	0.005	mg/L	0.0500	ND	117	1-120			BDS	
Fluoranthene	0.043	0.005	mg/L	0.0500	ND	86	26-137			BDS	
Carbazole	0.019	0.005	mg/L	0.0500	ND	39	20-120			BDS	
Benzidine	0.0003	0.005	mg/L	0.0500	ND	0.7	1-75			BDS	OO2
Pyrene	0.042	0.005	mg/L	0.0500	ND	84	52-120			BDS	
Benzylbutylphthalate	0.069	0.005	mg/L	0.0500	ND	137	0.1-152			BDS	
Benzo(a)anthracene	0.048	0.005	mg/L	0.0500	ND	95	33-143			BDS	
3,3'-Dichlorobenzidine	0.028	0.005	mg/L	0.0500	ND	55	0.1-262			BDS	
Chrysene	0.050	0.005	mg/L	0.0500	ND	100	17-168			BDS	
N-Nitroso-di-n-butylamine	0.053	0.005	mg/L	0.0500	ND	107	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.069	0.005	mg/L	0.0500	ND	138	8-158			BDS	
Di-n-octylphthalate	0.059	0.005	mg/L	0.0500	ND	119	4-146			BDS	
Benzo(b)fluoranthene	0.031	0.005	mg/L	0.0500	ND	61	24-159			BDS	
Benzo(k)fluoranthene	0.032	0.005	mg/L	0.0500	ND	65	11-162			BDS	
Benzo(a)pyrene	0.030	0.005	mg/L	0.0500	ND	60	17-163			BDS	
Indeno(1,2,3-cd)pyrene	0.049	0.005	mg/L	0.0500	ND	99	0.1-171			BDS	
Dibenz(a,h)anthracene	0.075	0.005	mg/L	0.0500	ND	149	0.1-227			BDS	
Benzo(g,h,i)perylene	0.076	0.005	mg/L	0.0500	ND	153	0.1-219			BDS	
Surrogate: 2-Fluorophenol	0.0576		mg/L	0.100		58	21-100				
Surrogate: Phenol-d6	0.0426		mg/L	0.100		43	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0964		mg/L	0.100		96	10-123				
Surrogate: Nitrobenzene-d5	0.0850		mg/L	0.100		85	35-114				
Surrogate: 2-Fluorobiphenyl	0.0861		mg/L	0.100		86	43-116				
Surrogate: p-Terphenyl-d14	0.116		mg/L	0.100		116	33-141				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
Matrix Spike Dup (B4D0605-MSD1)			Source: 4D29044-01		Prepared & Analyzed: 04/30/24						
N-Nitrosodimethylamine	0.026	0.005	mg/L	0.0500	ND	52	21-85	8	25	BDS	
Phenol	0.021	0.002	mg/L	0.0500	0.001	40	5-120	12	64	BDS	
2-Chlorophenol	0.041	0.005	mg/L	0.0500	ND	81	23-134	11	61	BDS	
Pyridine	0.0005	0.005	mg/L	0.0500	ND	0.9	3-81	2	25	BDS	OO2
bis(2-Chloroethyl)ether	0.049	0.005	mg/L	0.0500	ND	98	12-158	10	108	BDS	
n-Decane	0.036	0.005	mg/L	0.0500	ND	71	20-120	11	25	BDS	
bis(2-Chloroisopropyl)ether	0.049	0.005	mg/L	0.0500	ND	98	36-166	10	76	BDS	
o-Cresol	0.040	0.005	mg/L	0.0500	ND	79	27-120	10	25	BDS	
N-Nitroso-n-ethyl-ethanamine	0.042	0.005	mg/L	0.0500	ND	83	50-120	12	25	BDS	
m,p-Cresol	0.070	0.005	mg/L	0.100	ND	70	27-120	9	25	BDS	
N-Nitroso-di-n-propylamine	0.044	0.005	mg/L	0.0500	ND	89	0.1-230	10	87	BDS	
Hexachloroethane	0.034	0.002	mg/L	0.0500	ND	69	40-120	9	52	BDS	
Nitrobenzene	0.043	0.005	mg/L	0.0500	ND	86	35-180	10	62	BDS	
Isophorone	0.042	0.005	mg/L	0.0500	ND	84	21-196	11	93	BDS	
2-Nitrophenol	0.045	0.005	mg/L	0.0500	ND	90	29-182	11	55	BDS	
2,4-Dimethylphenol	0.042	0.005	mg/L	0.0500	ND	84	32-120	10	58	BDS	
bis(2-Chloroethoxy)methane	0.047	0.005	mg/L	0.0500	ND	93	33-184	11	54	BDS	
2,4-Dichlorophenol	0.045	0.005	mg/L	0.0500	ND	90	39-135	11	50	BDS	
1,2,4-Trichlorobenzene	0.040	0.005	mg/L	0.0500	ND	80	44-142	9	50	BDS	
Naphthalene	0.038	0.002	mg/L	0.0500	ND	76	21-133	12	65	BDS	
Hexachlorobutadiene	0.041	0.002	mg/L	0.0500	ND	81	24-120	9	62	BDS	
4-Chloro-3-methylphenol	0.044	0.005	mg/L	0.0500	ND	88	22-147	6	73	BDS	
Hexachlorocyclopentadiene	0.020	0.005	mg/L	0.0500	ND	41	10-98	8	25	BDS	
2,4,6-Trichlorophenol	0.046	0.005	mg/L	0.0500	ND	92	37-144	7	58	BDS	
2-Chloronaphthalene	0.045	0.005	mg/L	0.0500	ND	91	60-120	9	24	BDS	
1,2,4,5-Tetrachlorobenzene	0.042	0.005	mg/L	0.0500	ND	84	35-120	10	25	BDS	
Dimethylphthalate	0.040	0.002	mg/L	0.0500	ND	80	0.1-120	11	183	BDS	
2,4,5-Trichlorophenol	0.045	0.005	mg/L	0.0500	ND	91	40-120	10	25	BDS	
2,6-Dinitrotoluene	0.048	0.005	mg/L	0.0500	ND	97	50-158	8	48	BDS	
Acenaphthylene	0.038	0.005	mg/L	0.0500	ND	76	33-145	10	74	BDS	
Acenaphthene	0.039	0.005	mg/L	0.0500	ND	79	47-145	11	48	BDS	
2,4-Dinitrophenol	0.023	0.010	mg/L	0.0500	ND	45	0.1-191	4	132	BDS	
4-Nitrophenol	0.028	0.010	mg/L	0.0500	ND	56	0.1-132	10	131	BDS	
2,4-Dinitrotoluene	0.049	0.005	mg/L	0.0500	ND	98	39-139	6	42	BDS	
Pentachlorobenzene	0.046	0.005	mg/L	0.0500	ND	92	50-120	9	25	BDS	
Diethylphthalate	0.048	0.005	mg/L	0.0500	ND	96	0.1-120	8	100	BDS	
Fluorene	0.041	0.005	mg/L	0.0500	ND	82	59-121	9	38	BDS	
4-Chlorophenyl-phenyl ether	0.052	0.005	mg/L	0.0500	ND	105	25-158	9	61	BDS	
4,6-Dinitro-2-methylphenol	0.029	0.010	mg/L	0.0500	ND	59	0.1-181	4	203	BDS	
N-Nitrosodiphenylamine	0.045	0.005	mg/L	0.0500	ND	91	25-120	10	25	BDS	
Diphenylhydrazine(as Azobenzene)	0.022	0.005	mg/L	0.0500	ND	43	2-79	10	25	BDS	
4-Bromophenyl-phenyl ether	0.050	0.005	mg/L	0.0500	ND	99	53-127	11	43	BDS	
Hexachlorobenzene	0.033	0.005	mg/L	0.0500	ND	65	0.1-152	9	55	BDS	
Pentachlorophenol	0.043	0.005	mg/L	0.0500	ND	85	14-176	10	86	BDS	
n-Octadecane	0.045	0.005	mg/L	0.0500	0.003	85	20-120	8	25	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0605 - 3510C/625

Matrix Spike Dup (B4D0605-MSD1)

Source: 4D29044-01 Prepared & Analyzed: 04/30/24

Phenanthrene	0.040	0.005	mg/L	0.0500	ND	79	54-120	11	39	BDS	
Anthracene	0.038	0.005	mg/L	0.0500	ND	75	27-133	11	66	BDS	
Di-n-butylphthalate	0.052	0.005	mg/L	0.0500	ND	105	1-120	11	47	BDS	
Fluoranthene	0.037	0.005	mg/L	0.0500	ND	74	26-137	15	66	BDS	
Carbazole	0.018	0.005	mg/L	0.0500	ND	35	20-120	11	25	BDS	
Benzidine	0.0003	0.005	mg/L	0.0500	ND		1-75		25	BDS	OQ2
Pyrene	0.037	0.005	mg/L	0.0500	ND	73	52-120	14	49	BDS	
Benzylbutylphthalate	0.062	0.005	mg/L	0.0500	ND	124	0.1-152	10	60	BDS	
Benzo(a)anthracene	0.044	0.005	mg/L	0.0500	ND	87	33-143	8	53	BDS	
3,3'-Dichlorobenzidine	0.025	0.005	mg/L	0.0500	ND	50	0.1-262	10	108	BDS	
Chrysene	0.044	0.005	mg/L	0.0500	ND	89	17-168	12	87	BDS	
N-Nitroso-di-n-butylamine	0.047	0.005	mg/L	0.0500	ND	94	35-120	13	25	BDS	
bis(2-Ethylhexyl)phthalate	0.061	0.005	mg/L	0.0500	ND	122	8-158	12	82	BDS	
Di-n-octylphthalate	0.053	0.005	mg/L	0.0500	ND	106	4-146	12	69	BDS	
Benzo(b)fluoranthene	0.027	0.005	mg/L	0.0500	ND	54	24-159	13	71	BDS	
Benzo(k)fluoranthene	0.028	0.005	mg/L	0.0500	ND	56	11-162	13	63	BDS	
Benzo(a)pyrene	0.027	0.005	mg/L	0.0500	ND	54	17-163	10	72	BDS	
Indeno(1,2,3-cd)pyrene	0.045	0.005	mg/L	0.0500	ND	89	0.1-171	10	99	BDS	
Dibenz(a,h)anthracene	0.068	0.005	mg/L	0.0500	ND	137	0.1-227	9	126	BDS	
Benzo(g,h,i)perylene	0.069	0.005	mg/L	0.0500	ND	138	0.1-219	10	97	BDS	
Surrogate: 2-Fluorophenol	0.0517		mg/L	0.100		52	21-100				
Surrogate: Phenol-d6	0.0383		mg/L	0.100		38	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0856		mg/L	0.100		86	10-123				
Surrogate: Nitrobenzene-d5	0.0775		mg/L	0.100		78	35-114				
Surrogate: 2-Fluorobiphenyl	0.0777		mg/L	0.100		78	43-116				
Surrogate: p-Terphenyl-d14	0.103		mg/L	0.100		103	33-141				

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	<0.004	0.004	ug/L							BDS	
alpha-BHC	<0.003	0.003	ug/L							BDS	
beta-BHC	<0.006	0.006	ug/L							BDS	
delta-BHC	<0.009	0.009	ug/L							BDS	
gamma-BHC	<0.004	0.004	ug/L							BDS	
alpha-Chlordane	<0.014	0.014	ug/L							BDS	
gamma-Chlordane	<0.014	0.014	ug/L							BDS	
4,4'-DDD	<0.011	0.011	ug/L							BDS	
4,4'-DDE	<0.004	0.004	ug/L							BDS	
4,4'-DDT	<0.012	0.012	ug/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Dieldrin	<0.002	0.002	ug/L							BDS	
Endosulfan I	<0.014	0.014	ug/L							BDS	
Endosulfan II	<0.004	0.004	ug/L							BDS	
Endosulfan Sulfate	<0.066	0.066	ug/L							BDS	
Endrin	<0.006	0.006	ug/L							BDS	
Endrin Aldehyde	<0.023	0.023	ug/L							BDS	
Heptachlor	<0.003	0.003	ug/L							BDS	
Heptachlor Epoxide	<0.083	0.083	ug/L							BDS	
Endrin Ketone	<0.015	0.015	ug/L							BDS	
Methoxychlor	<0.126	0.126	ug/L							BDS	
Toxaphene	<0.240	0.240	ug/L							BDS	
Chlordane, Technical	<0.010	0.010	ug/L							BDS	

Surrogate: Decachlorobiphenyl

0.563

ug/L

1.00

56

10-140

Surrogate: Tetrachloro-m-xylene

0.358

ug/L

1.00

36

10-140

LCS (B4E0068-BS1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	0.358	0.005	ug/L	0.500		72	42-140			BDS	
alpha-BHC	0.383	0.005	ug/L	0.500		77	37-140			BDS	
beta-BHC	0.362	0.010	ug/L	0.500		72	17-147			BDS	
delta-BHC	0.453	0.010	ug/L	0.500		91	19-140			BDS	
gamma-BHC	0.401	0.005	ug/L	0.500		80	32-140			BDS	
alpha-Chlordane	0.357	0.020	ug/L	0.500		71	45-140			BDS	
gamma-Chlordane	0.416	0.020	ug/L	0.500		83	45-140			BDS	
4,4'-DDD	0.427	0.020	ug/L	0.500		85	31-141			BDS	
4,4'-DDE	0.428	0.005	ug/L	0.500		86	30-145			BDS	
4,4'-DDT	0.344	0.020	ug/L	0.500		69	25-160			BDS	
Dieldrin	0.452	0.005	ug/L	0.500		90	36-146			BDS	
Endosulfan I	0.432	0.020	ug/L	0.500		86	45-153			BDS	
Endosulfan II	0.338	0.005	ug/L	0.500		68	1-202			BDS	
Endosulfan Sulfate	0.384	0.100	ug/L	0.500		77	26-144			BDS	
Endrin	0.433	0.010	ug/L	0.500		87	30-147			BDS	
Endrin Aldehyde	0.331	0.050	ug/L	0.500		66	30-147			BDS	
Heptachlor	0.224	0.005	ug/L	0.500		45	34-140			BDS	
Heptachlor Epoxide	0.419	0.100	ug/L	0.500		84	37-142			BDS	
Endrin Ketone	0.386	0.020	ug/L	0.500		77	45-140			BDS	
Methoxychlor	0.330	0.150	ug/L	0.500		66	45-140			BDS	
Toxaphene	33.6	0.500	ug/L	50.0		67	41-140			BDS	
Chlordane, Technical	1.01	0.020	ug/L	1.00		101	45-140			BDS	

Surrogate: Decachlorobiphenyl

0.597

ug/L

1.00

60

10-140

Surrogate: Tetrachloro-m-xylene

0.426

ug/L

1.00

43

10-140

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike (B4E0068-MS1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.421	0.005	ug/L	0.500	ND	84	42-140			BDS	
alpha-BHC	0.352	0.005	ug/L	0.500	ND	70	37-140			BDS	
beta-BHC	0.094	0.010	ug/L	0.500	ND	19	17-147			BDS	
delta-BHC	0.351	0.010	ug/L	0.500	ND	70	19-140			BDS	
gamma-BHC	0.396	0.005	ug/L	0.500	ND	79	32-140			BDS	
alpha-Chlordane	0.186	0.020	ug/L	0.500	ND	37	45-140			BDS	OQ2, OQ4
gamma-Chlordane	0.359	0.020	ug/L	0.500	ND	72	45-140			BDS	
4,4'-DDD	0.413	0.020	ug/L	0.500	ND	83	31-141			BDS	
4,4'-DDE	0.413	0.005	ug/L	0.500	ND	83	30-145			BDS	
4,4'-DDT	0.306	0.020	ug/L	0.500	ND	61	25-160			BDS	
Dieldrin	0.391	0.005	ug/L	0.500	ND	78	36-146			BDS	
Endosulfan I	0.215	0.020	ug/L	0.500	ND	43	45-153			BDS	OQ2, OQ4
Endosulfan II	0.381	0.005	ug/L	0.500	ND	76	1-202			BDS	
Endosulfan Sulfate	0.338	0.100	ug/L	0.500	ND	68	26-144			BDS	
Endrin	0.389	0.010	ug/L	0.500	ND	78	30-147			BDS	
Endrin Aldehyde	0.224	0.050	ug/L	0.500	ND	45	30-147			BDS	
Heptachlor	0.307	0.005	ug/L	0.500	ND	61	34-140			BDS	
Heptachlor Epoxide	0.365	0.100	ug/L	0.500	ND	73	37-142			BDS	
Endrin Ketone	0.327	0.020	ug/L	0.500	ND	65	45-140			BDS	
Methoxychlor	0.363	0.150	ug/L	0.500	ND	73	45-140			BDS	
Toxaphene	21.5	0.500	ug/L	50.0	ND	43	41-140			BDS	
Chlordane, Technical	1.30	0.020	ug/L	1.00	ND	130	45-140			BDS	OQ4
Surrogate: Decachlorobiphenyl	0.612		ug/L	1.00		61	10-140				
Surrogate: Tetrachloro-m-xylene	0.476		ug/L	1.00		48	10-140				

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.396	0.005	ug/L	0.500	ND	79	42-140	6	35	BDS	
alpha-BHC	0.389	0.005	ug/L	0.500	ND	78	37-140	10	36	BDS	
beta-BHC	0.090	0.010	ug/L	0.500	ND	18	17-147	5	44	BDS	
delta-BHC	0.367	0.010	ug/L	0.500	ND	73	19-140	5	52	BDS	
gamma-BHC	0.425	0.005	ug/L	0.500	ND	85	32-140	7	39	BDS	
alpha-Chlordane	0.354	0.020	ug/L	0.500	ND	71	45-140	63	35	BDS	OQ3
gamma-Chlordane	0.378	0.020	ug/L	0.500	ND	76	45-140	5	35	BDS	
4,4'-DDD	0.421	0.020	ug/L	0.500	ND	84	31-141	2	39	BDS	
4,4'-DDE	0.371	0.005	ug/L	0.500	ND	74	30-145	11	35	BDS	
4,4'-DDT	0.293	0.020	ug/L	0.500	ND	59	25-160	4	42	BDS	
Dieldrin	0.173	0.005	ug/L	0.500	ND	35	36-146	77	49	BDS	OQ3, OQ4 OQ3
Endosulfan I	0.424	0.020	ug/L	0.500	ND	85	45-153	65	28	BDS	
Endosulfan II	0.384	0.005	ug/L	0.500	ND	77	1-202	0.8	53	BDS	
Endosulfan Sulfate	0.312	0.100	ug/L	0.500	ND	62	26-144	8	38	BDS	
Endrin	0.341	0.010	ug/L	0.500	ND	68	30-147	13	48	BDS	
Endrin Aldehyde	0.209	0.050	ug/L	0.500	ND	42	30-147	7	48	BDS	
Heptachlor	0.282	0.005	ug/L	0.500	ND	56	34-140	9	43	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Heptachlor Epoxide	0.373	0.100	ug/L	0.500	ND	75	37-142	2	26	BDS	
Endrin Ketone	0.294	0.020	ug/L	0.500	ND	59	45-140	10	35	BDS	
Methoxychlor	0.357	0.150	ug/L	0.500	ND	71	45-140	1	35	BDS	
Toxaphene	24.4	0.500	ug/L	50.0	ND	49	41-140	13	41	BDS	
Chlordane, Technical	1.57	0.020	ug/L	1.00	ND	157	45-140	19	35	BDS	OQ2, OQ4

Surrogate: Decachlorobiphenyl

0.508

ug/L

1.00

51

10-140

Surrogate: Tetrachloro-m-xylene

0.477

ug/L

1.00

48

10-140



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 001 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:25

Qualifiers, Definitions & Notes

Q8	Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.		
OQ4	The second column confirmation exceeded 50% difference.		
OQ3	The Relative Percent Difference (RPD) for one or more analytes is outside of acceptance criteria established for this analysis method.		
OQ2	The Matrix Spike Recovery (MS/MSD) limits for one or more analytes in this sample were outside of the method default acceptance criteria due to required dilutions and/or matrix interferences.		
OQ1	The Laboratory Control Sample (LCS) had one or more analytes outside of the QC acceptance limits.		
J	Estimated Value reported above the Method Detection Limit (MDL) but below the Reporting Limit (RL).		
E	Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory's initial calibration curve & adjusted for initial sample volume or weight.		
mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.#

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 001
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

Analysis Requested

No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON/T. Phos	Cl ₂ /F ₂ /SO ₄ /NO ₃ /NO ₂ -Br-	Alkalinity, Cr6	O&G	TDS/TSS	200.8 Metals/Cr3 *	Low Level Hg	Available Cyanide	624-Tox. Poll. VOA	625-Tox. Poll. SVOA	608-Pesticides	Nonylphenol	Color	Sulfide	MBAS-Surfactant
0103	Outfall 001	04/29/24	1219	X		2	1 L - P	WW	NONE	X																
0104	Outfall 001	04/29/24	1219	X		2	500 mL - P	WW	H2SO4		X															
0105	Outfall 001	04/29/24	1219	X		1	500 mL - P	WW	NONE				X													
0106	Outfall 001	04/29/24	1219	X		1	500 mL - P	WW	NONE					X												
0107	Outfall 001	04/29/24	1219	X		3	1 L - G	WW	H2SO4						X											
0108	Outfall 001	04/29/24	1219	X		1	1 L - P	WW	NONE							X										
0109	Outfall 001	04/29/24	1219	X		1	250 mL - P	WW	HNO3								X									* Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni
0110	Outfall 001	04/29/24	1219	X		2	40 mL - V	WW	HCL								X									Se, Ag, Tl, Zn
0111	Outfall 001	04/29/24	1219	X		1	250 mL - AP	WW	NAOH									X								B, Co, Fe, Mn, Mg, Mo, Sn, Ti
0112	Outfall 001	04/29/24	1219	X		3	40 mL - V	WW	NONE										X							
0113	Outfall 001	04/29/24	1219	X		1	1 L - AG	WW	NONE											X						
0114	Outfall 001	04/29/24	1219	X		1	1 L - AG	WW	NONE												X					
0115	Outfall 001	04/29/24	1219	X		1	250 mL - P	WW	NONE														X			
0116	Outfall 001	04/29/24	1219	X		1	250 mL - P	WW	NAOH/ZnAce															X		
0117	Outfall 001	04/29/24	1219	X		2	1 L - AG	WW	NONE																X	

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or NCooler Temperature: 3.1°TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)SAMPLED BY: 2200SAMPLED BY PRINT NAME: Tracy Tubbs

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY: 2200DATE: 04/29/24RECEIVED AT LABORATORY BY: [Signature]

ORGANIZATION:

TIME: 1335ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCl (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic AcidFRM-SC1
Revision 5
12-28-2009

Natgasoline - Permit Re

Page 36 of 70

CHAIN OF CUSTODY RECORD

Project: **TPDES Wastewater Permit**
 Project #:
 Location: **Outfall 001**
 P.O. #:
 Fax #:

4825 Ward Drive
Beaumont, Texas 77705
Phone: (409) 842-0658 Fax: (409) 842-9793

E.A.S.#

Analysis Requested

[illegible]

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or N

Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr.(ASAP)

TAT - Working Days (TCLP): 10 Day(STD) 5 Day(RUSH) 2-3 Day(ASAP)

SAMPLED BY:

SAMPLED BY PRINT NAME: Tracy Tubbs

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:**TIME:****ORGANIZATION:**

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED AT LABORATORY BY:

ORGANIZATION:

TIME:

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H_2SO_4 (2) HNO_3 (3) NaOH/Zinc Acetate (4) HCl (5) $Na_2S_2O_3$ (6) NaOH (7) NaHSO₄ (8) $H_2SO_4/CuSO_4$ (9) NaOH/Ascorbic Acid

FRM-SC1
Revision 5

Page 37 of 70

Natgasoline - Permit Renewal 001 101 002



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D29043

Dear Scott Boudreaux:

Order No.: 24042239

Summit Environmental Technologies, Inc. received 1 sample(s) on 4/30/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

A handwritten signature in black ink that reads 'Salwa Najjar'.

Salwa A. Najjar

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24042239
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D29043

WorkOrder Narrative:

24042239: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:

24042239-001A Color_NPW(2120B)2011: Sample was recieved/analyzed out of hold.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24042239
03-May-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D29043

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24042239-001	4D29043-01		4/29/2024 12:19:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042239-001	4D29043-01		4/29/2024 12:19:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042239-001	4D29043-01		4/29/2024 12:19:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042239-001	4D29043-01		4/29/2024 12:19:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: 24042239

Date Reported: 5/3/2024

Lab ID: 24042239-001

Collection Date: 4/29/2024 12:19:00 PM

Client Sample ID 4D29043-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	18.6	0.361	0.500		ng/L	1	R184822	5/2/2024 10:51:18 AM
STANDARD MASTER LIST-EXTRA (EPA 8270C)					EPA 8270 C			EPA 3510 Analyst: SAM
TIC: Nonylphenol	ND	0.0258	0.0258		mg/L	1	74993	5/2/2024 11:19:00 PM
Surr: 2-Fluorophenol	41.8		14-110		%Rec	1	74993	5/2/2024 11:19:00 PM
Surr: Phenol-d6	28.7		10-110		%Rec	1	74993	5/2/2024 11:19:00 PM
Surr: 2,4,6-Tribromophenol	90.9		13-125		%Rec	1	74993	5/2/2024 11:19:00 PM
COLOR (SM2120B) 2011					SM 2120-B 2011			Analyst: KMS
Apparent Color	55.0	0	0	H	PCU (platinum-cobalt units)	1	R184721	5/1/2024 9:37:00 AM
MBAS - NPW 5540C 2011					SM 5540C 2000			Analyst: CXS
MBAS	0.14	0.038	0.20	J	mg/L 288.38 MW LAS	1	R184883	4/30/2024 6:00:00 PM
TKN (EPA351.2)					EPA 351MOD 2			EPA 351.2 Analyst: BJT
TKN	8.85	0.500	1.00		mg/L	1	75029	5/2/2024 2:15:00 PM

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

BatchID: 74993

Sample ID: LCS-74993	SampType: LCS	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/30/2024	RunNo: 184865						
Client ID: LCSW	Batch ID: 74993	TestNo: SW8270C	SW3510C	Analysis Date: 5/2/2024	SeqNo: 5009993						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0224		0.05000		44.8	10	130				
Surr: Phenol-d6	0.0162		0.05000		32.4	10	130				
Surr: Nitrobenzene-d5	0.0449		0.05000		89.8	10	130				
Surr: 2,4,6-Tribromophenol	0.0480		0.05000		96.1	19	151				
Surr: 2-Fluorobiphenyl	0.0488		0.05000		97.5	10	130				
Surr: p-Terphenyl-d14	0.0485		0.05000		96.9	20	181				

Sample ID: LCSD-74993	SampType: LCSD	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/30/2024	RunNo: 184865						
Client ID: LCSS02	Batch ID: 74993	TestNo: SW8270C	SW3510C	Analysis Date: 5/2/2024	SeqNo: 5009994						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0207		0.05000		41.5	10	130		0		
Surr: Phenol-d6	0.0151		0.05000		30.2	10	130		0		
Surr: Nitrobenzene-d5	0.0428		0.05000		85.6	10	130		0		
Surr: 2,4,6-Tribromophenol	0.0445		0.05000		88.9	19	151		0		
Surr: 2-Fluorobiphenyl	0.0441		0.05000		88.2	10	130		0		
Surr: p-Terphenyl-d14	0.0464		0.05000		92.8	20	181		0		

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29043

BatchID: 74993

Sample ID: MB-74993	SampType: MBLK	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/30/2024	RunNo: 184865						
Client ID: PBW	Batch ID: 74993	TestNo: SW8270C	SW3510C	Analysis Date: 5/2/2024	SeqNo: 5010007						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0179		0.05000		35.9	10	130				
Surr: Phenol-d6	0.0114		0.05000		22.7	10	130				
Surr: Nitrobenzene-d5	0.0361		0.05000		72.2	10	130				
Surr: 2,4,6-Tribromophenol	0.0376		0.05000		75.2	19	151				
Surr: 2-Fluorobiphenyl	0.0381		0.05000		76.1	10	130				
Surr: p-Terphenyl-d14	0.0453		0.05000		90.7	20	181				

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

BatchID: 75029

Sample ID: MB-75029	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: PBW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009603		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-75029	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: LCSW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009604		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	10.1	1.00	10.00	0	101	90	110					

Sample ID: 24042239-001DMS		SampType: MS		TestCode: TKN_NPW(35		Units: mg/L		Prep Date: 5/1/2024		RunNo: 184847			
Client ID: 4D29043-01		Batch ID: 75029		TestNo: E351.2		E351.2		Analysis Date: 5/2/2024		SeqNo: 5009609			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		19.3		1.00	10.00	8.849	104	90	110				

Sample ID: 24042239-001DMSD	SampType: MSD	TestCode: TKN_NPW(35				Units: mg/L		Prep Date: 5/1/2024		RunNo: 184847	
Client ID: 4D29043-01	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009610		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	19.1	1.00	10.00	8.849	103	90	110	19.28	0.708	20	

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29043

BatchID: 75029

Sample ID: 24042239-001DMSD	SampType: MSD	TestCode: TKN_NPW(35	Units: mg/L	Prep Date: 5/1/2024	RunNo: 184847						
Client ID: 4D29043-01	Batch ID: 75029	TestNo: E351.2	E351.2	Analysis Date: 5/2/2024	SeqNo: 5009610						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24042240-001BDUP		SampType: DUP	TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 5/1/2024			RunNo: 184847	
Client ID: BatchQC		Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009612		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		0.572	1.00						0.5990	4.61	20	J

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

BatchID: R184721

Sample ID: MB-R184721	SampType: MBLK	TestCode: Color_NPW(2	Units: PCU (platinum	Prep Date:	RunNo: 184721						
Client ID: PBW	Batch ID: R184721	TestNo: A2120B		Analysis Date: 5/1/2024	SeqNo: 5006634						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	ND	0									

Sample ID: LCS-R184721	SampType: LCS	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:			RunNo: 184721		
Client ID: LCSW	Batch ID: R184721	TestNo: A2120B				Analysis Date: 5/1/2024			SeqNo: 5006635		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	50.0	0	50.00	0	100	85	115				

Sample ID: 24042239-001ADUP		SampType: DUP		TestCode: Color_NPW(2			Units: Color Units		Prep Date:			RunNo: 184721	
Client ID: 4D29043-01		Batch ID: R184721		TestNo: A2120B			Analysis Date: 5/1/2024			SeqNo: 5006637			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color		55.0		0						55.00	0	0	H

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

BatchID: R184822

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	47.5	0.500	50.00	0	95.1	77	123				

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024				SeqNo: 5008978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631			Analysis Date: 5/2/2024				SeqNo: 5008989		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008990		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.1	0.500	50.00	0	100	77	123				

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

BatchID: R184822

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184822			
Client ID: LCSW		Batch ID: R184822		TestNo: E1631			Analysis Date: 5/2/2024			SeqNo: 5008990			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008991		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	48.5	0.500	50.00	0	97.0	77	123	50.12	3.29	24	

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024				SeqNo: 5008993		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008994		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	49.9	0.500	50.00	0	99.9	77	123				

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29043

BatchID: R184822

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008995		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.7	0.500	50.00	0	101	77	123	49.94	1.49	24	

Qualifiers:

E	Value above quantitation range
M	Manual Integration used to determine area response
RL	Reporting Detection Limit

H	Holding times for preparation or analysis exceeded
ND	Not Detected
S	Spike Recovery outside accepted recovery limits

J	Analyte detected below quantitation limits
PL	Permit Limit
W	Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29043

BatchID: R184883

Sample ID: MB-R184883	SampType: MBLK	TestCode: MBAS-NPW(5	Units: mg/L 288.38 M	Prep Date:	RunNo: 184883						
Client ID: PBW	Batch ID: R184883	TestNo: A5540C		Analysis Date: 4/30/2024	SeqNo: 5010243						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	ND	0.20									

Sample ID: LCS-R184883	SampType: LCS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: LCSW	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010245		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0	101	80	120				

Sample ID: 24042239-001AMS	SampType: MS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: 4D29043-01	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010248		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0.1350	87.4	85	115				

Sample ID: 24042239-001AMSD	SampType: MSD	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: 4D29043-01	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010249		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0.1350	87.0	85	115	1.009	0.397	20	

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042239

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29043

BatchID: R184883

Sample ID: 24042239-001AMSD		SampType: MSD		TestCode: MBAS-NPW(5		Units: mg/L 288.38 M		Prep Date:		RunNo: 184883	
Client ID: 4D29043-01		Batch ID: R184883		TestNo: A5540C				Analysis Date: 4/30/2024		SeqNo: 5010249	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24042240-001ADUP	SampType: DUP	TestCode: MBAS-NPW(5				Units: mg/L 288.38 M			Prep Date:		RunNo: 184883	
Client ID: BatchQC	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024				SeqNo: 5010251		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	0.085	0.20						0.07700	9.88	20	J	

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24042239
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29043

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24042239-001A	4D29043-01	4/29/2024 12:19:00 PM	Non-Potable Water	Color (SM2120B) 2011			5/1/2024 9:37:00 AM
				MBAS - NPW 5540C 2011			4/30/2024 6:00:00 PM
24042239-001B				Standard Master List-Extra (EPA 8270		4/30/2024 9:10:00 AM	5/2/2024 11:19:00 PM
24042239-001C				Low-Level Mercury (EPA 1631)			5/2/2024 10:51:18 AM
24042239-001D				TKN (EPA351.2)		5/1/2024 10:45:00 AM	5/2/2024 2:15:00 PM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24042239
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D29043

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
MBAS - NPW 5540C 2011	Non-Potable Water	MBAS	N
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	AR	N	Not Accredited
A-NELA	A	Accredited	A-NELA	N	Not Accredited	CO	U	Unavailable
CT	A	Accredited	CT	N	Not Accredited	L-NELAI	A	Accredited
HI-DW	N	Not Accredited	ID	U	Unavailable	L-NELAF	A	Accredited
L-NELAF	N	Not Accredited	IN_DW	U	Unavailable	S - NELA	N	Not Accredited

Version #2

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D29043

24042239

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies
3310 Win Street
Cuyahoga Falls, OH 44223
Phone : (330) 253-8211
Fax: N/A

State of Origin : TX

Due Date: 05/09/24 11:00

PO Number : 4D29043

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29043-01	Outfall 001 - Grab	Water	04/29/24 12:19	Containers and Unique ID: Analyses 500 mL, P, H2SO4 (D) 40 mL, VOA, HCL (L) 40 mL, VOA, HCL (M) 1-Liter, AG, H2SO4 (T) 250 mL, P (U) 1-Liter, AG (W) 1-Liter, AG (X)	SUB. - Color SUB. - Nonylphenol SUB. - Surfactants SUB. - TKN SUB.-Low Level Mercury	QC FOR LOW ALK FROM 4D29044

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By
Page 18 of 19

Date/Time

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24042239

RcptNo: 1

Logged by: Christina N. Gemma 4/30/2024 12:35:00 PM

Completed By: Christina N. Gemma 4/30/2024 2:05:32 PM

Reviewed By: Holly Florea 5/1/2024 6:57:45 AM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☐ No ☒
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Color received past method hold time

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			
2	4.8	Good	Not Present			

Page 19 of 19

ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 5/6/2024 1:41:18 PM

JOB DESCRIPTION

4D29043-01

JOB NUMBER

180-173214-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Generated
5/6/2024 1:41:18 PM

Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445



Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14

Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D29043-01

Job ID: 180-173214-1

Job ID: 180-173214-1

Eurofins Pittsburgh

Job Narrative 180-173214-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/30/2024 10:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-173214-1	4D29043-01	Water	04/29/24 12:19	04/30/24 10:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Client Sample ID: 4D29043-01
Date Collected: 04/29/24 12:19
Date Received: 04/30/24 10:30

Lab Sample ID: 180-173214-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	OiA - 1677		1			467465	05/03/24 14:46	CMR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: EET PIT
Batch Type: Analysis
CMR = Carl Reagle

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Client Sample ID: 4D29043-01

Lab Sample ID: 180-173214-1

Date Collected: 04/29/24 12:19

Matrix: Water

Date Received: 04/30/24 10:30

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	0.0086		a.aaya	00016	mg/L			05/03/24 14:46	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-467465/25

Matrix: Water

Analysis Batch: 467465

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			05/03/24 14:34	1

Lab Sample ID: LCS 180-467465/26

Matrix: Water

Analysis Batch: 467465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0505		mg/L		101	82 - 132

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29043-01

Job ID: 180-173214-1

General Chemistry

Analysis Batch: 467465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-173214-1	4D29043-01	Total/NA	Water	OIA - 1677	
MB 180-467465/25	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-467465/26	Lab Control Sample	Total/NA	Water	OIA - 1677	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D29043

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/09/24 11:00

State of Origin : TX

PO Number : 4D29043

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29043-01	Outfall 001 - Grab	Water	04/29/24 12:19			

Containers and Unique ID: Analyses
250 mL - P, NAOH (N) SUB. - Available Cyanide



180-173214 Chain of Custody

Signature 4/29/24 1030 *Signature* 43024 1030

Released By _____ Date/Time _____ Received By _____ Date/Time _____

Released By _____ Date/Time _____ Received By _____ Date/Time _____

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-173214-1

Login Number: 173214

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

17 May 2024

EAS NO.: 4E09033

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: Outfall 001 Weekly

Project No.: WQ0005143000

Enclosed are the results of analyses for samples received by the laboratory on 05/09/24 12:40. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 001 - Grab	4E09033-01	Wastewater	3.2	05/09/24 11:30	05/09/24 12:40

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	No
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

Outfall 001 - Grab

Work Order # : 4E09033-01

Collection Date & Time : 5/9/2024 11:30:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Wet Chemistry Analysis Parameters									
Ammonia-Nitrogen	1.04	0.20	mg/L	05/14/24 14:15	05/14/24 14:15	SM 4500-NH3 D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	8.0	4.0	mg/L	05/09/24 10:05	05/09/24 10:05	SM 5210B-2016		CDR	
Oil & Grease (HEM)	<2.4	2.4	mg/L	05/17/24 07:45	05/17/24 07:45	EPA 1664 (Rev.A)		HNR	
Total Suspended Solids (TSS)	5.7	3.3	mg/L	05/10/24 08:10	05/10/24 08:10	SM 2540D-2015		CLB	
Total Metals by ICP-MS - EPA Method 200.8/6020									
Zinc	0.0130	0.00500	mg/L	05/09/24 15:30	05/10/24 07:51	EPA 200.8/6020		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0198 - Wet Chem Prep											
Blank (B4E0198-BLK1)				Prepared & Analyzed: 05/09/24							
Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
LCS (B4E0198-BS1)				Prepared & Analyzed: 05/09/24							
Biochemical Oxygen Demand (BOD), 5-Day	198	2.0	mg/L	198		100	85-115			CDR	
Duplicate (B4E0198-DUP1)				Source: 4E09011-03		Prepared & Analyzed: 05/09/24					
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L		ND			20		CDR	
Batch B4E0218 - Wet Chem Prep											
Blank (B4E0218-BLK1)				Prepared & Analyzed: 05/10/24							
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4E0218-BS1)				Prepared & Analyzed: 05/10/24							
Total Suspended Solids (TSS)	19.0	2.0	mg/L	20.0		95	80-120			CLB	
Matrix Spike (B4E0218-MS1)				Source: 4E09016-01		Prepared & Analyzed: 05/10/24					
Total Suspended Solids (TSS)	30.0	4.0	mg/L	20.0	10.0	100	80-120			CLB	
Matrix Spike (B4E0218-MS2)				Source: 4E09045-01		Prepared & Analyzed: 05/10/24					
Total Suspended Solids (TSS)	23.0	4.0	mg/L	20.0	ND	115	80-120			CLB	
Matrix Spike Dup (B4E0218-MSD1)				Source: 4E09016-01		Prepared & Analyzed: 05/10/24					
Total Suspended Solids (TSS)	30.0	4.0	mg/L	20.0	10.0	100	80-120	0	20	CLB	
Matrix Spike Dup (B4E0218-MSD2)				Source: 4E09045-01		Prepared & Analyzed: 05/10/24					
Total Suspended Solids (TSS)	23.0	4.0	mg/L	20.0	ND	115	80-120	0	20	CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0289 - Wet Chem Prep											
Blank (B4E0289-BLK1)				Prepared & Analyzed: 05/14/24							
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
LCS (B4E0289-BS1)				Prepared & Analyzed: 05/14/24							
Ammonia-Nitrogen	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4E0289-MS1)				Source: 4E13049-01 Prepared & Analyzed: 05/14/24							
Ammonia-Nitrogen	2.18	0.20	mg/L	2.00	0.24	97	80-120			AC	
Matrix Spike Dup (B4E0289-MSD1)				Source: 4E13049-01 Prepared & Analyzed: 05/14/24							
Ammonia-Nitrogen	2.22	0.20	mg/L	2.00	0.24	99	80-120	2	20	AC	
Batch B4E0383 - Wet Chem Prep											
Blank (B4E0383-BLK1)				Prepared & Analyzed: 05/17/24							
Oil & Grease (HEM)	<2.0	2.0	mg/L							HNR	
LCS (B4E0383-BS1)				Prepared & Analyzed: 05/17/24							
Oil & Grease (HEM)	36.0	2.0	mg/L	40.0		90	78-114			HNR	
Matrix Spike (B4E0383-MS1)				Source: 4E15062-02 Prepared & Analyzed: 05/17/24							
Oil & Grease (HEM)	46.0	2.4	mg/L	47.1	ND	98	78-114			HNR	
Matrix Spike (B4E0383-MS2)				Source: 4E16033-02 Prepared & Analyzed: 05/17/24							
Oil & Grease (HEM)	43.2	2.3	mg/L	45.5	ND	95	78-114			HNR	
Matrix Spike Dup (B4E0383-MSD1)				Source: 4E15062-02 Prepared & Analyzed: 05/17/24							
Oil & Grease (HEM)	48.5	2.5	mg/L	49.4	ND	98	78-114	5	18	HNR	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0383 - Wet Chem Prep

Matrix Spike Dup (B4E0383-MSD2) Source: 4E16033-02 Prepared & Analyzed: 05/17/24

Oil & Grease (HEM)	43.8	2.2	mg/L	44.0	ND	100	78-114	1	18	HNR	
--------------------	------	-----	------	------	----	-----	--------	---	----	-----	--

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0174 - 3015A

Blank (B4E0174-BLK1) Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	<0.00500	0.00500	mg/L							ZAC	
------	----------	---------	------	--	--	--	--	--	--	-----	--

LCS (B4E0174-BS1) Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	0.262	0.00500	mg/L	0.278		94	85-115			ZAC	
------	-------	---------	------	-------	--	----	--------	--	--	-----	--

Matrix Spike (B4E0174-MS1) Source: 4E08018-01 Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	0.249	0.00500	mg/L	0.278	ND	90	70-130			ZAC	
------	-------	---------	------	-------	----	----	--------	--	--	-----	--

Matrix Spike (B4E0174-MS2) Source: 4E09036-01 Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	0.279	0.00500	mg/L	0.278	0.0424	85	70-130			ZAC	
------	-------	---------	------	-------	--------	----	--------	--	--	-----	--

Matrix Spike Dup (B4E0174-MSD1) Source: 4E08018-01 Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	0.240	0.00500	mg/L	0.278	ND	87	70-130	4	20	ZAC	
------	-------	---------	------	-------	----	----	--------	---	----	-----	--

Matrix Spike Dup (B4E0174-MSD2) Source: 4E09036-01 Prepared: 05/09/24 Analyzed: 05/10/24

Zinc	0.281	0.00500	mg/L	0.278	0.0424	86	70-130	0.8	20	ZAC	
------	-------	---------	------	-------	--------	----	--------	-----	----	-----	--



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: Outfall 001 Weekly
Project Number: WQ0005143000
Project Manager: Scott Kolb

Reported:
05/17/24 14:40

Qualifiers, Definitions & Notes

mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

CHAIN OF CUSTODY RECORD

4825 Ward Drive
Beaumont, Texas 77705
Phone: (409) 842-0658 Fax: (409) 842-9793

Analysis Requested

[illegible]

COMMENTS:		LAB USE ONLY:	
		RECEIVED ON ICE: <u>Y</u> or <u>N</u> 3.2^{cc}	
		TAT - Working Days (Routine): <u> </u> 10 Day (STD) <u> </u> 3-5 Day (RUSH) <u> </u> 24 Hr. (ASAP)	
		TAT - Working Days (TCLP): <u> </u> 10 Day (STD) <u> </u> 5 Day (RUSH) <u> </u> 2-3 Day (ASAP)	
SAMPLED BY: <u>2200</u>		SAMPLED BY PRINT NAME: <u>Tracy Tubbs</u>	
RELINQUISHED BY:	DATE:	RECEIVED BY:	
ORGANIZATION:	TIME:	ORGANIZATION:	
RELINQUISHED BY:	DATE:	RECEIVED BY:	
ORGANIZATION:	TIME:	ORGANIZATION:	
RELINQUISHED BY: <u>2200</u>	DATE: <u>05/09/24</u>	RECEIVED AT LABORATORY BY:	
ORGANIZATION:	TIME: <u>1240</u>	ORGANIZATION: <u>Earth Analytical Sciences, Inc.</u>	

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum
(EC) EnCore-type Samplers

PRESERVATIVE: (1) H_2SO_4 (2) HNO_3 (3) $NaOH/Zinc\ Acetate$ (4) HCl (5) $Na_2S_2O_3$ (6) $NaOH$ (7) $NaHSO_4$ (8) $H_2SO_4/CuSO_4$ (9) $NaOH/Ascorbic\ Acid$



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

14 May 2024

EAS NO.: 4D22047

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 002 - Week 1

Enclosed are the results of analyses for samples received by the laboratory on 04/22/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 002 - Grab	4D22047-01	Wastewater	3.1	04/22/24 12:07	04/22/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Case Narrative

Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.
Subcontracted analysis performed by Summit. Certificate of Analysis is attached.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Outfall 002 - Grab

Work Order #: **4D22047-01** Collection Date & Time: **4/22/2024 12:07:00PM**

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	8.7	0.1	mg/L	04/22/24 12:13	04/22/24 12:13	SM 4500-O G-2016	E1	TT	
pH (on-site)	7.6		pH/°C	04/22/24 12:14	04/22/24 12:14	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	23.9		pH/°C	04/22/24 12:14	04/22/24 12:14	SM 4500-H+ B-2011	E1	TT	
Sulfite	<2.0	2.0	mg/L	04/22/24 12:52	04/22/24 12:52	SM 4500-SO3 B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L	04/22/24 12:17	04/22/24 12:17	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	75.0		°F	04/22/24 12:14	04/22/24 12:14	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO3	82	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	<0.20	0.20	mg/L	04/23/24 16:00	04/23/24 16:00	SM 4500-NH3 D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L	04/22/24 11:20	04/22/24 11:20	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	<4.0	4.0	mg/L	04/22/24 11:25	04/22/24 11:25	SM 5210B-2016		CDR	
Chloride	32.0	2.0	mg/L	04/23/24 11:30	04/23/24 11:30	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	25	5	mg/L	04/23/24 10:55	04/23/24 10:55	HACH 8000		CLB	
Fluoride	<0.10	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/22/24 15:40	04/22/24 15:40	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.2	2.2	mg/L	04/25/24 08:00	04/25/24 08:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO4	3.01	0.62	mg/L	04/26/24 09:25	04/26/24 09:25	SM 4500-P B/E-2011		ZAC	Q8
Sulfide	0.033	0.010	mg/L	04/29/24 10:00	04/29/24 10:00	SM 4500-S2 D-2011		CLB	Q8
Total Dissolved Solids (TDS)	388	20	mg/L	04/23/24 10:30	04/23/24 10:30	SM 2540C-2015		CLB	
Total Organic Carbon	9.88	2.00	mg/L	04/24/24 09:30	04/24/24 09:30	SM 5310C-2014		ZAC	
Total Organic Nitrogen	<1.00	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	<0.003	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	4.6	2.0	mg/L	04/23/24 08:30	04/23/24 08:30	SM 2540D-2015		CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Outfall 002 - Grab

Work Order #: 4D22047-01 Collection Date & Time : 4/22/2024 12:07:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate+Nitrite-Nitrogen	1.24	0.40	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Nitrate-Nitrogen	1.20	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Sulfate	73.4	2.00	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Bromide	0.57	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Total Metals by ICP-MS - EPA Method 200.8/6020									
Boron	49.2	20.0	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Aluminum	61.7	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Iron	127	7.00	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Magnesium	3780	20.0	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Titanium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Chromium	<3.00	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Manganese	23.1	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cobalt	<0.30	0.30	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Nickel	<2.00	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Copper	16.6	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Zinc	112	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Arsenic	1.48	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Molybdenum	375	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Silver	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Tin	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Barium	49.2	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0086 - Field Service Prep											
Blank (B4E0086-BLK1)				Prepared & Analyzed: 04/22/24							
Sulfite	<2.0	2.0	mg/L							TT	
LCS (B4E0086-BS1)				Prepared & Analyzed: 04/22/24							
Sulfite	470	20.0	mg/L	500		94	80-120			TT	
Matrix Spike (B4E0086-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	47.0	2.0	mg/L	50.0	ND	94	80-120			TT	
Matrix Spike Dup (B4E0086-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	46.0	2.0	mg/L	50.0	ND	92	80-120	2	20	TT	
Batch B4E0102 - Field Service Prep											
LCS (B4E0102-BS1)				Prepared & Analyzed: 04/22/24							
pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
Duplicate (B4E0102-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Temperature, F.	32.0		°F		79.2			85	200	TT	
pH (on-site)	8.3		pH/°C		8.3			0	20	TT	
Temperature by Field Meter	26.2		pH/°C		26.2			0	20	TT	
Batch B4E0112 - Field Service Prep											
Duplicate (B4E0112-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Dissolved Oxygen	7.0	0.1	mg/L		7.3			4	20	TT	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Field Services Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0115 - Field Service Prep

Duplicate (B4E0115-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Chlorine, Total Residual (Low Range)	0.03	0.02	mg/L		0.03			0	20	TT	
--------------------------------------	------	------	------	--	------	--	--	---	----	----	--

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0438 - Wet Chem Prep

Blank (B4D0438-BLK1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
---------------------	--------	-------	------	--	--	--	--	--	--	-----	--

LCS (B4D0438-BS1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400		98	80-110			CLB	
---------------------	-------	-------	------	--------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0438-MS1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400	ND	98	80-120			CLB	
---------------------	-------	-------	------	--------	----	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0438-MSD1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.041	0.003	mg/L	0.0400	ND	102	80-120	5	20	CLB	
---------------------	-------	-------	------	--------	----	-----	--------	---	----	-----	--

Batch B4D0440 - Wet Chem Prep

Blank (B4D0440-BLK1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0440-BS1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	193	2.0	mg/L	198		97	85-115			CDR	
--	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0440-DUP1)

Source: 4D22044-01 Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	7.6	6.6	mg/L		7.9			4	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0442 - Wet Chem Prep

Blank (B4D0442-BLK1)

Prepared & Analyzed: 04/22/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
---	------	-----	------	--	--	--	--	--	--	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0442 - Wet Chem Prep											
LCS (B4D0442-BS1)				Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	208	2.0	mg/L	198		105	85-115			CDR	
Duplicate (B4D0442-DUP1)				Source: 4D22037-01 Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	8.8	4.0	mg/L		9.6			9	20	CDR	
Batch B4D0455 - Wet Chem Prep											
Blank (B4D0455-BLK1)				Prepared & Analyzed: 04/23/24							
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4D0455-BS1)				Prepared & Analyzed: 04/23/24							
Chloride	893	40.0	mg/L	886		101	80-120			DGL	
Matrix Spike (B4D0455-MS1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	298	10.0	mg/L	222	86.0	96	80-120			DGL	
Matrix Spike Dup (B4D0455-MSD1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	297	10.0	mg/L	222	86.0	95	80-120	0.3	20	DGL	
Batch B4D0457 - Wet Chem Prep											
Blank (B4D0457-BLK1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	
LCS (B4D0457-BS1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	3960	40	mg/L	4000		99	80-120			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0457 - Wet Chem Prep											
Matrix Spike (B4D0457-MS1)		Source: 4D23003-02		Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2210	20	mg/L	2000	210	100	80-120			CLB	
Matrix Spike Dup (B4D0457-MSD1)		Source: 4D23003-02		Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2100	20	mg/L	2000	210	94	80-120	5	20	CLB	
Batch B4D0460 - Wet Chem Prep											
Blank (B4D0460-BLK1)		Prepared & Analyzed: 04/23/24									
Chemical Oxygen Demand	<5	5	mg/L							CLB	
LCS (B4D0460-BS1)		Prepared & Analyzed: 04/23/24									
Chemical Oxygen Demand	52	5	mg/L	50.0		104	80-120			CLB	
Matrix Spike (B4D0460-MS1)		Source: 4D22043-01		Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	214	10	mg/L	95.2	110	109	80-120			CLB	
Matrix Spike Dup (B4D0460-MSD1)		Source: 4D22043-01		Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	220	10	mg/L	95.2	110	116	80-120	3	20	CLB	
Batch B4D0462 - Wet Chem Prep											
Blank (B4D0462-BLK1)		Prepared & Analyzed: 04/23/24									
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4D0462-BS1)		Prepared & Analyzed: 04/23/24									
Total Suspended Solids (TSS)	19.0	2.0	mg/L	20.0		95	80-120			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0462 - Wet Chem Prep											
Matrix Spike (B4D0462-MS1)		Source: 4D22033-01		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	40.0	5.0	mg/L	25.0	14.0	104	80-120			CLB	
Matrix Spike (B4D0462-MS2)		Source: 4D23012-02		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	87.0	10.0	mg/L	50.0	32.0	110	80-120			CLB	
Matrix Spike Dup (B4D0462-MSD1)		Source: 4D22033-01		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	38.0	5.0	mg/L	25.0	14.0	96	80-120	5	20	CLB	
Matrix Spike Dup (B4D0462-MSD2)		Source: 4D23012-02		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	89.0	10.0	mg/L	50.0	32.0	114	80-120	2	20	CLB	
Batch B4D0467 - Wet Chem Prep											
Blank (B4D0467-BLK1)		Prepared & Analyzed: 04/23/24									
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
LCS (B4D0467-BS1)		Prepared & Analyzed: 04/23/24									
Ammonia-Nitrogen	0.99	0.10	mg/L	1.00		99	80-120			AC	
Matrix Spike (B4D0467-MS1)		Source: 4D22044-01		Prepared & Analyzed: 04/23/24							
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120			AC	
Matrix Spike Dup (B4D0467-MSD1)		Source: 4D22044-01		Prepared & Analyzed: 04/23/24							
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120	0	20	AC	
Batch B4D0468 - Wet Chem Prep											
Blank (B4D0468-BLK1)		Prepared & Analyzed: 04/24/24									
Total Organic Carbon	<1.00	1.00	mg/L							ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0468 - Wet Chem Prep											
LCS (B4D0468-BS1)				Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.1	1.00	mg/L	25.0		100	80-120			ZAC	
Matrix Spike (B4D0468-MS1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120			ZAC	
Matrix Spike Dup (B4D0468-MSD1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120	0	20	ZAC	
Batch B4D0509 - Wet Chem Prep											
Blank (B4D0509-BLK1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	<2.0	2.0	mg/L							HNR	
LCS (B4D0509-BS1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	39.7	2.0	mg/L	40.0		99	78-114			HNR	
Matrix Spike (B4D0509-MS1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.8	2.2	mg/L	43.0	ND	95	78-114			HNR	
Matrix Spike Dup (B4D0509-MSD1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.7	2.2	mg/L	42.6	ND	96	78-114	0.2	18	HNR	
Batch B4D0552 - Wet Chem Prep											
Blank (B4D0552-BLK1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0552 - Wet Chem Prep											
LCS (B4D0552-BS1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	1.04	0.31	mg/L	1.00		104	80-120			ZAC	Q8
Matrix Spike (B4D0552-MS1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120			ZAC	Q8
Matrix Spike Dup (B4D0552-MSD1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120	0	20	ZAC	Q8
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)				Prepared & Analyzed: 04/30/24							
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)				Prepared & Analyzed: 04/30/24							
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0603 - Wet Chem Prep											
Blank (B4D0603-BLK1)				Prepared & Analyzed: 04/29/24							
Sulfide	<0.010	0.010	mg/L							CLB	Q8

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0603 - Wet Chem Prep											
LCS (B4D0603-BS1)				Prepared & Analyzed: 04/29/24							
Sulfide	0.293	0.010	mg/L	0.300		98	80-120			CLB	Q8
Matrix Spike (B4D0603-MS1)				Source: 4D22044-02 Prepared & Analyzed: 04/29/24							
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120			CLB	Q8
Matrix Spike Dup (B4D0603-MSD1)				Source: 4D22044-02 Prepared & Analyzed: 04/29/24							
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120	0	20	CLB	Q8

Batch B4E0025 - Wet Chem Prep

Blank (B4E0025-BLK1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
Matrix Spike (B4E0025-MS1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
Matrix Spike Dup (B4E0025-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0420 - Wet Chem Prep											
Blank (B4D0420-BLK1)				Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	<0.20	0.20	mg/L							ZAC	
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
Bromide	<0.10	0.10	mg/L							ZAC	
LCS (B4D0420-BS1)				Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	10.1		mg/L	10.0		101	90-110			ZAC	
Nitrate-Nitrogen	4.99		mg/L	5.00		100	90-110			ZAC	
Sulfate	20.3		mg/L	20.0		101	90-110			ZAC	
Bromide	5.19		mg/L	5.00		104	90-110			ZAC	
Matrix Spike (B4D0420-MS1)				Source: 4D22038-01 Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110			ZAC	
Nitrate-Nitrogen	23.7	0.50	mg/L	25.0	ND	95	90-110			ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110			ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110			ZAC	
Matrix Spike Dup (B4D0420-MSD1)				Source: 4D22038-01 Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110	0.1	20	ZAC	
Nitrate-Nitrogen	23.6	0.50	mg/L	25.0	ND	95	90-110	0.01	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0420 - Wet Chem Prep

Matrix Spike Dup (B4D0420-MSD1)

Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Sulfate	209	5.00	mg/L	100	117	92	90-110	0.002	20	ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110	0.04	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Blank (B4D0444-BLK1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Magnesium	<20.0	20.0	ug/L							ZAC	
Titanium	<5.00	5.00	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Manganese	<0.50	0.50	ug/L							ZAC	
Cobalt	<0.30	0.30	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Molybdenum	<1.00	1.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Tin	<5.00	5.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4D0444-BS1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	26.3	0.50	ug/L	27.8		95	85-115			ZAC	
Magnesium	1060	20.0	ug/L	1110		95	85-115			ZAC	
Titanium	269	5.00	ug/L	278		97	85-115			ZAC	
Chromium	158	3.00	ug/L	167		95	85-115			ZAC	
Manganese	26.9	0.50	ug/L	27.8		97	85-115			ZAC	
Cobalt	16.0	0.30	ug/L	16.7		96	85-115			ZAC	
Nickel	107	2.00	ug/L	111		96	85-115			ZAC	
Copper	106	2.00	ug/L	111		96	85-115			ZAC	
Zinc	265	5.00	ug/L	278		95	85-115			ZAC	
Arsenic	26.4	0.50	ug/L	27.8		95	85-115			ZAC	
Selenium	268	5.00	ug/L	278		96	85-115			ZAC	
Molybdenum	54.4	1.00	ug/L	55.6		98	85-115			ZAC	
Silver	26.9	0.50	ug/L	27.8		97	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

LCS (B4D0444-BS1)

Prepared: 04/22/24 Analyzed: 04/25/24

Cadmium	52.6	1.00	ug/L	55.6		95	85-115			ZAC	
Tin	283	5.00	ug/L	278		102	85-115			ZAC	
Antimony	261	5.00	ug/L	278		94	85-115			ZAC	
Barium	162	3.00	ug/L	167		97	85-115			ZAC	
Thallium	26.8	0.50	ug/L	27.8		96	85-115			ZAC	
Lead	26.6	0.50	ug/L	27.8		96	85-115			ZAC	

Matrix Spike (B4D0444-MS1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1410	25.0	ug/L	1390	ND	101	70-130			ZAC	
Magnesium	61900	1000	ug/L	55600	3190	106	70-130			ZAC	
Titanium	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Chromium	7860	150	ug/L	8330	ND	94	70-130			ZAC	
Manganese	1360	25.0	ug/L	1390	27.5	96	70-130			ZAC	
Cobalt	800	15.0	ug/L	833	ND	96	70-130			ZAC	
Nickel	5270	100	ug/L	5560	ND	95	70-130			ZAC	
Copper	5250	100	ug/L	5560	ND	95	70-130			ZAC	
Zinc	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Arsenic	1270	25.0	ug/L	1390	ND	92	70-130			ZAC	
Selenium	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130			ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130			ZAC	
Cadmium	2790	50.0	ug/L	2780	ND	100	70-130			ZAC	
Tin	14900	250	ug/L	13900	ND	107	70-130			ZAC	
Antimony	14800	250	ug/L	13900	ND	106	70-130			ZAC	
Barium	9270	150	ug/L	8330	55.0	111	70-130			ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130			ZAC	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Matrix Spike Dup (B4D0444-MSD1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1430	25.0	ug/L	1390	ND	103	70-130	2	20	ZAC	
Magnesium	62600	1000	ug/L	55600	3190	107	70-130	1	20	ZAC	
Titanium	13300	250	ug/L	13900	ND	95	70-130	0.9	20	ZAC	
Chromium	7920	150	ug/L	8330	ND	95	70-130	0.7	20	ZAC	
Manganese	1350	25.0	ug/L	1390	27.5	95	70-130	0.9	20	ZAC	
Cobalt	794	15.0	ug/L	833	ND	95	70-130	0.6	20	ZAC	
Nickel	5240	100	ug/L	5560	ND	94	70-130	0.6	20	ZAC	
Copper	5200	100	ug/L	5560	ND	94	70-130	1	20	ZAC	
Zinc	12600	250	ug/L	13900	ND	90	70-130	0.4	20	ZAC	
Arsenic	1280	25.0	ug/L	1390	ND	92	70-130	0.7	20	ZAC	
Selenium	12600	250	ug/L	13900	ND	90	70-130	0.8	20	ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130	0.2	20	ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130	0.2	20	ZAC	
Cadmium	2830	50.0	ug/L	2780	ND	102	70-130	2	20	ZAC	
Tin	15300	250	ug/L	13900	ND	110	70-130	3	20	ZAC	
Antimony	14700	250	ug/L	13900	ND	106	70-130	0.6	20	ZAC	
Barium	9230	150	ug/L	8330	55.0	110	70-130	0.5	20	ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130	0.002	20	ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130	0.08	20	ZAC	

Batch B4E0076 - 3015A

Blank (B4E0076-BLK1)

Prepared: 05/06/24 Analyzed: 05/14/24

Boron	<20.0	20.0	ug/L							ZAC	
Aluminum	<2.50	2.50	ug/L							ZAC	
Iron	<7.00	7.00	ug/L							ZAC	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0076 - 3015A											
LCS (B4E0076-BS1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	998	20.0	ug/L	1110		90	85-115			ZAC	
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Iron	380	7.00	ug/L	389		98	85-115			ZAC	
Matrix Spike (B4E0076-MS1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	57400	1000	ug/L	55600	ND	103	70-130			ZAC	
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
Iron	19400	350	ug/L	19400	127	99	70-130			ZAC	
Matrix Spike (B4E0076-MS2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	59000	1000	ug/L	55600	ND	106	70-130			ZAC	
Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
Iron	19500	350	ug/L	19400	186	99	70-130			ZAC	
Matrix Spike Dup (B4E0076-MSD1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	58800	1000	ug/L	55600	ND	106	70-130	2	20	ZAC	
Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
Iron	19300	350	ug/L	19400	127	99	70-130	0.4	20	ZAC	
Matrix Spike Dup (B4E0076-MSD2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	60800	1000	ug/L	55600	ND	110	70-130	3	20	ZAC	
Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
Iron	19900	350	ug/L	19400	186	101	70-130	2	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:08

Qualifiers, Definitions & Notes

Q8 Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.

E Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory' initial calibration curve & adjusted for initial sample volume or weight.

mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
 Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.# 4022047-01

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 002
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

E.A.S.:#										Analysis Requested																
No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON /T. Phos.	Cl,F,SO4,NO3,Br-NO3+NO2	Alkalinity,Cr6	O&G	TDS/TSS	200.8 Metals/Cr3	Low Level Hg	Available Cyanide	Color	Sulfide	Sulfite	Surfactant-MBAS	on-site pH/Temp F/DO	T. Residual Chlorine-LOW	
01B	Outfall 002	04/22/24	1207	X		2	1 L - P	WW	NONE	X																
01	Outfall 002	04/22/24	1207	X		2	500 mL - P	WW	H2SO4		X															
E	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE				X													
F	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE					X												
G	Outfall 002	04/22/24	1207	X		1	1 L - G	WW	H2SO4						X											
H	Outfall 002	04/22/24	1207	X		1	1 L - P	WW	NONE							X										
I	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	HNO3								X									* Al,Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni 7
J	Outfall 002	04/22/24	1207	X		2	40 mL - V	WW	HCL									X								Se,Ag,Tl,Zn
K	Outfall 002	04/22/24	1207	X		1	250 mL - AP	WW	NAOH										X							B,Co,Fe,Mn,Mg,Mo,Sn,Ti -6
L	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE												X					
M	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	NAOH/ZnAce													X				
N	Outfall 002	04/22/24	1252	X		1	1 L - G	WW	NONE														X			
O	Outfall 002	04/22/24	1207	X		2	1 L - AG	WW	NONE															X		
P	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	NONE																X	
S	Outfall 002	04/22/24	1207	X		1	4 oz - G	WW	NONE																X	

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Yes or N Coole Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)

TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)

SAMPLED BY: JXL

SAMPLED BY PRINT NAME: Tracy Tully

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:

ORGANIZATION:

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:

ORGANIZATION:

RELINQUISHED BY: JXL

RECEIVED AT LABORATORY BY:

ORGANIZATION: E

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCL (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid



ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 4/25/2024 4:44:04 PM

JOB DESCRIPTION

4D22047-01

JOB NUMBER

180-172819-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Generated
4/25/2024 4:44:04 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14



Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D22047-01

Job ID: 180-172819-1

Job ID: 180-172819-1

Eurofins Pittsburgh

Job Narrative 180-172819-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/23/2024 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-172819-1	4D22047-01	Water	04/22/24 12:07	04/23/24 10:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Client Sample ID: 4D22047-01
Date Collected: 04/22/24 12:07
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172819-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	O ₂ A - 1677		1			466468	04/24/24 16:23	SNR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: EET PIT
Batch Type: Analysis
SNR = Sabra Richart

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Client Sample ID: 4D22047-01
Date Collected: 04/22/24 12:07
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172819-1
Matrix: Water

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	Nt		0.0020	0.0016	mg/L			04/24/24 16:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-466468/43

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			04/24/24 16:20	1

Lab Sample ID: LCS 180-466468/44

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0486		mg/L		97	82 - 132

Lab Sample ID: 180-172819-1 MS

Matrix: Water

Analysis Batch: 466468

Client Sample ID: 4D22047-01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	ND		0.0501	0.0530		mg/L		106	82 - 130

Lab Sample ID: 180-172819-1 MSD

Matrix: Water

Analysis Batch: 466468

Client Sample ID: 4D22047-01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Available	ND		0.0501	0.0556		mg/L		111	82 - 130	5	11

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

General Chemistry

Analysis Batch: 466468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-172819-1	4D22047-01	Total/NA	Water	OIA - 1677	
MB 180-466468/43	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-466468/44	Lab Control Sample	Total/NA	Water	OIA - 1677	
180-172819-1 MS	4D22047-01	Total/NA	Water	OIA - 1677	
180-172819-1 MSD	4D22047-01	Total/NA	Water	OIA - 1677	

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22047

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

State of Origin : TX

PO Number : 4D22047

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
-----------	------------	--------	---------	---------------------	----------	----------

4D22047-01	Outfall 002 - Grab	Water	04/22/24 12:07	Containers and Unique ID: Analyses 250 mL - P, NAOH (L) SUB. - Available Cyanide		
------------	--------------------	-------	----------------	---	--	--

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/02/24 11:00



180-172819 Chain of Custody

[Signature]

Released By _____ Date/Time _____

[Signature] 4/22/24 @ 11:30

Received By _____

Date/Time _____

4-23-24 1000

Released By _____ Date/Time _____

Received By _____

Date/Time _____

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-172819-1

Login Number: 172819

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Rucker, Keenyn J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D22047

Dear Scott Boudreaux:

Order No.: 24041707

Summit Environmental Technologies, Inc. received 1 sample(s) on 4/23/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24041707
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D22047

WorkOrder Narrative:

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24041707
03-May-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D22047

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24041707**

Date Reported: **5/3/2024**

Lab ID: 24041707-001

Collection Date: 4/22/2024 12:07:00 PM

Client Sample ID 4D22047-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E		Analyst: TAL	
Mercury	2.38	0.361	0.500		ng/L	1	R184375	4/25/2024 11:40:57 AM
COLOR (SM2120B) 2011					SM 2120-B 2011		Analyst: KMS	
Apparent Color	30.0	0	0		PCU (platinum-cobalt units)	1	R184276	4/23/2024 11:21:00 AM
MBAS - NPW 5540C 2011					SM 5540C 2000		Analyst: CXS	
MBAS	0.14	0.038	0.20	J	mg/L 288.38 MW LAS	1	R184864	4/23/2024 5:00:00 PM
TKN (EPA351.2)					EPA 351MOD 2		Analyst: BJT	
TKN	0.774	0.500	1.00	J	mg/L	1	74923	4/26/2024 12:00:00 PM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: 74923

Sample ID: MB-74923	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024				RunNo: 184460		
Client ID: PBW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000787		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-74923	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: LCSW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000791		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.8	1.00	10.00	0	108	90	110				

Sample ID: 24041763-008ADUP SampType: DUP TestCode: TKN_NPW(35 Units: mg/L Prep Date: 4/25/2024 RunNo: 184460												
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2 E351.2		Analysis Date: 4/26/2024				SeqNo: 5000810		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		ND	1.00						0	0	20	

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000812		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	18.7	1.00	10.00	8.232	105	90	110				

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: 74923

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35	Units: mg/L	Prep Date: 4/25/2024	RunNo: 184460						
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2	E351.2	Analysis Date: 4/26/2024	SeqNo: 5000812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041816-006AMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000813		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		18.9	1.00	10.00	8.232	106	90	110	18.74	0.702	20	

Sample ID: 24041879-003CMS		SampType: MS		TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 4/25/2024			RunNo: 184460	
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000824		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		10.4		1.00	10.00	1.091	93.2	90	110				

Sample ID: 24041879-003CMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000825		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		11.2	1.00	10.00	1.091	101	90	110	10.41	7.00	20	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184276

Sample ID: MB-R184276	SampType: MBLK	TestCode: Color_NPW(2	Units: PCU (platinum	Prep Date:	RunNo: 184276						
Client ID: PBW	Batch ID: R184276	TestNo: A2120B	Analysis Date: 4/23/2024	SeqNo: 4995385							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	ND	0									

Sample ID: LCS-R184276	SampType: LCS	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:				RunNo: 184276		
Client ID: LCSW	Batch ID: R184276	TestNo: A2120B				Analysis Date: 4/23/2024				SeqNo: 4995386		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Apparent Color	50.0	0	50.00	0	100	85	115					

Sample ID: 24041707-001ADUP	SampType: DUP	TestCode: Color_NPW(2	Units: Color Units	Prep Date:	RunNo: 184276						
Client ID: 4D22047-01	Batch ID: R184276	TestNo: A2120B	Analysis Date: 4/23/2024	SeqNo: 4995389							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	30.0	0						30.00	0	0	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank1		SampType: MBLK		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: PBW		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998538			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND		0.500									

Sample ID: LCS		SampType: LCS		TestCode: HG-LL_NPW(		Units: ng/L		Prep Date:		RunNo: 184375			
Client ID: LCSW		Batch ID: R184375		TestNo: E1631				Analysis Date: 4/25/2024		SeqNo: 4998541			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		45.0		0.500	50.00	0	90.0	77	123				

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 184375						
Client ID: PBW	Batch ID: R184375	TestNo: E1631		Analysis Date: 4/25/2024	SeqNo: 4998542						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 184375						
Client ID: PBW	Batch ID: R184375	TestNo: E1631		Analysis Date: 4/25/2024	SeqNo: 4998553						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank3		SampType: MBLK		TestCode: HG-LL_NPW(Units: ng/L		Prep Date:				RunNo: 184375			
Client ID: PBW		Batch ID: R184375		TestNo: E1631		Analysis Date: 4/25/2024				SeqNo: 4998553			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: LCSW		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998554			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		50.2		0.500	50.00	0	100	77	123				

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998555		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	46.7	0.500	50.00	0	93.5	77	123	50.25	7.21	24		

Sample ID: LCS2	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998557		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	53.2	0.500	50.00	0	106	77	123					

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998558		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.478	0.500									J	

Sample ID: mblank5	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998569		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998570		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	50.4	0.500	50.00	0	101	77	123					

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998571		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.6	0.500	50.00	0	101	77	123	50.38	0.499	24	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 184375						
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631		Analysis Date: 4/25/2024	SeqNo: 4998571						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: mblank6	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998576		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Mercury	ND	0.500
---------	----	-------

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: LCSW		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998577			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	50.6	0.500	50.00	0	101	77	123
---------	------	-------	-------	---	-----	----	-----

Sample ID: LFBD		SampType: LCSD		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: LCSS02		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998578			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	52.2	0.500	50.00	0	104	77	123	50.59	3.19	24
---------	------	-------	-------	---	-----	----	-----	-------	------	----

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
W	Sample container temperature is out of limit as specified at testcode

J	Analyte detected below quantitation limits
PL	Permit Limit

M	Manual Integration used to determine area respons
RL	Reporting Detection Limit

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184864

Sample ID: MB-R184864	SampType: MBLK	TestCode: MBAS-NPW(5	Units: mg/L 288.38 M	Prep Date:	RunNo: 184864						
Client ID: PBW	Batch ID: R184864	TestNo: A5540C		Analysis Date: 4/23/2024	SeqNo: 5009979						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	ND	0.20									

Sample ID: LCS-R184864	SampType: LCS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: LCSW	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009981		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0	104	80	120				

Sample ID: 24041706-001AMS		SampType: MS		TestCode: MBAS-NPW(5 Units: mg/L 288.38 M			Prep Date:			RunNo: 184864		
Client ID: BatchQC		Batch ID: R184864		TestNo: A5540C			Analysis Date: 4/23/2024			SeqNo: 5009984		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	1.2	0.20	1.000	0.2110	104	85	115					

Sample ID: 24041706-001AMSD		SampType: MSD	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: BatchQC		Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009985		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	1.2	0.20	1.000	0.2110	103	85	115	1.247	0.644	20		

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184864

Sample ID: 24041706-001AMSD		SampType: MSD		TestCode: MBAS-NPW(5		Units: mg/L 288.38 M		Prep Date:		RunNo: 184864			
Client ID: BatchQC		Batch ID: R184864		TestNo: A5540C				Analysis Date: 4/23/2024		SeqNo: 5009985			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041707-001ADUP	SampType: DUP	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:				RunNo: 184864		
Client ID: 4D22047-01	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024				SeqNo: 5009987		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	0.14	0.20						0.1400	3.64	20	J	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24041707
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22047

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24041707-001A	4D22047-01	4/22/2024 12:07:00 PM	Non-Potable Water	Color (SM2120B) 2011			4/23/2024 11:21:00 AM
				MBAS - NPW 5540C 2011			4/23/2024 5:00:00 PM
24041707-001B				TKN (EPA351.2)		4/25/2024 11:00:00 AM	4/26/2024 12:00:00 PM
24041707-001C				Low-Level Mercury (EPA 1631)			4/25/2024 11:40:57 AM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24041707
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D22047

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
MBAS - NPW 5540C 2011	Non-Potable Water	MBAS	N
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	AR	N	Not Accredited
A-NELA	A	Accredited	A-NELA	N	Not Accredited	CO	U	Unavailable
CT	A	Accredited	CT	N	Not Accredited	L-NELAI	A	Accredited
HI-DW	N	Not Accredited	ID	U	Unavailable	L-NELAF	A	Accredited
L-NELAF	N	Not Accredited	IN_DW	U	Unavailable	S - NELA	N	Not Accredited

Original #1

SUBCONTRACT ORDER

Earth Analytical Sciences, Inc.

Project Number: 4D22047

21041707

SENDING LABORATORY:

Earth Analytical Sciences, Inc.

4825 Ward Dr.

Beaumont, TX 77705

Phone: 409-842-0658

Fax: 409-842-9793

Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies

3310 Win Street

Cuyahoga Falls, OH 44223

Phone : (330) 253-8211

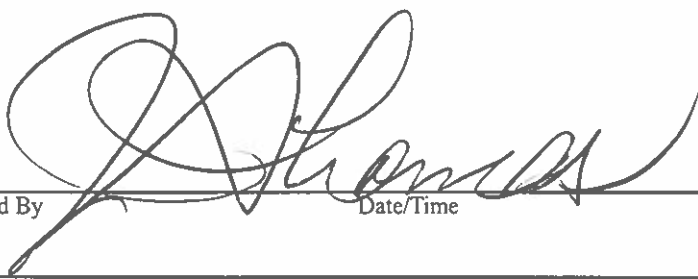
Fax: N/A

State of Origin : TX

Due Date: 05/02/24 11:00

PO Number : 4D22047

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22047-01	Outfall 002 - Grab	Water	04/22/24 12:07	Containers and Unique ID: Analyses 500 mL, P, H2SO4 (D) 40 mL, VOA, HCL (J) 40 mL, VOA, HCL (K) 500 mL, P (M) 1-Liter, AG (P) 1-Liter, AG (Q)	SUB. - Color SUB. - Surfactants SUB. - TKN SUB.-Low Level Mercury	

Released By  Date/Time 4/22/24 @ 1630 Received By  Date/Time 4/23/24 0920

Released By _____ Date/Time _____ Received By _____ Date/Time _____

Page 17 of 18

5.8-0.2=5.6
Fedex cooler

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24041707

RcptNo: 1

Logged by: Christina N. Gemma 4/23/2024 9:20:00 AM

Completed By: Christina N. Gemma 4/23/2024 12:14:08 PM

Reviewed By: Holly Florea 4/24/2024 7:24:53 AM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

14 May 2024

EAS NO.: 4D22047

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 002 - Week 1

Enclosed are the results of analyses for samples received by the laboratory on 04/22/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 002 - Grab	4D22047-01	Wastewater	3.1	04/22/24 12:07	04/22/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Case Narrative

Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.
Subcontracted analysis performed by Summit. Certificate of Analysis is attached.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Outfall 002 - Grab

Work Order #: **4D22047-01** Collection Date & Time : **4/22/2024 12:07:00PM**

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	8.7	0.1	mg/L	04/22/24 12:13	04/22/24 12:13	SM 4500-O G-2016	E1	TT	
pH (on-site)	7.6		pH/°C	04/22/24 12:14	04/22/24 12:14	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	23.9		pH/°C	04/22/24 12:14	04/22/24 12:14	SM 4500-H+ B-2011	E1	TT	
Sulfite	<2.0	2.0	mg/L	04/22/24 12:52	04/22/24 12:52	SM 4500-SO3 B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L	04/22/24 12:17	04/22/24 12:17	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	75.0		°F	04/22/24 12:14	04/22/24 12:14	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO3	82	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	<0.20	0.20	mg/L	04/23/24 16:00	04/23/24 16:00	SM 4500-NH3 D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L	04/22/24 11:20	04/22/24 11:20	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	<4.0	4.0	mg/L	04/22/24 11:25	04/22/24 11:25	SM 5210B-2016		CDR	
Chloride	32.0	2.0	mg/L	04/23/24 11:30	04/23/24 11:30	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	25	5	mg/L	04/23/24 10:55	04/23/24 10:55	HACH 8000		CLB	
Fluoride	<0.10	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/22/24 15:40	04/22/24 15:40	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.2	2.2	mg/L	04/25/24 08:00	04/25/24 08:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO4	3.01	0.62	mg/L	04/26/24 09:25	04/26/24 09:25	SM 4500-P B/E-2011		ZAC	Q8
Sulfide	0.033	0.010	mg/L	04/29/24 10:00	04/29/24 10:00	SM 4500-S2 D-2011		CLB	Q8
Total Dissolved Solids (TDS)	388	20	mg/L	04/23/24 10:30	04/23/24 10:30	SM 2540C-2015		CLB	
Total Organic Carbon	9.88	2.00	mg/L	04/24/24 09:30	04/24/24 09:30	SM 5310C-2014		ZAC	
Total Organic Nitrogen	<1.00	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	<0.003	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	4.6	2.0	mg/L	04/23/24 08:30	04/23/24 08:30	SM 2540D-2015		CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Outfall 002 - Grab

Work Order #: 4D22047-01 Collection Date & Time : 4/22/2024 12:07:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate+Nitrite-Nitrogen	1.24	0.40	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Nitrate-Nitrogen	1.20	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Sulfate	73.4	2.00	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Bromide	0.57	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Total Metals by ICP-MS - EPA Method 200.8/6020									
Boron	49.2	20.0	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Aluminum	61.7	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Iron	127	7.00	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Magnesium	3780	20.0	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Titanium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Chromium	<3.00	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Manganese	23.1	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cobalt	<0.30	0.30	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Nickel	<2.00	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Copper	16.6	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Zinc	112	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Arsenic	1.48	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Molybdenum	375	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	E
Silver	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Tin	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Barium	49.2	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0086 - Field Service Prep											
Blank (B4E0086-BLK1)				Prepared & Analyzed: 04/22/24							
Sulfite	<2.0	2.0	mg/L							TT	
LCS (B4E0086-BS1)				Prepared & Analyzed: 04/22/24							
Sulfite	470	20.0	mg/L	500		94	80-120			TT	
Matrix Spike (B4E0086-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	47.0	2.0	mg/L	50.0	ND	94	80-120			TT	
Matrix Spike Dup (B4E0086-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Sulfite	46.0	2.0	mg/L	50.0	ND	92	80-120	2	20	TT	
Batch B4E0102 - Field Service Prep											
LCS (B4E0102-BS1)				Prepared & Analyzed: 04/22/24							
pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
Duplicate (B4E0102-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Temperature, F.	32.0		°F		79.2			85	200	TT	
pH (on-site)	8.3		pH/°C		8.3			0	20	TT	
Temperature by Field Meter	26.2		pH/°C		26.2			0	20	TT	
Batch B4E0112 - Field Service Prep											
Duplicate (B4E0112-DUP1)				Source: 4D22046-01 Prepared & Analyzed: 04/22/24							
Dissolved Oxygen	7.0	0.1	mg/L		7.3			4	20	TT	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Field Services Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0115 - Field Service Prep

Duplicate (B4E0115-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Chlorine, Total Residual (Low Range)	0.03	0.02	mg/L		0.03			0	20	TT	
--------------------------------------	------	------	------	--	------	--	--	---	----	----	--

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0438 - Wet Chem Prep

Blank (B4D0438-BLK1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
---------------------	--------	-------	------	--	--	--	--	--	--	-----	--

LCS (B4D0438-BS1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400		98	80-110			CLB	
---------------------	-------	-------	------	--------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0438-MS1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400	ND	98	80-120			CLB	
---------------------	-------	-------	------	--------	----	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0438-MSD1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.041	0.003	mg/L	0.0400	ND	102	80-120	5	20	CLB	
---------------------	-------	-------	------	--------	----	-----	--------	---	----	-----	--

Batch B4D0440 - Wet Chem Prep

Blank (B4D0440-BLK1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0440-BS1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	193	2.0	mg/L	198		97	85-115			CDR	
--	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0440-DUP1)

Source: 4D22044-01 Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	7.6	6.6	mg/L		7.9			4	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0442 - Wet Chem Prep

Blank (B4D0442-BLK1)

Prepared & Analyzed: 04/22/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
---	------	-----	------	--	--	--	--	--	--	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0442 - Wet Chem Prep											
LCS (B4D0442-BS1)				Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	208	2.0	mg/L	198		105	85-115			CDR	
Duplicate (B4D0442-DUP1)				Source: 4D22037-01 Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	8.8	4.0	mg/L		9.6			9	20	CDR	
Batch B4D0455 - Wet Chem Prep											
Blank (B4D0455-BLK1)				Prepared & Analyzed: 04/23/24							
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4D0455-BS1)				Prepared & Analyzed: 04/23/24							
Chloride	893	40.0	mg/L	886		101	80-120			DGL	
Matrix Spike (B4D0455-MS1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	298	10.0	mg/L	222	86.0	96	80-120			DGL	
Matrix Spike Dup (B4D0455-MSD1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	297	10.0	mg/L	222	86.0	95	80-120	0.3	20	DGL	
Batch B4D0457 - Wet Chem Prep											
Blank (B4D0457-BLK1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	
LCS (B4D0457-BS1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	3960	40	mg/L	4000		99	80-120			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0457 - Wet Chem Prep											
Matrix Spike (B4D0457-MS1)		Source: 4D23003-02		Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2210	20	mg/L	2000	210	100	80-120			CLB	
Matrix Spike Dup (B4D0457-MSD1)		Source: 4D23003-02		Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2100	20	mg/L	2000	210	94	80-120	5	20	CLB	
Batch B4D0460 - Wet Chem Prep											
Blank (B4D0460-BLK1)		Prepared & Analyzed: 04/23/24									
Chemical Oxygen Demand	<5	5	mg/L							CLB	
LCS (B4D0460-BS1)		Prepared & Analyzed: 04/23/24									
Chemical Oxygen Demand	52	5	mg/L	50.0		104	80-120			CLB	
Matrix Spike (B4D0460-MS1)		Source: 4D22043-01		Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	214	10	mg/L	95.2	110	109	80-120			CLB	
Matrix Spike Dup (B4D0460-MSD1)		Source: 4D22043-01		Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	220	10	mg/L	95.2	110	116	80-120	3	20	CLB	
Batch B4D0462 - Wet Chem Prep											
Blank (B4D0462-BLK1)		Prepared & Analyzed: 04/23/24									
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4D0462-BS1)		Prepared & Analyzed: 04/23/24									
Total Suspended Solids (TSS)	19.0	2.0	mg/L	20.0		95	80-120			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0462 - Wet Chem Prep											
Matrix Spike (B4D0462-MS1)		Source: 4D22033-01		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	40.0	5.0	mg/L	25.0	14.0	104	80-120			CLB	
Matrix Spike (B4D0462-MS2)		Source: 4D23012-02		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	87.0	10.0	mg/L	50.0	32.0	110	80-120			CLB	
Matrix Spike Dup (B4D0462-MSD1)		Source: 4D22033-01		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	38.0	5.0	mg/L	25.0	14.0	96	80-120	5	20	CLB	
Matrix Spike Dup (B4D0462-MSD2)		Source: 4D23012-02		Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	89.0	10.0	mg/L	50.0	32.0	114	80-120	2	20	CLB	
Batch B4D0467 - Wet Chem Prep											
Blank (B4D0467-BLK1)		Prepared & Analyzed: 04/23/24									
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
LCS (B4D0467-BS1)		Prepared & Analyzed: 04/23/24									
Ammonia-Nitrogen	0.99	0.10	mg/L	1.00		99	80-120			AC	
Matrix Spike (B4D0467-MS1)		Source: 4D22044-01		Prepared & Analyzed: 04/23/24							
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120			AC	
Matrix Spike Dup (B4D0467-MSD1)		Source: 4D22044-01		Prepared & Analyzed: 04/23/24							
Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120	0	20	AC	
Batch B4D0468 - Wet Chem Prep											
Blank (B4D0468-BLK1)		Prepared & Analyzed: 04/24/24									
Total Organic Carbon	<1.00	1.00	mg/L							ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0468 - Wet Chem Prep											
LCS (B4D0468-BS1)				Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.1	1.00	mg/L	25.0		100	80-120			ZAC	
Matrix Spike (B4D0468-MS1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120			ZAC	
Matrix Spike Dup (B4D0468-MSD1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120	0	20	ZAC	
Batch B4D0509 - Wet Chem Prep											
Blank (B4D0509-BLK1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	<2.0	2.0	mg/L							HNR	
LCS (B4D0509-BS1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	39.7	2.0	mg/L	40.0		99	78-114			HNR	
Matrix Spike (B4D0509-MS1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.8	2.2	mg/L	43.0	ND	95	78-114			HNR	
Matrix Spike Dup (B4D0509-MSD1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.7	2.2	mg/L	42.6	ND	96	78-114	0.2	18	HNR	
Batch B4D0552 - Wet Chem Prep											
Blank (B4D0552-BLK1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0552 - Wet Chem Prep											
LCS (B4D0552-BS1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	1.04	0.31	mg/L	1.00		104	80-120			ZAC	Q8
Matrix Spike (B4D0552-MS1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120			ZAC	Q8
Matrix Spike Dup (B4D0552-MSD1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120	0	20	ZAC	Q8
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)				Prepared & Analyzed: 04/30/24							
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)				Prepared & Analyzed: 04/30/24							
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0603 - Wet Chem Prep											
Blank (B4D0603-BLK1)				Prepared & Analyzed: 04/29/24							
Sulfide	<0.010	0.010	mg/L							CLB	Q8

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0603 - Wet Chem Prep											
LCS (B4D0603-BS1)				Prepared & Analyzed: 04/29/24							
Sulfide	0.293	0.010	mg/L	0.300		98	80-120			CLB	Q8
Matrix Spike (B4D0603-MS1)				Source: 4D22044-02 Prepared & Analyzed: 04/29/24							
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120			CLB	Q8
Matrix Spike Dup (B4D0603-MSD1)				Source: 4D22044-02 Prepared & Analyzed: 04/29/24							
Sulfide	0.365	0.010	mg/L	0.400	0.011	88	80-120	0	20	CLB	Q8

Batch B4E0025 - Wet Chem Prep

Blank (B4E0025-BLK1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
Matrix Spike (B4E0025-MS1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
Matrix Spike Dup (B4E0025-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0420 - Wet Chem Prep											
Blank (B4D0420-BLK1)				Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	<0.20	0.20	mg/L							ZAC	
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
Bromide	<0.10	0.10	mg/L							ZAC	
LCS (B4D0420-BS1)				Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	10.1		mg/L	10.0		101	90-110			ZAC	
Nitrate-Nitrogen	4.99		mg/L	5.00		100	90-110			ZAC	
Sulfate	20.3		mg/L	20.0		101	90-110			ZAC	
Bromide	5.19		mg/L	5.00		104	90-110			ZAC	
Matrix Spike (B4D0420-MS1)				Source: 4D22038-01 Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110			ZAC	
Nitrate-Nitrogen	23.7	0.50	mg/L	25.0	ND	95	90-110			ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110			ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110			ZAC	
Matrix Spike Dup (B4D0420-MSD1)				Source: 4D22038-01 Prepared & Analyzed: 04/22/24							
Nitrate+Nitrite-Nitrogen	48.4	1.00	mg/L	50.0	ND	97	90-110	0.1	20	ZAC	
Nitrate-Nitrogen	23.6	0.50	mg/L	25.0	ND	95	90-110	0.01	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0420 - Wet Chem Prep

Matrix Spike Dup (B4D0420-MSD1)

Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Sulfate	209	5.00	mg/L	100	117	92	90-110	0.002	20	ZAC	
Bromide	25.1	0.50	mg/L	25.0	0.46	99	90-110	0.04	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0444 - 3015A

Blank (B4D0444-BLK1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Magnesium	<20.0	20.0	ug/L							ZAC	
Titanium	<5.00	5.00	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Manganese	<0.50	0.50	ug/L							ZAC	
Cobalt	<0.30	0.30	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Molybdenum	<1.00	1.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Tin	<5.00	5.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4D0444-BS1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	26.3	0.50	ug/L	27.8		95	85-115			ZAC	
Magnesium	1060	20.0	ug/L	1110		95	85-115			ZAC	
Titanium	269	5.00	ug/L	278		97	85-115			ZAC	
Chromium	158	3.00	ug/L	167		95	85-115			ZAC	
Manganese	26.9	0.50	ug/L	27.8		97	85-115			ZAC	
Cobalt	16.0	0.30	ug/L	16.7		96	85-115			ZAC	
Nickel	107	2.00	ug/L	111		96	85-115			ZAC	
Copper	106	2.00	ug/L	111		96	85-115			ZAC	
Zinc	265	5.00	ug/L	278		95	85-115			ZAC	
Arsenic	26.4	0.50	ug/L	27.8		95	85-115			ZAC	
Selenium	268	5.00	ug/L	278		96	85-115			ZAC	
Molybdenum	54.4	1.00	ug/L	55.6		98	85-115			ZAC	
Silver	26.9	0.50	ug/L	27.8		97	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

LCS (B4D0444-BS1)

Prepared: 04/22/24 Analyzed: 04/25/24

Cadmium	52.6	1.00	ug/L	55.6		95	85-115			ZAC	
Tin	283	5.00	ug/L	278		102	85-115			ZAC	
Antimony	261	5.00	ug/L	278		94	85-115			ZAC	
Barium	162	3.00	ug/L	167		97	85-115			ZAC	
Thallium	26.8	0.50	ug/L	27.8		96	85-115			ZAC	
Lead	26.6	0.50	ug/L	27.8		96	85-115			ZAC	

Matrix Spike (B4D0444-MS1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1410	25.0	ug/L	1390	ND	101	70-130			ZAC	
Magnesium	61900	1000	ug/L	55600	3190	106	70-130			ZAC	
Titanium	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Chromium	7860	150	ug/L	8330	ND	94	70-130			ZAC	
Manganese	1360	25.0	ug/L	1390	27.5	96	70-130			ZAC	
Cobalt	800	15.0	ug/L	833	ND	96	70-130			ZAC	
Nickel	5270	100	ug/L	5560	ND	95	70-130			ZAC	
Copper	5250	100	ug/L	5560	ND	95	70-130			ZAC	
Zinc	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Arsenic	1270	25.0	ug/L	1390	ND	92	70-130			ZAC	
Selenium	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130			ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130			ZAC	
Cadmium	2790	50.0	ug/L	2780	ND	100	70-130			ZAC	
Tin	14900	250	ug/L	13900	ND	107	70-130			ZAC	
Antimony	14800	250	ug/L	13900	ND	106	70-130			ZAC	
Barium	9270	150	ug/L	8330	55.0	111	70-130			ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130			ZAC	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Matrix Spike Dup (B4D0444-MSD1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1430	25.0	ug/L	1390	ND	103	70-130	2	20	ZAC	
Magnesium	62600	1000	ug/L	55600	3190	107	70-130	1	20	ZAC	
Titanium	13300	250	ug/L	13900	ND	95	70-130	0.9	20	ZAC	
Chromium	7920	150	ug/L	8330	ND	95	70-130	0.7	20	ZAC	
Manganese	1350	25.0	ug/L	1390	27.5	95	70-130	0.9	20	ZAC	
Cobalt	794	15.0	ug/L	833	ND	95	70-130	0.6	20	ZAC	
Nickel	5240	100	ug/L	5560	ND	94	70-130	0.6	20	ZAC	
Copper	5200	100	ug/L	5560	ND	94	70-130	1	20	ZAC	
Zinc	12600	250	ug/L	13900	ND	90	70-130	0.4	20	ZAC	
Arsenic	1280	25.0	ug/L	1390	ND	92	70-130	0.7	20	ZAC	
Selenium	12600	250	ug/L	13900	ND	90	70-130	0.8	20	ZAC	
Molybdenum	3070	50.0	ug/L	2780	ND	111	70-130	0.2	20	ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130	0.2	20	ZAC	
Cadmium	2830	50.0	ug/L	2780	ND	102	70-130	2	20	ZAC	
Tin	15300	250	ug/L	13900	ND	110	70-130	3	20	ZAC	
Antimony	14700	250	ug/L	13900	ND	106	70-130	0.6	20	ZAC	
Barium	9230	150	ug/L	8330	55.0	110	70-130	0.5	20	ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130	0.002	20	ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130	0.08	20	ZAC	

Batch B4E0076 - 3015A

Blank (B4E0076-BLK1)

Prepared: 05/06/24 Analyzed: 05/14/24

Boron	<20.0	20.0	ug/L							ZAC	
Aluminum	<2.50	2.50	ug/L							ZAC	
Iron	<7.00	7.00	ug/L							ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0076 - 3015A											
LCS (B4E0076-BS1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	998	20.0	ug/L	1110		90	85-115			ZAC	
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Iron	380	7.00	ug/L	389		98	85-115			ZAC	
Matrix Spike (B4E0076-MS1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	57400	1000	ug/L	55600	ND	103	70-130			ZAC	
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
Iron	19400	350	ug/L	19400	127	99	70-130			ZAC	
Matrix Spike (B4E0076-MS2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	59000	1000	ug/L	55600	ND	106	70-130			ZAC	
Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
Iron	19500	350	ug/L	19400	186	99	70-130			ZAC	
Matrix Spike Dup (B4E0076-MSD1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	58800	1000	ug/L	55600	ND	106	70-130	2	20	ZAC	
Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
Iron	19300	350	ug/L	19400	127	99	70-130	0.4	20	ZAC	
Matrix Spike Dup (B4E0076-MSD2)				Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24							
Boron	60800	1000	ug/L	55600	ND	110	70-130	3	20	ZAC	
Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
Iron	19900	350	ug/L	19400	186	101	70-130	2	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 1
Project Manager: Scott Kolb

Reported:
05/14/24 15:10

Qualifiers, Definitions & Notes

Q8 Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.

E Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory' initial calibration curve & adjusted for initial sample volume or weight.

mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
 Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.# 4022047-01

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 002
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

E.A.S.#										Analysis Requested																
No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON /T. Phos.	Cl,F,SO4,NO3,Br-NO3+NO2	Alkalinity,Cr6	O&G	TDS/TSS	200.8 Metals/Cr3	Low Level Hg	Available Cyanide	Color	Sulfide	Sulfite	Surfactant-MBAS	on-site pH/Temp F/DO	T. Residual Chlorine-LOW	
01AB	Outfall 002	04/22/24	1207	X		2	1 L - P	WW	NONE	X																
01	Outfall 002	04/22/24	1207	X		2	500 mL - P	WW	H2SO4		X															
E	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE				X													
F	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE					X												
G	Outfall 002	04/22/24	1207	X		1	1 L - G	WW	H2SO4						X											
H	Outfall 002	04/22/24	1207	X		1	1 L - P	WW	NONE							X										
I	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	HNO3								X									* Al,Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni 7
J	Outfall 002	04/22/24	1207	X		2	40 mL - V	WW	HCL									X								Se,Ag,Tl,Zn
K	Outfall 002	04/22/24	1207	X		1	250 mL - AP	WW	NAOH										X							B,Co,Fe,Mn,Mg,Mo,Sn,Ti -6
L	Outfall 002	04/22/24	1207	X		1	500 mL - P	WW	NONE												X					
M	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	NAOH/ZnAce													X				
N	Outfall 002	04/22/24	1252	X		1	1 L - G	WW	NONE														X			
O	Outfall 002	04/22/24	1207	X		2	1 L - AG	WW	NONE															X		
P	Outfall 002	04/22/24	1207	X		1	250 mL - P	WW	NONE																X	
S	Outfall 002	04/22/24	1207	X		1	4 oz - G	WW	NONE																X	

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Yes or N Coole Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)

TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)

SAMPLED BY: J. X. L.

SAMPLED BY PRINT NAME: Tracy Tully

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:

ORGANIZATION:

RELINQUISHED BY:

RECEIVED BY:

ORGANIZATION:

ORGANIZATION:

RELINQUISHED BY: J. X. L.

RECEIVED AT LABORATORY BY:

ORGANIZATION:

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCL (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid



ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 4/25/2024 4:44:04 PM

JOB DESCRIPTION

4D22047-01

JOB NUMBER

180-172819-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Generated
4/25/2024 4:44:04 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14



Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D22047-01

Job ID: 180-172819-1

Job ID: 180-172819-1

Eurofins Pittsburgh

Job Narrative 180-172819-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/23/2024 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-172819-1	4D22047-01	Water	04/22/24 12:07	04/23/24 10:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Client Sample ID: 4D22047-01
Date Collected: 04/22/24 12:07
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172819-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	O ₂ A - 1677		1			466468	04/24/24 16:23	SNR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: EET PIT
Batch Type: Analysis
SNR = Sabra Richart

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Client Sample ID: 4D22047-01

Lab Sample ID: 180-172819-1

Date Collected: 04/22/24 12:07

Matrix: Water

Date Received: 04/23/24 10:00

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	Nt		0.0020	0.0016	mg/L			04/24/24 16:23	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-466468/43

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			04/24/24 16:20	1

Lab Sample ID: LCS 180-466468/44

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0486		mg/L		97	82 - 132

Lab Sample ID: 180-172819-1 MS

Matrix: Water

Analysis Batch: 466468

Client Sample ID: 4D22047-01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	ND		0.0501	0.0530		mg/L		106	82 - 130

Lab Sample ID: 180-172819-1 MSD

Matrix: Water

Analysis Batch: 466468

Client Sample ID: 4D22047-01

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Available	ND		0.0501	0.0556		mg/L		111	82 - 130	5	11

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22047-01

Job ID: 180-172819-1

General Chemistry

Analysis Batch: 466468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-172819-1	4D22047-01	Total/NA	Water	OIA - 1677	
MB 180-466468/43	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-466468/44	Lab Control Sample	Total/NA	Water	OIA - 1677	
180-172819-1 MS	4D22047-01	Total/NA	Water	OIA - 1677	
180-172819-1 MSD	4D22047-01	Total/NA	Water	OIA - 1677	

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22047

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

State of Origin : TX

PO Number : 4D22047

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/02/24 11:00

Comments

Analysis

Container type & ID

Sampled

Matrix

Sample Name

Sample ID

Containers and Unique ID: Analyses
250 mL - P, NAOH (L) SUB. - Available Cyanide

04/22/24 12:07

Water

Outfall 002 - Grab

4D22047-01



180-172819 Chain of Custody

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By

Date/Time

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-172819-1

Login Number: 172819

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Rucker, Keenyn J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D22047

Dear Scott Boudreaux:

Order No.: 24041707

Summit Environmental Technologies, Inc. received 1 sample(s) on 4/23/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24041707
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D22047

WorkOrder Narrative:

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24041707
03-May-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D22047

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water
24041707-001	4D22047-01		4/22/2024 12:07:00 PM	4/23/2024 9:20:00 AM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24041707**

Date Reported: **5/3/2024**

Lab ID: 24041707-001

Collection Date: 4/22/2024 12:07:00 PM

Client Sample ID 4D22047-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E		Analyst: TAL	
Mercury	2.38	0.361	0.500		ng/L	1	R184375	4/25/2024 11:40:57 AM
COLOR (SM2120B) 2011					SM 2120-B 2011		Analyst: KMS	
Apparent Color	30.0	0	0		PCU (platinum-cobalt units)	1	R184276	4/23/2024 11:21:00 AM
MBAS - NPW 5540C 2011					SM 5540C 2000		Analyst: CXS	
MBAS	0.14	0.038	0.20	J	mg/L 288.38 MW LAS	1	R184864	4/23/2024 5:00:00 PM
TKN (EPA351.2)					EPA 351MOD 2		Analyst: BJT	
TKN	0.774	0.500	1.00	J	mg/L	1	74923	4/26/2024 12:00:00 PM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: 74923

Sample ID: MB-74923	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024				RunNo: 184460		
Client ID: PBW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000787		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-74923	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: LCSW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000791		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.8	1.00	10.00	0	108	90	110				

Sample ID: 24041763-008ADUP SampType: DUP TestCode: TKN_NPW(35 Units: mg/L Prep Date: 4/25/2024 RunNo: 184460												
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2 E351.2		Analysis Date: 4/26/2024				SeqNo: 5000810		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		ND	1.00						0	0	20	

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000812		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	18.7	1.00	10.00	8.232	105	90	110				

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: 74923

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35	Units: mg/L	Prep Date: 4/25/2024	RunNo: 184460						
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2	E351.2	Analysis Date: 4/26/2024	SeqNo: 5000812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041816-006AMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000813		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		18.9	1.00	10.00	8.232	106	90	110	18.74	0.702	20	

Sample ID: 24041879-003CMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024				RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000824		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	10.4	1.00	10.00	1.091	93.2	90	110					

Sample ID: 24041879-003CMSD	SampType: MSD	TestCode: TKN_NPW(35				Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000825			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	11.2	1.00	10.00	1.091	101	90	110	10.41	7.00	20		

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22047

BatchID: R184276

Sample ID: MB-R184276	SampType: MBLK	TestCode: Color_NPW(2	Units: PCU (platinum	Prep Date:	RunNo: 184276						
Client ID: PBW	Batch ID: R184276	TestNo: A2120B	Analysis Date: 4/23/2024	SeqNo: 4995385							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	ND	0									

Sample ID: LCS-R184276	SampType: LCS	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:				RunNo: 184276		
Client ID: LCSW	Batch ID: R184276	TestNo: A2120B				Analysis Date: 4/23/2024				SeqNo: 4995386		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Apparent Color	50.0	0	50.00	0	100	85	115					

Sample ID: 24041707-001ADUP	SampType: DUP	TestCode: Color_NPW(2	Units: Color Units	Prep Date:	RunNo: 184276						
Client ID: 4D22047-01	Batch ID: R184276	TestNo: A2120B	Analysis Date: 4/23/2024	SeqNo: 4995389							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	30.0	0						30.00	0	0	

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank1	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998538		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998541		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	45.0	0.500	50.00	0	90.0	77	123					

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998542		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998553		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(	Units: ng/L	Prep Date:	RunNo: 184375						
Client ID: PBW	Batch ID: R184375	TestNo: E1631		Analysis Date: 4/25/2024	SeqNo: 4998553						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998554		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.2	0.500	50.00	0	100	77	123				

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998555		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	46.7	0.500	50.00	0	93.5	77	123	50.25	7.21	24		

Sample ID: LCS2	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998557		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	53.2	0.500	50.00	0	106	77	123					

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998558		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.478	0.500									J	

Sample ID: mblank5	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998569		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998570		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.4	0.500	50.00	0	101	77	123				

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998571		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.6	0.500	50.00	0	101	77	123	50.38	0.499	24	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184375

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L	Prep Date:				RunNo: 184375				
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631	Analysis Date: 4/25/2024				SeqNo: 4998571				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: mblank6	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998576		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Mercury ND 0.500

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: LCSW		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998577			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 50.6 0.500 50.00 0 101 77 123

Sample ID: LFBD		SampType: LCSD		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184375			
Client ID: LCSS02		Batch ID: R184375		TestNo: E1631			Analysis Date: 4/25/2024			SeqNo: 4998578			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 52.2 0.500 50.00 0 104 77 123 50.59 3.19 24

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184864

Sample ID: MB-R184864	SampType: MBLK	TestCode: MBAS-NPW(5	Units: mg/L 288.38 M	Prep Date:	RunNo: 184864						
Client ID: PBW	Batch ID: R184864	TestNo: A5540C		Analysis Date: 4/23/2024	SeqNo: 5009979						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	ND	0.20									

Sample ID: LCS-R184864	SampType: LCS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: LCSW	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009981		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0	104	80	120				

Sample ID: 24041706-001AMS		SampType: MS		TestCode: MBAS-NPW(5 Units: mg/L 288.38 M			Prep Date:			RunNo: 184864		
Client ID: BatchQC		Batch ID: R184864		TestNo: A5540C			Analysis Date: 4/23/2024			SeqNo: 5009984		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	1.2	0.20	1.000	0.2110	104	85	115					

Sample ID: 24041706-001AMSD		SampType: MSD	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: BatchQC		Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009985		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MBAS	1.2	0.20	1.000	0.2110	103	85	115	1.247	0.644	20		

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041707

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22047

BatchID: R184864

Sample ID: 24041706-001AMSD		SampType: MSD		TestCode: MBAS-NPW(5		Units: mg/L 288.38 M		Prep Date:		RunNo: 184864			
Client ID: BatchQC		Batch ID: R184864		TestNo: A5540C				Analysis Date: 4/23/2024		SeqNo: 5009985			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041707-001ADUP	SampType: DUP	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184864		
Client ID: 4D22047-01	Batch ID: R184864	TestNo: A5540C				Analysis Date: 4/23/2024			SeqNo: 5009987		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	0.14	0.20						0.1400	3.64	20	J

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24041707
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22047

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24041707-001A	4D22047-01	4/22/2024 12:07:00 PM	Non-Potable Water	Color (SM2120B) 2011			4/23/2024 11:21:00 AM
				MBAS - NPW 5540C 2011			4/23/2024 5:00:00 PM
24041707-001B				TKN (EPA351.2)		4/25/2024 11:00:00 AM	4/26/2024 12:00:00 PM
24041707-001C				Low-Level Mercury (EPA 1631)			4/25/2024 11:40:57 AM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24041707
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D22047

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
MBAS - NPW 5540C 2011	Non-Potable Water	MBAS	N
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	AR	N	Not Accredited
A-NELA	A	Accredited	A-NELA	N	Not Accredited	CO	U	Unavailable
CT	A	Accredited	CT	N	Not Accredited	L-NELAI	A	Accredited
HI-DW	N	Not Accredited	ID	U	Unavailable	L-NELAF	A	Accredited
L-NELAF	N	Not Accredited	IN_DW	U	Unavailable	S - NELA	N	Not Accredited

Original #1

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22047

21041707

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

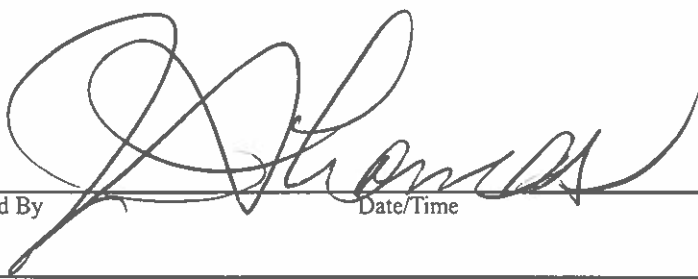
Summit Environmental Technologies
3310 Win Street
Cuyahoga Falls, OH 44223
Phone : (330) 253-8211
Fax: N/A

State of Origin : TX

Due Date: 05/02/24 11:00

PO Number : 4D22047

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22047-01	Outfall 002 - Grab	Water	04/22/24 12:07	<i>Containers and Unique ID: Analyses</i> 500 mL, P, H2SO4 (D) SUB. - Color 40 mL, VOA, HCL (J) SUB. - Surfactants 40 mL, VOA, HCL (K) SUB. - TKN 500 mL, P (M) SUB.-Low Level Mercury 1-Liter, AG (P) 1-Liter, AG (Q)		

Released By  Date/Time 4/22/24 @ 1630 Received By  Date/Time 4/23/24 0920

Released By _____ Date/Time _____ Received By _____ Date/Time _____

Page 17 of 18

5.8-0.2=5.6
Fedex cooler

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24041707

RcptNo: 1

Logged by: Christina N. Gemma 4/23/2024 9:20:00 AM
Completed By: Christina N. Gemma 4/23/2024 12:14:08 PM
Reviewed By: Holly Florea 4/24/2024 7:24:53 AM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

14 May 2024

EAS NO.: 4D29045

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 002 - Week 2

Enclosed are the results of analyses for samples received by the laboratory on 04/29/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 002 - Grab	4D29045-01	Wastewater	3.1	04/29/24 12:40	04/29/24 13:35
Outfall 002 - Grab	4D29045-02	Wastewater	3.1	04/29/24 13:06	04/29/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Case Narrative

Subcontracted analysis performed by Summit. Certificate of Analysis is attached.
Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Outfall 002 - Grab

Work Order #: **4D29045-01** Collection Date & Time: **4/29/2024 12:40:00PM**

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	7.3	0.1	mg/L	04/29/24 12:45	04/29/24 12:45	SM 4500-O G-2016	E1	TT	
pH (on-site)	7.2		pH/°C	04/29/24 12:51	04/29/24 12:51	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	22.9		pH/°C	04/29/24 12:51	04/29/24 12:51	SM 4500-H+ B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L	04/29/24 12:50	04/29/24 12:50	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	73.2		°F	04/29/24 12:51	04/29/24 12:51	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO ₃	76	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	<0.20	0.20	mg/L	05/04/24 13:15	05/04/24 13:15	SM 4500-NH ₃ D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L	04/29/24 11:15	04/29/24 11:15	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	<4.0	4.0	mg/L	04/29/24 11:20	04/29/24 11:20	SM 5210B-2016		CDR	
Chloride	9.6	2.0	mg/L	05/02/24 14:00	05/02/24 14:00	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	15	5	mg/L	05/01/24 09:15	05/01/24 09:15	HACH 8000		CLB	
Fluoride	0.14	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/29/24 16:30	04/29/24 16:30	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.2	2.2	mg/L	04/30/24 06:00	04/30/24 06:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO ₄	1.17	0.62	mg/L	05/08/24 11:30	05/08/24 11:30	SM 4500-P B/E-2011		ZAC	Q8
Sulfide	0.019	0.010	mg/L	05/02/24 10:00	05/02/24 10:00	SM 4500-S ₂ D-2011		CLB	Q8
Total Dissolved Solids (TDS)	268	40	mg/L	05/01/24 14:20	05/01/24 14:20	SM 2540C-2015		CLB	
Total Organic Carbon	4.86	2.00	mg/L	04/30/24 08:00	04/30/24 08:00	SM 5310C-2014		ZAC	
Total Organic Nitrogen	<1.00	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	0.004	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	9.4	2.0	mg/L	04/30/24 08:00	04/30/24 08:00	SM 2540D-2015		CLB	
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate+Nitrite-Nitrogen	1.60	0.40	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Nitrate-Nitrogen	1.57	0.20	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Sulfate	82.4	2.00	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Bromide	<0.20	0.20	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Outfall 002 - Grab

Work Order # : 4D29045-01 Collection Date & Time : 4/29/2024 12:40:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Total Metals by ICP-MS - EPA Method 200.8/6020									
Boron	41.6	20.0	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Aluminum	191	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Iron	251	7.00	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Magnesium	5280	20.0	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	E
Titanium	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Chromium	3.98	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Manganese	46.4	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Cobalt	0.35	0.30	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Nickel	<2.00	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Copper	16.4	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Zinc	149	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Arsenic	1.23	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Molybdenum	36.7	1.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Silver	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Tin	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Barium	43.0	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	

Outfall 002 - Grab

Work Order # : 4D29045-02 Collection Date & Time : 4/29/2024 1:06:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Sulfite	<2.0	2.0	mg/L	04/29/24 13:20	04/29/24 13:20	SM 4500-SO3 B-2011	E1	TT	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0089 - Field Service Prep											
Blank (B4E0089-BLK1)				Prepared & Analyzed: 04/29/24							
Sulfite	<2.0	2.0	mg/L							TT	
LCS (B4E0089-BS1)				Prepared & Analyzed: 04/29/24							
Sulfite	470	20.0	mg/L	500		94	80-120			TT	
Matrix Spike (B4E0089-MS1)				Source: 4D29043-02 Prepared & Analyzed: 04/29/24							
Sulfite	46.0	2.0	mg/L	50.0	ND	92	80-120			TT	
Matrix Spike Dup (B4E0089-MSD1)				Source: 4D29043-02 Prepared & Analyzed: 04/29/24							
Sulfite	47.0	2.0	mg/L	50.0	ND	94	80-120	2	20	TT	
Batch B4E0105 - Field Service Prep											
LCS (B4E0105-BS1)				Prepared & Analyzed: 04/29/24							
pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
Duplicate (B4E0105-DUP1)				Source: 4D29043-01 Prepared & Analyzed: 04/29/24							
Temperature, F.	84.0		°F		84.0			0	200	TT	
pH (on-site)	8.4		pH/°C		8.4			0	20	TT	
Temperature by Field Meter	28.9		pH/°C		28.9			0	20	TT	
Batch B4E0113 - Field Service Prep											
Duplicate (B4E0113-DUP1)				Source: 4D29043-01 Prepared & Analyzed: 04/29/24							
Dissolved Oxygen	6.1	0.1	mg/L		6.5			6	20	TT	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Field Services Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0117 - Field Service Prep

Duplicate (B4E0117-DUP1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L		ND				20	TT	
--------------------------------------	-------	------	------	--	----	--	--	--	----	----	--

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0561 - Wet Chem Prep

Blank (B4D0561-BLK1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	<1.00	1.00	mg/L							ZAC	
----------------------	-------	------	------	--	--	--	--	--	--	-----	--

LCS (B4D0561-BS1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	24.8	1.00	mg/L	25.0		99	80-120			ZAC	
----------------------	------	------	------	------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0561-MS1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.0	1.00	mg/L	20.0	6.93	95	80-120			ZAC	
----------------------	------	------	------	------	------	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0561-MSD1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.1	1.00	mg/L	20.0	6.93	96	80-120	0.4	20	ZAC	
----------------------	------	------	------	------	------	----	--------	-----	----	-----	--

Batch B4D0574 - Wet Chem Prep

Blank (B4D0574-BLK1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0574-BS1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	175	2.0	mg/L	198		88	85-115			CDR	
--	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0574-DUP1)

Source: 4D29012-01 Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	8.0	4.0	mg/L		8.0			0	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0575 - Wet Chem Prep

Blank (B4D0575-BLK1)

Prepared & Analyzed: 04/29/24

Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
---	------	-----	------	--	--	--	--	--	--	-----	--

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0575 - Wet Chem Prep											
LCS (B4D0575-BS1)				Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	178	2.0	mg/L	198		90	85-115			CDR	
Duplicate (B4D0575-DUP1)				Source: 4D29012-01 Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.8	4.0	mg/L		7.0			3	20	CDR	
Batch B4D0584 - Wet Chem Prep											
Blank (B4D0584-BLK1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	<2.1	2.1	mg/L							HNR	
LCS (B4D0584-BS1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	40.7	2.1	mg/L	40.0		102	78-114			HNR	
Matrix Spike (B4D0584-MS1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	43.5	2.3	mg/L	45.5	ND	96	78-114			HNR	
Matrix Spike Dup (B4D0584-MSD1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	45.6	2.4	mg/L	47.6	ND	96	78-114	5	18	HNR	
Batch B4D0587 - Wet Chem Prep											
Blank (B4D0587-BLK1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
LCS (B4D0587-BS1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400		95	80-110			CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0587 - Wet Chem Prep											
Matrix Spike (B4D0587-MS1)		Source: 4D29048-01		Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.037	0.003	mg/L	0.0400	ND	92	80-120			CLB	
Matrix Spike Dup (B4D0587-MSD1)		Source: 4D29048-01		Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400	ND	95	80-120	3	20	CLB	
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)		Prepared & Analyzed: 04/30/24									
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)		Prepared & Analyzed: 04/30/24									
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)		Source: 4D22046-01		Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)		Source: 4D22046-01		Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0604 - Wet Chem Prep											
Blank (B4D0604-BLK1)		Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4D0604-BS1)		Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	21.0	2.0	mg/L	20.0		105	80-120			CLB	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0604 - Wet Chem Prep											
Matrix Spike (B4D0604-MS1)		Source: 4D29041-01 Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120			CLB	
Matrix Spike Dup (B4D0604-MSD1)		Source: 4D29041-01 Prepared & Analyzed: 04/30/24									
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120	0	20	CLB	
Batch B4E0016 - Wet Chem Prep											
Blank (B4E0016-BLK1)		Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	<5	5	mg/L							CLB	
LCS (B4E0016-BS1)		Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	50	5	mg/L	50.0		100	80-120			CLB	
Matrix Spike (B4E0016-MS1)		Source: 4D29041-01 Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120			CLB	
Matrix Spike Dup (B4E0016-MSD1)		Source: 4D29041-01 Prepared & Analyzed: 05/01/24									
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120	0	20	CLB	
Batch B4E0025 - Wet Chem Prep											
Blank (B4E0025-BLK1)		Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)		Prepared & Analyzed: 05/01/24									
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0025 - Wet Chem Prep											
Matrix Spike (B4E0025-MS1)		Source: 4D22046-01		Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
Matrix Spike Dup (B4E0025-MSD1)		Source: 4D22046-01		Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	
Batch B4E0027 - Wet Chem Prep											
Blank (B4E0027-BLK1)		Prepared & Analyzed: 05/01/24									
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	
LCS (B4E0027-BS1)		Prepared & Analyzed: 05/01/24									
Total Dissolved Solids (Source)	4060	40	mg/L	4000		102	80-120			CLB	
Matrix Spike (B4E0027-MS1)		Source: 4D30025-02		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2350	40	mg/L	2000	242	105	80-120			CLB	
Matrix Spike (B4E0027-MS2)		Source: 4E01033-03		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2460	40	mg/L	2000	436	101	80-120			CLB	
Matrix Spike Dup (B4E0027-MSD1)		Source: 4D30025-02		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2300	40	mg/L	2000	242	103	80-120	2	20	CLB	
Matrix Spike Dup (B4E0027-MSD2)		Source: 4E01033-03		Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (Source)	2460	40	mg/L	2000	436	101	80-120	0	20	CLB	
Batch B4E0048 - Wet Chem Prep											
Blank (B4E0048-BLK1)		Prepared & Analyzed: 05/02/24									
Sulfide	<0.010	0.010	mg/L							CLB	Q8

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0048 - Wet Chem Prep											
LCS (B4E0048-BS1)				Prepared & Analyzed: 05/02/24							
Sulfide	0.312	0.010	mg/L	0.300		104	80-120			CLB	Q8
Matrix Spike (B4E0048-MS1)				Source: 4D29042-02 Prepared & Analyzed: 05/02/24							
Sulfide	0.390	0.010	mg/L	0.400	ND	97	80-120			CLB	Q8
Matrix Spike Dup (B4E0048-MSD1)				Source: 4D29042-02 Prepared & Analyzed: 05/02/24							
Sulfide	0.390	0.010	mg/L	0.400	ND	97	80-120	0	20	CLB	Q8
Batch B4E0050 - Wet Chem Prep											
Blank (B4E0050-BLK1)				Prepared & Analyzed: 05/02/24							
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4E0050-BS1)				Prepared & Analyzed: 05/02/24							
Chloride	876	2.0	mg/L	886		99	80-120			DGL	
Matrix Spike (B4E0050-MS1)				Source: 4D29045-01 Prepared & Analyzed: 05/02/24							
Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120			DGL	
Matrix Spike Dup (B4E0050-MSD1)				Source: 4D29045-01 Prepared & Analyzed: 05/02/24							
Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120	0	20	DGL	
Batch B4E0071 - Wet Chem Prep											
Blank (B4E0071-BLK1)				Prepared & Analyzed: 05/04/24							
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0071 - Wet Chem Prep

LCS (B4E0071-BS1)

Prepared & Analyzed: 05/04/24

Ammonia-Nitrogen	0.96	0.10	mg/L	1.00		96	80-120			AC	
------------------	------	------	------	------	--	----	--------	--	--	----	--

Matrix Spike (B4E0071-MS1)

Source: 4D29045-01 Prepared & Analyzed: 05/04/24

Ammonia-Nitrogen	2.02	0.20	mg/L	2.00	ND	101	80-120			AC	
------------------	------	------	------	------	----	-----	--------	--	--	----	--

Matrix Spike (B4E0071-MS2)

Source: 4E03041-01 Prepared & Analyzed: 05/04/24

Ammonia-Nitrogen	2.12	0.20	mg/L	2.00	ND	106	80-120			AC	
------------------	------	------	------	------	----	-----	--------	--	--	----	--

Matrix Spike Dup (B4E0071-MSD1)

Source: 4D29045-01 Prepared & Analyzed: 05/04/24

Ammonia-Nitrogen	2.02	0.20	mg/L	2.00	ND	101	80-120	0	20	AC	
------------------	------	------	------	------	----	-----	--------	---	----	----	--

Matrix Spike Dup (B4E0071-MSD2)

Source: 4E03041-01 Prepared & Analyzed: 05/04/24

Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	ND	107	80-120	0.9	20	AC	
------------------	------	------	------	------	----	-----	--------	-----	----	----	--

Batch B4E0176 - Wet Chem Prep

Blank (B4E0176-BLK1)

Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8
--------------------------	-------	------	------	--	--	--	--	--	--	-----	----

LCS (B4E0176-BS1)

Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	1.01	0.31	mg/L	1.00		101	80-120			ZAC	Q8
--------------------------	------	------	------	------	--	-----	--------	--	--	-----	----

Matrix Spike (B4E0176-MS1)

Source: 4E06054-01 Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	3.01	0.62	mg/L	2.00	1.04	98	80-120			ZAC	Q8
--------------------------	------	------	------	------	------	----	--------	--	--	-----	----

Matrix Spike Dup (B4E0176-MSD1)

Source: 4E06054-01 Prepared & Analyzed: 05/08/24

Phosphorus, Total as PO4	3.19	0.62	mg/L	2.00	1.04	108	80-120	6	20	ZAC	Q8
--------------------------	------	------	------	------	------	-----	--------	---	----	-----	----

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0585 - Wet Chem Prep

Blank (B4D0585-BLK1)

Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	<0.20	0.20	mg/L							ZAC	
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
Bromide	<0.10	0.10	mg/L							ZAC	

LCS (B4D0585-BS1)

Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	10.1		mg/L	10.0		101	90-110			ZAC	
Nitrate-Nitrogen	4.97		mg/L	5.00		99	90-110			ZAC	
Sulfate	20.4		mg/L	20.0		102	90-110			ZAC	
Bromide	5.11		mg/L	5.00		102	90-110			ZAC	

Matrix Spike (B4D0585-MS1)

Source: 4D24045-01 Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	94.0	2.00	mg/L	100	ND	94	90-110			ZAC	
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110			ZAC	
Sulfate	221	10.0	mg/L	200	25.9	97	90-110			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0585 - Wet Chem Prep

Matrix Spike (B4D0585-MS1) Source: 4D24045-01 Prepared & Analyzed: 04/30/24

Bromide	50.2	1.00	mg/L	50.0	3.29	94	90-110			ZAC	
---------	------	------	------	------	------	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0585-MSD1) Source: 4D24045-01 Prepared & Analyzed: 04/30/24

Nitrate+Nitrite-Nitrogen	94.1	2.00	mg/L	100	ND	94	90-110	0.03	20	ZAC	
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110	0.08	20	ZAC	
Sulfate	220	10.0	mg/L	200	25.9	97	90-110	0.1	20	ZAC	
Bromide	50.2	1.00	mg/L	50.0	3.29	94	90-110	0.06	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0076 - 3015A

Blank (B4E0076-BLK1) Prepared: 05/06/24 Analyzed: 05/14/24

Boron	<20.0	20.0	ug/L							ZAC	
Aluminum	<2.50	2.50	ug/L							ZAC	
Iron	<7.00	7.00	ug/L							ZAC	

LCS (B4E0076-BS1) Prepared: 05/06/24 Analyzed: 05/14/24

Boron	998	20.0	ug/L	1110		90	85-115			ZAC	
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Iron	380	7.00	ug/L	389		98	85-115			ZAC	

Matrix Spike (B4E0076-MS1) Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24

Boron	57400	1000	ug/L	55600	ND	103	70-130			ZAC	
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
Iron	19400	350	ug/L	19400	127	99	70-130			ZAC	

Matrix Spike (B4E0076-MS2) Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Boron	59000	1000	ug/L	55600	ND	106	70-130			ZAC	
Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
Iron	19500	350	ug/L	19400	186	99	70-130			ZAC	

Matrix Spike Dup (B4E0076-MSD1) Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24

Boron	58800	1000	ug/L	55600	ND	106	70-130	2	20	ZAC	
Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
Iron	19300	350	ug/L	19400	127	99	70-130	0.4	20	ZAC	

Matrix Spike Dup (B4E0076-MSD2) Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Boron	60800	1000	ug/L	55600	ND	110	70-130	3	20	ZAC	
Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
Iron	19900	350	ug/L	19400	186	101	70-130	2	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0080 - 3015A

Blank (B4E0080-BLK1)

Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Magnesium	<20.0	20.0	ug/L							ZAC	
Titanium	<5.00	5.00	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Manganese	<0.50	0.50	ug/L							ZAC	
Cobalt	<0.30	0.30	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Molybdenum	<1.00	1.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Tin	<5.00	5.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4E0080-BS1)

Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	29.4	0.50	ug/L	27.8		106	85-115			ZAC	
Magnesium	1150	20.0	ug/L	1110		104	85-115			ZAC	
Titanium	286	5.00	ug/L	278		103	85-115			ZAC	
Chromium	170	3.00	ug/L	167		102	85-115			ZAC	
Manganese	27.1	0.50	ug/L	27.8		98	85-115			ZAC	
Cobalt	17.3	0.30	ug/L	16.7		104	85-115			ZAC	
Nickel	115	2.00	ug/L	111		103	85-115			ZAC	
Copper	115	2.00	ug/L	111		104	85-115			ZAC	
Zinc	281	5.00	ug/L	278		101	85-115			ZAC	
Arsenic	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Selenium	280	5.00	ug/L	278		101	85-115			ZAC	
Molybdenum	55.3	1.00	ug/L	55.6		100	85-115			ZAC	
Silver	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Cadmium	55.7	1.00	ug/L	55.6		100	85-115			ZAC	
Tin	273	5.00	ug/L	278		98	85-115			ZAC	
Antimony	282	5.00	ug/L	278		101	85-115			ZAC	
Barium	168	3.00	ug/L	167		101	85-115			ZAC	
Thallium	28.3	0.50	ug/L	27.8		102	85-115			ZAC	
Lead	28.1	0.50	ug/L	27.8		101	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0080 - 3015A

Matrix Spike (B4E0080-MS1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Magnesium	63800	1000	ug/L	55600	5240	105	70-130			ZAC	
Titanium	13900	250	ug/L	13900	56.1	99	70-130			ZAC	
Chromium	8310	150	ug/L	8330	ND	100	70-130			ZAC	
Manganese	1370	25.0	ug/L	1390	62.9	94	70-130			ZAC	
Cobalt	853	15.0	ug/L	833	ND	102	70-130			ZAC	
Nickel	5740	100	ug/L	5560	ND	103	70-130			ZAC	
Copper	5660	100	ug/L	5560	ND	102	70-130			ZAC	
Zinc	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Arsenic	1340	25.0	ug/L	1390	ND	97	70-130			ZAC	
Selenium	13100	250	ug/L	13900	ND	94	70-130			ZAC	
Molybdenum	2730	50.0	ug/L	2780	9.69	98	70-130			ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130			ZAC	
Cadmium	2700	50.0	ug/L	2780	ND	97	70-130			ZAC	
Tin	13000	250	ug/L	13900	ND	94	70-130			ZAC	
Antimony	14200	250	ug/L	13900	ND	102	70-130			ZAC	
Barium	8350	150	ug/L	8330	34.0	100	70-130			ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130			ZAC	
Lead	1400	25.0	ug/L	1390	ND	101	70-130			ZAC	

Matrix Spike Dup (B4E0080-MSD1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1470	25.0	ug/L	1390	ND	106	70-130	1	20	ZAC	
Magnesium	63000	1000	ug/L	55600	5240	104	70-130	1	20	ZAC	
Titanium	14100	250	ug/L	13900	56.1	101	70-130	2	20	ZAC	
Chromium	8390	150	ug/L	8330	ND	101	70-130	1	20	ZAC	
Manganese	1360	25.0	ug/L	1390	62.9	93	70-130	1	20	ZAC	
Cobalt	846	15.0	ug/L	833	ND	102	70-130	0.8	20	ZAC	
Nickel	5620	100	ug/L	5560	ND	101	70-130	2	20	ZAC	
Copper	5600	100	ug/L	5560	ND	101	70-130	1	20	ZAC	
Zinc	13200	250	ug/L	13900	ND	95	70-130	0.2	20	ZAC	
Arsenic	1350	25.0	ug/L	1390	ND	97	70-130	0.5	20	ZAC	
Selenium	13200	250	ug/L	13900	ND	95	70-130	0.8	20	ZAC	
Molybdenum	2760	50.0	ug/L	2780	9.69	99	70-130	1	20	ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130	0.03	20	ZAC	
Cadmium	2730	50.0	ug/L	2780	ND	98	70-130	1	20	ZAC	
Tin	13200	250	ug/L	13900	ND	95	70-130	1	20	ZAC	
Antimony	14100	250	ug/L	13900	ND	102	70-130	0.5	20	ZAC	
Barium	8380	150	ug/L	8330	34.0	100	70-130	0.4	20	ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130	0.3	20	ZAC	
Lead	1410	25.0	ug/L	1390	ND	102	70-130	0.6	20	ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 002 - Week 2
Project Manager: Scott Kolb

Reported:
05/14/24 15:12

Qualifiers, Definitions & Notes

Q8 **Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.**

E **Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory' initial calibration curve & adjusted for initial sample volume or weight.**

mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
 Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.# 4029045-01-02

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 002
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

										Analysis Requested																
No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON /T. Phos	Cl,F,SO4,NO3,Br-,NO3+NO2	Alkalinity,Cr6	O&G	TDS/TSS	200.8 Metals/Cr3	Low Level Hg	Available Cyanide	Color	Sulfide	Sulfite	Surfactant-MBAS	on-site pH/Temp F/DO	T. Residual Chlorine-LOW	
01A3	Outfall 002	04/29/24	1240	X		2	1 L - P	WW	NONE	X																
CD	Outfall 002	04/29/24	1240	X		2	500 mL - P	WW	H2SO4		X															
E	Outfall 002	04/29/24	1240	X		1	500 mL - P	WW	NONE				X													
F	Outfall 002	04/29/24	1240	X		1	500 mL - P	WW	NONE					X												
G	Outfall 002	04/29/24	1240	X		1	1 L - G	WW	H2SO4						X											
H	Outfall 002	04/29/24	1240	X		1	1 L - P	WW	NONE							X										
I	Outfall 002	04/29/24	1240	X		1	250 mL - P	WW	HNO3								X									* Al,Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni
J	Outfall 002	04/29/24	1240	X		2	40 mL - V	WW	HCL									X								Se,Ag,Tl,Zn
K	Outfall 002	04/29/24	1240	X		1	250 mL - AP	WW	NAOH										X							B,Co,Fe,Mn,Mg,Mo,Sn,Ti
LM	Outfall 002	04/29/24	1240	X		1	500 mL - P	WW	NONE											X						
N	Outfall 002	04/29/24	1240	X		1	250 mL - P	WW	NAOH/ZnAce												X					
OA	Outfall 002	04/29/24	1306	X		1	1 L - G	WW	NONE													X				
OP	Outfall 002	04/29/24	1240	X		2	1 L - AG	WW	NONE														X			
Q	Outfall 002	04/29/24	1240	X		1	250 mL - P	WW	NONE															X		
R	Outfall 002	04/29/24	1240	X		1	4 oz - G	WW	NONE																X	

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or N Coole Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)

TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)

SAMPLED BY: J200

SAMPLED BY PRINT NAME: Tracy Tubbs

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY: J200

DATE: 04/29/24

RECEIVED AT LABORATORY BY: J. Hernandez

ORGANIZATION: 6

TIME: 1335

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCl (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid

FRM-SC1
 Revision 5
 12-28-2009



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D29045

Dear Scott Boudreaux:

Order No.: 24042240

Summit Environmental Technologies, Inc. received 1 sample(s) on 4/30/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

A handwritten signature in black ink that reads 'Salwa Najjar'.

Salwa A. Najjar

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24042240
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D29045

WorkOrder Narrative:

24042240: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:

24042240-001A Color_NPW(2120B)2011: Sample was recieved/analyzed out of hold.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24042240
03-May-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D29045

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24042240-001	4D29045-01		4/29/2024 12:40:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042240-001	4D29045-01		4/29/2024 12:40:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042240-001	4D29045-01		4/29/2024 12:40:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24042240**

Date Reported: **5/3/2024**

Lab ID: 24042240-001

Collection Date: 4/29/2024 12:40:00 PM

Client Sample ID 4D29045-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E		Analyst: TAL	
Mercury	3.59	0.361	0.500		ng/L	1	R184822	5/2/2024 10:55:27 AM
COLOR (SM2120B) 2011					SM 2120-B 2011		Analyst: KMS	
Apparent Color	30.0	0	0	H	PCU (platinum-cobalt units)	1	R184721	5/1/2024 9:37:00 AM
MBAS - NPW 5540C 2011					SM 5540C 2000		Analyst: CXS	
MBAS	0.077	0.038	0.20	J	mg/L 288.38 MW LAS	1	R184883	4/30/2024 6:00:00 PM
TKN (EPA351.2)					EPA 351MOD 2		Analyst: BJT	
TKN	0.599	0.500	1.00	J	mg/L	1	75029	5/2/2024 2:15:00 PM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29045

BatchID: 75029

Sample ID: MB-75029	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: PBW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009603		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-75029	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024			RunNo: 184847		
Client ID: LCSW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009604		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.1	1.00	10.00	0	101	90	110				

Sample ID: 24042239-001DMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: BatchQC	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009609		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	19.3	1.00	10.00	8.849	104	90	110					

Sample ID: 24042239-001DMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 5/1/2024			RunNo: 184847		
Client ID: BatchQC		Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009610		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	19.1	1.00	10.00	8.849	103	90	110	19.28	0.708	20		

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29045

BatchID: 75029

Sample ID: 24042239-001DMSD		SampType: MSD		TestCode: TKN_NPW(35		Units: mg/L		Prep Date: 5/1/2024			RunNo: 184847		
Client ID: BatchQC		Batch ID: 75029		TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009610		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24042240-001BDUP		SampType: DUP	TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 5/1/2024			RunNo: 184847	
Client ID: 4D29045-01		Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009612		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		0.572	1.00						0.5990	4.61	20	J

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area response
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29045

BatchID: R184721

Sample ID: MB-R184721	SampType: MBLK	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:				RunNo: 184721		
Client ID: PBW	Batch ID: R184721	TestNo: A2120B				Analysis Date: 5/1/2024				SeqNo: 5006634		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Apparent Color	ND	0										

Sample ID: LCS-R184721	SampType: LCS	TestCode: Color_NPW(2 Units: PCU (platinum				Prep Date:			RunNo: 184721		
Client ID: LCSW	Batch ID: R184721	TestNo: A2120B				Analysis Date: 5/1/2024			SeqNo: 5006635		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color	50.0	0	50.00	0	100	85	115				

Sample ID: 24042239-001ADUP		SampType: DUP		TestCode: Color_NPW(2		Units: Color Units		Prep Date:		RunNo: 184721			
Client ID: BatchQC		Batch ID: R184721		TestNo: A2120B				Analysis Date: 5/1/2024		SeqNo: 5006637			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Apparent Color		55.0		0						55.00	0	0	H

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29045

BatchID: R184822

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	47.5	0.500	50.00	0	95.1	77	123				

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024				SeqNo: 5008978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631			Analysis Date: 5/2/2024				SeqNo: 5008989		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008990		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.1	0.500	50.00	0	100	77	123				

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area response
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29045

BatchID: R184822

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184822			
Client ID: LCSW		Batch ID: R184822		TestNo: E1631			Analysis Date: 5/2/2024			SeqNo: 5008990			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008991		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	48.5	0.500	50.00	0	97.0	77	123	50.12	3.29	24	

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024				SeqNo: 5008993		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024				SeqNo: 5008994		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	49.9	0.500	50.00	0	99.9	77	123					

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29045

BatchID: R184822

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008995		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.7	0.500	50.00	0	101	77	123	49.94	1.49	24	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29045

BatchID: R184883

Sample ID: MB-R184883	SampType: MBLK	TestCode: MBAS-NPW(5	Units: mg/L 288.38 M	Prep Date:	RunNo: 184883						
Client ID: PBW	Batch ID: R184883	TestNo: A5540C		Analysis Date: 4/30/2024	SeqNo: 5010243						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	ND	0.20									

Sample ID: LCS-R184883	SampType: LCS	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: LCSW	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010245		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0	101	80	120				

Sample ID: 24042239-001AMS		SampType: MS		TestCode: MBAS-NPW(5 Units: mg/L 288.38 M			Prep Date:			RunNo: 184883			
Client ID: BatchQC		Batch ID: R184883		TestNo: A5540C			Analysis Date: 4/30/2024			SeqNo: 5010248			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS		1.0		0.20	1.000	0.1350	87.4	85	115				

Sample ID: 24042239-001AMSD	SampType: MSD	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: BatchQC	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010249		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	1.0	0.20	1.000	0.1350	87.0	85	115	1.009	0.397	20	

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042240

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29045

BatchID: R184883

Sample ID: 24042239-001AMSD		SampType: MSD		TestCode: MBAS-NPW(5		Units: mg/L 288.38 M		Prep Date:		RunNo: 184883	
Client ID: BatchQC		Batch ID: R184883		TestNo: A5540C		Analysis Date: 4/30/2024		SeqNo: 5010249			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24042240-001ADUP	SampType: DUP	TestCode: MBAS-NPW(5 Units: mg/L 288.38 M				Prep Date:			RunNo: 184883		
Client ID: 4D29045-01	Batch ID: R184883	TestNo: A5540C				Analysis Date: 4/30/2024			SeqNo: 5010251		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MBAS	0.085	0.20						0.07700	9.88	20	J

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
W Sample container temperature is out of limit as specified at testcode

J Analyte detected below quantitation limits
PL Permit Limit

M Manual Integration used to determine area respons
RL Reporting Detection Limit

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24042240
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29045

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24042240-001A	4D29045-01	4/29/2024 12:40:00 PM	Non-Potable Water	Color (SM2120B) 2011			5/1/2024 9:37:00 AM
				MBAS - NPW 5540C 2011			4/30/2024 6:00:00 PM
24042240-001B				TKN (EPA351.2)		5/1/2024 3:15:00 PM	5/2/2024 2:15:00 PM
24042240-001C				Low-Level Mercury (EPA 1631)			5/2/2024 10:55:27 AM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24042240
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D29045

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
MBAS - NPW 5540C 2011	Non-Potable Water	MBAS	N
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	AR	N	Not Accredited
A-NELA	A	Accredited	A-NELA	N	Not Accredited	CO	U	Unavailable
CT	A	Accredited	CT	N	Not Accredited	L-NELAI	A	Accredited
HI-DW	N	Not Accredited	ID	U	Unavailable	L-NELAF	A	Accredited
L-NELAF	N	Not Accredited	IN_DW	U	Unavailable	S - NELA	N	Not Accredited

Original #1

SUBCONTRACT ORDER

Earth Analytical Sciences, Inc.

Project Number: 4D29045

24042240

SENDING LABORATORY:

Earth Analytical Sciences, Inc.

4825 Ward Dr.

Beaumont, TX 77705

Phone: 409-842-0658

Fax: 409-842-9793

Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies

3310 Win Street

Cuyahoga Falls, OH 44223

Phone :(330) 253-8211

Fax: N/A

State of Origin : TX

Due Date: 05/09/24 11:00

PO Number : 4D29045

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29045-01	Outfall 002 - Grab	Water	04/29/24 12:40	Containers and Unique ID: 500 mL, P, H2SO4 (D) 40 mL, VOA, HCL (J) 40 mL, VOA, HCL (K) 500 mL, P (M) 1-Liter, AG (O) 1-Liter, AG (P)	Analyses SUB. - Color SUB. - Surfactants SUB. - TKN SUB.-Low Level Mercury	QC FOR LAUNCH FROM 4D29045

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By

Date/Time

Page 16 of 17

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24042240

RcptNo: 1

Logged by: Christina N. Gemma 4/30/2024 12:35:00 PM

Completed By: Christina N. Gemma 4/30/2024 2:07:37 PM

Reviewed By: Holly Florea 5/1/2024 7:01:36 AM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☐ No ☒
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Color received with insufficient time to run within method hold time

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			
2	4.8	Good	Not Present			

Page 17 of 17



ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 5/6/2024 1:41:04 PM

JOB DESCRIPTION

4D29045-01

JOB NUMBER

180-173212-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Generated
5/6/2024 1:41:04 PM

Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14



Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D29045-01

Job ID: 180-173212-1

Job ID: 180-173212-1

Eurofins Pittsburgh

Job Narrative 180-173212-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/30/2024 10:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-173212-1	4D29045-01	Water	04/29/24 12:40	04/30/24 10:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Client Sample ID: 4D29045-01
Date Collected: 04/29/24 12:40
Date Received: 04/30/24 10:30

Lab Sample ID: 180-173212-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	O ₂ A - 1677		1			467465	05/03/24 14:43	CMR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: EET PIT
Batch Type: Analysis
CMR = Carl Reagle

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Client Sample ID: 4D29045-01

Lab Sample ID: 180-173212-1

Date Collected: 04/29/24 12:40

Matrix: Water

Date Received: 04/30/24 10:30

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	Nt		0.0020	0.0016	mg/L			05/03/24 14:43	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-467465/25

Matrix: Water

Analysis Batch: 467465

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			05/03/24 14:34	1

Lab Sample ID: LCS 180-467465/26

Matrix: Water

Analysis Batch: 467465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0505		mg/L		101	82 - 132

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29045-01

Job ID: 180-173212-1

General Chemistry

Analysis Batch: 467465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-173212-1	4D29045-01	Total/NA	Water	OIA - 1677	
MB 180-467465/25	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-467465/26	Lab Control Sample	Total/NA	Water	OIA - 1677	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D29045

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/09/24 11:00

State of Origin : TX

PO Number : 4D29045

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29045-01	Outfall 002 - Grab	Water	04/29/24 12:40		Containers and Unique ID: Analyses 250 mL - P, NAOH (L) SUB. - Available Cyanide	



Released By: *[Signature]* Date/Time: *4/29/24 @ 1630*
Received By: *[Signature]* Date/Time: *4-30-24 1030*

Released By: _____ Date/Time: _____

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-173212-1

Login Number: 173212

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

17 May 2024

EAS NO.: 4D22048

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 101

Enclosed are the results of analyses for samples received by the laboratory on 04/22/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 101 - Grab	4D22048-01	Wastewater	3.1	04/22/24 11:15	04/22/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Case Narrative

Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.
Subcontracted analysis performed by Summit. Certificate of Analysis is attached.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Outfall 101 - Grab

Work Order #: 4D22048-01

Collection Date & Time: 4/22/2024 11:15:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	7.2	0.1	mg/L	04/22/24 11:22	04/22/24 11:22	SM 4500-O G-2016	E1	TT	
pH (on-site)	8.0		pH/°C	04/22/24 11:22	04/22/24 11:22	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	28.9		pH/°C	04/22/24 11:22	04/22/24 11:22	SM 4500-H+ B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	0.02	0.02	mg/L	04/22/24 11:25	04/22/24 11:25	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	84.0		°F	04/22/24 11:22	04/22/24 11:22	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO ₃	254	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	42.5	2.50	mg/L	04/23/24 16:00	04/23/24 16:00	SM 4500-NH ₃ D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	<4.0	4.0	mg/L	04/22/24 11:20	04/22/24 11:20	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	<4.0	4.0	mg/L	04/22/24 11:25	04/22/24 11:25	SM 5210B-2016		CDR	
Chloride	86.0	10.0	mg/L	04/23/24 11:30	04/23/24 11:30	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	50	5	mg/L	04/23/24 10:55	04/23/24 10:55	HACH 8000		CLB	
Fluoride	0.10	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/22/24 15:40	04/22/24 15:40	USGS I-1230-85		CLB	
Oil & Grease (HEM)	<2.2	2.2	mg/L	04/25/24 08:00	04/25/24 08:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO ₄	0.74	0.62	mg/L	04/26/24 09:25	04/26/24 09:25	SM 4500-P B/E-2011		ZAC	Q8
Total Dissolved Solids (TDS)	4590	20	mg/L	04/23/24 10:30	04/23/24 10:30	SM 2540C-2015		CLB	
Total Organic Carbon	16.0	2.00	mg/L	04/24/24 09:30	04/24/24 09:30	SM 5310C-2014		ZAC	
Total Organic Nitrogen	6.00	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	<0.003	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	6.6	2.0	mg/L	04/23/24 08:30	04/23/24 08:30	SM 2540D-2015		CLB	
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate-Nitrogen	<0.20	0.20	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	
Sulfate	2690	25.0	mg/L	04/22/24 15:44	04/22/24 15:44	EPA 300.0 Rev 2.1		ZAC	E

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Outfall 101 - Grab

Work Order #: 4D22048-01 Collection Date & Time : 4/22/2024 11:15:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Total Metals by ICP-MS - EPA Method 200.8/6020									
Aluminum	39.2	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Chromium	<3.00	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Nickel	3.76	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Copper	4.94	2.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Zinc	18.0	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Arsenic	0.82	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Silver	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Barium	68.5	3.00	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	04/22/24 15:00	04/25/24 08:20	EPA 200.8/6020		ZAC	
Toxic Pollutant Volatiles by EPA 624.1									
Vinyl chloride	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Bromomethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Chloroform	0.014	0.004	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Acrolein	<0.020	0.020	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Acetone	0.012	0.010	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,1-Dichloroethene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Acrylonitrile	<0.020	0.020	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Methylene chloride	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
trans-1,2-Dichloroethene	<0.004	0.004	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,1-Dichloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Methyl-t-butyl ether (MTBE)	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Chloromethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
2-Butanone (MEK)	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,1,1-Trichloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,2-Dichloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Benzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Carbon tetrachloride	<0.002	0.002	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,2-Dichloropropane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Trichloroethene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Dibromomethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1	E1	SEA	
Bromodichloromethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
cis-1,3-Dichloropropene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Epichlorohydrin	<0.100	0.100	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1	E1	SEA	
trans-1,3-Dichloropropene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Toluene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,1,2-Trichloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Outfall 101 - Grab

Work Order #: **4D22048-01** Collection Date & Time: **4/22/2024 11:15:00AM**

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Volatiles by EPA 624.1									
Chloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Dibromochloromethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Tetrachloroethene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Chlorobenzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,2-Dibromoethane (EDB)	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Ethyl benzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Bromoform	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
m,p-Xylene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
o-Xylene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,1,2,2-Tetrachloroethane	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,3-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,4-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
1,2-Dichlorobenzene	<0.005	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
TTHM (Total Trihalomethanes)	0.014	0.005	mg/L	04/23/24 13:07	04/23/24 13:07	EPA 624.1		SEA	
Surrogate: Dibromofluoromethane		118 %		82-118	04/23/24 13:07	EPA 624.1		SEA	
Surrogate: Toluene-d8		102 %		88-110	04/23/24 13:07	EPA 624.1		SEA	
Surrogate: 4-Bromofluorobenzene		96 %		86-115	04/23/24 13:07	EPA 624.1		SEA	
Toxic Pollutant Semivolatiles by EPA 625.1									
N-Nitrosodimethylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Phenol	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2-Chlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Pyridine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
bis(2-Chloroethyl)ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
n-Decane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1	E1	BDS	
bis(2-Chloroisopropyl)ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
o-Cresol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
N-Nitroso-n-ethyl-ethanamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1	E1	BDS	
m,p-Cresol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
N-Nitroso-di-n-propylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Hexachloroethane	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Nitrobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Isophorone	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2-Nitrophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4-Dimethylphenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
bis(2-Chloroethoxy)methane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4-Dichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
1,2,4-Trichlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Naphthalene	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Hexachlorobutadiene	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
4-Chloro-3-methylphenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Hexachlorocyclopentadiene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4,6-Trichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Outfall 101 - Grab

Work Order #: 4D22048-01 Collection Date & Time : 4/22/2024 11:15:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
2-Chloronaphthalene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
1,2,4,5-Tetrachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Dimethylphthalate	<0.002	0.002	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4,5-Trichlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,6-Dinitrotoluene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Acenaphthylene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Acenaphthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4-Dinitrophenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
4-Nitrophenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
2,4-Dinitrotoluene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Pentachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Diethylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Fluorene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
4-Chlorophenyl-phenyl ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
4,6-Dinitro-2-methylphenol	<0.010	0.010	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
N-Nitrosodiphenylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Diphenylhydrazine(as Azobenzene)	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
4-Bromophenyl-phenyl ether	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Hexachlorobenzene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Pentachlorophenol	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
n-Octadecane	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1	E1	BDS	
Phenanthrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Di-n-butylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Carbazole	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1	E1	BDS	
Benzidine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzylbutylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzo(a)anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
3,3'-Dichlorobenzidine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Chrysene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
N-Nitroso-di-n-butylamine	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
bis(2-Ethylhexyl)phthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Di-n-octylphthalate	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzo(b)fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzo(k)fluoranthene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzo(a)pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Indeno(1,2,3-cd)pyrene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Dibenz(a,h)anthracene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Benzo(g,h,i)perylene	<0.005	0.005	mg/L	04/29/24 07:33	04/29/24 17:29	EPA 625.1		BDS	
Surrogate: 2-Fluorophenol		25 %		21-100	04/29/24 17:29	EPA 625.1		BDS	
Surrogate: Phenol-d6		16 %		10-94	04/29/24 17:29	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Outfall 101 - Grab

Work Order # : 4D22048-01 Collection Date & Time : 4/22/2024 11:15:00AM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
Surrogate: 2,4,6-Tribromophenol		57 %		10-123	04/29/24 17:29	EPA 625.1		BDS	
Surrogate: Nitrobenzene-d5		50 %		35-114	04/29/24 17:29	EPA 625.1		BDS	
Surrogate: 2-Fluorobiphenyl		47 %		43-116	04/29/24 17:29	EPA 625.1		BDS	
Surrogate: p-Terphenyl-d14		64 %		33-141	04/29/24 17:29	EPA 625.1		BDS	
Organochlorine Pesticides by EPA Method 608.3									
Aldrin	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
alpha-BHC	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
beta-BHC	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
delta-BHC	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
gamma-BHC	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
alpha-Chlordane	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
gamma-Chlordane	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
4,4'-DDD	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
4,4'-DDE	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
4,4'-DDT	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Dieldrin	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endosulfan I	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endosulfan II	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endosulfan Sulfate	<0.100	0.100	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endrin	<0.010	0.010	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endrin Aldehyde	<0.050	0.050	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Heptachlor	<0.005	0.005	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Heptachlor Epoxide	<0.100	0.100	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Endrin Ketone	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Methoxychlor	<0.150	0.150	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Toxaphene	<0.500	0.500	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Chlordane, Technical	<0.020	0.020	ug/L	04/29/24 09:18	05/16/24 22:54	EPA 608.3		BDS	
Surrogate: Decachlorobiphenyl		52 %		10-140	05/16/24 22:54	EPA 608.3		BDS	
Surrogate: Tetrachloro-m-xylene		39 %		10-140	05/16/24 22:54	EPA 608.3		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0102 - Field Service Prep

LCS (B4E0102-BS1)

Prepared & Analyzed: 04/22/24

pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
--------------	-----	--	-------	------	--	-----	------------	--	--	----	--

Duplicate (B4E0102-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Temperature, F.	32.0		°F		79.2			85	200	TT	
pH (on-site)	8.3		pH/°C		8.3			0	20	TT	
Temperature by Field Meter	26.2		pH/°C		26.2			0	20	TT	

Batch B4E0112 - Field Service Prep

Duplicate (B4E0112-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Dissolved Oxygen	7.0	0.1	mg/L		7.3			4	20	TT	
------------------	-----	-----	------	--	-----	--	--	---	----	----	--

Batch B4E0115 - Field Service Prep

Duplicate (B4E0115-DUP1)

Source: 4D22046-01 Prepared & Analyzed: 04/22/24

Chlorine, Total Residual (Low Range)	0.03	0.02	mg/L		0.03			0	20	TT	
--------------------------------------	------	------	------	--	------	--	--	---	----	----	--

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0438 - Wet Chem Prep

Blank (B4D0438-BLK1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	<0.003	0.003	mg/L							CLB	
---------------------	--------	-------	------	--	--	--	--	--	--	-----	--

LCS (B4D0438-BS1)

Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400		98	80-110			CLB	
---------------------	-------	-------	------	--------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0438-MS1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.039	0.003	mg/L	0.0400	ND	98	80-120			CLB	
---------------------	-------	-------	------	--------	----	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0438-MSD1)

Source: 4D22047-01 Prepared & Analyzed: 04/22/24

Hexavalent Chromium	0.041	0.003	mg/L	0.0400	ND	102	80-120	5	20	CLB	
---------------------	-------	-------	------	--------	----	-----	--------	---	----	-----	--

Batch B4D0440 - Wet Chem Prep

Blank (B4D0440-BLK1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0440-BS1)

Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	193	2.0	mg/L	198		97	85-115			CDR	
--	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0440-DUP1)

Source: 4D22044-01 Prepared & Analyzed: 04/22/24

Biochemical Oxygen Demand (BOD), 5-Day	7.6	6.6	mg/L		7.9			4	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0442 - Wet Chem Prep

Blank (B4D0442-BLK1)

Prepared & Analyzed: 04/22/24

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0442 - Wet Chem Prep											
Blank (B4D0442-BLK1)				Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
LCS (B4D0442-BS1)				Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	208	2.0	mg/L	198		105	85-115			CDR	
Duplicate (B4D0442-DUP1)				Source: 4D22037-01 Prepared & Analyzed: 04/22/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	8.8	4.0	mg/L		9.6			9	20	CDR	
Batch B4D0455 - Wet Chem Prep											
Blank (B4D0455-BLK1)				Prepared & Analyzed: 04/23/24							
Chloride	<2.0	2.0	mg/L							DGL	
LCS (B4D0455-BS1)				Prepared & Analyzed: 04/23/24							
Chloride	893	40.0	mg/L	886		101	80-120			DGL	
Matrix Spike (B4D0455-MS1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	298	10.0	mg/L	222	86.0	96	80-120			DGL	
Matrix Spike Dup (B4D0455-MSD1)				Source: 4D22048-01 Prepared & Analyzed: 04/23/24							
Chloride	297	10.0	mg/L	222	86.0	95	80-120	0.3	20	DGL	
Batch B4D0457 - Wet Chem Prep											
Blank (B4D0457-BLK1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0457 - Wet Chem Prep											
LCS (B4D0457-BS1)				Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	3960	40	mg/L	4000		99	80-120			CLB	
Matrix Spike (B4D0457-MS1)				Source: 4D23003-02 Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2210	20	mg/L	2000	210	100	80-120			CLB	
Matrix Spike Dup (B4D0457-MSD1)				Source: 4D23003-02 Prepared & Analyzed: 04/23/24							
Total Dissolved Solids (Source)	2100	20	mg/L	2000	210	94	80-120	5	20	CLB	
Batch B4D0460 - Wet Chem Prep											
Blank (B4D0460-BLK1)				Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	<5	5	mg/L							CLB	
LCS (B4D0460-BS1)				Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	52	5	mg/L	50.0		104	80-120			CLB	
Matrix Spike (B4D0460-MS1)				Source: 4D22043-01 Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	214	10	mg/L	95.2	110	109	80-120			CLB	
Matrix Spike Dup (B4D0460-MSD1)				Source: 4D22043-01 Prepared & Analyzed: 04/23/24							
Chemical Oxygen Demand	220	10	mg/L	95.2	110	116	80-120	3	20	CLB	
Batch B4D0462 - Wet Chem Prep											
Blank (B4D0462-BLK1)				Prepared & Analyzed: 04/23/24							
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0462 - Wet Chem Prep

LCS (B4D0462-BS1) Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	19.0	2.0	mg/L	20.0		95	80-120			CLB	
------------------------------	------	-----	------	------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0462-MS1) Source: 4D22033-01 Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	40.0	5.0	mg/L	25.0	14.0	104	80-120			CLB	
------------------------------	------	-----	------	------	------	-----	--------	--	--	-----	--

Matrix Spike (B4D0462-MS2) Source: 4D23012-02 Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	87.0	10.0	mg/L	50.0	32.0	110	80-120			CLB	
------------------------------	------	------	------	------	------	-----	--------	--	--	-----	--

Matrix Spike Dup (B4D0462-MSD1) Source: 4D22033-01 Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	38.0	5.0	mg/L	25.0	14.0	96	80-120	5	20	CLB	
------------------------------	------	-----	------	------	------	----	--------	---	----	-----	--

Matrix Spike Dup (B4D0462-MSD2) Source: 4D23012-02 Prepared & Analyzed: 04/23/24

Total Suspended Solids (TSS)	89.0	10.0	mg/L	50.0	32.0	114	80-120	2	20	CLB	
------------------------------	------	------	------	------	------	-----	--------	---	----	-----	--

Batch B4D0467 - Wet Chem Prep

Blank (B4D0467-BLK1) Prepared & Analyzed: 04/23/24

Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	
------------------	-------	------	------	--	--	--	--	--	--	----	--

LCS (B4D0467-BS1) Prepared & Analyzed: 04/23/24

Ammonia-Nitrogen	0.99	0.10	mg/L	1.00		99	80-120			AC	
------------------	------	------	------	------	--	----	--------	--	--	----	--

Matrix Spike (B4D0467-MS1) Source: 4D22044-01 Prepared & Analyzed: 04/23/24

Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120			AC	
------------------	------	------	------	------	------	----	--------	--	--	----	--

Matrix Spike Dup (B4D0467-MSD1) Source: 4D22044-01 Prepared & Analyzed: 04/23/24

Ammonia-Nitrogen	2.14	0.20	mg/L	2.00	0.22	96	80-120	0	20	AC	
------------------	------	------	------	------	------	----	--------	---	----	----	--



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0468 - Wet Chem Prep											
Blank (B4D0468-BLK1)				Prepared & Analyzed: 04/24/24							
Total Organic Carbon	<1.00	1.00	mg/L							ZAC	
LCS (B4D0468-BS1)				Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.1	1.00	mg/L	25.0		100	80-120			ZAC	
Matrix Spike (B4D0468-MS1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120			ZAC	
Matrix Spike Dup (B4D0468-MSD1)				Source: 4D12026-01 Prepared & Analyzed: 04/24/24							
Total Organic Carbon	25.4	1.00	mg/L	20.0	6.37	95	80-120	0	20	ZAC	
Batch B4D0509 - Wet Chem Prep											
Blank (B4D0509-BLK1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	<2.0	2.0	mg/L							HNR	
LCS (B4D0509-BS1)				Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	39.7	2.0	mg/L	40.0		99	78-114			HNR	
Matrix Spike (B4D0509-MS1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.8	2.2	mg/L	43.0	ND	95	78-114			HNR	
Matrix Spike Dup (B4D0509-MSD1)				Source: 4D23025-01 Prepared & Analyzed: 04/25/24							
Oil & Grease (HEM)	40.7	2.2	mg/L	42.6	ND	96	78-114	0.2	18	HNR	
Batch B4D0552 - Wet Chem Prep											
Blank (B4D0552-BLK1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0552 - Wet Chem Prep											
LCS (B4D0552-BS1)				Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	1.04	0.31	mg/L	1.00		104	80-120			ZAC	Q8
Matrix Spike (B4D0552-MS1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120			ZAC	Q8
Matrix Spike Dup (B4D0552-MSD1)				Source: 4D25023-01 Prepared & Analyzed: 04/26/24							
Phosphorus, Total as PO4	3.80	0.62	mg/L	2.00	1.90	95	80-120	0	20	ZAC	Q8
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)				Prepared & Analyzed: 04/30/24							
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)				Prepared & Analyzed: 04/30/24							
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4E0025 - Wet Chem Prep											
Blank (B4E0025-BLK1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO3	<20	20	mg/L							AC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Wet Chemistry Analysis Parameters - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0025 - Wet Chem Prep

LCS (B4E0025-BS1)

Prepared & Analyzed: 05/01/24

Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
---------------------------------------	------	----	------	------	--	-----	--------	--	--	----	--

Matrix Spike (B4E0025-MS1)

Source: 4D22046-01 Prepared & Analyzed: 05/01/24

Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
---------------------------------------	-----	----	------	-----	-----	-----	--------	--	--	----	--

Matrix Spike Dup (B4E0025-MSD1)

Source: 4D22046-01 Prepared & Analyzed: 05/01/24

Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	
---------------------------------------	-----	----	------	-----	-----	----	--------	-----	----	----	--

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0420 - Wet Chem Prep

Blank (B4D0420-BLK1)

Prepared & Analyzed: 04/22/24

Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	

LCS (B4D0420-BS1)

Prepared & Analyzed: 04/22/24

Nitrate-Nitrogen	4.99		mg/L	5.00		100	90-110			ZAC	
Sulfate	20.3		mg/L	20.0		101	90-110			ZAC	

Matrix Spike (B4D0420-MS1)

Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Nitrate-Nitrogen	23.7	0.50	mg/L	25.0	ND	95	90-110			ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110			ZAC	

Matrix Spike Dup (B4D0420-MSD1)

Source: 4D22038-01 Prepared & Analyzed: 04/22/24

Nitrate-Nitrogen	23.6	0.50	mg/L	25.0	ND	95	90-110	0.01	20	ZAC	
Sulfate	209	5.00	mg/L	100	117	92	90-110	0.002	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0444 - 3015A

Blank (B4D0444-BLK1)

Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0444 - 3015A											
Blank (B4D0444-BLK1)				Prepared: 04/22/24 Analyzed: 04/25/24							
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	
LCS (B4D0444-BS1)				Prepared: 04/22/24 Analyzed: 04/25/24							
Beryllium	26.3	0.50	ug/L	27.8		95	85-115			ZAC	
Chromium	158	3.00	ug/L	167		95	85-115			ZAC	
Nickel	107	2.00	ug/L	111		96	85-115			ZAC	
Copper	106	2.00	ug/L	111		96	85-115			ZAC	
Zinc	265	5.00	ug/L	278		95	85-115			ZAC	
Arsenic	26.4	0.50	ug/L	27.8		95	85-115			ZAC	
Selenium	268	5.00	ug/L	278		96	85-115			ZAC	
Silver	26.9	0.50	ug/L	27.8		97	85-115			ZAC	
Cadmium	52.6	1.00	ug/L	55.6		95	85-115			ZAC	
Antimony	261	5.00	ug/L	278		94	85-115			ZAC	
Barium	162	3.00	ug/L	167		97	85-115			ZAC	
Thallium	26.8	0.50	ug/L	27.8		96	85-115			ZAC	
Lead	26.6	0.50	ug/L	27.8		96	85-115			ZAC	
Matrix Spike (B4D0444-MS1)				Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24							
Beryllium	1410	25.0	ug/L	1390	ND	101	70-130			ZAC	
Chromium	7860	150	ug/L	8330	ND	94	70-130			ZAC	
Nickel	5270	100	ug/L	5560	ND	95	70-130			ZAC	
Copper	5250	100	ug/L	5560	ND	95	70-130			ZAC	
Zinc	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Arsenic	1270	25.0	ug/L	1390	ND	92	70-130			ZAC	
Selenium	12500	250	ug/L	13900	ND	90	70-130			ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130			ZAC	
Cadmium	2790	50.0	ug/L	2780	ND	100	70-130			ZAC	
Antimony	14800	250	ug/L	13900	ND	106	70-130			ZAC	
Barium	9270	150	ug/L	8330	55.0	111	70-130			ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0444 - 3015A

Matrix Spike Dup (B4D0444-MSD1)

Source: 4D08046-02 Prepared: 04/22/24 Analyzed: 04/25/24

Beryllium	1430	25.0	ug/L	1390	ND	103	70-130	2	20	ZAC	
Chromium	7920	150	ug/L	8330	ND	95	70-130	0.7	20	ZAC	
Nickel	5240	100	ug/L	5560	ND	94	70-130	0.6	20	ZAC	
Copper	5200	100	ug/L	5560	ND	94	70-130	1	20	ZAC	
Zinc	12600	250	ug/L	13900	ND	90	70-130	0.4	20	ZAC	
Arsenic	1280	25.0	ug/L	1390	ND	92	70-130	0.7	20	ZAC	
Selenium	12600	250	ug/L	13900	ND	90	70-130	0.8	20	ZAC	
Silver	1530	25.0	ug/L	1390	ND	110	70-130	0.2	20	ZAC	
Cadmium	2830	50.0	ug/L	2780	ND	102	70-130	2	20	ZAC	
Antimony	14700	250	ug/L	13900	ND	106	70-130	0.6	20	ZAC	
Barium	9230	150	ug/L	8330	55.0	110	70-130	0.5	20	ZAC	
Thallium	1450	25.0	ug/L	1390	ND	104	70-130	0.002	20	ZAC	
Lead	1450	25.0	ug/L	1390	ND	105	70-130	0.08	20	ZAC	

Batch B4E0076 - 3015A

Blank (B4E0076-BLK1)

Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	<2.50	2.50	ug/L							ZAC	
----------	-------	------	------	--	--	--	--	--	--	-----	--

LCS (B4E0076-BS1)

Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
----------	-----	------	------	-----	--	----	--------	--	--	-----	--

Matrix Spike (B4E0076-MS1)

Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	
----------	------	-----	------	------	----	----	--------	--	--	-----	--

Matrix Spike (B4E0076-MS2)

Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
----------	------	-----	------	------	-----	----	--------	--	--	-----	--



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0076 - 3015A

Matrix Spike Dup (B4E0076-MSD1) Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
----------	------	-----	------	------	----	----	--------	-----	----	-----	--

Matrix Spike Dup (B4E0076-MSD2) Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
----------	------	-----	------	------	-----	----	--------	---	----	-----	--

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0453 - EPA 5030C/624

Blank (B4D0453-BLK1) Prepared & Analyzed: 04/23/24

Vinyl chloride	<0.0008	0.0008	mg/L							SEA	
Bromomethane	<0.0006	0.0006	mg/L							SEA	
Chloroform	<0.0009	0.0009	mg/L							SEA	
Acrolein	<0.001	0.001	mg/L							SEA	
Acetone	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethene	<0.0009	0.0009	mg/L							SEA	
Acrylonitrile	<0.002	0.002	mg/L							SEA	
Methylene chloride	<0.0007	0.0007	mg/L							SEA	
trans-1,2-Dichloroethene	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Methyl-t-butyl ether (MTBE)	<0.0005	0.0005	mg/L							SEA	
2-Butanone (MEK)	<0.001	0.001	mg/L							SEA	
Chloromethane	<0.0006	0.0006	mg/L							SEA	
1,1,1-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
1,2-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Benzene	<0.001	0.001	mg/L							SEA	
Carbon tetrachloride	<0.0009	0.0009	mg/L							SEA	
1,2-Dichloropropane	<0.0009	0.0009	mg/L							SEA	
Trichloroethene	<0.0009	0.0009	mg/L							SEA	
Dibromomethane	<0.0009	0.0009	mg/L							SEA	
Bromodichloromethane	<0.0007	0.0007	mg/L							SEA	
2-Chloroethyl vinyl ether	<0.0007	0.0007	mg/L							SEA	
cis-1,3-Dichloropropene	<0.0006	0.0006	mg/L							SEA	
trans-1,3-Dichloropropene	<0.0007	0.0007	mg/L							SEA	
Epichlorohydrin	<0.005	0.005	mg/L							SEA	
Toluene	<0.0007	0.0007	mg/L							SEA	
1,1,2-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
Chloroethane	<0.0007	0.0007	mg/L							SEA	
Dibromochloromethane	<0.0005	0.0005	mg/L							SEA	
Tetrachloroethene	0.002	0.001	mg/L							SEA	J
Chlorobenzene	<0.001	0.001	mg/L							SEA	
1,2-Dibromoethane (EDB)	<0.001	0.001	mg/L							SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0453 - EPA 5030C/624											
Blank (B4D0453-BLK1)			Prepared & Analyzed: 04/23/24								
Ethyl benzene	<0.0006	0.0006	mg/L							SEA	
Bromoform	<0.0008	0.0008	mg/L							SEA	
m,p-Xylene	<0.001	0.001	mg/L							SEA	
1,1,2,2-Tetrachloroethane	<0.0009	0.0009	mg/L							SEA	
o-Xylene	<0.0005	0.0005	mg/L							SEA	
1,3-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,4-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,2-Dichlorobenzene	<0.0006	0.0006	mg/L							SEA	
TTHM (Total Trihalomethanes)	<0.005	0.005	mg/L							SEA	
Surrogate: Dibromofluoromethane	0.0600		mg/L	0.0500		120	82-118				OS2
Surrogate: Toluene-d8	0.0502		mg/L	0.0500		100	88-110				
Surrogate: 4-Bromofluorobenzene	0.0462		mg/L	0.0500		92	86-115				
LCS (B4D0453-BS1)			Prepared & Analyzed: 04/23/24								
Vinyl chloride	0.077	0.005	mg/L	0.0500		154	5-195			SEA	
Bromomethane	0.055	0.005	mg/L	0.0500		109	15-185			SEA	
Chloroform	0.059	0.004	mg/L	0.0500		118	70-135			SEA	
Acrolein	0.512	0.020	mg/L	0.200		256	60-140			SEA	OQ1
Acetone	0.046	0.010	mg/L	0.0500		91	70-130			SEA	
1,1-Dichloroethene	0.077	0.005	mg/L	0.0500		154	50-150			SEA	OQ1
Acrylonitrile	0.227	0.020	mg/L	0.200		114	60-140			SEA	
Methylene chloride	0.052	0.005	mg/L	0.0500		105	60-140			SEA	
trans-1,2-Dichloroethene	0.061	0.004	mg/L	0.0500		123	70-130			SEA	
1,1-Dichloroethane	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
Methyl-t-butyl ether (MTBE)	0.049	0.005	mg/L	0.0500		98	70-130			SEA	
2-Butanone (MEK)	0.046	0.005	mg/L	0.0500		92	70-130			SEA	
Chloromethane	0.072	0.005	mg/L	0.0500		144	0.1-205			SEA	
1,1,1-Trichloroethane	0.057	0.005	mg/L	0.0500		114	70-130			SEA	
1,2-Dichloroethane	0.049	0.005	mg/L	0.0500		99	70-130			SEA	
Benzene	0.062	0.005	mg/L	0.0500		124	65-135			SEA	
Carbon tetrachloride	0.060	0.002	mg/L	0.0500		120	70-130			SEA	
1,2-Dichloropropane	0.055	0.005	mg/L	0.0500		109	35-165			SEA	
Trichloroethene	0.059	0.005	mg/L	0.0500		118	65-135			SEA	
Dibromomethane	0.052	0.005	mg/L	0.0500		104	70-130			SEA	
Bromodichloromethane	0.053	0.005	mg/L	0.0500		106	65-135			SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	0.0500			0.1-225			SEA	OQ1
cis-1,3-Dichloropropene	0.052	0.005	mg/L	0.0500		103	25-175			SEA	
trans-1,3-Dichloropropene	0.047	0.005	mg/L	0.0500		95	50-150			SEA	
Epichlorohydrin	0.031	0.100	mg/L	0.0500		63	70-130			SEA	OQ1
Toluene	0.060	0.005	mg/L	0.0500		120	70-130			SEA	
1,1,2-Trichloroethane	0.053	0.005	mg/L	0.0500		106	70-130			SEA	
Chloroethane	0.068	0.005	mg/L	0.0500		135	40-160			SEA	
Dibromochloromethane	0.050	0.005	mg/L	0.0500		100	70-135			SEA	
Tetrachloroethene	0.057	0.005	mg/L	0.0500		113	70-130			SEA	
Chlorobenzene	0.056	0.005	mg/L	0.0500		111	65-135			SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0453 - EPA 5030C/624

LCS (B4D0453-BS1)

Prepared & Analyzed: 04/23/24

1,2-Dibromoethane (EDB)	0.048	0.005	mg/L	0.0500		96	70-130			SEA	
Ethyl benzene	0.057	0.005	mg/L	0.0500		115	60-140			SEA	
Bromoform	0.043	0.005	mg/L	0.0500		87	70-130			SEA	
m,p-Xylene	0.117	0.005	mg/L	0.100		117	70-130			SEA	
1,1,2,2-Tetrachloroethane	0.051	0.005	mg/L	0.0500		103	60-140			SEA	
o-Xylene	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
1,3-Dichlorobenzene	0.053	0.005	mg/L	0.0500		107	75-144			SEA	
1,4-Dichlorobenzene	0.050	0.005	mg/L	0.0500		101	59-174			SEA	
1,2-Dichlorobenzene	0.050	0.005	mg/L	0.0500		100	59-174			SEA	
TTHM (Total Trihalomethanes)	0.209	0.005	mg/L	0.200		105	65-135			SEA	
Surrogate: Dibromofluoromethane	0.0579		mg/L	0.0500		116	82-118				
Surrogate: Toluene-d8	0.0495		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0479		mg/L	0.0500		96	86-115				

Matrix Spike (B4D0453-MS1)

Source: 4D22048-01

Prepared & Analyzed: 04/23/24

Vinyl chloride	7.68	0.500	mg/L	5.00	ND	154	0.1-251			SEA	
Bromomethane	5.36	0.500	mg/L	5.00	ND	107	0.1-242			SEA	
Chloroform	6.17	0.400	mg/L	5.00	ND	123	51-138			SEA	
Acrolein	17.0	2.00	mg/L	20.0	ND	85	40-160			SEA	
Acetone	4.15	1.00	mg/L	5.00	ND	83	70-130			SEA	
1,1-Dichloroethene	7.02	0.500	mg/L	5.00	ND	140	0.1-234			SEA	
Acrylonitrile	20.1	2.00	mg/L	20.0	ND	101	40-160			SEA	
Methylene chloride	6.02	0.500	mg/L	5.00	ND	120	0.1-221			SEA	
trans-1,2-Dichloroethene	6.14	0.400	mg/L	5.00	ND	123	54-156			SEA	
1,1-Dichloroethane	6.18	0.500	mg/L	5.00	ND	124	59-155			SEA	
Methyl-t-butyl ether (MTBE)	5.20	0.500	mg/L	5.00	ND	104	70-130			SEA	
2-Butanone (MEK)	4.32	0.500	mg/L	5.00	ND	86	70-130			SEA	
Chloromethane	6.70	0.500	mg/L	5.00	ND	134	0.1-273			SEA	
1,1,1-Trichloroethane	5.74	0.500	mg/L	5.00	ND	115	52-162			SEA	
1,2-Dichloroethane	4.89	0.500	mg/L	5.00	ND	98	49-155			SEA	
Benzene	6.12	0.500	mg/L	5.00	ND	122	37-151			SEA	
Carbon tetrachloride	5.82	0.200	mg/L	5.00	ND	116	70-140			SEA	
1,2-Dichloropropane	5.42	0.500	mg/L	5.00	ND	108	0.1-210			SEA	
Trichloroethene	5.82	0.500	mg/L	5.00	ND	116	70-157			SEA	
Dibromomethane	5.43	0.500	mg/L	5.00	ND	109	70-130			SEA	
Bromodichloromethane	5.48	0.500	mg/L	5.00	ND	110	35-155			SEA	
2-Chloroethyl vinyl ether	0.306	0.500	mg/L	5.00	ND	6	0.1-305			SEA	
cis-1,3-Dichloropropene	5.33	0.500	mg/L	5.00	ND	107	0.1-227			SEA	
trans-1,3-Dichloropropene	5.05	0.500	mg/L	5.00	ND	101	17-183			SEA	
Epichlorohydrin	4.14	10.0	mg/L	5.00	ND	83	70-130			SEA	
Toluene	6.01	0.500	mg/L	5.00	ND	120	47-150			SEA	
1,1,2-Trichloroethane	5.39	0.500	mg/L	5.00	ND	108	52-150			SEA	
Chloroethane	6.24	0.500	mg/L	5.00	ND	125	14-230			SEA	
Dibromochloromethane	5.02	0.500	mg/L	5.00	ND	100	53-149			SEA	
Tetrachloroethene	5.83	0.500	mg/L	5.00	ND	117	64-148			SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0453 - EPA 5030C/624

Matrix Spike (B4D0453-MS1)

Source: 4D22048-01 Prepared & Analyzed: 04/23/24

Chlorobenzene	5.78	0.500	mg/L	5.00	ND	116	37-160			SEA	
1,2-Dibromoethane (EDB)	4.90	0.500	mg/L	5.00	ND	98	70-130			SEA	
Ethyl benzene	5.86	0.500	mg/L	5.00	ND	117	37-162			SEA	
Bromoform	4.52	0.500	mg/L	5.00	ND	90	45-169			SEA	
m,p-Xylene	12.1	0.500	mg/L	10.0	ND	121	70-130			SEA	
1,1,2,2-Tetrachloroethane	5.46	0.500	mg/L	5.00	ND	109	46-157			SEA	
o-Xylene	6.16	0.500	mg/L	5.00	ND	123	70-130			SEA	
1,3-Dichlorobenzene	5.91	0.500	mg/L	5.00	ND	118	59-156			SEA	
1,4-Dichlorobenzene	5.80	0.500	mg/L	5.00	ND	116	18-190			SEA	
1,2-Dichlorobenzene	5.77	0.500	mg/L	5.00	ND	115	18-190			SEA	
TTHM (Total Trihalomethanes)	22.2	0.500	mg/L	20.0	0.014	111	35-169			SEA	

Surrogate: Dibromofluoromethane

5.32

mg/L

5.00

106

82-118

Surrogate: Toluene-d8

5.00

mg/L

5.00

100

88-110

Surrogate: 4-Bromofluorobenzene

4.97

mg/L

5.00

99

86-115

Matrix Spike Dup (B4D0453-MSD1)

Source: 4D22048-01 Prepared & Analyzed: 04/23/24

Vinyl chloride	7.73	0.500	mg/L	5.00	ND	155	0.1-251	0.6	66	SEA	
Bromomethane	5.46	0.500	mg/L	5.00	ND	109	0.1-242	2	61	SEA	
Chloroform	6.17	0.400	mg/L	5.00	ND	123	51-138	0.08	54	SEA	
Acrolein	17.5	2.00	mg/L	20.0	ND	88	40-160	3	60	SEA	
Acetone	4.05	1.00	mg/L	5.00	ND	81	70-130	3	20	SEA	
1,1-Dichloroethene	7.09	0.500	mg/L	5.00	ND	142	0.1-234	1	32	SEA	
Acrylonitrile	20.8	2.00	mg/L	20.0	ND	104	40-160	3	60	SEA	
Methylene chloride	5.84	0.500	mg/L	5.00	ND	117	0.1-221	3	28	SEA	
trans-1,2-Dichloroethene	6.22	0.400	mg/L	5.00	ND	124	54-156	1	45	SEA	
1,1-Dichloroethane	6.15	0.500	mg/L	5.00	ND	123	59-155	0.5	40	SEA	
Methyl-t-butyl ether (MTBE)	5.24	0.500	mg/L	5.00	ND	105	70-130	0.8	20	SEA	
2-Butanone (MEK)	4.58	0.500	mg/L	5.00	ND	92	70-130	6	20	SEA	
Chloromethane	6.83	0.500	mg/L	5.00	ND	137	0.1-273	2	60	SEA	
1,1,1-Trichloroethane	5.81	0.500	mg/L	5.00	ND	116	52-162	1	36	SEA	
1,2-Dichloroethane	4.83	0.500	mg/L	5.00	ND	97	49-155	1	49	SEA	
Benzene	6.17	0.500	mg/L	5.00	ND	123	37-151	0.8	61	SEA	
Carbon tetrachloride	5.96	0.200	mg/L	5.00	ND	119	70-140	3	41	SEA	
1,2-Dichloropropane	5.47	0.500	mg/L	5.00	ND	109	0.1-210	0.9	55	SEA	
Trichloroethene	5.98	0.500	mg/L	5.00	ND	120	70-157	3	48	SEA	
Dibromomethane	5.28	0.500	mg/L	5.00	ND	106	70-130	3	20	SEA	
Bromodichloromethane	5.41	0.500	mg/L	5.00	ND	108	35-155	1	56	SEA	
2-Chloroethyl vinyl ether	0.423	0.500	mg/L	5.00	ND	8	0.1-305	32	71	SEA	
cis-1,3-Dichloropropene	5.54	0.500	mg/L	5.00	ND	111	0.1-227	4	58	SEA	
trans-1,3-Dichloropropene	5.12	0.500	mg/L	5.00	ND	102	17-183	1	86	SEA	
Epichlorohydrin	4.40	10.0	mg/L	5.00	ND	88	70-130	6	20	SEA	
Toluene	6.04	0.500	mg/L	5.00	ND	121	47-150	0.5	41	SEA	
1,1,2-Trichloroethane	5.59	0.500	mg/L	5.00	ND	112	52-150	4	45	SEA	
Chloroethane	6.17	0.500	mg/L	5.00	ND	123	14-230	1	78	SEA	
Dibromochloromethane	5.14	0.500	mg/L	5.00	ND	103	53-149	2	50	SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0453 - EPA 5030C/624

Matrix Spike Dup (B4D0453-MSD1)

Source: 4D22048-01 Prepared & Analyzed: 04/23/24

Tetrachloroethene	5.90	0.500	mg/L	5.00	ND	118	64-148	1	39	SEA	
Chlorobenzene	5.96	0.500	mg/L	5.00	ND	119	37-160	3	53	SEA	
1,2-Dibromoethane (EDB)	4.97	0.500	mg/L	5.00	ND	99	70-130	1	20	SEA	
Ethyl benzene	6.04	0.500	mg/L	5.00	ND	121	37-162	3	63	SEA	
Bromoform	4.57	0.500	mg/L	5.00	ND	91	45-169	0.9	42	SEA	
m,p-Xylene	12.4	0.500	mg/L	10.0	ND	124	70-130	2	20	SEA	
1,1,2,2-Tetrachloroethane	5.53	0.500	mg/L	5.00	ND	111	46-157	1	61	SEA	
o-Xylene	6.22	0.500	mg/L	5.00	ND	124	70-130	0.9	20	SEA	
1,3-Dichlorobenzene	6.15	0.500	mg/L	5.00	ND	123	59-156	4	43	SEA	
1,4-Dichlorobenzene	5.95	0.500	mg/L	5.00	ND	119	18-190	3	57	SEA	
1,2-Dichlorobenzene	5.80	0.500	mg/L	5.00	ND	116	18-190	0.4	57	SEA	
TTHM (Total Trihalomethanes)	22.3	0.500	mg/L	20.0	0.014	111	35-169	0.4	56	SEA	
Surrogate: Dibromofluoromethane	5.29		mg/L	5.00		106	82-118				
Surrogate: Toluene-d8	5.11		mg/L	5.00		102	88-110				
Surrogate: 4-Bromofluorobenzene	5.00		mg/L	5.00		100	86-115				

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0572 - 3510C/625

Blank (B4D0572-BLK1)

Prepared & Analyzed: 04/29/24

N-Nitrosodimethylamine	<0.0002	0.0002	mg/L							BDS	
Phenol	<0.0001	0.0001	mg/L							BDS	
2-Chlorophenol	<0.0004	0.0004	mg/L							BDS	
Pyridine	<0.0003	0.0003	mg/L							BDS	
bis(2-Chloroethyl)ether	<0.0002	0.0002	mg/L							BDS	
n-Decane	<0.0009	0.0009	mg/L							BDS	
bis(2-Chloroisopropyl)ether	<0.0004	0.0004	mg/L							BDS	
o-Cresol	<0.0004	0.0004	mg/L							BDS	
N-Nitroso-n-ethyl-ethanamine	<0.0005	0.0005	mg/L							BDS	
m,p-Cresol	<0.0003	0.0003	mg/L							BDS	
N-Nitroso-di-n-propylamine	<0.0005	0.0005	mg/L							BDS	
Hexachloroethane	<0.0004	0.0004	mg/L							BDS	
Nitrobenzene	<0.0004	0.0004	mg/L							BDS	
Isophorone	<0.0007	0.0007	mg/L							BDS	
2-Nitrophenol	<0.0005	0.0005	mg/L							BDS	
2,4-Dimethylphenol	<0.0005	0.0005	mg/L							BDS	
bis(2-Chloroethoxy)methane	<0.0005	0.0005	mg/L							BDS	
2,4-Dichlorophenol	<0.0007	0.0007	mg/L							BDS	
1,2,4-Trichlorobenzene	<0.0003	0.0003	mg/L							BDS	
Naphthalene	<0.0004	0.0004	mg/L							BDS	
Hexachlorobutadiene	<0.0004	0.0004	mg/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Blank (B4D0572-BLK1)				Prepared & Analyzed: 04/29/24							
4-Chloro-3-methylphenol	<0.0008	0.0008	mg/L							BDS	
Hexachlorocyclopentadiene	<0.0006	0.0006	mg/L							BDS	
2,4,6-Trichlorophenol	<0.0007	0.0007	mg/L							BDS	
2-Chloronaphthalene	<0.0005	0.0005	mg/L							BDS	
1,2,4,5-Tetrachlorobenzene	<0.0003	0.0003	mg/L							BDS	
Dimethylphthalate	<0.0007	0.0007	mg/L							BDS	
2,4,5-Trichlorophenol	<0.0004	0.0004	mg/L							BDS	
2,6-Dinitrotoluene	<0.0004	0.0004	mg/L							BDS	
Acenaphthylene	<0.0005	0.0005	mg/L							BDS	
Acenaphthene	<0.0005	0.0005	mg/L							BDS	
2,4-Dinitrophenol	<0.0004	0.0004	mg/L							BDS	
4-Nitrophenol	<0.0004	0.0004	mg/L							BDS	
2,4-Dinitrotoluene	<0.0005	0.0005	mg/L							BDS	
Pentachlorobenzene	<0.0004	0.0004	mg/L							BDS	
Diethylphthalate	<0.0005	0.0005	mg/L							BDS	
Fluorene	<0.0007	0.0007	mg/L							BDS	
4-Chlorophenyl-phenyl ether	<0.0007	0.0007	mg/L							BDS	
4,6-Dinitro-2-methylphenol	<0.0004	0.0004	mg/L							BDS	
N-Nitrosodiphenylamine	<0.0007	0.0007	mg/L							BDS	
Diphenylhydrazine(as Azobenzene)	<0.001	0.001	mg/L							BDS	
4-Bromophenyl-phenyl ether	<0.0006	0.0006	mg/L							BDS	
Hexachlorobenzene	<0.0005	0.0005	mg/L							BDS	
Pentachlorophenol	<0.0005	0.0005	mg/L							BDS	
n-Octadecane	<0.001	0.001	mg/L							BDS	
Phenanthrene	<0.0006	0.0006	mg/L							BDS	
Anthracene	<0.0008	0.0008	mg/L							BDS	
Di-n-butylphthalate	<0.001	0.001	mg/L							BDS	
Fluoranthene	<0.0005	0.0005	mg/L							BDS	
Carbazole	<0.001	0.001	mg/L							BDS	
Benzidine	<0.0003	0.0003	mg/L							BDS	
Pyrene	<0.0005	0.0005	mg/L							BDS	
Benzylbutylphthalate	<0.0005	0.0005	mg/L							BDS	
Benzo(a)anthracene	<0.0008	0.0008	mg/L							BDS	
3,3'-Dichlorobenzidine	<0.0008	0.0008	mg/L							BDS	
Chrysene	<0.0005	0.0005	mg/L							BDS	
N-Nitroso-di-n-butylamine	<0.0007	0.0007	mg/L							BDS	
bis(2-Ethylhexyl)phthalate	<0.001	0.001	mg/L							BDS	
Di-n-octylphthalate	<0.001	0.001	mg/L							BDS	
Benzo(b)fluoranthene	<0.001	0.001	mg/L							BDS	
Benzo(k)fluoranthene	<0.0008	0.0008	mg/L							BDS	
Benzo(a)pyrene	<0.001	0.001	mg/L							BDS	
Indeno(1,2,3-cd)pyrene	<0.001	0.001	mg/L							BDS	
Dibenz(a,h)anthracene	<0.001	0.001	mg/L							BDS	
Benzo(g,h,i)perylene	<0.001	0.001	mg/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Blank (B4D0572-BLK1)				Prepared & Analyzed: 04/29/24							
Surrogate: 2-Fluorophenol	0.0432		mg/L	0.100		43	21-100				
Surrogate: Phenol-d6	0.0262		mg/L	0.100		26	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0869		mg/L	0.100		87	10-123				
Surrogate: Nitrobenzene-d5	0.0804		mg/L	0.100		80	35-114				
Surrogate: 2-Fluorobiphenyl	0.0699		mg/L	0.100		70	43-116				
Surrogate: p-Terphenyl-d14	0.0917		mg/L	0.100		92	33-141				
LCS (B4D0572-BS1)				Prepared & Analyzed: 04/29/24							
N-Nitrosodimethylamine	0.027	0.005	mg/L	0.0500		53	21-85			BDS	
Phenol	0.019	0.002	mg/L	0.0500		38	17-120			BDS	
2-Chlorophenol	0.049	0.005	mg/L	0.0500		98	36-120			BDS	
Pyridine	0.007	0.005	mg/L	0.0500		13	3-81			BDS	
bis(2-Chloroethyl)ether	0.050	0.005	mg/L	0.0500		100	43-126			BDS	
n-Decane	0.037	0.005	mg/L	0.0500		73	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.050	0.005	mg/L	0.0500		101	63-139			BDS	
o-Cresol	0.039	0.005	mg/L	0.0500		78	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.052	0.005	mg/L	0.0500		104	30-120			BDS	
m,p-Cresol	0.071	0.005	mg/L	0.100		71	27-120			BDS	
N-Nitroso-di-n-propylamine	0.048	0.005	mg/L	0.0500		96	14-198			BDS	
Hexachloroethane	0.032	0.002	mg/L	0.0500		64	55-120			BDS	
Nitrobenzene	0.048	0.005	mg/L	0.0500		95	54-158			BDS	
Isophorone	0.046	0.005	mg/L	0.0500		93	47-180			BDS	
2-Nitrophenol	0.050	0.005	mg/L	0.0500		99	45-167			BDS	
2,4-Dimethylphenol	0.050	0.005	mg/L	0.0500		99	42-120			BDS	
bis(2-Chloroethoxy)methane	0.047	0.005	mg/L	0.0500		94	49-165			BDS	
2,4-Dichlorophenol	0.051	0.005	mg/L	0.0500		103	53-122			BDS	
1,2,4-Trichlorobenzene	0.040	0.005	mg/L	0.0500		81	57-130			BDS	
Naphthalene	0.042	0.002	mg/L	0.0500		84	36-120			BDS	
Hexachlorobutadiene	0.040	0.002	mg/L	0.0500		79	38-120			BDS	
4-Chloro-3-methylphenol	0.050	0.005	mg/L	0.0500		101	41-128			BDS	
Hexachlorocyclopentadiene	0.048	0.005	mg/L	0.0500		96	10-98			BDS	
2,4,6-Trichlorophenol	0.051	0.005	mg/L	0.0500		102	52-129			BDS	
2-Chloronaphthalene	0.046	0.005	mg/L	0.0500		92	36-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
Dimethylphthalate	0.019	0.002	mg/L	0.0500		39	0-120			BDS	
2,4,5-Trichlorophenol	0.047	0.005	mg/L	0.0500		93	40-120			BDS	
2,6-Dinitrotoluene	0.048	0.005	mg/L	0.0500		95	68-137			BDS	
Acenaphthylene	0.019	0.005	mg/L	0.0500		38	54-126			BDS	OO1
Acenaphthene	0.046	0.005	mg/L	0.0500		92	60-132			BDS	
2,4-Dinitrophenol	0.038	0.010	mg/L	0.0500		75	0-173			BDS	
4-Nitrophenol	0.024	0.010	mg/L	0.0500		49	13-129			BDS	
2,4-Dinitrotoluene	0.047	0.005	mg/L	0.0500		94	48-127			BDS	
Pentachlorobenzene	0.049	0.005	mg/L	0.0500		99	50-120			BDS	
Diethylphthalate	0.030	0.005	mg/L	0.0500		61	0-120			BDS	
Fluorene	0.047	0.005	mg/L	0.0500		94	70-120			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
LCS (B4D0572-BS1)				Prepared & Analyzed: 04/29/24							
4-Chlorophenyl-phenyl ether	0.048	0.005	mg/L	0.0500		96	38-145			BDS	
4,6-Dinitro-2-methylphenol	0.047	0.010	mg/L	0.0500		94	53-130			BDS	
N-Nitrosodiphenylamine	0.049	0.005	mg/L	0.0500		98	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.026	0.005	mg/L	0.0500		52	2-79			BDS	
4-Bromophenyl-phenyl ether	0.047	0.005	mg/L	0.0500		94	65-120			BDS	
Hexachlorobenzene	0.038	0.005	mg/L	0.0500		76	8-142			BDS	
Pentachlorophenol	0.046	0.005	mg/L	0.0500		93	38-152			BDS	
n-Octadecane	0.047	0.005	mg/L	0.0500		94	20-120			BDS	
Phenanthrene	0.045	0.005	mg/L	0.0500		90	65-120			BDS	
Anthracene	0.045	0.005	mg/L	0.0500		89	43-120			BDS	
Di-n-butylphthalate	0.047	0.005	mg/L	0.0500		94	8-120			BDS	
Fluoranthene	0.045	0.005	mg/L	0.0500		90	43-121			BDS	
Carbazole	0.023	0.005	mg/L	0.0500		46	20-120			BDS	
Benzidine	0.001	0.005	mg/L	0.0500		2	1-75			BDS	
Pyrene	0.046	0.005	mg/L	0.0500		91	70-130			BDS	
Benzylbutylphthalate	0.047	0.005	mg/L	0.0500		95	0-140			BDS	
Benzo(a)anthracene	0.051	0.005	mg/L	0.0500		102	42-133			BDS	
3,3'-Dichlorobenzidine	0.051	0.005	mg/L	0.0500		102	8-213			BDS	
Chrysene	0.052	0.005	mg/L	0.0500		104	44-140			BDS	
N-Nitroso-di-n-butylamine	0.046	0.005	mg/L	0.0500		91	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.050	0.005	mg/L	0.0500		101	29-137			BDS	
Di-n-octylphthalate	0.048	0.005	mg/L	0.0500		96	19-132			BDS	
Benzo(b)fluoranthene	0.050	0.005	mg/L	0.0500		99	42-140			BDS	
Benzo(k)fluoranthene	0.050	0.005	mg/L	0.0500		100	25-146			BDS	
Benzo(a)pyrene	0.049	0.005	mg/L	0.0500		98	32-148			BDS	
Indeno(1,2,3-cd)pyrene	0.045	0.005	mg/L	0.0500		90	0-151			BDS	
Dibenz(a,h)anthracene	0.047	0.005	mg/L	0.0500		94	0-200			BDS	
Benzo(g,h,i)perylene	0.043	0.005	mg/L	0.0500		86	0-195			BDS	
Surrogate: 2-Fluorophenol	0.0488		mg/L	0.100		49	21-100				
Surrogate: Phenol-d6	0.0299		mg/L	0.100		30	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0946		mg/L	0.100		95	10-123				
Surrogate: Nitrobenzene-d5	0.0924		mg/L	0.100		92	35-114				
Surrogate: 2-Fluorobiphenyl	0.0782		mg/L	0.100		78	43-116				
Surrogate: p-Terphenyl-d14	0.102		mg/L	0.100		102	33-141				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Matrix Spike (B4D0572-MS1)		Source: 4D23023-02		Prepared & Analyzed: 04/29/24							
N-Nitrosodimethylamine	0.011	0.005	mg/L	0.0500	ND	22	21-85			BDS	
Phenol	0.009	0.002	mg/L	0.0500	ND	18	5-120			BDS	
2-Chlorophenol	0.022	0.005	mg/L	0.0500	ND	43	23-134			BDS	
Pyridine	0.0004	0.005	mg/L	0.0500	ND	0.9	3-81			BDS	Q2
bis(2-Chloroethyl)ether	0.021	0.005	mg/L	0.0500	ND	43	12-158			BDS	
n-Decane	0.017	0.005	mg/L	0.0500	ND	35	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.022	0.005	mg/L	0.0500	ND	44	36-166			BDS	
o-Cresol	0.016	0.005	mg/L	0.0500	ND	33	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.021	0.005	mg/L	0.0500	ND	42	50-120			BDS	Q2
m,p-Cresol	0.029	0.005	mg/L	0.100	ND	29	27-120			BDS	
N-Nitroso-di-n-propylamine	0.020	0.005	mg/L	0.0500	ND	41	0.1-230			BDS	
Hexachloroethane	0.017	0.002	mg/L	0.0500	ND	33	40-120			BDS	Q2
Nitrobenzene	0.022	0.005	mg/L	0.0500	ND	44	35-180			BDS	
Isophorone	0.022	0.005	mg/L	0.0500	ND	43	21-196			BDS	
2-Nitrophenol	0.022	0.005	mg/L	0.0500	ND	44	29-182			BDS	
2,4-Dimethylphenol	0.022	0.005	mg/L	0.0500	ND	44	32-120			BDS	
bis(2-Chloroethoxy)methane	0.021	0.005	mg/L	0.0500	ND	42	33-184			BDS	
2,4-Dichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	39-135			BDS	
1,2,4-Trichlorobenzene	0.018	0.005	mg/L	0.0500	ND	36	44-142			BDS	Q2
Naphthalene	0.019	0.002	mg/L	0.0500	0.0006	36	21-133			BDS	
Hexachlorobutadiene	0.018	0.002	mg/L	0.0500	ND	36	24-120			BDS	
4-Chloro-3-methylphenol	0.023	0.005	mg/L	0.0500	ND	46	22-147			BDS	
Hexachlorocyclopentadiene	0.024	0.005	mg/L	0.0500	ND	47	10-98			BDS	
2,4,6-Trichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	37-144			BDS	
2-Chloronaphthalene	0.019	0.005	mg/L	0.0500	ND	38	60-120			BDS	Q2
1,2,4,5-Tetrachlorobenzene	0.019	0.005	mg/L	0.0500	ND	37	35-120			BDS	
Dimethylphthalate	0.018	0.002	mg/L	0.0500	ND	35	0.1-120			BDS	
2,4,5-Trichlorophenol	0.020	0.005	mg/L	0.0500	ND	41	40-120			BDS	
2,6-Dinitrotoluene	0.023	0.005	mg/L	0.0500	ND	46	50-158			BDS	Q2
Acenaphthylene	0.019	0.005	mg/L	0.0500	ND	37	33-145			BDS	
Acenaphthene	0.019	0.005	mg/L	0.0500	ND	37	47-145			BDS	Q2
2,4-Dinitrophenol	0.020	0.010	mg/L	0.0500	ND	39	0.1-191			BDS	
4-Nitrophenol	0.014	0.010	mg/L	0.0500	ND	28	0.1-132			BDS	
2,4-Dinitrotoluene	0.024	0.005	mg/L	0.0500	ND	49	39-139			BDS	
Pentachlorobenzene	0.019	0.005	mg/L	0.0500	ND	38	50-120			BDS	Q2
Diethylphthalate	0.020	0.005	mg/L	0.0500	ND	39	0.1-120			BDS	
Fluorene	0.019	0.005	mg/L	0.0500	ND	39	59-121			BDS	Q2
4-Chlorophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	45	25-158			BDS	
4,6-Dinitro-2-methylphenol	0.023	0.010	mg/L	0.0500	ND	47	0.1-181			BDS	
N-Nitrosodiphenylamine	0.021	0.005	mg/L	0.0500	ND	42	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.012	0.005	mg/L	0.0500	ND	24	2-79			BDS	
4-Bromophenyl-phenyl ether	0.022	0.005	mg/L	0.0500	ND	44	53-127			BDS	Q2
Hexachlorobenzene	0.018	0.005	mg/L	0.0500	ND	35	0.1-152			BDS	
Pentachlorophenol	0.020	0.005	mg/L	0.0500	ND	40	14-176			BDS	
n-Octadecane	0.022	0.005	mg/L	0.0500	ND	44	20-120			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0572 - 3510C/625

Matrix Spike (B4D0572-MS1)

Source: 4D23023-02 Prepared & Analyzed: 04/29/24

Phenanthrene	0.019	0.005	mg/L	0.0500	ND	38	54-120			BDS	OQ2
Anthracene	0.018	0.005	mg/L	0.0500	ND	37	27-133			BDS	
Di-n-butylphthalate	0.023	0.005	mg/L	0.0500	ND	46	1-120			BDS	
Fluoranthene	0.019	0.005	mg/L	0.0500	ND	38	26-137			BDS	
Carbazole	0.007	0.005	mg/L	0.0500	ND	15	20-120			BDS	OQ2
Benzidine	<0.005	0.005	mg/L	0.0500	ND		1-75			BDS	OQ2
Pyrene	0.019	0.005	mg/L	0.0500	ND	38	52-120			BDS	OQ2
Benzylbutylphthalate	0.024	0.005	mg/L	0.0500	ND	47	0.1-152			BDS	
Benzo(a)anthracene	0.021	0.005	mg/L	0.0500	ND	42	33-143			BDS	
3,3'-Dichlorobenzidine	0.016	0.005	mg/L	0.0500	ND	31	0.1-262			BDS	
Chrysene	0.018	0.005	mg/L	0.0500	ND	37	17-168			BDS	
N-Nitroso-di-n-butylamine	0.020	0.005	mg/L	0.0500	ND	40	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.024	0.005	mg/L	0.0500	ND	48	8-158			BDS	
Di-n-octylphthalate	0.023	0.005	mg/L	0.0500	ND	46	4-146			BDS	
Benzo(b)fluoranthene	0.021	0.005	mg/L	0.0500	ND	42	24-159			BDS	
Benzo(k)fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	11-162			BDS	
Benzo(a)pyrene	0.019	0.005	mg/L	0.0500	ND	39	17-163			BDS	
Indeno(1,2,3-cd)pyrene	0.018	0.005	mg/L	0.0500	ND	36	0.1-171			BDS	
Dibenz(a,h)anthracene	0.021	0.005	mg/L	0.0500	ND	41	0.1-227			BDS	
Benzo(g,h,i)perylene	0.022	0.005	mg/L	0.0500	ND	45	0.1-219			BDS	
Surrogate: 2-Fluorophenol	0.0224		mg/L	0.100		22	21-100				
Surrogate: Phenol-d6	0.0149		mg/L	0.100		15	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0392		mg/L	0.100		39	10-123				
Surrogate: Nitrobenzene-d5	0.0353		mg/L	0.100		35	35-114				
Surrogate: 2-Fluorobiphenyl	0.0356		mg/L	0.100		36	43-116				OS4
Surrogate: p-Terphenyl-d14	0.0421		mg/L	0.100		42	33-141				

Matrix Spike Dup (B4D0572-MSD1)

Source: 4D23023-02 Prepared & Analyzed: 04/29/24

N-Nitrosodimethylamine	0.011	0.005	mg/L	0.0500	ND	22	21-85	0.3	25	BDS	
Phenol	0.009	0.002	mg/L	0.0500	ND	19	5-120	4	64	BDS	
2-Chlorophenol	0.022	0.005	mg/L	0.0500	ND	44	23-134	2	61	BDS	
Pyridine	0.0009	0.005	mg/L	0.0500	ND	2	3-81	68	25	BDS	OQ2, OQ3
bis(2-Chloroethyl)ether	0.022	0.005	mg/L	0.0500	ND	44	12-158	3	108	BDS	
n-Decane	0.018	0.005	mg/L	0.0500	ND	35	20-120	3	25	BDS	
bis(2-Chloroisopropyl)ether	0.022	0.005	mg/L	0.0500	ND	45	36-166	1	76	BDS	
o-Cresol	0.017	0.005	mg/L	0.0500	ND	34	27-120	3	25	BDS	
N-Nitroso-n-ethyl-ethanamine	0.022	0.005	mg/L	0.0500	ND	43	50-120	2	25	BDS	OQ2
m,p-Cresol	0.030	0.005	mg/L	0.100	ND	30	27-120	3	25	BDS	
N-Nitroso-di-n-propylamine	0.021	0.005	mg/L	0.0500	ND	42	0.1-230	4	87	BDS	
Hexachloroethane	0.017	0.002	mg/L	0.0500	ND	34	40-120	2	52	BDS	OQ2
Nitrobenzene	0.022	0.005	mg/L	0.0500	ND	45	35-180	2	62	BDS	
Isophorone	0.022	0.005	mg/L	0.0500	ND	45	21-196	4	93	BDS	
2-Nitrophenol	0.023	0.005	mg/L	0.0500	ND	46	29-182	6	55	BDS	
2,4-Dimethylphenol	0.023	0.005	mg/L	0.0500	ND	46	32-120	6	58	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0572 - 3510C/625											
Matrix Spike Dup (B4D0572-MSD1)			Source: 4D23023-02		Prepared & Analyzed: 04/29/24						
bis(2-Chloroethoxy)methane	0.022	0.005	mg/L	0.0500	ND	44	33-184	5	54	BDS	
2,4-Dichlorophenol	0.024	0.005	mg/L	0.0500	ND	48	39-135	1	50	BDS	
1,2,4-Trichlorobenzene	0.019	0.005	mg/L	0.0500	ND	37	44-142	5	50	BDS	OQ2
Naphthalene	0.019	0.002	mg/L	0.0500	0.0006	37	21-133	3	65	BDS	
Hexachlorobutadiene	0.019	0.002	mg/L	0.0500	ND	38	24-120	6	62	BDS	
4-Chloro-3-methylphenol	0.025	0.005	mg/L	0.0500	ND	49	22-147	8	73	BDS	
Hexachlorocyclopentadiene	0.024	0.005	mg/L	0.0500	ND	49	10-98	3	25	BDS	
2,4,6-Trichlorophenol	0.025	0.005	mg/L	0.0500	ND	50	37-144	5	58	BDS	
2-Chloronaphthalene	0.019	0.005	mg/L	0.0500	ND	38	60-120	0.7	24	BDS	OQ2
1,2,4,5-Tetrachlorobenzene	0.020	0.005	mg/L	0.0500	ND	39	35-120	5	25	BDS	
Dimethylphthalate	0.018	0.002	mg/L	0.0500	ND	37	0.1-120	4	183	BDS	
2,4,5-Trichlorophenol	0.020	0.005	mg/L	0.0500	ND	39	40-120	4	25	BDS	
2,6-Dinitrotoluene	0.025	0.005	mg/L	0.0500	ND	50	50-158	8	48	BDS	
Acenaphthylene	0.020	0.005	mg/L	0.0500	ND	39	33-145	5	74	BDS	
Acenaphthene	0.019	0.005	mg/L	0.0500	ND	38	47-145	3	48	BDS	OQ2
2,4-Dinitrophenol	0.021	0.010	mg/L	0.0500	ND	41	0.1-191	5	132	BDS	
4-Nitrophenol	0.013	0.010	mg/L	0.0500	ND	27	0.1-132	3	131	BDS	
2,4-Dinitrotoluene	0.025	0.005	mg/L	0.0500	ND	50	39-139	3	42	BDS	
Pentachlorobenzene	0.021	0.005	mg/L	0.0500	ND	41	50-120	8	25	BDS	OQ2
Diethylphthalate	0.021	0.005	mg/L	0.0500	ND	41	0.1-120	4	100	BDS	
Fluorene	0.020	0.005	mg/L	0.0500	ND	40	59-121	4	38	BDS	OQ2
4-Chlorophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	47	25-158	4	61	BDS	
4,6-Dinitro-2-methylphenol	0.023	0.010	mg/L	0.0500	ND	45	0.1-181	3	203	BDS	
N-Nitrosodiphenylamine	0.022	0.005	mg/L	0.0500	ND	44	25-120	5	25	BDS	
Diphenylhydrazine(as Azobenzene)	0.013	0.005	mg/L	0.0500	ND	25	2-79	7	25	BDS	
4-Bromophenyl-phenyl ether	0.023	0.005	mg/L	0.0500	ND	46	53-127	5	43	BDS	OQ2
Hexachlorobenzene	0.019	0.005	mg/L	0.0500	ND	39	0.1-152	10	55	BDS	
Pentachlorophenol	0.021	0.005	mg/L	0.0500	ND	42	14-176	4	86	BDS	
n-Octadecane	0.023	0.005	mg/L	0.0500	ND	46	20-120	3	25	BDS	
Phenanthrene	0.020	0.005	mg/L	0.0500	ND	39	54-120	5	39	BDS	OQ2
Anthracene	0.019	0.005	mg/L	0.0500	ND	39	27-133	5	66	BDS	
Di-n-butylphthalate	0.024	0.005	mg/L	0.0500	ND	49	1-120	6	47	BDS	
Fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	26-137	6	66	BDS	
Carbazole	0.008	0.005	mg/L	0.0500	ND	16	20-120	5	25	BDS	OQ2
Benzidine	<0.005	0.005	mg/L	0.0500	ND		1-75		25	BDS	OQ2
Pyrene	0.020	0.005	mg/L	0.0500	ND	40	52-120	6	49	BDS	OQ2
Benzylbutylphthalate	0.025	0.005	mg/L	0.0500	ND	50	0.1-152	7	60	BDS	
Benzo(a)anthracene	0.022	0.005	mg/L	0.0500	ND	44	33-143	4	53	BDS	
3,3'-Dichlorobenzidine	0.017	0.005	mg/L	0.0500	ND	35	0.1-262	11	108	BDS	
Chrysene	0.019	0.005	mg/L	0.0500	ND	39	17-168	5	87	BDS	
N-Nitroso-di-n-butylamine	0.021	0.005	mg/L	0.0500	ND	42	35-120	6	25	BDS	
bis(2-Ethylhexyl)phthalate	0.026	0.005	mg/L	0.0500	ND	51	8-158	7	82	BDS	
Di-n-octylphthalate	0.024	0.005	mg/L	0.0500	ND	48	4-146	5	69	BDS	
Benzo(b)fluoranthene	0.020	0.005	mg/L	0.0500	ND	40	24-159	6	71	BDS	
Benzo(k)fluoranthene	0.020	0.005	mg/L	0.0500	ND	41	11-162	3	63	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0572 - 3510C/625

Matrix Spike Dup (B4D0572-MSD1)

Source: 4D23023-02 Prepared & Analyzed: 04/29/24

Benzo(a)pyrene	0.021	0.005	mg/L	0.0500	ND	41	17-163	6	72	BDS	
Indeno(1,2,3-cd)pyrene	0.019	0.005	mg/L	0.0500	ND	37	0.1-171	3	99	BDS	
Dibenz(a,h)anthracene	0.021	0.005	mg/L	0.0500	ND	42	0.1-227	3	126	BDS	
Benzo(g,h,i)perylene	0.024	0.005	mg/L	0.0500	ND	47	0.1-219	5	97	BDS	
Surrogate: 2-Fluorophenol	0.0232		mg/L	0.100		23	21-100				
Surrogate: Phenol-d6	0.0150		mg/L	0.100		15	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0426		mg/L	0.100		43	10-123				
Surrogate: Nitrobenzene-d5	0.0373		mg/L	0.100		37	35-114				
Surrogate: 2-Fluorobiphenyl	0.0372		mg/L	0.100		37	43-116				OS4
Surrogate: p-Terphenyl-d14	0.0455		mg/L	0.100		45	33-141				

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	<0.004	0.004	ug/L							BDS	
alpha-BHC	<0.003	0.003	ug/L							BDS	
beta-BHC	<0.006	0.006	ug/L							BDS	
delta-BHC	<0.009	0.009	ug/L							BDS	
gamma-BHC	<0.004	0.004	ug/L							BDS	
alpha-Chlordane	<0.014	0.014	ug/L							BDS	
gamma-Chlordane	<0.014	0.014	ug/L							BDS	
4,4'-DDD	<0.011	0.011	ug/L							BDS	
4,4'-DDE	<0.004	0.004	ug/L							BDS	
4,4'-DDT	<0.012	0.012	ug/L							BDS	
Dieldrin	<0.002	0.002	ug/L							BDS	
Endosulfan I	<0.014	0.014	ug/L							BDS	
Endosulfan II	<0.004	0.004	ug/L							BDS	
Endosulfan Sulfate	<0.066	0.066	ug/L							BDS	
Endrin	<0.006	0.006	ug/L							BDS	
Endrin Aldehyde	<0.023	0.023	ug/L							BDS	
Heptachlor	<0.003	0.003	ug/L							BDS	
Heptachlor Epoxide	<0.083	0.083	ug/L							BDS	
Endrin Ketone	<0.015	0.015	ug/L							BDS	
Methoxychlor	<0.126	0.126	ug/L							BDS	
Toxaphene	<0.240	0.240	ug/L							BDS	
Chlordane, Technical	<0.010	0.010	ug/L							BDS	
Surrogate: Decachlorobiphenyl	0.563		ug/L	1.00		56	10-140				
Surrogate: Tetrachloro-m-xylene	0.358		ug/L	1.00		36	10-140				

LCS (B4E0068-BS1)

Prepared: 04/29/24 Analyzed: 05/16/24

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Organochlorine Pesticides by EPA Method 608.3 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

LCS (B4E0068-BS1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	0.358	0.005	ug/L	0.500		72	42-140			BDS
alpha-BHC	0.383	0.005	ug/L	0.500		77	37-140			BDS
beta-BHC	0.362	0.010	ug/L	0.500		72	17-147			BDS
delta-BHC	0.453	0.010	ug/L	0.500		91	19-140			BDS
gamma-BHC	0.401	0.005	ug/L	0.500		80	32-140			BDS
alpha-Chlordane	0.357	0.020	ug/L	0.500		71	45-140			BDS
gamma-Chlordane	0.416	0.020	ug/L	0.500		83	45-140			BDS
4,4'-DDD	0.427	0.020	ug/L	0.500		85	31-141			BDS
4,4'-DDE	0.428	0.005	ug/L	0.500		86	30-145			BDS
4,4'-DDT	0.344	0.020	ug/L	0.500		69	25-160			BDS
Dieldrin	0.452	0.005	ug/L	0.500		90	36-146			BDS
Endosulfan I	0.432	0.020	ug/L	0.500		86	45-153			BDS
Endosulfan II	0.338	0.005	ug/L	0.500		68	1-202			BDS
Endosulfan Sulfate	0.384	0.100	ug/L	0.500		77	26-144			BDS
Endrin	0.433	0.010	ug/L	0.500		87	30-147			BDS
Endrin Aldehyde	0.331	0.050	ug/L	0.500		66	30-147			BDS
Heptachlor	0.224	0.005	ug/L	0.500		45	34-140			BDS
Heptachlor Epoxide	0.419	0.100	ug/L	0.500		84	37-142			BDS
Endrin Ketone	0.386	0.020	ug/L	0.500		77	45-140			BDS
Methoxychlor	0.330	0.150	ug/L	0.500		66	45-140			BDS
Toxaphene	33.6	0.500	ug/L	50.0		67	41-140			BDS
Chlordane, Technical	1.01	0.020	ug/L	1.00		101	45-140			BDS
Surrogate: Decachlorobiphenyl	0.597		ug/L	1.00		60	10-140			
Surrogate: Tetrachloro-m-xylene	0.426		ug/L	1.00		43	10-140			

Matrix Spike (B4E0068-MS1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.421	0.005	ug/L	0.500	ND	84	42-140			BDS
alpha-BHC	0.352	0.005	ug/L	0.500	ND	70	37-140			BDS
beta-BHC	0.094	0.010	ug/L	0.500	ND	19	17-147			BDS
delta-BHC	0.351	0.010	ug/L	0.500	ND	70	19-140			BDS
gamma-BHC	0.396	0.005	ug/L	0.500	ND	79	32-140			BDS
alpha-Chlordane	0.186	0.020	ug/L	0.500	ND	37	45-140			BDS OQ2, OQ4
gamma-Chlordane	0.359	0.020	ug/L	0.500	ND	72	45-140			BDS
4,4'-DDD	0.413	0.020	ug/L	0.500	ND	83	31-141			BDS
4,4'-DDE	0.413	0.005	ug/L	0.500	ND	83	30-145			BDS
4,4'-DDT	0.306	0.020	ug/L	0.500	ND	61	25-160			BDS
Dieldrin	0.391	0.005	ug/L	0.500	ND	78	36-146			BDS
Endosulfan I	0.215	0.020	ug/L	0.500	ND	43	45-153			BDS OQ2, OQ4
Endosulfan II	0.381	0.005	ug/L	0.500	ND	76	1-202			BDS
Endosulfan Sulfate	0.338	0.100	ug/L	0.500	ND	68	26-144			BDS
Endrin	0.389	0.010	ug/L	0.500	ND	78	30-147			BDS
Endrin Aldehyde	0.224	0.050	ug/L	0.500	ND	45	30-147			BDS
Heptachlor	0.307	0.005	ug/L	0.500	ND	61	34-140			BDS
Heptachlor Epoxide	0.365	0.100	ug/L	0.500	ND	73	37-142			BDS

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike (B4E0068-MS1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Endrin Ketone	0.327	0.020	ug/L	0.500	ND	65	45-140			BDS	
Methoxychlor	0.363	0.150	ug/L	0.500	ND	73	45-140			BDS	
Toxaphene	21.5	0.500	ug/L	50.0	ND	43	41-140			BDS	
Chlordane, Technical	1.30	0.020	ug/L	1.00	ND	130	45-140			BDS	OQ4
Surrogate: Decachlorobiphenyl	0.612		ug/L	1.00		61	10-140				
Surrogate: Tetrachloro-m-xylene	0.476		ug/L	1.00		48	10-140				

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.396	0.005	ug/L	0.500	ND	79	42-140	6	35	BDS	
alpha-BHC	0.389	0.005	ug/L	0.500	ND	78	37-140	10	36	BDS	
beta-BHC	0.090	0.010	ug/L	0.500	ND	18	17-147	5	44	BDS	
delta-BHC	0.367	0.010	ug/L	0.500	ND	73	19-140	5	52	BDS	
gamma-BHC	0.425	0.005	ug/L	0.500	ND	85	32-140	7	39	BDS	
alpha-Chlordane	0.354	0.020	ug/L	0.500	ND	71	45-140	63	35	BDS	OQ3
gamma-Chlordane	0.378	0.020	ug/L	0.500	ND	76	45-140	5	35	BDS	
4,4'-DDD	0.421	0.020	ug/L	0.500	ND	84	31-141	2	39	BDS	
4,4'-DDE	0.371	0.005	ug/L	0.500	ND	74	30-145	11	35	BDS	
4,4'-DDT	0.293	0.020	ug/L	0.500	ND	59	25-160	4	42	BDS	
Dieldrin	0.173	0.005	ug/L	0.500	ND	35	36-146	77	49	BDS	OQ3, OQ4
Endosulfan I	0.424	0.020	ug/L	0.500	ND	85	45-153	65	28	BDS	OQ3
Endosulfan II	0.384	0.005	ug/L	0.500	ND	77	1-202	0.8	53	BDS	
Endosulfan Sulfate	0.312	0.100	ug/L	0.500	ND	62	26-144	8	38	BDS	
Endrin	0.341	0.010	ug/L	0.500	ND	68	30-147	13	48	BDS	
Endrin Aldehyde	0.209	0.050	ug/L	0.500	ND	42	30-147	7	48	BDS	
Heptachlor	0.282	0.005	ug/L	0.500	ND	56	34-140	9	43	BDS	
Heptachlor Epoxide	0.373	0.100	ug/L	0.500	ND	75	37-142	2	26	BDS	
Endrin Ketone	0.294	0.020	ug/L	0.500	ND	59	45-140	10	35	BDS	
Methoxychlor	0.357	0.150	ug/L	0.500	ND	71	45-140	1	35	BDS	
Toxaphene	24.4	0.500	ug/L	50.0	ND	49	41-140	13	41	BDS	
Chlordane, Technical	1.57	0.020	ug/L	1.00	ND	157	45-140	19	35	BDS	OQ2, OQ4
Surrogate: Decachlorobiphenyl	0.508		ug/L	1.00		51	10-140				
Surrogate: Tetrachloro-m-xylene	0.477		ug/L	1.00		48	10-140				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101
Project Manager: Scott Kolb

Reported:
05/17/24 14:20

Qualifiers, Definitions & Notes

Q8	Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.		
OS4	The Surrogate Recovery for this sample cannot be accurately quantified due to matrix interferences.		
OS2	Surrogate % Recovery is greater than the maximum defined recovery level due to sample dilution and/or matrix interference.		
OQ4	The second column confirmation exceeded 50% difference.		
OQ3	The Relative Percent Difference (RPD) for one or more analytes is outside of acceptance criteria established for this analysis meth		
OQ2	The Matrix Spike Recovery (MS/MSD) limits for one or more analytes in this sample were outside of the method default acceptan		
OQ1	The Laboratory Control Sample (LCS) had one or more analytes outside of the QC acceptance limits.		
J	Estimated Value reported above the Method Detection Limit (MDL) but below the Reporting Limit (RL).		
E	Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory'		
	initial calibration curve & adjusted for initial sample volume or weight.		
mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
 Beaumont TX, 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.#

Project: TPDES Wastewater Permit
 Project #:
 Location: Outfall 101
 P.O. #:
 Fax #:

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

E.A.S.#										Analysis Requested																
No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON/T. Phos.	Cl, F, SO4, NO3	Alkalinity, Cr6	O&G	TDS/TSS	200.8 Metals/Cr3 *	Low Level Hg	Available Cyanide	624-Tox. Poll. VOA	625-Tox. Poll SVOA	608-Pesticides	Nonylphenol	on-site pH/Temp F/DO	T. Residual Chlorine-LOW	Extra
Outfall 101	04/22/24	1115	X		2	1 L - P	WW	NONE	X																	
Outfall 101	04/22/24	1115	X		2	500 mL - P	WW	H2SO4		X																
Outfall 101	04/22/24	1115	X		1	500 mL - P	WW	NONE				X														
Outfall 101	04/22/24	1115	X		1	500 mL - P	WW	NONE					X													
Outfall 101	04/22/24	1115	X		1	1 L - G	WW	H2SO4						X												
Outfall 101	04/22/24	1115	X		1	1 L - P	WW	NONE							X											
Outfall 101	04/22/24	1115	X		1	250 mL - P	WW	HNO3								X										* Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni
Outfall 101	04/22/24	1115	X		2	40 mL - V	WW	HCL									X									Se, Ag, Tl, Zn
Outfall 101	04/22/24	1115	X		1	250 mL - AP	WW	NAOH										X								
Outfall 101	04/22/24	1115	X		3	40 mL - V	WW	NONE												X						
Outfall 101	04/22/24	1115	X		3	1 L - AG	WW	NONE													X					
Outfall 101	04/22/24	1115	X		3	1 L - AG	WW	NONE														X				
Outfall 101	04/22/24	1115	X		2	1 L - AG	WW	H2SO4															X			
Outfall 101	04/22/24	1115	X		1	250 mL - P	WW	NONE																X		
Outfall 101	04/22/24	1115	X		1	4 oz - G	WW	NONE																	X	
DUP	04/22/24	1115	X		2	40 mL - V	WW	HCL									X									
FB	04/22/24	1115	X		2	40 mL - V	W	HCL									X									
Outfall 101	04/22/24	1115	X		2	1 L - P	WW	NONE																		X

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or N

Cooler Temperature: 3.1°C

TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)

TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)

SAMPLED BY: JSC

SAMPLED BY PRINT NAME: Tracy Tubbs

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY: JSC

DATE: 04/22/24

RECEIVED AT LABORATORY BY:

ORGANIZATION:

TIME: 1335

ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCL (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid

FRM-SC1

Revision 5

12-28-2009

Reviewed 1-13-2012

ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 4/25/2024 4:44:38 PM

JOB DESCRIPTION

4D22048-01

JOB NUMBER

180-172822-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Generated
4/25/2024 4:44:38 PM



Table of Contents

Cover Page 1

Table of Contents 3

Case Narrative 4

Definitions/Glossary 5

Certification Summary 6

Sample Summary 7

Method Summary 8

Lab Chronicle 9

Client Sample Results 10

QC Sample Results 11

QC Association Summary 12

Chain of Custody 13

Receipt Checklists 14

Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D22048-01

Job ID: 180-172822-1

Job ID: 180-172822-1

Eurofins Pittsburgh

Job Narrative 180-172822-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/23/2024 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

General Chemistry

Method 1677: The following sample was diluted to bring the concentration of target analytes within the calibration range: 4D22048-01 (180-172822-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-172822-1	4D22048-01	Water	04/22/24 11:15	04/23/24 10:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Client Sample ID: 4D22048-01
Date Collected: 04/22/24 11:15
Date Received: 04/23/24 10:00

Lab Sample ID: 180-172822-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	OrA - 1677		2			466468	04/24/24 17:28	SNR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: EET PIT

Batch Type: Analysis

SNR = Sabra Richart

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Client Sample ID: 4D22048-01

Lab Sample ID: 180-172822-1

Date Collected: 04/22/24 11:15

Matrix: Water

Date Received: 04/23/24 10:00

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	0.12		a.aa4a	0.0031	mg/L			04/24/24 17:28	2

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-466468/43

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			04/24/24 16:20	1

Lab Sample ID: LCS 180-466468/44

Matrix: Water

Analysis Batch: 466468

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0486		mg/L		97	82 - 132

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D22048-01

Job ID: 180-172822-1

General Chemistry

Analysis Batch: 466468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-172822-1	4D22048-01	Total/NA	Water	OIA - 1677	
MB 180-466468/43	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-466468/44	Lab Control Sample	Total/NA	Water	OIA - 1677	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22048

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

RECEIVING LABORATORY:

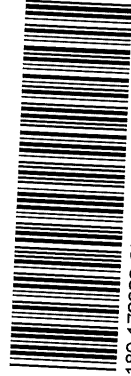
Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

Due Date: 05/02/24 11:00

State of Origin : TX

PO Number : 4D22048

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22048-01	Outfall 101 - Grab	Water	04/22/24 11:15	Containers and Unique ID: Analyses 250 mL - P, NAOH (L)	SUB. - Available Cyanide	



180-172822 Chain of Custody

Signature 4/22/24 11:30

Released By	Date/Time	Received By	Date/Time
<i>Signature</i>		<i>Signature</i>	4-23-24 10:00
Released By	Date/Time	Received By	Date/Time

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-172822-1

Login Number: 172822

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Rucker, Keenyn J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

April 30, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D22048

Order No.: 24041705

Dear Scott Boudreaux:

Summit Environmental Technologies, Inc. received 3 sample(s) on 4/23/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24041705
Date: 4/30/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D22048

WorkOrder Narrative:

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24041705
30-Apr-24

CLIENT: Earth Analytical Sciences, Inc.
Project: 4D22048

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24041705-001	4D22048-01		4/22/2024 11:15:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041705-001	4D22048-01		4/22/2024 11:15:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041705-001	4D22048-01		4/22/2024 11:15:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041705-002	4D22048-02		4/22/2024 11:15:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water
24041705-003	4D22048-03		4/22/2024 11:15:00 AM	4/23/2024 9:20:00 AM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24041705**

Date Reported: **4/30/2024**

Lab ID: 24041705-001

Collection Date: 4/22/2024 11:15:00 AM

Client Sample ID 4D22048-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	41.7	0.361	0.500		ng/L	1	R184375	4/25/2024 11:20:13 AM
STANDARD MASTER LIST-EXTRA (EPA 8270C)					EPA 8270 C			EPA 3510 Analyst: SAM
Nonylphenol	ND		0.00490	J	mg/L	1	74863	4/28/2024 5:46:00 PM
Surr: 2-Fluorophenol	59.0		14-110		%Rec	1	74863	4/28/2024 5:46:00 PM
Surr: Phenol-d6	41.5		10-110		%Rec	1	74863	4/28/2024 5:46:00 PM
Surr: 2,4,6-Tribromophenol	83.9		13-125		%Rec	1	74863	4/28/2024 5:46:00 PM
TKN (EPA351.2)					EPA 351MOD 2			EPA 351.2 Analyst: BJT
TKN	48.5	5.00	10.0		mg/L	10	74923	4/26/2024 12:00:00 PM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24041705**

Date Reported: **4/30/2024**

Lab ID: 24041705-002

Collection Date: 4/22/2024 11:15:00 AM

Client Sample ID 4D22048-02

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	43.9	0.361	0.500		ng/L	1	R184375	4/25/2024 11:24:22 AM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24041705**

Date Reported: **4/30/2024**

Lab ID: 24041705-003

Collection Date: 4/22/2024 11:15:00 AM

Client Sample ID 4D22048-03

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	0.556	0.361	0.500		ng/L	1	R184375	4/25/2024 11:32:39 AM

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

M Manual Integration used to determine area response
PL Permit Limit
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: 74863

Sample ID: MB-74863	SampType: MBLK	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: PBW	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002659						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0270		0.05000		54.0	10	130				
Surr: Phenol-d6	0.0187		0.05000		37.4	10	130				
Surr: Nitrobenzene-d5	0.0629		0.05000		126	10	130				
Surr: 2,4,6-Tribromophenol	0.0383		0.05000		76.6	19	151				
Surr: 2-Fluorobiphenyl	0.0581		0.05000		116	10	130				
Surr: p-Terphenyl-d14	0.0590		0.05000		118	20	181				

Sample ID: LCS-74863	SampType: LCS	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: LCSW	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002660						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0300		0.05000		59.9	10	130				
Surr: Phenol-d6	0.0224		0.05000		44.7	10	130				
Surr: Nitrobenzene-d5	0.0556		0.05000		111	10	130				
Surr: 2,4,6-Tribromophenol	0.0394		0.05000		78.9	19	151				
Surr: 2-Fluorobiphenyl	0.0512		0.05000		102	10	130				
Surr: p-Terphenyl-d14	0.0452		0.05000		90.5	20	181				

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: 74863

Sample ID: LCSD-74863	SampType: LCSD	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/24/2024	RunNo: 184557						
Client ID: LCSS02	Batch ID: 74863	TestNo: SW8270C	SW3510C	Analysis Date: 4/28/2024	SeqNo: 5002661						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0279		0.05000		55.8	10	130		0		
Surr: Phenol-d6	0.0205		0.05000		41.0	10	130		0		
Surr: Nitrobenzene-d5	0.0508		0.05000		102	10	130		0		
Surr: 2,4,6-Tribromophenol	0.0360		0.05000		72.0	19	151		0		
Surr: 2-Fluorobiphenyl	0.0456		0.05000		91.2	10	130		0		
Surr: p-Terphenyl-d14	0.0422		0.05000		84.3	20	181		0		

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22048

BatchID: 74923

Sample ID: MB-74923	SampType: MBLK	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024				RunNo: 184460		
Client ID: PBW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000787		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-74923	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: LCSW	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000791		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.8	1.00	10.00	0	108	90	110				

Sample ID: 24041763-008ADUP		SampType: DUP		TestCode: TKN_NPW(35			Units: mg/L			Prep Date: 4/25/2024			RunNo: 184460	
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000810			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN		ND		1.00						0	0	20		

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000812		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	18.7	1.00	10.00	8.232	105	90	110				

Qualifiers:
H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: 74923

Sample ID: 24041816-006AMS	SampType: MS	TestCode: TKN_NPW(35	Units: mg/L	Prep Date: 4/25/2024	RunNo: 184460						
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2	E351.2	Analysis Date: 4/26/2024	SeqNo: 5000812						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24041816-006AMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 4/25/2024			RunNo: 184460		
Client ID: BatchQC		Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000813		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		18.9	1.00	10.00	8.232	106	90	110	18.74	0.702	20	

Sample ID: 24041879-003CMS		SampType: MS		TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 4/25/2024			RunNo: 184460	
Client ID: BatchQC		Batch ID: 74923		TestNo: E351.2		E351.2		Analysis Date: 4/26/2024			SeqNo: 5000824		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		10.4		1.00	10.00	1.091	93.2	90	110				

Sample ID: 24041879-003CMSD	SampType: MSD	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 4/25/2024				RunNo: 184460	
Client ID: BatchQC	Batch ID: 74923	TestNo: E351.2		E351.2		Analysis Date: 4/26/2024				SeqNo: 5000825	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	11.2	1.00	10.00	1.091	101	90	110	10.41	7.00	20	

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: R184375

Sample ID: mblank1	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998538		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998541		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	45.0	0.500	50.00	0	90.0	77	123				

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631			Analysis Date: 4/25/2024				SeqNo: 4998542		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998553		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: R184375

Sample ID: mblank3		SampType: MBLK		TestCode: HG-LL_NPW(Units: ng/L		Prep Date:			RunNo: 184375				
Client ID: PBW		Batch ID: R184375		TestNo: E1631		Analysis Date: 4/25/2024			SeqNo: 4998553				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998554		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.2	0.500	50.00	0	100	77	123				

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998555		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	46.7	0.500	50.00	0	93.5	77	123	50.25	7.21	24	

Sample ID: LCS2	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998557		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	53.2	0.500	50.00	0	106	77	123				

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.

Project: 4D22048

BatchID: R184375

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998558		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	0.478	0.500									J	

Sample ID: mblank5	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998569		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998570		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	50.4	0.500	50.00	0	101	77	123					

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024			SeqNo: 4998571		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.6	0.500	50.00	0	101	77	123	50.38	0.499	24	

Qualifiers:

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24041705

30-Apr-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22048

BatchID: R184375

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L	Prep Date:				RunNo: 184375				
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631	Analysis Date: 4/25/2024				SeqNo: 4998571				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: mblank6	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: PBW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998576		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	ND	0.500										

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSSW	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998577		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	50.6	0.500	50.00	0	101	77	123					

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:				RunNo: 184375		
Client ID: LCSS02	Batch ID: R184375	TestNo: E1631				Analysis Date: 4/25/2024				SeqNo: 4998578		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Mercury	52.2	0.500	50.00	0	104	77	123	50.59	3.19	24		

Qualifiers: H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit

J Analyte detected below quantitation limits
PL Permit Limit
S Spike Recovery outside accepted recovery limits

M Manual Integration used to determine area respons
R RPD outside accepted recovery limits
W Sample container temperature is out of limit as spe

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24041705
30-Apr-24

Client: Earth Analytical Sciences, Inc.
Project: 4D22048

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24041705-001A	4D22048-01	4/22/2024 11:15:00 AM	Non-Potable Water	Standard Master List-Extra (EPA 8270		4/24/2024 3:45:00 PM	4/28/2024 5:46:00 PM
24041705-001B				TKN (EPA351.2)		4/25/2024 11:00:00 AM	4/26/2024 12:00:00 PM
24041705-001C				Low-Level Mercury (EPA 1631)			4/25/2024 11:20:13 AM
24041705-002A	4D22048-02			Low-Level Mercury (EPA 1631)			4/25/2024 11:24:22 AM
24041705-003A	4D22048-03			Low-Level Mercury (EPA 1631)			4/25/2024 11:32:39 AM

Original



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24041705
30-Apr-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D22048

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	A-NELA	A	Accredited
A-NELA	N	Not Accredited	CO	U	Unavailable	CT	A	Accredited
CT	N	Not Accredited	L-NELA	A	Accredited	HI-DW	N	Not Accredited
ID	U	Unavailable	L-NELA	A	Accredited	IN_DW	U	Unavailable
S - NELA	N	Not Accredited	KY_UST	N	Not Accredited	W(RADS)	A	Accredited

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D22048

24041705

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies
3310 Win Street
Cuyahoga Falls, OH 44223
Phone : (330) 253-8211
Fax: N/A

State of Origin : TX

Due Date: 05/02/24 11:00

PO Number : 4D22048

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22048-01	Outfall 101 - Grab	Water	04/22/24 11:15	<i>Containers and Unique ID: Analyses</i> 500 mL, P, H2SO4 (D) SUB. - Nonylphenol 40 mL, VOA, HCL (J) SUB. - TKN 40 mL, VOA, HCL (K) SUB.-Low Level Mercury 1-Liter, AG, H2SO4 (V) 1-Liter, AG, H2SO4 (W)		
4D22048-02	DUP - Grab	Water	04/22/24 11:15	<i>Containers and Unique ID: Analyses</i> 40 mL, VOA, HCL (A) SUB.-Low Level Mercury 40 mL, VOA, HCL (B)		

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By

Date/Time

Page 18 of 20

5.8 - 0.2 = 5.6
Fedup cooler

SUBCONTRACT ORDER

Earth Analytical Sciences. Inc.

Project Number: 4D22048

SENDING LABORATORY:

RECEIVING LABORATORY:

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D22048-03	Field Blank - Grab	Water	04/22/24 11:15	Containers and Unique ID: Analyses 40 mL, VOA, HCL (A) 40 mL, VOA, HCL (B)	SUB.-Low Level Mercury	

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By

Date/Time

Page 19 of 20

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24041705

RcptNo: 1

Logged by: Christina N. Gemma 4/23/2024 9:20:00 AM
Completed By: Christina N. Gemma 4/23/2024 12:06:04 PM
Reviewed By: Holly Florea 4/23/2024 3:33:03 PM

C. Gemma
C. Gemma
Holly Florea

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			



EAS

4825 Ward Drive, Beaumont, TX 77705 (p) 409-842-0658 (f) 409-842-9793

17 May 2024

EAS NO.: 4D29044

Scott Kolb
Natgasoline
2366 Sulphur Plant Road
Beaumont, TX 77705
RE: TPDES Permit Renewal

Project No.: Outfall 101 - Week 2

Enclosed are the results of analyses for samples received by the laboratory on 04/29/24 13:35. If you have any questions concerning this report, please feel free to contact me.

Reviewed and Approved:

Scott Boudreaux
Project Manager

Earth Analytical Sciences, Inc. (EAS) warrants that work will be performed in accordance with sound laboratory practice and professional standards, but makes no other warranty, expressed or implied. In the event of any error, omission or other professional negligence, the sole and exclusive responsibility of EAS shall be to re-perform the work at its own expense, and EAS shall have no other liability whatsoever. In no event shall EAS be liable, whether in contract or tort, including negligence, for any incidental or consequential damages. If this provision is in conflict with other contractual terms, it is understood that this provision will, in all cases, prevail. This report can only be reproduced in full with written approval and consent of Earth Analytical Sciences, Inc.



EAS is a NELAP accredited laboratory and meets the guidance requirements put forth by "The NELAC Institute" (2016) for NELAP accredited parameters at EAS, unless noted otherwise. NELAP analyte certifications are considered to be approved in Texas and Louisiana for all analytes, unless denoted with an (E-1) under "Certification". Those analytes certified in either Texas or Louisiana, but not both, will be noted by "Case Narrative".

4825 Ward Drive
Beaumont, TX 77705

Tel: (409) 842-0658
Fax: (409) 842-9793
www.earthanalytical.com



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Cooler Temp C	Date Sampled	Date Received
Outfall 101 - Grab	4D29044-01	Wastewater	3.1	04/29/24 12:02	04/29/24 13:35

Sample Receipt Checklist

COC complete w/ required dates, times, signatures?	Yes
Chain of Custody Seal on Shipping Container?	No
If yes, is seal intact?	No
COC Seals on containers?	No
If yes, is seal intact?	No
Samples received with evidence of chilling?	Yes
Was a temperature blank used?	Yes
Samples received were not frozen & acceptable?	Yes
Are samples received on ice?	Yes
Therm. ID#200787226. Bias temp. (if appl.) on chain	Yes
Cooler temperature was acceptable and recorded?	Yes
Proof of chilling, sampled same day & acceptable?	Yes
Are sample containers intact (not damaged)?	Yes
Are acceptable containers used?	Yes
Were EnCore-Type samplers used, where applicable?	No
Is volume of samples sufficient for all analyses?	Yes
Are required preservatives documented acceptable?	Yes
Preserved samples checked for pH and acceptable?	Yes
Are samples that require adjusted pH documented?	No
VOAs requiring zero headspace have none or <6mm?	Yes
Are samples received within holding times?	Yes
Containers properly labeled and COC match labels?	Yes



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Case Narrative

Subcontracted analysis performed by Summit. Certificate of Analysis is attached.

Available Cyanide analysis performed by Eurofins TestAmerica. A certificate of analysis is enclosed.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Outfall 101 - Grab

Work Order #: 4D29044-01 Collection Date & Time: 4/29/2024 12:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Field Services Analysis Parameters									
Dissolved Oxygen	2.0	0.1	mg/L	04/29/24 12:09	04/29/24 12:09	SM 4500-O G-2016	E1	TT	
pH (on-site)	8.6		pH/°C	04/29/24 12:07	04/29/24 12:07	SM 4500-H+ B-2011	E1	TT	
Temperature by Field Meter	28.9		pH/°C	04/29/24 12:07	04/29/24 12:07	SM 4500-H+ B-2011	E1	TT	
Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L	04/29/24 12:12	04/29/24 12:12	SM 4500-Cl G-2011	E1	TT	
Temperature, F.	84.0		°F	04/29/24 12:07	04/29/24 12:07	SM 2550B-2010	E1	TT	
Wet Chemistry Analysis Parameters									
Total Alkalinity as CaCO ₃	536	20	mg/L	05/01/24 10:30	05/01/24 10:30	SM 2320B-2011		AC	
Ammonia-Nitrogen	23.0	5.00	mg/L	04/30/24 13:35	04/30/24 13:35	SM 4500-NH ₃ D-2011		AC	
Biochemical Oxygen Demand (BOD), 5-Day	162	8.0	mg/L	04/29/24 11:15	04/29/24 11:15	SM 5210B-2016		CDR	
Carbonaceous Biochemical Oxygen Demand (CBOD)	171	8.0	mg/L	04/29/24 11:20	04/29/24 11:20	SM 5210B-2016		CDR	
Chloride	79.0	10.0	mg/L	05/02/24 14:00	05/02/24 14:00	ASTM D512-12(A)		DGL	
Chemical Oxygen Demand	433	5	mg/L	05/01/24 09:15	05/01/24 09:15	HACH 8000		CLB	
Fluoride	0.13	0.10	mg/L	04/30/24 09:10	04/30/24 09:10	SM 4500-F C-2011		AC	
Hexavalent Chromium	<0.003	0.003	mg/L	04/29/24 16:30	04/29/24 16:30	USGS I-1230-85		CLB	
Oil & Grease (HEM)	5.0	2.3	mg/L	04/30/24 06:00	04/30/24 06:00	EPA 1664 (Rev.A)		HNR	
Phosphorus, Total as PO ₄	3.74	0.62	mg/L	05/08/24 11:30	05/08/24 11:30	SM 4500-P B/E-2011		ZAC	Q8
Total Dissolved Solids (TDS)	4360	40	mg/L	05/01/24 14:20	05/01/24 14:20	SM 2540C-2015		CLB	
Total Organic Carbon	241	10.0	mg/L	04/30/24 08:00	04/30/24 08:00	SM 5310C-2014		ZAC	
Total Organic Nitrogen	4.00	1.00	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Trivalent Chromium	0.004	0.003	mg/L	05/01/24 09:39	05/08/24 13:48	MISC.	E1	DS	
Total Suspended Solids (TSS)	18.0	5.0	mg/L	04/30/24 08:00	04/30/24 08:00	SM 2540D-2015		CLB	
Anions by Ion Chromatography - Method EPA 300.0									
Nitrate-Nitrogen	<0.20	0.20	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	
Sulfate	1800	25.0	mg/L	04/30/24 16:32	04/30/24 16:32	EPA 300.0 Rev 2.1		ZAC	E

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Outfall 101 - Grab

Work Order #: 4D29044-01 Collection Date & Time: 4/29/2024 12:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Total Metals by ICP-MS - EPA Method 200.8/6020									
Aluminum	124	2.50	ug/L	05/06/24 09:30	05/14/24 08:43	EPA 200.8/6020		ZAC	
Beryllium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Chromium	4.46	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Nickel	4.85	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Copper	23.4	2.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Zinc	142	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Arsenic	1.09	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Selenium	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Silver	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Cadmium	<1.00	1.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Antimony	<5.00	5.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Barium	62.8	3.00	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Thallium	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Lead	<0.50	0.50	ug/L	05/07/24 12:00	05/14/24 12:20	EPA 200.8/6020		ZAC	
Toxic Pollutant Volatiles by EPA 624.1									
Vinyl chloride	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Bromomethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Chloroform	0.007	0.004	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Acrolein	<0.020	0.020	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Acetone	0.040	0.010	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,1-Dichloroethene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Acrylonitrile	<0.020	0.020	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Methylene chloride	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
trans-1,2-Dichloroethene	<0.004	0.004	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,1-Dichloroethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Methyl-t-butyl ether (MTBE)	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Chloromethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
2-Butanone (MEK)	0.014	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,1,1-Trichloroethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,2-Dichloroethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Benzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Carbon tetrachloride	<0.002	0.002	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,2-Dichloropropane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Trichloroethene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Dibromomethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1	E1	SEA	
Bromodichloromethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
2-Chloroethyl vinyl ether	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
cis-1,3-Dichloropropene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Epichlorohydrin	<0.100	0.100	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1	E1	SEA	
trans-1,3-Dichloropropene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Toluene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,1,2-Trichloroethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Outfall 101 - Grab

Work Order #: 4D29044-01 Collection Date & Time: 4/29/2024 12:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Volatiles by EPA 624.1									
Chloroethane	0.300	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Dibromochloromethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Tetrachloroethene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Chlorobenzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,2-Dibromoethane (EDB)	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Ethyl benzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Bromoform	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
m,p-Xylene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
o-Xylene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,1,2,2-Tetrachloroethane	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,3-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,4-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
1,2-Dichlorobenzene	<0.005	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
TTHM (Total Trihalomethanes)	0.007	0.005	mg/L	04/29/24 17:55	04/29/24 17:55	EPA 624.1		SEA	
Surrogate: Dibromofluoromethane		115 %		82-118	04/29/24 17:55	EPA 624.1		SEA	
Surrogate: Toluene-d8		101 %		88-110	04/29/24 17:55	EPA 624.1		SEA	
Surrogate: 4-Bromofluorobenzene		95 %		86-115	04/29/24 17:55	EPA 624.1		SEA	
Toxic Pollutant Semivolatiles by EPA 625.1									
N-Nitrosodimethylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Phenol	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2-Chlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Pyridine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
bis(2-Chloroethyl)ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
n-Decane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1	E1	BDS	
bis(2-Chloroisopropyl)ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
o-Cresol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
N-Nitroso-n-ethyl-ethanamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1	E1	BDS	
m,p-Cresol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
N-Nitroso-di-n-propylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Hexachloroethane	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Nitrobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Isophorone	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2-Nitrophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4-Dimethylphenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
bis(2-Chloroethoxy)methane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4-Dichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
1,2,4-Trichlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Naphthalene	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Hexachlorobutadiene	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
4-Chloro-3-methylphenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Hexachlorocyclopentadiene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4,6-Trichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Outfall 101 - Grab

Work Order #: 4D29044-01 Collection Date & Time : 4/29/2024 12:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
2-Chloronaphthalene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
1,2,4,5-Tetrachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Dimethylphthalate	<0.002	0.002	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4,5-Trichlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,6-Dinitrotoluene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Acenaphthylene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Acenaphthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4-Dinitrophenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
4-Nitrophenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
2,4-Dinitrotoluene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Pentachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Diethylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Fluorene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
4-Chlorophenyl-phenyl ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
4,6-Dinitro-2-methylphenol	<0.010	0.010	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
N-Nitrosodiphenylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Diphenylhydrazine(as Azobenzene)	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
4-Bromophenyl-phenyl ether	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Hexachlorobenzene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Pentachlorophenol	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
n-Octadecane	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1	E1	BDS	
Phenanthrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Di-n-butylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Carbazole	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1	E1	BDS	
Benzidine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzylbutylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzo(a)anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
3,3'-Dichlorobenzidine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Chrysene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
N-Nitroso-di-n-butylamine	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
bis(2-Ethylhexyl)phthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Di-n-octylphthalate	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzo(b)fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzo(k)fluoranthene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzo(a)pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Indeno(1,2,3-cd)pyrene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Dibenz(a,h)anthracene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Benzo(g,h,i)perylene	<0.005	0.005	mg/L	04/30/24 16:45	04/30/24 20:15	EPA 625.1		BDS	
Surrogate: 2-Fluorophenol		44 %		21-100	04/30/24 20:15	EPA 625.1		BDS	
Surrogate: Phenol-d6		32 %		10-94	04/30/24 20:15	EPA 625.1		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Outfall 101 - Grab

Work Order # : 4D29044-01 Collection Date & Time : 4/29/2024 12:02:00PM

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Method	Cert	Analyst	Notes
Toxic Pollutant Semivolatiles by EPA 625.1									
Surrogate: 2,4,6-Tribromophenol		85 %		10-123	04/30/24 20:15	EPA 625.1		BDS	
Surrogate: Nitrobenzene-d5		70 %		35-114	04/30/24 20:15	EPA 625.1		BDS	
Surrogate: 2-Fluorobiphenyl		74 %		43-116	04/30/24 20:15	EPA 625.1		BDS	
Surrogate: p-Terphenyl-d14		102 %		33-141	04/30/24 20:15	EPA 625.1		BDS	
Organochlorine Pesticides by EPA Method 608.3									
Aldrin	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
alpha-BHC	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
beta-BHC	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
delta-BHC	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
gamma-BHC	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
alpha-Chlordane	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
gamma-Chlordane	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
4,4'-DDD	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
4,4'-DDE	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
4,4'-DDT	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Dieldrin	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endosulfan I	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endosulfan II	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endosulfan Sulfate	<0.100	0.100	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endrin	<0.010	0.010	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endrin Aldehyde	<0.050	0.050	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Heptachlor	<0.005	0.005	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Heptachlor Epoxide	<0.100	0.100	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Endrin Ketone	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Methoxychlor	<0.150	0.150	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Toxaphene	<0.500	0.500	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Chlordane, Technical	<0.020	0.020	ug/L	04/29/24 15:00	05/17/24 00:52	EPA 608.3		BDS	
Surrogate: Decachlorobiphenyl		52 %		10-140	05/17/24 00:52	EPA 608.3		BDS	
Surrogate: Tetrachloro-m-xylene		44 %		10-140	05/17/24 00:52	EPA 608.3		BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Field Services Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0105 - Field Service Prep

LCS (B4E0105-BS1)

Prepared & Analyzed: 04/29/24

pH (on-site)	8.1		pH/°C	8.00		101	97.5-102.5			TT	
--------------	-----	--	-------	------	--	-----	------------	--	--	----	--

Duplicate (B4E0105-DUP1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Temperature, F.	84.0		°F		84.0			0	200	TT	
pH (on-site)	8.4		pH/°C		8.4			0	20	TT	
Temperature by Field Meter	28.9		pH/°C		28.9			0	20	TT	

Batch B4E0113 - Field Service Prep

Duplicate (B4E0113-DUP1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Dissolved Oxygen	6.1	0.1	mg/L		6.5			6	20	TT	
------------------	-----	-----	------	--	-----	--	--	---	----	----	--

Batch B4E0117 - Field Service Prep

Duplicate (B4E0117-DUP1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Chlorine, Total Residual (Low Range)	<0.02	0.02	mg/L		ND				20	TT	
--------------------------------------	-------	------	------	--	----	--	--	--	----	----	--

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0561 - Wet Chem Prep

Blank (B4D0561-BLK1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	<1.00	1.00	mg/L							ZAC	
----------------------	-------	------	------	--	--	--	--	--	--	-----	--

LCS (B4D0561-BS1)

Prepared & Analyzed: 04/30/24

Total Organic Carbon	24.8	1.00	mg/L	25.0		99	80-120			ZAC	
----------------------	------	------	------	------	--	----	--------	--	--	-----	--

Matrix Spike (B4D0561-MS1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.0	1.00	mg/L	20.0	6.93	95	80-120			ZAC	
----------------------	------	------	------	------	------	----	--------	--	--	-----	--

Matrix Spike Dup (B4D0561-MSD1)

Source: 4D17027-01 Prepared & Analyzed: 04/30/24

Total Organic Carbon	26.1	1.00	mg/L	20.0	6.93	96	80-120	0.4	20	ZAC	
----------------------	------	------	------	------	------	----	--------	-----	----	-----	--

Batch B4D0574 - Wet Chem Prep

Blank (B4D0574-BLK1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	<0.2	0.2	mg/L							CDR	
--	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4D0574-BS1)

Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	175	2.0	mg/L	198		88	85-115			CDR	
--	-----	-----	------	-----	--	----	--------	--	--	-----	--

Duplicate (B4D0574-DUP1)

Source: 4D29012-01 Prepared & Analyzed: 04/29/24

Biochemical Oxygen Demand (BOD), 5-Day	8.0	4.0	mg/L		8.0			0	20	CDR	
--	-----	-----	------	--	-----	--	--	---	----	-----	--

Batch B4D0575 - Wet Chem Prep

Blank (B4D0575-BLK1)

Prepared & Analyzed: 04/29/24

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0575 - Wet Chem Prep											
Blank (B4D0575-BLK1)				Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	<0.2	0.2	mg/L							CDR	
LCS (B4D0575-BS1)				Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	178	2.0	mg/L	198		90	85-115			CDR	
Duplicate (B4D0575-DUP1)				Source: 4D29012-01 Prepared & Analyzed: 04/29/24							
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.8	4.0	mg/L		7.0			3	20	CDR	
Batch B4D0584 - Wet Chem Prep											
Blank (B4D0584-BLK1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	<2.1	2.1	mg/L							HNR	
LCS (B4D0584-BS1)				Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	40.7	2.1	mg/L	40.0		102	78-114			HNR	
Matrix Spike (B4D0584-MS1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	43.5	2.3	mg/L	45.5	ND	96	78-114			HNR	
Matrix Spike Dup (B4D0584-MSD1)				Source: 4D29043-01 Prepared & Analyzed: 04/30/24							
Oil & Grease (HEM)	45.6	2.4	mg/L	47.6	ND	96	78-114	5	18	HNR	
Batch B4D0587 - Wet Chem Prep											
Blank (B4D0587-BLK1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	<0.003	0.003	mg/L							CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0587 - Wet Chem Prep											
LCS (B4D0587-BS1)				Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400		95	80-110			CLB	
Matrix Spike (B4D0587-MS1)				Source: 4D29048-01 Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.037	0.003	mg/L	0.0400	ND	92	80-120			CLB	
Matrix Spike Dup (B4D0587-MSD1)				Source: 4D29048-01 Prepared & Analyzed: 04/29/24							
Hexavalent Chromium	0.038	0.003	mg/L	0.0400	ND	95	80-120	3	20	CLB	
Batch B4D0595 - Wet Chem Prep											
Blank (B4D0595-BLK1)				Prepared & Analyzed: 04/30/24							
Fluoride	<0.05	0.05	mg/L							AC	
LCS (B4D0595-BS1)				Prepared & Analyzed: 04/30/24							
Fluoride	1.00	0.10	mg/L	1.00		100	80-120			AC	
Matrix Spike (B4D0595-MS1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120			AC	
Matrix Spike Dup (B4D0595-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 04/30/24							
Fluoride	1.09	0.10	mg/L	1.00	ND	109	80-120	0	20	AC	
Batch B4D0601 - Wet Chem Prep											
Blank (B4D0601-BLK1)				Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	<0.05	0.05	mg/L							AC	



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0601 - Wet Chem Prep											
LCS (B4D0601-BS1)				Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	0.98	0.10	mg/L	1.00		98	80-120			AC	
Matrix Spike (B4D0601-MS1)				Source: 4D24039-01 Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	2.42	0.20	mg/L	2.00	0.50	96	80-120			AC	
Matrix Spike Dup (B4D0601-MSD1)				Source: 4D24039-01 Prepared & Analyzed: 04/30/24							
Ammonia-Nitrogen	2.48	0.20	mg/L	2.00	0.50	99	80-120	2	20	AC	
Batch B4D0604 - Wet Chem Prep											
Blank (B4D0604-BLK1)				Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	<2.0	2.0	mg/L							CLB	
LCS (B4D0604-BS1)				Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	21.0	2.0	mg/L	20.0		105	80-120			CLB	
Matrix Spike (B4D0604-MS1)				Source: 4D29041-01 Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120			CLB	
Matrix Spike Dup (B4D0604-MSD1)				Source: 4D29041-01 Prepared & Analyzed: 04/30/24							
Total Suspended Solids (TSS)	162	20.0	mg/L	100	64.0	98	80-120	0	20	CLB	
Batch B4E0016 - Wet Chem Prep											
Blank (B4E0016-BLK1)				Prepared & Analyzed: 05/01/24							
Chemical Oxygen Demand	<5	5	mg/L							CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0016 - Wet Chem Prep											
LCS (B4E0016-BS1)				Prepared & Analyzed: 05/01/24							
Chemical Oxygen Demand	50	5	mg/L	50.0		100	80-120			CLB	
Matrix Spike (B4E0016-MS1)				Source: 4D29041-01 Prepared & Analyzed: 05/01/24							
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120			CLB	
Matrix Spike Dup (B4E0016-MSD1)				Source: 4D29041-01 Prepared & Analyzed: 05/01/24							
Chemical Oxygen Demand	184	10	mg/L	95.2	86	103	80-120	0	20	CLB	
Batch B4E0025 - Wet Chem Prep											
Blank (B4E0025-BLK1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	<20	20	mg/L							AC	
LCS (B4E0025-BS1)				Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	2390	20	mg/L	2350		102	80-120			AC	
Matrix Spike (B4E0025-MS1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	589	20	mg/L	376	211	101	80-120			AC	
Matrix Spike Dup (B4E0025-MSD1)				Source: 4D22046-01 Prepared & Analyzed: 05/01/24							
Total Alkalinity as CaCO ₃	585	20	mg/L	376	211	99	80-120	0.7	20	AC	
Batch B4E0027 - Wet Chem Prep											
Blank (B4E0027-BLK1)				Prepared & Analyzed: 05/01/24							
Total Dissolved Solids (TDS)	<10	10	mg/L							CLB	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0027 - Wet Chem Prep

LCS (B4E0027-BS1)

Prepared & Analyzed: 05/01/24

Total Dissolved Solids (Source)	4060	40	mg/L	4000		102	80-120			CLB	
---------------------------------	------	----	------	------	--	-----	--------	--	--	-----	--

Matrix Spike (B4E0027-MS1)

Source: 4D30025-02 Prepared & Analyzed: 05/01/24

Total Dissolved Solids (Source)	2350	40	mg/L	2000	242	105	80-120			CLB	
---------------------------------	------	----	------	------	-----	-----	--------	--	--	-----	--

Matrix Spike (B4E0027-MS2)

Source: 4E01033-03 Prepared & Analyzed: 05/01/24

Total Dissolved Solids (Source)	2460	40	mg/L	2000	436	101	80-120			CLB	
---------------------------------	------	----	------	------	-----	-----	--------	--	--	-----	--

Matrix Spike Dup (B4E0027-MSD1)

Source: 4D30025-02 Prepared & Analyzed: 05/01/24

Total Dissolved Solids (Source)	2300	40	mg/L	2000	242	103	80-120	2	20	CLB	
---------------------------------	------	----	------	------	-----	-----	--------	---	----	-----	--

Matrix Spike Dup (B4E0027-MSD2)

Source: 4E01033-03 Prepared & Analyzed: 05/01/24

Total Dissolved Solids (Source)	2460	40	mg/L	2000	436	101	80-120	0	20	CLB	
---------------------------------	------	----	------	------	-----	-----	--------	---	----	-----	--

Batch B4E0050 - Wet Chem Prep

Blank (B4E0050-BLK1)

Prepared & Analyzed: 05/02/24

Chloride	<2.0	2.0	mg/L							DGL	
----------	------	-----	------	--	--	--	--	--	--	-----	--

LCS (B4E0050-BS1)

Prepared & Analyzed: 05/02/24

Chloride	876	2.0	mg/L	886		99	80-120			DGL	
----------	-----	-----	------	-----	--	----	--------	--	--	-----	--

Matrix Spike (B4E0050-MS1)

Source: 4D29045-01 Prepared & Analyzed: 05/02/24

Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120			DGL	
----------	------	-----	------	------	-----	----	--------	--	--	-----	--

Matrix Spike Dup (B4E0050-MSD1)

Source: 4D29045-01 Prepared & Analyzed: 05/02/24

Chloride	53.0	2.0	mg/L	44.3	9.6	98	80-120	0	20	DGL	
----------	------	-----	------	------	-----	----	--------	---	----	-----	--



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Wet Chemistry Analysis Parameters - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0176 - Wet Chem Prep											
Blank (B4E0176-BLK1)				Prepared & Analyzed: 05/08/24							
Phosphorus, Total as PO4	<0.15	0.15	mg/L							ZAC	Q8
LCS (B4E0176-BS1)				Prepared & Analyzed: 05/08/24							
Phosphorus, Total as PO4	1.01	0.31	mg/L	1.00		101	80-120			ZAC	Q8
Matrix Spike (B4E0176-MS1)				Source: 4E06054-01 Prepared & Analyzed: 05/08/24							
Phosphorus, Total as PO4	3.01	0.62	mg/L	2.00	1.04	98	80-120			ZAC	Q8
Matrix Spike Dup (B4E0176-MSD1)				Source: 4E06054-01 Prepared & Analyzed: 05/08/24							
Phosphorus, Total as PO4	3.19	0.62	mg/L	2.00	1.04	108	80-120	6	20	ZAC	Q8

Anions by Ion Chromatography - Method EPA 300.0 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0585 - Wet Chem Prep											
Blank (B4D0585-BLK1)				Prepared & Analyzed: 04/30/24							
Nitrate-Nitrogen	<0.10	0.10	mg/L							ZAC	
Sulfate	<1.00	1.00	mg/L							ZAC	
LCS (B4D0585-BS1)				Prepared & Analyzed: 04/30/24							
Nitrate-Nitrogen	4.97		mg/L	5.00		99	90-110			ZAC	
Sulfate	20.4		mg/L	20.0		102	90-110			ZAC	
Matrix Spike (B4D0585-MS1)				Source: 4D24045-01 Prepared & Analyzed: 04/30/24							
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110			ZAC	
Sulfate	221	10.0	mg/L	200	25.9	97	90-110			ZAC	
Matrix Spike Dup (B4D0585-MSD1)				Source: 4D24045-01 Prepared & Analyzed: 04/30/24							
Nitrate-Nitrogen	45.8	1.00	mg/L	50.0	ND	92	90-110	0.08	20	ZAC	
Sulfate	220	10.0	mg/L	200	25.9	97	90-110	0.1	20	ZAC	

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control
Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4E0076 - 3015A											
Blank (B4E0076-BLK1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Aluminum	<2.50	2.50	ug/L							ZAC	
LCS (B4E0076-BS1)				Prepared: 05/06/24 Analyzed: 05/14/24							
Aluminum	134	2.50	ug/L	139		97	85-115			ZAC	
Matrix Spike (B4E0076-MS1)				Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24							
Aluminum	6690	125	ug/L	6940	ND	96	70-130			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0076 - 3015A

Matrix Spike (B4E0076-MS2) Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6800	125	ug/L	6940	112	96	70-130			ZAC	
----------	------	-----	------	------	-----	----	--------	--	--	-----	--

Matrix Spike Dup (B4E0076-MSD1) Source: 4D22047-01 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6730	125	ug/L	6940	ND	97	70-130	0.6	20	ZAC	
----------	------	-----	------	------	----	----	--------	-----	----	-----	--

Matrix Spike Dup (B4E0076-MSD2) Source: 4D29024-05 Prepared: 05/06/24 Analyzed: 05/14/24

Aluminum	6670	125	ug/L	6940	112	95	70-130	2	20	ZAC	
----------	------	-----	------	------	-----	----	--------	---	----	-----	--

Batch B4E0080 - 3015A

Blank (B4E0080-BLK1) Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	<0.50	0.50	ug/L							ZAC	
Chromium	<3.00	3.00	ug/L							ZAC	
Nickel	<2.00	2.00	ug/L							ZAC	
Copper	<2.00	2.00	ug/L							ZAC	
Zinc	<5.00	5.00	ug/L							ZAC	
Arsenic	<0.50	0.50	ug/L							ZAC	
Selenium	<5.00	5.00	ug/L							ZAC	
Silver	<0.50	0.50	ug/L							ZAC	
Cadmium	<1.00	1.00	ug/L							ZAC	
Antimony	<5.00	5.00	ug/L							ZAC	
Barium	<3.00	3.00	ug/L							ZAC	
Thallium	<0.50	0.50	ug/L							ZAC	
Lead	<0.50	0.50	ug/L							ZAC	

LCS (B4E0080-BS1) Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	29.4	0.50	ug/L	27.8		106	85-115			ZAC	
Chromium	170	3.00	ug/L	167		102	85-115			ZAC	
Nickel	115	2.00	ug/L	111		103	85-115			ZAC	
Copper	115	2.00	ug/L	111		104	85-115			ZAC	
Zinc	281	5.00	ug/L	278		101	85-115			ZAC	
Arsenic	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Selenium	280	5.00	ug/L	278		101	85-115			ZAC	
Silver	28.2	0.50	ug/L	27.8		101	85-115			ZAC	
Cadmium	55.7	1.00	ug/L	55.6		100	85-115			ZAC	
Antimony	282	5.00	ug/L	278		101	85-115			ZAC	
Barium	168	3.00	ug/L	167		101	85-115			ZAC	
Thallium	28.3	0.50	ug/L	27.8		102	85-115			ZAC	
Lead	28.1	0.50	ug/L	27.8		101	85-115			ZAC	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Total Metals by ICP-MS - EPA Method 200.8/6020 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0080 - 3015A

Matrix Spike (B4E0080-MS1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1450	25.0	ug/L	1390	ND	104	70-130			ZAC	
Chromium	8310	150	ug/L	8330	ND	100	70-130			ZAC	
Nickel	5740	100	ug/L	5560	ND	103	70-130			ZAC	
Copper	5660	100	ug/L	5560	ND	102	70-130			ZAC	
Zinc	13100	250	ug/L	13900	ND	95	70-130			ZAC	
Arsenic	1340	25.0	ug/L	1390	ND	97	70-130			ZAC	
Selenium	13100	250	ug/L	13900	ND	94	70-130			ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130			ZAC	
Cadmium	2700	50.0	ug/L	2780	ND	97	70-130			ZAC	
Antimony	14200	250	ug/L	13900	ND	102	70-130			ZAC	
Barium	8350	150	ug/L	8330	34.0	100	70-130			ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130			ZAC	
Lead	1400	25.0	ug/L	1390	ND	101	70-130			ZAC	

Matrix Spike Dup (B4E0080-MSD1)

Source: 4D29029-01 Prepared: 05/07/24 Analyzed: 05/14/24

Beryllium	1470	25.0	ug/L	1390	ND	106	70-130	1	20	ZAC	
Chromium	8390	150	ug/L	8330	ND	101	70-130	1	20	ZAC	
Nickel	5620	100	ug/L	5560	ND	101	70-130	2	20	ZAC	
Copper	5600	100	ug/L	5560	ND	101	70-130	1	20	ZAC	
Zinc	13200	250	ug/L	13900	ND	95	70-130	0.2	20	ZAC	
Arsenic	1350	25.0	ug/L	1390	ND	97	70-130	0.5	20	ZAC	
Selenium	13200	250	ug/L	13900	ND	95	70-130	0.8	20	ZAC	
Silver	1410	25.0	ug/L	1390	ND	102	70-130	0.03	20	ZAC	
Cadmium	2730	50.0	ug/L	2780	ND	98	70-130	1	20	ZAC	
Antimony	14100	250	ug/L	13900	ND	102	70-130	0.5	20	ZAC	
Barium	8380	150	ug/L	8330	34.0	100	70-130	0.4	20	ZAC	
Thallium	1420	25.0	ug/L	1390	ND	102	70-130	0.3	20	ZAC	
Lead	1410	25.0	ug/L	1390	ND	102	70-130	0.6	20	ZAC	

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0579 - EPA 5030C/624

Blank (B4D0579-BLK1)

Prepared & Analyzed: 04/29/24

Vinyl chloride	<0.0008	0.0008	mg/L							SEA	
Bromomethane	<0.0006	0.0006	mg/L							SEA	
Chloroform	<0.0009	0.0009	mg/L							SEA	
Acrolein	<0.001	0.001	mg/L							SEA	
Acetone	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethene	<0.0009	0.0009	mg/L							SEA	
Acrylonitrile	<0.002	0.002	mg/L							SEA	
Methylene chloride	<0.0007	0.0007	mg/L							SEA	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0579 - EPA 5030C/624

Blank (B4D0579-BLK1)

Prepared & Analyzed: 04/29/24

trans-1,2-Dichloroethene	<0.0006	0.0006	mg/L							SEA	
1,1-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Methyl-t-butyl ether (MTBE)	<0.0005	0.0005	mg/L							SEA	
2-Butanone (MEK)	<0.001	0.001	mg/L							SEA	
Chloromethane	<0.0006	0.0006	mg/L							SEA	
1,1,1-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
1,2-Dichloroethane	<0.0007	0.0007	mg/L							SEA	
Benzene	<0.001	0.001	mg/L							SEA	
Carbon tetrachloride	<0.0009	0.0009	mg/L							SEA	
1,2-Dichloropropane	<0.0009	0.0009	mg/L							SEA	
Trichloroethene	<0.0009	0.0009	mg/L							SEA	
Dibromomethane	<0.0009	0.0009	mg/L							SEA	
Bromodichloromethane	<0.0007	0.0007	mg/L							SEA	
2-Chloroethyl vinyl ether	<0.0007	0.0007	mg/L							SEA	
cis-1,3-Dichloropropene	<0.0006	0.0006	mg/L							SEA	
Epichlorohydrin	<0.005	0.005	mg/L							SEA	
trans-1,3-Dichloropropene	<0.0007	0.0007	mg/L							SEA	
Toluene	<0.0007	0.0007	mg/L							SEA	
1,1,2-Trichloroethane	<0.0006	0.0006	mg/L							SEA	
Chloroethane	<0.0007	0.0007	mg/L							SEA	
Dibromochloromethane	<0.0005	0.0005	mg/L							SEA	
Tetrachloroethene	0.003	0.001	mg/L							SEA	J
Chlorobenzene	<0.001	0.001	mg/L							SEA	
1,2-Dibromoethane (EDB)	<0.001	0.001	mg/L							SEA	
Ethyl benzene	<0.0006	0.0006	mg/L							SEA	
Bromoform	<0.0008	0.0008	mg/L							SEA	
m,p-Xylene	<0.001	0.001	mg/L							SEA	
1,1,2,2-Tetrachloroethane	<0.0009	0.0009	mg/L							SEA	
o-Xylene	<0.0005	0.0005	mg/L							SEA	
1,3-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,4-Dichlorobenzene	<0.0005	0.0005	mg/L							SEA	
1,2-Dichlorobenzene	<0.0006	0.0006	mg/L							SEA	
TTHM (Total Trihalomethanes)	<0.005	0.005	mg/L							SEA	
Surrogate: Dibromofluoromethane	0.0580		mg/L	0.0500		116	82-118				
Surrogate: Toluene-d8	0.0496		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0478		mg/L	0.0500		96	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0579 - EPA 5030C/624											
LCS (B4D0579-BS1)				Prepared & Analyzed: 04/29/24							
Vinyl chloride	0.060	0.005	mg/L	0.0500		120	5-195			SEA	
Bromomethane	0.048	0.005	mg/L	0.0500		97	15-185			SEA	
Chloroform	0.067	0.004	mg/L	0.0500		133	70-135			SEA	
Acrolein	0.213	0.020	mg/L	0.200		106	60-140			SEA	
Acetone	0.043	0.010	mg/L	0.0500		86	70-130			SEA	
1,1-Dichloroethene	0.080	0.005	mg/L	0.0500		159	50-150			SEA	OQ1
Acrylonitrile	0.247	0.020	mg/L	0.200		123	60-140			SEA	
Methylene chloride	0.061	0.005	mg/L	0.0500		122	60-140			SEA	
trans-1,2-Dichloroethene	0.068	0.004	mg/L	0.0500		136	70-130			SEA	OQ1
1,1-Dichloroethane	0.067	0.005	mg/L	0.0500		134	70-130			SEA	OQ1
Methyl-t-butyl ether (MTBE)	0.059	0.005	mg/L	0.0500		117	70-130			SEA	
2-Butanone (MEK)	0.050	0.005	mg/L	0.0500		99	70-130			SEA	
Chloromethane	0.062	0.005	mg/L	0.0500		125	0.1-205			SEA	
1,1,1-Trichloroethane	0.063	0.005	mg/L	0.0500		126	70-130			SEA	
1,2-Dichloroethane	0.054	0.005	mg/L	0.0500		109	70-130			SEA	
Benzene	0.068	0.005	mg/L	0.0500		136	65-135			SEA	OQ1
Carbon tetrachloride	0.065	0.002	mg/L	0.0500		129	70-130			SEA	
1,2-Dichloropropane	0.060	0.005	mg/L	0.0500		120	35-165			SEA	
Trichloroethene	0.065	0.005	mg/L	0.0500		130	65-135			SEA	
Dibromomethane	0.058	0.005	mg/L	0.0500		116	70-130			SEA	
Bromodichloromethane	0.059	0.005	mg/L	0.0500		118	65-135			SEA	
2-Chloroethyl vinyl ether	0.001	0.005	mg/L	0.0500		3	0.1-225			SEA	
cis-1,3-Dichloropropene	0.057	0.005	mg/L	0.0500		113	25-175			SEA	
trans-1,3-Dichloropropene	0.054	0.005	mg/L	0.0500		108	50-150			SEA	
Epichlorohydrin	0.041	0.100	mg/L	0.0500		82	70-130			SEA	
Toluene	0.066	0.005	mg/L	0.0500		132	70-130			SEA	OQ1
1,1,2-Trichloroethane	0.058	0.005	mg/L	0.0500		117	70-130			SEA	
Chloroethane	0.060	0.005	mg/L	0.0500		120	40-160			SEA	
Dibromochloromethane	0.055	0.005	mg/L	0.0500		111	70-135			SEA	
Tetrachloroethene	0.064	0.005	mg/L	0.0500		127	70-130			SEA	
Chlorobenzene	0.061	0.005	mg/L	0.0500		121	65-135			SEA	
1,2-Dibromoethane (EDB)	0.054	0.005	mg/L	0.0500		108	70-130			SEA	
Ethyl benzene	0.065	0.005	mg/L	0.0500		130	60-140			SEA	
Bromoform	0.050	0.005	mg/L	0.0500		100	70-130			SEA	
m,p-Xylene	0.133	0.005	mg/L	0.100		133	70-130			SEA	OQ1
1,1,2,2-Tetrachloroethane	0.059	0.005	mg/L	0.0500		117	60-140			SEA	
o-Xylene	0.066	0.005	mg/L	0.0500		132	70-130			SEA	OQ1
1,3-Dichlorobenzene	0.061	0.005	mg/L	0.0500		122	75-144			SEA	
1,4-Dichlorobenzene	0.057	0.005	mg/L	0.0500		115	59-174			SEA	
1,2-Dichlorobenzene	0.058	0.005	mg/L	0.0500		116	59-174			SEA	
TTHM (Total Trihalomethanes)	0.235	0.005	mg/L	0.200		118	65-135			SEA	
Surrogate: Dibromofluoromethane	0.0536		mg/L	0.0500		107	82-118				
Surrogate: Toluene-d8	0.0493		mg/L	0.0500		99	88-110				
Surrogate: 4-Bromofluorobenzene	0.0481		mg/L	0.0500		96	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0579 - EPA 5030C/624

Matrix Spike (B4D0579-MS1)

Source: 4D29043-01 Prepared & Analyzed: 04/29/24

Vinyl chloride	5.90	0.500	mg/L	5.00	ND	118	0.1-251			SEA	
Bromomethane	5.10	0.500	mg/L	5.00	ND	102	0.1-242			SEA	
Chloroform	6.22	0.400	mg/L	5.00	ND	124	51-138			SEA	
Acrolein	23.1	2.00	mg/L	20.0	ND	115	40-160			SEA	
Acetone	4.56	1.00	mg/L	5.00	ND	91	70-130			SEA	
1,1-Dichloroethene	7.79	0.500	mg/L	5.00	ND	156	0.1-234			SEA	
Acrylonitrile	22.8	2.00	mg/L	20.0	ND	114	40-160			SEA	
Methylene chloride	6.71	0.500	mg/L	5.00	ND	134	0.1-221			SEA	
trans-1,2-Dichloroethene	6.74	0.400	mg/L	5.00	ND	135	54-156			SEA	
1,1-Dichloroethane	6.29	0.500	mg/L	5.00	ND	126	59-155			SEA	
Methyl-t-butyl ether (MTBE)	5.42	0.500	mg/L	5.00	ND	108	70-130			SEA	
2-Butanone (MEK)	5.22	0.500	mg/L	5.00	ND	104	70-130			SEA	
Chloromethane	6.00	0.500	mg/L	5.00	ND	120	0.1-273			SEA	
1,1,1-Trichloroethane	6.06	0.500	mg/L	5.00	ND	121	52-162			SEA	
1,2-Dichloroethane	5.28	0.500	mg/L	5.00	ND	106	49-155			SEA	
Benzene	6.60	0.500	mg/L	5.00	ND	132	37-151			SEA	
Carbon tetrachloride	6.11	0.200	mg/L	5.00	ND	122	70-140			SEA	
1,2-Dichloropropane	5.89	0.500	mg/L	5.00	ND	118	0.1-210			SEA	
Trichloroethene	6.28	0.500	mg/L	5.00	ND	126	70-157			SEA	
Dibromomethane	5.53	0.500	mg/L	5.00	ND	111	70-130			SEA	
Bromodichloromethane	5.51	0.500	mg/L	5.00	ND	110	35-155			SEA	
2-Chloroethyl vinyl ether	0.403	0.500	mg/L	5.00	ND	8	0.1-305			SEA	
cis-1,3-Dichloropropene	5.49	0.500	mg/L	5.00	ND	110	0.1-227			SEA	
trans-1,3-Dichloropropene	5.27	0.500	mg/L	5.00	ND	105	17-183			SEA	
Epichlorohydrin	6.28	10.0	mg/L	5.00	ND	126	70-130			SEA	
Toluene	6.47	0.500	mg/L	5.00	ND	129	47-150			SEA	
1,1,2-Trichloroethane	5.80	0.500	mg/L	5.00	ND	116	52-150			SEA	
Chloroethane	5.88	0.500	mg/L	5.00	ND	118	14-230			SEA	
Dibromochloromethane	5.12	0.500	mg/L	5.00	ND	102	53-149			SEA	
Tetrachloroethene	6.21	0.500	mg/L	5.00	ND	124	64-148			SEA	
Chlorobenzene	6.03	0.500	mg/L	5.00	ND	121	37-160			SEA	
1,2-Dibromoethane (EDB)	5.31	0.500	mg/L	5.00	ND	106	70-130			SEA	
Ethyl benzene	6.45	0.500	mg/L	5.00	ND	129	37-162			SEA	
Bromoform	4.56	0.500	mg/L	5.00	ND	91	45-169			SEA	
m,p-Xylene	13.0	0.500	mg/L	10.0	ND	130	70-130			SEA	
1,1,2,2-Tetrachloroethane	5.76	0.500	mg/L	5.00	ND	115	46-157			SEA	
o-Xylene	6.44	0.500	mg/L	5.00	ND	129	70-130			SEA	
1,3-Dichlorobenzene	5.81	0.500	mg/L	5.00	ND	116	59-156			SEA	
1,4-Dichlorobenzene	5.52	0.500	mg/L	5.00	ND	110	18-190			SEA	
1,2-Dichlorobenzene	5.58	0.500	mg/L	5.00	ND	112	18-190			SEA	
TTHM (Total Trihalomethanes)	21.9	0.500	mg/L	20.0	0.004	109	35-169			SEA	
Surrogate: Dibromofluoromethane	5.12		mg/L	5.00		102	82-118				
Surrogate: Toluene-d8	5.10		mg/L	5.00		102	88-110				
Surrogate: 4-Bromofluorobenzene	5.09		mg/L	5.00		102	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Volatiles by EPA 624.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0579 - EPA 5030C/624

Matrix Spike Dup (B4D0579-MSD1)

Source: 4D29043-01

Prepared & Analyzed: 04/29/24

Vinyl chloride	6.00	0.500	mg/L	5.00	ND	120	0.1-251	2	66	SEA	
Bromomethane	5.12	0.500	mg/L	5.00	ND	102	0.1-242	0.5	61	SEA	
Chloroform	6.42	0.400	mg/L	5.00	ND	128	51-138	3	54	SEA	
Acrolein	24.3	2.00	mg/L	20.0	ND	121	40-160	5	60	SEA	
Acetone	4.57	1.00	mg/L	5.00	ND	91	70-130	0.4	20	SEA	
1,1-Dichloroethene	8.10	0.500	mg/L	5.00	ND	162	0.1-234	4	32	SEA	
Acrylonitrile	22.3	2.00	mg/L	20.0	ND	111	40-160	2	60	SEA	
Methylene chloride	6.27	0.500	mg/L	5.00	ND	125	0.1-221	7	28	SEA	
trans-1,2-Dichloroethene	6.78	0.400	mg/L	5.00	ND	136	54-156	0.6	45	SEA	
1,1-Dichloroethane	6.53	0.500	mg/L	5.00	ND	131	59-155	4	40	SEA	
Methyl-t-butyl ether (MTBE)	5.70	0.500	mg/L	5.00	ND	114	70-130	5	20	SEA	
2-Butanone (MEK)	5.37	0.500	mg/L	5.00	ND	107	70-130	3	20	SEA	
Chloromethane	6.11	0.500	mg/L	5.00	ND	122	0.1-273	2	60	SEA	
1,1,1-Trichloroethane	6.25	0.500	mg/L	5.00	ND	125	52-162	3	36	SEA	
1,2-Dichloroethane	5.30	0.500	mg/L	5.00	ND	106	49-155	0.5	49	SEA	
Benzene	6.59	0.500	mg/L	5.00	ND	132	37-151	0.2	61	SEA	
Carbon tetrachloride	6.34	0.200	mg/L	5.00	ND	127	70-140	4	41	SEA	
1,2-Dichloropropane	5.96	0.500	mg/L	5.00	ND	119	0.1-210	1	55	SEA	
Trichloroethene	6.36	0.500	mg/L	5.00	ND	127	70-157	1	48	SEA	
Dibromomethane	5.78	0.500	mg/L	5.00	ND	116	70-130	4	20	SEA	
Bromodichloromethane	5.45	0.500	mg/L	5.00	ND	109	35-155	1	56	SEA	
2-Chloroethyl vinyl ether	0.421	0.500	mg/L	5.00	ND	8	0.1-305	4	71	SEA	
cis-1,3-Dichloropropene	5.44	0.500	mg/L	5.00	ND	109	0.1-227	1	58	SEA	
Epichlorohydrin	6.08	10.0	mg/L	5.00	ND	122	70-130	3	20	SEA	
trans-1,3-Dichloropropene	5.23	0.500	mg/L	5.00	ND	105	17-183	0.8	86	SEA	
Toluene	6.51	0.500	mg/L	5.00	ND	130	47-150	0.6	41	SEA	
1,1,2-Trichloroethane	5.75	0.500	mg/L	5.00	ND	115	52-150	0.8	45	SEA	
Chloroethane	6.13	0.500	mg/L	5.00	ND	123	14-230	4	78	SEA	
Dibromochloromethane	5.17	0.500	mg/L	5.00	ND	103	53-149	1	50	SEA	
Tetrachloroethene	6.32	0.500	mg/L	5.00	ND	126	64-148	2	39	SEA	
Chlorobenzene	5.98	0.500	mg/L	5.00	ND	120	37-160	0.9	53	SEA	
1,2-Dibromoethane (EDB)	5.31	0.500	mg/L	5.00	ND	106	70-130	0.06	20	SEA	
Ethyl benzene	6.44	0.500	mg/L	5.00	ND	129	37-162	0.2	63	SEA	
Bromoform	4.52	0.500	mg/L	5.00	ND	90	45-169	1	42	SEA	
m,p-Xylene	13.1	0.500	mg/L	10.0	ND	131	70-130	0.3	20	SEA	OQ2
1,1,2,2-Tetrachloroethane	5.82	0.500	mg/L	5.00	ND	116	46-157	1	61	SEA	
o-Xylene	6.37	0.500	mg/L	5.00	ND	127	70-130	1	20	SEA	
1,3-Dichlorobenzene	6.12	0.500	mg/L	5.00	ND	122	59-156	5	43	SEA	
1,4-Dichlorobenzene	5.88	0.500	mg/L	5.00	ND	118	18-190	6	57	SEA	
1,2-Dichlorobenzene	5.83	0.500	mg/L	5.00	ND	117	18-190	4	57	SEA	
TTHM (Total Trihalomethanes)	22.4	0.500	mg/L	20.0	0.004	112	35-169	2	56	SEA	
Surrogate: Dibromofluoromethane	5.20		mg/L	5.00		104	82-118				
Surrogate: Toluene-d8	4.98		mg/L	5.00		100	88-110				
Surrogate: 4-Bromofluorobenzene	5.04		mg/L	5.00		101	86-115				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
Blank (B4D0605-BLK1)				Prepared & Analyzed: 04/30/24							
N-Nitrosodimethylamine	<0.0002	0.0002	mg/L							BDS	
Phenol	<0.0001	0.0001	mg/L							BDS	
2-Chlorophenol	<0.0004	0.0004	mg/L							BDS	
Pyridine	<0.0003	0.0003	mg/L							BDS	
bis(2-Chloroethyl)ether	<0.0002	0.0002	mg/L							BDS	
n-Decane	<0.0009	0.0009	mg/L							BDS	
bis(2-Chloroisopropyl)ether	<0.0004	0.0004	mg/L							BDS	
o-Cresol	<0.0004	0.0004	mg/L							BDS	
N-Nitroso-n-ethyl-ethanamine	<0.0005	0.0005	mg/L							BDS	
m,p-Cresol	<0.0003	0.0003	mg/L							BDS	
N-Nitroso-di-n-propylamine	<0.0005	0.0005	mg/L							BDS	
Hexachloroethane	<0.0004	0.0004	mg/L							BDS	
Nitrobenzene	<0.0004	0.0004	mg/L							BDS	
Isophorone	<0.0007	0.0007	mg/L							BDS	
2-Nitrophenol	<0.0005	0.0005	mg/L							BDS	
2,4-Dimethylphenol	<0.0005	0.0005	mg/L							BDS	
bis(2-Chloroethoxy)methane	<0.0005	0.0005	mg/L							BDS	
2,4-Dichlorophenol	<0.0007	0.0007	mg/L							BDS	
1,2,4-Trichlorobenzene	<0.0003	0.0003	mg/L							BDS	
Naphthalene	<0.0004	0.0004	mg/L							BDS	
Hexachlorobutadiene	<0.0004	0.0004	mg/L							BDS	
4-Chloro-3-methylphenol	<0.0008	0.0008	mg/L							BDS	
Hexachlorocyclopentadiene	<0.0006	0.0006	mg/L							BDS	
2,4,6-Trichlorophenol	<0.0007	0.0007	mg/L							BDS	
2-Chloronaphthalene	<0.0005	0.0005	mg/L							BDS	
1,2,4,5-Tetrachlorobenzene	<0.0003	0.0003	mg/L							BDS	
Dimethylphthalate	<0.0007	0.0007	mg/L							BDS	
2,4,5-Trichlorophenol	<0.0004	0.0004	mg/L							BDS	
2,6-Dinitrotoluene	<0.0003	0.0003	mg/L							BDS	
Acenaphthylene	<0.0005	0.0005	mg/L							BDS	
Acenaphthene	<0.0005	0.0005	mg/L							BDS	
2,4-Dinitrophenol	<0.0004	0.0004	mg/L							BDS	
4-Nitrophenol	<0.0003	0.0003	mg/L							BDS	
2,4-Dinitrotoluene	<0.0005	0.0005	mg/L							BDS	
Pentachlorobenzene	<0.0004	0.0004	mg/L							BDS	
Diethylphthalate	<0.0005	0.0005	mg/L							BDS	
Fluorene	<0.0007	0.0007	mg/L							BDS	
4-Chlorophenyl-phenyl ether	<0.0007	0.0007	mg/L							BDS	
4,6-Dinitro-2-methylphenol	<0.0004	0.0004	mg/L							BDS	
N-Nitrosodiphenylamine	<0.0007	0.0007	mg/L							BDS	
Diphenylhydrazine(as Azobenzene)	<0.001	0.001	mg/L							BDS	
4-Bromophenyl-phenyl ether	<0.0006	0.0006	mg/L							BDS	
Hexachlorobenzene	<0.0005	0.0005	mg/L							BDS	
Pentachlorophenol	<0.0005	0.0005	mg/L							BDS	
n-Octadecane	<0.001	0.001	mg/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4D0605 - 3510C/625

Blank (B4D0605-BLK1)

Prepared & Analyzed: 04/30/24

Phenanthrene	<0.0006	0.0006	mg/L							BDS	
Anthracene	<0.0008	0.0008	mg/L							BDS	
Di-n-butylphthalate	<0.001	0.001	mg/L							BDS	
Fluoranthene	<0.0005	0.0005	mg/L							BDS	
Carbazole	<0.001	0.001	mg/L							BDS	
Benzidine	<0.0003	0.0003	mg/L							BDS	
Pyrene	<0.0005	0.0005	mg/L							BDS	
Benzylbutylphthalate	<0.0008	0.0008	mg/L							BDS	
Benzo(a)anthracene	<0.0008	0.0008	mg/L							BDS	
3,3'-Dichlorobenzidine	<0.0008	0.0008	mg/L							BDS	
Chrysene	<0.0005	0.0005	mg/L							BDS	
N-Nitroso-di-n-butylamine	<0.0007	0.0007	mg/L							BDS	
bis(2-Ethylhexyl)phthalate	<0.001	0.001	mg/L							BDS	
Di-n-octylphthalate	<0.001	0.001	mg/L							BDS	
Benzo(b)fluoranthene	<0.001	0.001	mg/L							BDS	
Benzo(k)fluoranthene	<0.0008	0.0008	mg/L							BDS	
Benzo(a)pyrene	<0.001	0.001	mg/L							BDS	
Indeno(1,2,3-cd)pyrene	<0.001	0.001	mg/L							BDS	
Dibenz(a,h)anthracene	<0.001	0.001	mg/L							BDS	
Benzo(g,h,i)perylene	<0.001	0.001	mg/L							BDS	
Surrogate: 2-Fluorophenol	0.0544		mg/L	0.100		54	21-100				
Surrogate: Phenol-d6	0.0317		mg/L	0.100		32	10-94				
Surrogate: 2,4,6-Tribromophenol	0.105		mg/L	0.100		105	10-123				
Surrogate: Nitrobenzene-d5	0.102		mg/L	0.100		102	35-114				
Surrogate: 2-Fluorobiphenyl	0.0881		mg/L	0.100		88	43-116				
Surrogate: p-Terphenyl-d14	0.141		mg/L	0.100		141	33-141				

LCS (B4D0605-BS1)

Prepared & Analyzed: 04/30/24

N-Nitrosodimethylamine	0.030	0.005	mg/L	0.0500		60	21-85			BDS	
Phenol	0.019	0.002	mg/L	0.0500		37	17-120			BDS	
2-Chlorophenol	0.048	0.005	mg/L	0.0500		96	36-120			BDS	
Pyridine	0.007	0.005	mg/L	0.0500		13	3-81			BDS	
bis(2-Chloroethyl)ether	0.048	0.005	mg/L	0.0500		96	43-126			BDS	
n-Decane	0.036	0.005	mg/L	0.0500		71	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.048	0.005	mg/L	0.0500		96	63-139			BDS	
o-Cresol	0.040	0.005	mg/L	0.0500		80	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.048	0.005	mg/L	0.0500		97	30-120			BDS	
m,p-Cresol	0.068	0.005	mg/L	0.100		68	27-120			BDS	
N-Nitroso-di-n-propylamine	0.048	0.005	mg/L	0.0500		95	14-198			BDS	
Hexachloroethane	0.032	0.002	mg/L	0.0500		64	55-120			BDS	
Nitrobenzene	0.046	0.005	mg/L	0.0500		92	54-158			BDS	
Isophorone	0.047	0.005	mg/L	0.0500		93	47-180			BDS	
2-Nitrophenol	0.053	0.005	mg/L	0.0500		105	45-167			BDS	
2,4-Dimethylphenol	0.050	0.005	mg/L	0.0500		101	42-120			BDS	
bis(2-Chloroethoxy)methane	0.048	0.005	mg/L	0.0500		95	49-165			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
LCS (B4D0605-BS1)				Prepared & Analyzed: 04/30/24							
2,4-Dichlorophenol	0.053	0.005	mg/L	0.0500		106	53-122			BDS	
1,2,4-Trichlorobenzene	0.042	0.005	mg/L	0.0500		83	57-130			BDS	
Naphthalene	0.043	0.002	mg/L	0.0500		86	36-120			BDS	
Hexachlorobutadiene	0.040	0.002	mg/L	0.0500		81	38-120			BDS	
4-Chloro-3-methylphenol	0.051	0.005	mg/L	0.0500		103	41-128			BDS	
Hexachlorocyclopentadiene	0.023	0.005	mg/L	0.0500		46	10-98			BDS	
2,4,6-Trichlorophenol	0.051	0.005	mg/L	0.0500		102	52-129			BDS	
2-Chloronaphthalene	0.047	0.005	mg/L	0.0500		95	36-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
Dimethylphthalate	0.019	0.002	mg/L	0.0500		38	0-120			BDS	
2,4,5-Trichlorophenol	0.046	0.005	mg/L	0.0500		92	40-120			BDS	
2,6-Dinitrotoluene	0.051	0.005	mg/L	0.0500		101	68-137			BDS	
Acenaphthylene	0.020	0.005	mg/L	0.0500		39	54-126			BDS	OQ1
Acenaphthene	0.044	0.005	mg/L	0.0500		89	60-132			BDS	
2,4-Dinitrophenol	0.014	0.010	mg/L	0.0500		29	0-173			BDS	
4-Nitrophenol	0.011	0.010	mg/L	0.0500		23	13-129			BDS	
2,4-Dinitrotoluene	0.051	0.005	mg/L	0.0500		102	48-127			BDS	
Pentachlorobenzene	0.050	0.005	mg/L	0.0500		99	50-120			BDS	
Diethylphthalate	0.032	0.005	mg/L	0.0500		64	0-120			BDS	
Fluorene	0.048	0.005	mg/L	0.0500		95	70-120			BDS	
4-Chlorophenyl-phenyl ether	0.050	0.005	mg/L	0.0500		100	38-145			BDS	
4,6-Dinitro-2-methylphenol	0.031	0.010	mg/L	0.0500		61	53-130			BDS	
N-Nitrosodiphenylamine	0.050	0.005	mg/L	0.0500		100	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.025	0.005	mg/L	0.0500		51	2-79			BDS	
4-Bromophenyl-phenyl ether	0.046	0.005	mg/L	0.0500		93	65-120			BDS	
Hexachlorobenzene	0.033	0.005	mg/L	0.0500		65	8-142			BDS	
Pentachlorophenol	0.037	0.005	mg/L	0.0500		74	38-152			BDS	
n-Octadecane	0.048	0.005	mg/L	0.0500		96	20-120			BDS	
Phenanthrene	0.045	0.005	mg/L	0.0500		91	65-120			BDS	
Anthracene	0.045	0.005	mg/L	0.0500		90	43-120			BDS	
Di-n-butylphthalate	0.048	0.005	mg/L	0.0500		96	8-120			BDS	
Fluoranthene	0.044	0.005	mg/L	0.0500		89	43-121			BDS	
Carbazole	0.023	0.005	mg/L	0.0500		47	20-120			BDS	
Benzidine	0.0008	0.005	mg/L	0.0500		2	1-75			BDS	
Pyrene	0.044	0.005	mg/L	0.0500		88	70-130			BDS	
Benzylbutylphthalate	0.056	0.005	mg/L	0.0500		111	0-140			BDS	
Benzo(a)anthracene	0.052	0.005	mg/L	0.0500		104	42-133			BDS	
3,3'-Dichlorobenzidine	0.044	0.005	mg/L	0.0500		87	8-213			BDS	
Chrysene	0.052	0.005	mg/L	0.0500		104	44-140			BDS	
N-Nitroso-di-n-butylamine	0.046	0.005	mg/L	0.0500		92	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.059	0.005	mg/L	0.0500		118	29-137			BDS	
Di-n-octylphthalate	0.054	0.005	mg/L	0.0500		108	19-132			BDS	
Benzo(b)fluoranthene	0.032	0.005	mg/L	0.0500		64	42-140			BDS	
Benzo(k)fluoranthene	0.035	0.005	mg/L	0.0500		71	25-146			BDS	
Benzo(a)pyrene	0.033	0.005	mg/L	0.0500		66	32-148			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0605 - 3510C/625

LCS (B4D0605-BS1)

Prepared & Analyzed: 04/30/24

Indeno(1,2,3-cd)pyrene	0.054	0.005	mg/L	0.0500		107	0-151			BDS	
Dibenz(a,h)anthracene	0.077	0.005	mg/L	0.0500		154	0-200			BDS	
Benzo(g,h,i)perylene	0.079	0.005	mg/L	0.0500		159	0-195			BDS	
Surrogate: 2-Fluorophenol	0.0484		mg/L	0.100		48	21-100				
Surrogate: Phenol-d6	0.0291		mg/L	0.100		29	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0938		mg/L	0.100		94	10-123				
Surrogate: Nitrobenzene-d5	0.0912		mg/L	0.100		91	35-114				
Surrogate: 2-Fluorobiphenyl	0.0809		mg/L	0.100		81	43-116				
Surrogate: p-Terphenyl-d14	0.122		mg/L	0.100		122	33-141				

Matrix Spike (B4D0605-MS1)

Source: 4D29044-01

Prepared & Analyzed: 04/30/24

N-Nitrosodimethylamine	0.028	0.005	mg/L	0.0500	ND	57	21-85			BDS	
Phenol	0.024	0.002	mg/L	0.0500	0.001	45	5-120			BDS	
2-Chlorophenol	0.046	0.005	mg/L	0.0500	ND	91	23-134			BDS	
Pyridine	0.0005	0.005	mg/L	0.0500	ND	0.9	3-81			BDS	QO2
bis(2-Chloroethyl)ether	0.055	0.005	mg/L	0.0500	ND	109	12-158			BDS	
n-Decane	0.040	0.005	mg/L	0.0500	ND	79	20-120			BDS	
bis(2-Chloroisopropyl)ether	0.054	0.005	mg/L	0.0500	ND	108	36-166			BDS	
o-Cresol	0.044	0.005	mg/L	0.0500	ND	88	27-120			BDS	
N-Nitroso-n-ethyl-ethanamine	0.047	0.005	mg/L	0.0500	ND	94	50-120			BDS	
m,p-Cresol	0.077	0.005	mg/L	0.100	ND	77	27-120			BDS	
N-Nitroso-di-n-propylamine	0.049	0.005	mg/L	0.0500	ND	98	0.1-230			BDS	
Hexachloroethane	0.038	0.002	mg/L	0.0500	ND	76	40-120			BDS	
Nitrobenzene	0.047	0.005	mg/L	0.0500	ND	95	35-180			BDS	
Isophorone	0.047	0.005	mg/L	0.0500	ND	94	21-196			BDS	
2-Nitrophenol	0.050	0.005	mg/L	0.0500	ND	100	29-182			BDS	
2,4-Dimethylphenol	0.047	0.005	mg/L	0.0500	ND	93	32-120			BDS	
bis(2-Chloroethoxy)methane	0.052	0.005	mg/L	0.0500	ND	104	33-184			BDS	
2,4-Dichlorophenol	0.051	0.005	mg/L	0.0500	ND	101	39-135			BDS	
1,2,4-Trichlorobenzene	0.044	0.005	mg/L	0.0500	ND	88	44-142			BDS	
Naphthalene	0.043	0.002	mg/L	0.0500	ND	85	21-133			BDS	
Hexachlorobutadiene	0.045	0.002	mg/L	0.0500	ND	89	24-120			BDS	
4-Chloro-3-methylphenol	0.047	0.005	mg/L	0.0500	ND	93	22-147			BDS	
Hexachlorocyclopentadiene	0.022	0.005	mg/L	0.0500	ND	44	10-98			BDS	
2,4,6-Trichlorophenol	0.049	0.005	mg/L	0.0500	ND	99	37-144			BDS	
2-Chloronaphthalene	0.050	0.005	mg/L	0.0500	ND	99	60-120			BDS	
1,2,4,5-Tetrachlorobenzene	0.046	0.005	mg/L	0.0500	ND	93	35-120			BDS	
Dimethylphthalate	0.045	0.002	mg/L	0.0500	ND	90	0.1-120			BDS	
2,4,5-Trichlorophenol	0.050	0.005	mg/L	0.0500	ND	100	40-120			BDS	
2,6-Dinitrotoluene	0.052	0.005	mg/L	0.0500	ND	105	50-158			BDS	
Acenaphthylene	0.042	0.005	mg/L	0.0500	ND	84	33-145			BDS	
Acenaphthene	0.044	0.005	mg/L	0.0500	ND	88	47-145			BDS	
2,4-Dinitrophenol	0.022	0.010	mg/L	0.0500	ND	44	0.1-191			BDS	
4-Nitrophenol	0.031	0.010	mg/L	0.0500	ND	62	0.1-132			BDS	
2,4-Dinitrotoluene	0.052	0.005	mg/L	0.0500	ND	104	39-139			BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
Matrix Spike (B4D0605-MS1)		Source: 4D29044-01		Prepared & Analyzed: 04/30/24							
Pentachlorobenzene	0.050	0.005	mg/L	0.0500	ND	101	50-120			BDS	
Diethylphthalate	0.052	0.005	mg/L	0.0500	ND	104	0.1-120			BDS	
Fluorene	0.045	0.005	mg/L	0.0500	ND	90	59-121			BDS	
4-Chlorophenyl-phenyl ether	0.057	0.005	mg/L	0.0500	ND	115	25-158			BDS	
4,6-Dinitro-2-methylphenol	0.031	0.010	mg/L	0.0500	ND	61	0.1-181			BDS	
N-Nitrosodiphenylamine	0.050	0.005	mg/L	0.0500	ND	100	25-120			BDS	
Diphenylhydrazine(as Azobenzene)	0.024	0.005	mg/L	0.0500	ND	48	2-79			BDS	
4-Bromophenyl-phenyl ether	0.056	0.005	mg/L	0.0500	ND	111	53-127			BDS	
Hexachlorobenzene	0.036	0.005	mg/L	0.0500	ND	72	0.1-152			BDS	
Pentachlorophenol	0.047	0.005	mg/L	0.0500	ND	94	14-176			BDS	
n-Octadecane	0.049	0.005	mg/L	0.0500	0.003	93	20-120			BDS	
Phenanthrene	0.044	0.005	mg/L	0.0500	ND	89	54-120			BDS	
Anthracene	0.042	0.005	mg/L	0.0500	ND	84	27-133			BDS	
Di-n-butylphthalate	0.058	0.005	mg/L	0.0500	ND	117	1-120			BDS	
Fluoranthene	0.043	0.005	mg/L	0.0500	ND	86	26-137			BDS	
Carbazole	0.019	0.005	mg/L	0.0500	ND	39	20-120			BDS	
Benzidine	0.0003	0.005	mg/L	0.0500	ND	0.7	1-75			BDS	OO2
Pyrene	0.042	0.005	mg/L	0.0500	ND	84	52-120			BDS	
Benzylbutylphthalate	0.069	0.005	mg/L	0.0500	ND	137	0.1-152			BDS	
Benzo(a)anthracene	0.048	0.005	mg/L	0.0500	ND	95	33-143			BDS	
3,3'-Dichlorobenzidine	0.028	0.005	mg/L	0.0500	ND	55	0.1-262			BDS	
Chrysene	0.050	0.005	mg/L	0.0500	ND	100	17-168			BDS	
N-Nitroso-di-n-butylamine	0.053	0.005	mg/L	0.0500	ND	107	35-120			BDS	
bis(2-Ethylhexyl)phthalate	0.069	0.005	mg/L	0.0500	ND	138	8-158			BDS	
Di-n-octylphthalate	0.059	0.005	mg/L	0.0500	ND	119	4-146			BDS	
Benzo(b)fluoranthene	0.031	0.005	mg/L	0.0500	ND	61	24-159			BDS	
Benzo(k)fluoranthene	0.032	0.005	mg/L	0.0500	ND	65	11-162			BDS	
Benzo(a)pyrene	0.030	0.005	mg/L	0.0500	ND	60	17-163			BDS	
Indeno(1,2,3-cd)pyrene	0.049	0.005	mg/L	0.0500	ND	99	0.1-171			BDS	
Dibenz(a,h)anthracene	0.075	0.005	mg/L	0.0500	ND	149	0.1-227			BDS	
Benzo(g,h,i)perylene	0.076	0.005	mg/L	0.0500	ND	153	0.1-219			BDS	
Surrogate: 2-Fluorophenol	0.0576		mg/L	0.100		58	21-100				
Surrogate: Phenol-d6	0.0426		mg/L	0.100		43	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0964		mg/L	0.100		96	10-123				
Surrogate: Nitrobenzene-d5	0.0850		mg/L	0.100		85	35-114				
Surrogate: 2-Fluorobiphenyl	0.0861		mg/L	0.100		86	43-116				
Surrogate: p-Terphenyl-d14	0.116		mg/L	0.100		116	33-141				

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
Batch B4D0605 - 3510C/625											
Matrix Spike Dup (B4D0605-MSD1)			Source: 4D29044-01		Prepared & Analyzed: 04/30/24						
N-Nitrosodimethylamine	0.026	0.005	mg/L	0.0500	ND	52	21-85	8	25	BDS	
Phenol	0.021	0.002	mg/L	0.0500	0.001	40	5-120	12	64	BDS	
2-Chlorophenol	0.041	0.005	mg/L	0.0500	ND	81	23-134	11	61	BDS	
Pyridine	0.0005	0.005	mg/L	0.0500	ND	0.9	3-81	2	25	BDS	OO2
bis(2-Chloroethyl)ether	0.049	0.005	mg/L	0.0500	ND	98	12-158	10	108	BDS	
n-Decane	0.036	0.005	mg/L	0.0500	ND	71	20-120	11	25	BDS	
bis(2-Chloroisopropyl)ether	0.049	0.005	mg/L	0.0500	ND	98	36-166	10	76	BDS	
o-Cresol	0.040	0.005	mg/L	0.0500	ND	79	27-120	10	25	BDS	
N-Nitroso-n-ethyl-ethanamine	0.042	0.005	mg/L	0.0500	ND	83	50-120	12	25	BDS	
m,p-Cresol	0.070	0.005	mg/L	0.100	ND	70	27-120	9	25	BDS	
N-Nitroso-di-n-propylamine	0.044	0.005	mg/L	0.0500	ND	89	0.1-230	10	87	BDS	
Hexachloroethane	0.034	0.002	mg/L	0.0500	ND	69	40-120	9	52	BDS	
Nitrobenzene	0.043	0.005	mg/L	0.0500	ND	86	35-180	10	62	BDS	
Isophorone	0.042	0.005	mg/L	0.0500	ND	84	21-196	11	93	BDS	
2-Nitrophenol	0.045	0.005	mg/L	0.0500	ND	90	29-182	11	55	BDS	
2,4-Dimethylphenol	0.042	0.005	mg/L	0.0500	ND	84	32-120	10	58	BDS	
bis(2-Chloroethoxy)methane	0.047	0.005	mg/L	0.0500	ND	93	33-184	11	54	BDS	
2,4-Dichlorophenol	0.045	0.005	mg/L	0.0500	ND	90	39-135	11	50	BDS	
1,2,4-Trichlorobenzene	0.040	0.005	mg/L	0.0500	ND	80	44-142	9	50	BDS	
Naphthalene	0.038	0.002	mg/L	0.0500	ND	76	21-133	12	65	BDS	
Hexachlorobutadiene	0.041	0.002	mg/L	0.0500	ND	81	24-120	9	62	BDS	
4-Chloro-3-methylphenol	0.044	0.005	mg/L	0.0500	ND	88	22-147	6	73	BDS	
Hexachlorocyclopentadiene	0.020	0.005	mg/L	0.0500	ND	41	10-98	8	25	BDS	
2,4,6-Trichlorophenol	0.046	0.005	mg/L	0.0500	ND	92	37-144	7	58	BDS	
2-Chloronaphthalene	0.045	0.005	mg/L	0.0500	ND	91	60-120	9	24	BDS	
1,2,4,5-Tetrachlorobenzene	0.042	0.005	mg/L	0.0500	ND	84	35-120	10	25	BDS	
Dimethylphthalate	0.040	0.002	mg/L	0.0500	ND	80	0.1-120	11	183	BDS	
2,4,5-Trichlorophenol	0.045	0.005	mg/L	0.0500	ND	91	40-120	10	25	BDS	
2,6-Dinitrotoluene	0.048	0.005	mg/L	0.0500	ND	97	50-158	8	48	BDS	
Acenaphthylene	0.038	0.005	mg/L	0.0500	ND	76	33-145	10	74	BDS	
Acenaphthene	0.039	0.005	mg/L	0.0500	ND	79	47-145	11	48	BDS	
2,4-Dinitrophenol	0.023	0.010	mg/L	0.0500	ND	45	0.1-191	4	132	BDS	
4-Nitrophenol	0.028	0.010	mg/L	0.0500	ND	56	0.1-132	10	131	BDS	
2,4-Dinitrotoluene	0.049	0.005	mg/L	0.0500	ND	98	39-139	6	42	BDS	
Pentachlorobenzene	0.046	0.005	mg/L	0.0500	ND	92	50-120	9	25	BDS	
Diethylphthalate	0.048	0.005	mg/L	0.0500	ND	96	0.1-120	8	100	BDS	
Fluorene	0.041	0.005	mg/L	0.0500	ND	82	59-121	9	38	BDS	
4-Chlorophenyl-phenyl ether	0.052	0.005	mg/L	0.0500	ND	105	25-158	9	61	BDS	
4,6-Dinitro-2-methylphenol	0.029	0.010	mg/L	0.0500	ND	59	0.1-181	4	203	BDS	
N-Nitrosodiphenylamine	0.045	0.005	mg/L	0.0500	ND	91	25-120	10	25	BDS	
Diphenylhydrazine(as Azobenzene)	0.022	0.005	mg/L	0.0500	ND	43	2-79	10	25	BDS	
4-Bromophenyl-phenyl ether	0.050	0.005	mg/L	0.0500	ND	99	53-127	11	43	BDS	
Hexachlorobenzene	0.033	0.005	mg/L	0.0500	ND	65	0.1-152	9	55	BDS	
Pentachlorophenol	0.043	0.005	mg/L	0.0500	ND	85	14-176	10	86	BDS	
n-Octadecane	0.045	0.005	mg/L	0.0500	0.003	85	20-120	8	25	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Toxic Pollutant Semivolatiles by EPA 625.1 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4D0605 - 3510C/625

Matrix Spike Dup (B4D0605-MSD1)

Source: 4D29044-01 Prepared & Analyzed: 04/30/24

Phenanthrene	0.040	0.005	mg/L	0.0500	ND	79	54-120	11	39	BDS	
Anthracene	0.038	0.005	mg/L	0.0500	ND	75	27-133	11	66	BDS	
Di-n-butylphthalate	0.052	0.005	mg/L	0.0500	ND	105	1-120	11	47	BDS	
Fluoranthene	0.037	0.005	mg/L	0.0500	ND	74	26-137	15	66	BDS	
Carbazole	0.018	0.005	mg/L	0.0500	ND	35	20-120	11	25	BDS	
Benzidine	0.0003	0.005	mg/L	0.0500	ND		1-75		25	BDS	OQ2
Pyrene	0.037	0.005	mg/L	0.0500	ND	73	52-120	14	49	BDS	
Benzylbutylphthalate	0.062	0.005	mg/L	0.0500	ND	124	0.1-152	10	60	BDS	
Benzo(a)anthracene	0.044	0.005	mg/L	0.0500	ND	87	33-143	8	53	BDS	
3,3'-Dichlorobenzidine	0.025	0.005	mg/L	0.0500	ND	50	0.1-262	10	108	BDS	
Chrysene	0.044	0.005	mg/L	0.0500	ND	89	17-168	12	87	BDS	
N-Nitroso-di-n-butylamine	0.047	0.005	mg/L	0.0500	ND	94	35-120	13	25	BDS	
bis(2-Ethylhexyl)phthalate	0.061	0.005	mg/L	0.0500	ND	122	8-158	12	82	BDS	
Di-n-octylphthalate	0.053	0.005	mg/L	0.0500	ND	106	4-146	12	69	BDS	
Benzo(b)fluoranthene	0.027	0.005	mg/L	0.0500	ND	54	24-159	13	71	BDS	
Benzo(k)fluoranthene	0.028	0.005	mg/L	0.0500	ND	56	11-162	13	63	BDS	
Benzo(a)pyrene	0.027	0.005	mg/L	0.0500	ND	54	17-163	10	72	BDS	
Indeno(1,2,3-cd)pyrene	0.045	0.005	mg/L	0.0500	ND	89	0.1-171	10	99	BDS	
Dibenz(a,h)anthracene	0.068	0.005	mg/L	0.0500	ND	137	0.1-227	9	126	BDS	
Benzo(g,h,i)perylene	0.069	0.005	mg/L	0.0500	ND	138	0.1-219	10	97	BDS	
Surrogate: 2-Fluorophenol	0.0517		mg/L	0.100		52	21-100				
Surrogate: Phenol-d6	0.0383		mg/L	0.100		38	10-94				
Surrogate: 2,4,6-Tribromophenol	0.0856		mg/L	0.100		86	10-123				
Surrogate: Nitrobenzene-d5	0.0775		mg/L	0.100		78	35-114				
Surrogate: 2-Fluorobiphenyl	0.0777		mg/L	0.100		78	43-116				
Surrogate: p-Terphenyl-d14	0.103		mg/L	0.100		103	33-141				

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	<0.004	0.004	ug/L							BDS	
alpha-BHC	<0.003	0.003	ug/L							BDS	
beta-BHC	<0.006	0.006	ug/L							BDS	
delta-BHC	<0.009	0.009	ug/L							BDS	
gamma-BHC	<0.004	0.004	ug/L							BDS	
alpha-Chlordane	<0.014	0.014	ug/L							BDS	
gamma-Chlordane	<0.014	0.014	ug/L							BDS	
4,4'-DDD	<0.011	0.011	ug/L							BDS	
4,4'-DDE	<0.004	0.004	ug/L							BDS	
4,4'-DDT	<0.012	0.012	ug/L							BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Blank (B4E0068-BLK1)

Prepared: 04/29/24 Analyzed: 05/16/24

Dieldrin	<0.002	0.002	ug/L							BDS	
Endosulfan I	<0.014	0.014	ug/L							BDS	
Endosulfan II	<0.004	0.004	ug/L							BDS	
Endosulfan Sulfate	<0.066	0.066	ug/L							BDS	
Endrin	<0.006	0.006	ug/L							BDS	
Endrin Aldehyde	<0.023	0.023	ug/L							BDS	
Heptachlor	<0.003	0.003	ug/L							BDS	
Heptachlor Epoxide	<0.083	0.083	ug/L							BDS	
Endrin Ketone	<0.015	0.015	ug/L							BDS	
Methoxychlor	<0.126	0.126	ug/L							BDS	
Toxaphene	<0.240	0.240	ug/L							BDS	
Chlordane, Technical	<0.010	0.010	ug/L							BDS	

Surrogate: Decachlorobiphenyl

0.563

ug/L

1.00

56

10-140

Surrogate: Tetrachloro-m-xylene

0.358

ug/L

1.00

36

10-140

LCS (B4E0068-BS1)

Prepared: 04/29/24 Analyzed: 05/16/24

Aldrin	0.358	0.005	ug/L	0.500		72	42-140			BDS	
alpha-BHC	0.383	0.005	ug/L	0.500		77	37-140			BDS	
beta-BHC	0.362	0.010	ug/L	0.500		72	17-147			BDS	
delta-BHC	0.453	0.010	ug/L	0.500		91	19-140			BDS	
gamma-BHC	0.401	0.005	ug/L	0.500		80	32-140			BDS	
alpha-Chlordane	0.357	0.020	ug/L	0.500		71	45-140			BDS	
gamma-Chlordane	0.416	0.020	ug/L	0.500		83	45-140			BDS	
4,4'-DDD	0.427	0.020	ug/L	0.500		85	31-141			BDS	
4,4'-DDE	0.428	0.005	ug/L	0.500		86	30-145			BDS	
4,4'-DDT	0.344	0.020	ug/L	0.500		69	25-160			BDS	
Dieldrin	0.452	0.005	ug/L	0.500		90	36-146			BDS	
Endosulfan I	0.432	0.020	ug/L	0.500		86	45-153			BDS	
Endosulfan II	0.338	0.005	ug/L	0.500		68	1-202			BDS	
Endosulfan Sulfate	0.384	0.100	ug/L	0.500		77	26-144			BDS	
Endrin	0.433	0.010	ug/L	0.500		87	30-147			BDS	
Endrin Aldehyde	0.331	0.050	ug/L	0.500		66	30-147			BDS	
Heptachlor	0.224	0.005	ug/L	0.500		45	34-140			BDS	
Heptachlor Epoxide	0.419	0.100	ug/L	0.500		84	37-142			BDS	
Endrin Ketone	0.386	0.020	ug/L	0.500		77	45-140			BDS	
Methoxychlor	0.330	0.150	ug/L	0.500		66	45-140			BDS	
Toxaphene	33.6	0.500	ug/L	50.0		67	41-140			BDS	
Chlordane, Technical	1.01	0.020	ug/L	1.00		101	45-140			BDS	

Surrogate: Decachlorobiphenyl

0.597

ug/L

1.00

60

10-140

Surrogate: Tetrachloro-m-xylene

0.426

ug/L

1.00

43

10-140

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike (B4E0068-MS1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.421	0.005	ug/L	0.500	ND	84	42-140			BDS	
alpha-BHC	0.352	0.005	ug/L	0.500	ND	70	37-140			BDS	
beta-BHC	0.094	0.010	ug/L	0.500	ND	19	17-147			BDS	
delta-BHC	0.351	0.010	ug/L	0.500	ND	70	19-140			BDS	
gamma-BHC	0.396	0.005	ug/L	0.500	ND	79	32-140			BDS	
alpha-Chlordane	0.186	0.020	ug/L	0.500	ND	37	45-140			BDS	OQ2, OQ4
gamma-Chlordane	0.359	0.020	ug/L	0.500	ND	72	45-140			BDS	
4,4'-DDD	0.413	0.020	ug/L	0.500	ND	83	31-141			BDS	
4,4'-DDE	0.413	0.005	ug/L	0.500	ND	83	30-145			BDS	
4,4'-DDT	0.306	0.020	ug/L	0.500	ND	61	25-160			BDS	
Dieldrin	0.391	0.005	ug/L	0.500	ND	78	36-146			BDS	
Endosulfan I	0.215	0.020	ug/L	0.500	ND	43	45-153			BDS	OQ2, OQ4
Endosulfan II	0.381	0.005	ug/L	0.500	ND	76	1-202			BDS	
Endosulfan Sulfate	0.338	0.100	ug/L	0.500	ND	68	26-144			BDS	
Endrin	0.389	0.010	ug/L	0.500	ND	78	30-147			BDS	
Endrin Aldehyde	0.224	0.050	ug/L	0.500	ND	45	30-147			BDS	
Heptachlor	0.307	0.005	ug/L	0.500	ND	61	34-140			BDS	
Heptachlor Epoxide	0.365	0.100	ug/L	0.500	ND	73	37-142			BDS	
Endrin Ketone	0.327	0.020	ug/L	0.500	ND	65	45-140			BDS	
Methoxychlor	0.363	0.150	ug/L	0.500	ND	73	45-140			BDS	
Toxaphene	21.5	0.500	ug/L	50.0	ND	43	41-140			BDS	
Chlordane, Technical	1.30	0.020	ug/L	1.00	ND	130	45-140			BDS	OQ4
Surrogate: Decachlorobiphenyl	0.612		ug/L	1.00		61	10-140				
Surrogate: Tetrachloro-m-xylene	0.476		ug/L	1.00		48	10-140				

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Aldrin	0.396	0.005	ug/L	0.500	ND	79	42-140	6	35	BDS	
alpha-BHC	0.389	0.005	ug/L	0.500	ND	78	37-140	10	36	BDS	
beta-BHC	0.090	0.010	ug/L	0.500	ND	18	17-147	5	44	BDS	
delta-BHC	0.367	0.010	ug/L	0.500	ND	73	19-140	5	52	BDS	
gamma-BHC	0.425	0.005	ug/L	0.500	ND	85	32-140	7	39	BDS	
alpha-Chlordane	0.354	0.020	ug/L	0.500	ND	71	45-140	63	35	BDS	OQ3
gamma-Chlordane	0.378	0.020	ug/L	0.500	ND	76	45-140	5	35	BDS	
4,4'-DDD	0.421	0.020	ug/L	0.500	ND	84	31-141	2	39	BDS	
4,4'-DDE	0.371	0.005	ug/L	0.500	ND	74	30-145	11	35	BDS	
4,4'-DDT	0.293	0.020	ug/L	0.500	ND	59	25-160	4	42	BDS	
Dieldrin	0.173	0.005	ug/L	0.500	ND	35	36-146	77	49	BDS	OQ3, OQ4 OQ3
Endosulfan I	0.424	0.020	ug/L	0.500	ND	85	45-153	65	28	BDS	
Endosulfan II	0.384	0.005	ug/L	0.500	ND	77	1-202	0.8	53	BDS	
Endosulfan Sulfate	0.312	0.100	ug/L	0.500	ND	62	26-144	8	38	BDS	
Endrin	0.341	0.010	ug/L	0.500	ND	68	30-147	13	48	BDS	
Endrin Aldehyde	0.209	0.050	ug/L	0.500	ND	42	30-147	7	48	BDS	
Heptachlor	0.282	0.005	ug/L	0.500	ND	56	34-140	9	43	BDS	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Organochlorine Pesticides by EPA Method 608.3 - Quality Control

Earth Analytical Sciences, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Analyst	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	---------	-------

Batch B4E0068 - 3510C/608.3

Matrix Spike Dup (B4E0068-MSD1)

Source: 4D29044-01 Prepared: 04/29/24 Analyzed: 05/17/24

Heptachlor Epoxide	0.373	0.100	ug/L	0.500	ND	75	37-142	2	26	BDS	
Endrin Ketone	0.294	0.020	ug/L	0.500	ND	59	45-140	10	35	BDS	
Methoxychlor	0.357	0.150	ug/L	0.500	ND	71	45-140	1	35	BDS	
Toxaphene	24.4	0.500	ug/L	50.0	ND	49	41-140	13	41	BDS	
Chlordane, Technical	1.57	0.020	ug/L	1.00	ND	157	45-140	19	35	BDS	OQ2, OQ4

Surrogate: Decachlorobiphenyl

0.508

ug/L

1.00

51

10-140

Surrogate: Tetrachloro-m-xylene

0.477

ug/L

1.00

48

10-140



4825 Ward Drive
Beaumont, TX 77705
(p) 409-842-0658
(f) 409-842-9793

Natgasoline
2366 Sulphur Plant Road
Beaumont TX, 77705

Project: TPDES Permit Renewal
Project Number: Outfall 101 - Week 2
Project Manager: Scott Kolb

Reported:
05/17/24 14:30

Qualifiers, Definitions & Notes

Q8	Standard Methods 23rd Ed. Section 4020 used as guidance for calibration of instruments.		
OQ4	The second column confirmation exceeded 50% difference.		
OQ3	The Relative Percent Difference (RPD) for one or more analytes is outside of acceptance criteria established for this analysis method.		
OQ2	The Matrix Spike Recovery (MS/MSD) limits for one or more analytes in this sample were outside of the method default acceptance criteria due to required dilutions and/or matrix interferences.		
OQ1	The Laboratory Control Sample (LCS) had one or more analytes outside of the QC acceptance limits.		
J	Estimated Value reported above the Method Detection Limit (MDL) but below the Reporting Limit (RL).		
E	Estimated Value reported above the Upper Quantitation Limit (UQL), which is the highest calibration standard in the laboratory's initial calibration curve & adjusted for initial sample volume or weight.		
mg/L	milligrams per liter	<	Results are less than the reporting limit
mg/kg	milligrams per kilogram	ND	Non Detected at reporting limit
ug/g	microgram per gram	LCS	Laboratory Control Sample
ug/kg	microgram per kilogram	RPD	Relative Percent Difference
ug/L	microgram per liter		

All results are reported on a wet weight basis unless otherwise requested by the client.

If the Blank and/or LCS is qualified, a Case Narrative is included providing details for reporting decisions based on discussions of project management, technical operations and the end data user(Client).

MS/MSD and/or Surrogate results, that are qualified, are sample matrix driven anomalies and therefore, as defined by TNI Standards, not used to determine the validity of the analysis batch.

EARTH ANALYTICAL SCIENCES, INC.

CHAIN OF CUSTODY RECORD

Client: Natgasoline, LLC
 Address: 2366 Sulphur Plant Road
Beaumont TX , 77705
 Contact: Scott Kolb
 Phone #: 409-344-4932/346-774-5446
 E.A.S.# 41229044-01-03

Project: TPDES Wastewater Permit
 Project #: _____
 Location: Outfall 101
 P.O. #: _____
 Fax #: _____

4825 Ward Drive
 Beaumont, Texas 77705
 Phone: (409) 842-0658 Fax: (409) 842-9793

E.A.S.#										Analysis Requested																
No.	Sample ID	Sample Date	Sample Time	Grab	Composite	# Containers	Volume/Type Container	Matrix	Preserved	BOD/CBOD	COD/TOC/NH3	TKN/TON / T. Phos.	Cl,F,SO4,NO3	Alkalinity,Cr6	O&G	TDS/TSS	200.8 Metals/Cr3 *	Low Level Hg	Available Cyanide	624-Tox. Poll. VOA	625-Tox. Poll SVOA	608-Pesticides	Nonylphenol	on-site pH/Temp F/DO	T. Residual Chlorine-LOW	Extra
01AB	Outfall 101	04/29/24	1202	X		2	1 L - P	WW	NONE	X																
CO	Outfall 101	04/29/24	1202	X		2	500 mL - P	WW	H2SO4		X															
E	Outfall 101	04/29/24	1202	X		1	500 mL - P	WW	NONE				X													
F	Outfall 101	04/29/24	1202	X		1	500 mL - P	WW	NONE					X												
G	Outfall 101	04/29/24	1202	X		1	1 L - G	WW	H2SO4						X											
H	Outfall 101	04/29/24	1202	X		1	1 L - P	WW	NONE							X										
I	Outfall 101	04/29/24	1202	X		1	250 mL - P	WW	HNO3								X									* Al,Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni
JK	Outfall 101	04/29/24	1202	X		2	40 mL - V	WW	HCL									X								Se,Ag,Tl,Zn
K	Outfall 101	04/29/24	1202	X		1	250 mL - AP	WW	NAOH										X							
MNO	Outfall 101	04/29/24	1202	X		3	40 mL - V	WW	NONE											X						
PQR	Outfall 101	04/29/24	1202	X		3	1 L - AG	WW	NONE												X					
STU	Outfall 101	04/29/24	1202	X		3	1 L - AG	WW	NONE													X				
VWX	Outfall 101	04/29/24	1202	X		2	1 L - AG	WW	H2SO4														X			
X	Outfall 101	04/29/24	1202	X		1	250 mL - P	WW	NONE															X		
Y	Outfall 101	04/29/24	1202	X		1	4 oz - G	WW	NONE																X	
02AB	DUP	04/29/24	1202	X		2	40 mL - V	WW	HCL									X								
03AB	FB	04/29/24	1202	X		2	40 mL - V	W	HCL									X								
012AB	Outfall 101	04/29/24	1202	X		2	1 L - P	WW	NONE																X	

COMMENTS:

LAB USE ONLY:

RECEIVED ON ICE: Y or NCooler Temperature: 3.1"TAT - Working Days (Routine): XX 10 Day (STD) 3-5 Day (RUSH) 24 Hr. (ASAP)TAT - Working Days (TCLP): 10 Day (STD) 5 Day (RUSH) 2-3 Day (ASAP)SAMPLED BY: 2200SAMPLED BY PRINT NAME: Tracy Tull

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY:

DATE:

RECEIVED BY:

ORGANIZATION:

TIME:

ORGANIZATION:

RELINQUISHED BY: 2200DATE: 04/29/24RECEIVED AT LABORATORY BY: [Signature]ORGANIZATION: 60TIME: 1335ORGANIZATION: Earth Analytical Sciences, Inc.

MATRIX: (W) Water (WW) Wastewater (L) Liquid (SL) Sludge (S) Soil (SD) Solid (O) Oil

CONTAINER: (GA) Glass Amber (G) Glass (P) Plastic (VOA) 40ml Glass Vial w/Teflon Septum

(EC) EnCore-type Samplers

PRESERVATIVE: (1) H₂SO₄ (2) HNO₃ (3) NaOH/Zinc Acetate (4) HCl (5) Na₂S₂O₃ (6) NaOH (7) NaHSO₄ (8) H₂SO₄/CuSO₄ (9) NaOH/Ascorbic Acid

Natgasoline - Permit R

 FRM-SC1
 Revision 5
 12-28-2009

Page 33 of 66



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

May 03, 2024

Scott Boudreaux
Earth Analytical Sciences, Inc.
4825 Ward Dr
Beaumont, TX 77705
TEL: (409) 842-0658
FAX: (409) 842-9793
RE: 4D29044

Dear Scott Boudreaux:

Order No.: 24042238

Summit Environmental Technologies, Inc. received 3 sample(s) on 4/30/2024 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

A handwritten signature in black ink that reads 'Salwa Najjar'.

Salwa A. Najjar

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Case Narrative

WO#: 24042238
Date: 5/3/2024

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D29044

WorkOrder Narrative:

24042238: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Workorder Sample Summary

WO#: 24042238

03-May-24

CLIENT: Earth Analytical Sciences, Inc.

Project: 4D29044

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
24042238-001	4D29044-01		4/29/2024 12:02:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042238-001	4D29044-01		4/29/2024 12:02:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042238-001	4D29044-01		4/29/2024 12:02:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042238-002	4D29044-02		4/29/2024 12:02:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water
24042238-003	4D29044-03		4/29/2024 12:02:00 PM	4/30/2024 12:35:00 PM	Non-Potable Water



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24042238**

Date Reported: **5/3/2024**

Lab ID: 24042238-001

Collection Date: 4/29/2024 12:02:00 PM

Client Sample ID 4D29044-01

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	9.81	0.361	0.500		ng/L	1	R184822	5/2/2024 10:34:39 AM
STANDARD MASTER LIST-EXTRA (EPA 8270C)					EPA 8270 C			EPA 3510 Analyst: SAM
TIC: Nonylphenol	ND	0.0245	0.0245		mg/L	1	74993	5/2/2024 10:48:00 PM
Surr: 2-Fluorophenol	34.5		14-110		%Rec	1	74993	5/2/2024 10:48:00 PM
Surr: Phenol-d6	22.8		10-110		%Rec	1	74993	5/2/2024 10:48:00 PM
Surr: 2,4,6-Tribromophenol	73.8		13-125		%Rec	1	74993	5/2/2024 10:48:00 PM
TKN (EPA351.2)					EPA 351MOD 2			EPA 351.2 Analyst: BJT
TKN	27.0	5.00	10.0		mg/L	10	75029	5/2/2024 2:15:00 PM

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24042238**

Date Reported: **5/3/2024**

Lab ID: 24042238-002

Collection Date: 4/29/2024 12:02:00 PM

Client Sample ID 4D29044-02

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	12.7	0.361	0.500		ng/L	1	R184822	5/2/2024 10:38:49 AM

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Analytical Report

(consolidated)

WO#: **24042238**

Date Reported: **5/3/2024**

Lab ID: 24042238-003

Collection Date: 4/29/2024 12:02:00 PM

Client Sample ID 4D29044-03

Matrix: NON-POTABLE WATER

Analysis	Result	MDL	PQL	Qual	Units	Dilution	Batch	Date Analyzed
LOW-LEVEL MERCURY (EPA 1631)					EPA 1631 E			Analyst: TAL
Mercury	1.27	0.361	0.500		ng/L	1	R184822	5/2/2024 10:47:09 AM

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
PL Permit Limit
W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
ND Not Detected
RL Reporting Detection Limit



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29044

BatchID: 74993

Sample ID: LCS-74993		SampType: LCS	TestCode: SVOC-MSTR		Units: %Rec		Prep Date: 4/30/2024			RunNo: 184865		
Client ID: LCSW	Batch ID: 74993		TestNo: SW8270C		SW3510C		Analysis Date: 5/2/2024			SeqNo: 5009993		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Surr: 2-Fluorophenol	0.0224		0.05000		44.8	10	130					
Surr: Phenol-d6	0.0162		0.05000		32.4	10	130					
Surr: Nitrobenzene-d5	0.0449		0.05000		89.8	10	130					
Surr: 2,4,6-Tribromophenol	0.0480		0.05000		96.1	19	151					
Surr: 2-Fluorobiphenyl	0.0488		0.05000		97.5	10	130					
Surr: p-Terphenyl-d14	0.0485		0.05000		96.9	20	181					

Sample ID: LCSD-74993	SampType: LCSD	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/30/2024	RunNo: 184865						
Client ID: LCSS02	Batch ID: 74993	TestNo: SW8270C	SW3510C	Analysis Date: 5/2/2024	SeqNo: 5009994						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0207		0.05000		41.5	10	130		0		
Surr: Phenol-d6	0.0151		0.05000		30.2	10	130		0		
Surr: Nitrobenzene-d5	0.0428		0.05000		85.6	10	130		0		
Surr: 2,4,6-Tribromophenol	0.0445		0.05000		88.9	19	151		0		
Surr: 2-Fluorobiphenyl	0.0441		0.05000		88.2	10	130		0		
Surr: p-Terphenyl-d14	0.0464		0.05000		92.8	20	181		0		

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spec

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29044

BatchID: 74993

Sample ID: MB-74993	SampType: MBLK	TestCode: SVOC-MSTR	Units: %Rec	Prep Date: 4/30/2024	RunNo: 184865						
Client ID: PBW	Batch ID: 74993	TestNo: SW8270C	SW3510C	Analysis Date: 5/2/2024	SeqNo: 5010007						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	0.0179		0.05000		35.9	10	130				
Surr: Phenol-d6	0.0114		0.05000		22.7	10	130				
Surr: Nitrobenzene-d5	0.0361		0.05000		72.2	10	130				
Surr: 2,4,6-Tribromophenol	0.0376		0.05000		75.2	19	151				
Surr: 2-Fluorobiphenyl	0.0381		0.05000		76.1	10	130				
Surr: p-Terphenyl-d14	0.0453		0.05000		90.7	20	181				

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29044

BatchID: 75029

Sample ID: MB-75029	SampType: MBLK	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: PBW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009603		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	ND	1.00										

Sample ID: LCS-75029	SampType: LCS	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024			RunNo: 184847		
Client ID: LCSW	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009604		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN	10.1	1.00	10.00	0	101	90	110				

Sample ID: 24042239-001DMS		SampType: MS		TestCode: TKN_NPW(35			Units: mg/L		Prep Date: 5/1/2024			RunNo: 184847	
Client ID: BatchQC		Batch ID: 75029		TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009609		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TKN		19.3		1.00	10.00	8.849	104	90	110				

Sample ID: 24042239-001DMSD		SampType: MSD	TestCode: TKN_NPW(35			Units: mg/L	Prep Date: 5/1/2024			RunNo: 184847		
Client ID: BatchQC		Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009610		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	19.1	1.00	10.00	8.849	103	90	110	19.28	0.708	20		

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29044

BatchID: 75029

Sample ID: 24042239-001DMSD		SampType: MSD		TestCode: TKN_NPW(35		Units: mg/L		Prep Date: 5/1/2024			RunNo: 184847		
Client ID: BatchQC		Batch ID: 75029		TestNo: E351.2		E351.2		Analysis Date: 5/2/2024			SeqNo: 5009610		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 24042240-001BDUP	SampType: DUP	TestCode: TKN_NPW(35 Units: mg/L				Prep Date: 5/1/2024				RunNo: 184847		
Client ID: BatchQC	Batch ID: 75029	TestNo: E351.2		E351.2		Analysis Date: 5/2/2024				SeqNo: 5009612		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
TKN	0.572	1.00						0.5990	4.61	20	J	

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29044

BatchID: R184822

Sample ID: LCS	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008977		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	47.5	0.500	50.00	0	95.1	77	123				

Sample ID: mblank2	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631			Analysis Date: 5/2/2024				SeqNo: 5008978		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: mblank3	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631			Analysis Date: 5/2/2024				SeqNo: 5008989		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008990		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.1	0.500	50.00	0	100	77	123				

Qualifiers:

E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as specified

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29044

BatchID: R184822

Sample ID: LFB		SampType: LCS		TestCode: HG-LL_NPW(Units: ng/L			Prep Date:			RunNo: 184822			
Client ID: LCSW		Batch ID: R184822		TestNo: E1631			Analysis Date: 5/2/2024			SeqNo: 5008990			
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: LFB	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008991		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	48.5	0.500	50.00	0	97.0	77	123	50.12	3.29	24	

Sample ID: mblank4	SampType: MBLK	TestCode: HG-LL_NPW(Units: ng/L			Prep Date:				RunNo: 184822		
Client ID: PBW	Batch ID: R184822	TestNo: E1631			Analysis Date: 5/2/2024				SeqNo: 5008993		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.500									

Sample ID: LFB	SampType: LCS	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSW	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008994		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	49.9	0.500	50.00	0	99.9	77	123				

Qualifiers:
E Value above quantitation range
M Manual Integration used to determine area response
RL Reporting Detection Limit

H Holding times for preparation or analysis exceeded
ND Not Detected
S Spike Recovery outside accepted recovery limits

J Analyte detected below quantitation limits
PL Permit Limit
W Sample container temperature is out of limit as spe

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 24042238

03-May-24

Client: Earth Analytical Sciences, Inc.

Project: 4D29044

BatchID: R184822

Sample ID: LFBD	SampType: LCSD	TestCode: HG-LL_NPW(Units: ng/L				Prep Date:			RunNo: 184822		
Client ID: LCSS02	Batch ID: R184822	TestNo: E1631				Analysis Date: 5/2/2024			SeqNo: 5008995		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	50.7	0.500	50.00	0	101	77	123	49.94	1.49	24	

Qualifiers:

E	Value above quantitation range
M	Manual Integration used to determine area response
RL	Reporting Detection Limit

H	Holding times for preparation or analysis exceeded
ND	Not Detected
S	Spike Recovery outside accepted recovery limits

J	Analyte detected below quantitation limits
PL	Permit Limit
W	Sample container temperature is out of limit as specified

Original

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample	LOQ	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	PQL	Practical Quantitation Limit
QCS	Quality Control Sample	CRQL	Contract Required Quantitation Limit
DUP	Duplicate	PL	Permit Limit
MS	Matrix Spike	RegLvl	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
CCV	Continuing Calibration Verification	TIC	Tentatively Identified Compound
CCB	Continuing Calibration Blank	RT	Retention Time
RLC	Reporting Limit Check	CF	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.



SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

DATES REPORT

WO#: 24042238
03-May-24

Client: Earth Analytical Sciences, Inc.
Project: 4D29044

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
24042238-001A	4D29044-01	4/29/2024 12:02:00 PM	Non-Potable Water	Standard Master List-Extra (EPA 8270		4/30/2024 9:10:00 AM	5/2/2024 10:48:00 PM
24042238-001B				TKN (EPA351.2)		5/1/2024 3:15:00 PM	5/2/2024 2:15:00 PM
24042238-001C				Low-Level Mercury (EPA 1631)			5/2/2024 10:34:39 AM
24042238-002A	4D29044-02			Low-Level Mercury (EPA 1631)			5/2/2024 10:38:49 AM
24042238-003A	4D29044-03			Low-Level Mercury (EPA 1631)			5/2/2024 10:47:09 AM

Original



Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: <http://www.settek.com>

Accreditation Program Analytes Report

WO#: 24042238
03-May-24

Client: Earth Analytical Sciences, Inc.

State: TX

Project: 4D29044

Program Name: TX_DW_NPW_S

Test Name	Matrix	Analyte	Status
Low-Level Mercury (EPA 1631)	Non-Potable Water	Mercury	A
TKN (EPA351.2)	Non-Potable Water	Nitrogen, Total	A

AL	N	Not Accredited	AR	A	Accredited	A-NELA	A	Accredited
A-NELA	N	Not Accredited	CO	U	Unavailable	CT	A	Accredited
CT	N	Not Accredited	L-NELA	A	Accredited	HI-DW	N	Not Accredited
ID	U	Unavailable	L-NELA	A	Accredited	IN_DW	U	Unavailable
S - NELA	N	Not Accredited	KY_UST	N	Not Accredited	W(RADS)	A	Accredited

Version #2

SUBCONTRACT ORDER

Earth Analytical Sciences, Inc.

Project Number: 4D29044

24042238

SENDING LABORATORY:

Earth Analytical Sciences, Inc.

4825 Ward Dr.

Beaumont, TX 77705

Phone: 409-842-0658

Fax: 409-842-9793

Project Manager: Scott Boudreaux

scott@earthanalytical.com

RECEIVING LABORATORY:

Summit Environmental Technologies

3310 Win Street

Cuyahoga Falls, OH 44223

Phone : (330) 253-8211

Fax: N/A

State of Origin : TX

Due Date: 05/09/24 11:00

PO Number : 4D29044

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29044-01	Outfall 101 - Grab	Water	04/29/24 12:02	Containers and Unique ID: Analyses 500 mL, P, H2SO4 (D) 40 mL, VOA, HCL (J) 40 mL, VOA, HCL (K) 1-Liter, AG, H2SO4 (V) 1-Liter, AG, H2SO4 (W)	SUB. - Nonylphenol SUB. - TKN SUB.-Low Level Mercury	
4D29044-02	Dup - Grab	Water	04/29/24 12:02	Containers and Unique ID: Analyses 40 mL, VOA, HCL (A) 40 mL, VOA, HCL (B)	SUB.-Low Level Mercury	

Released By

Date/Time

Received By

Date/Time

Released By

Date/Time

Received By

Date/Time

Page 17 of 19

SUBCONTRACT ORDER

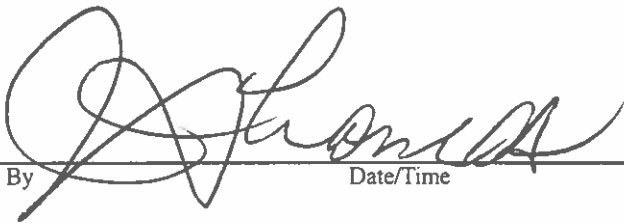
Earth Analytical Sciences, Inc.

Project Number: 4D29044

SENDING LABORATORY:

RECEIVING LABORATORY:

Sample ID	SampleName	Matrix	Sampled	Container type & ID	Analysis	Comments
4D29044-03	Field Blank - Grab	Water	04/29/24 12:02	<i>Containers and Unique ID: Analyses</i> 40 mL , VOA, HCL (A) SUB.-Low Level Mercury 40 mL , VOA, HCL (B)		

Released By		Date/Time	4/29/24	Received By		Date/Time	
-------------	---	-----------	---------	-------------	--	-----------	--

Released By		Date/Time		Received By		Date/Time	
-------------	--	-----------	--	-------------	--	-----------	--

Sample Log-In Check List

Client Name: EAR-TX-77705

Work Order Number: 24042238

RcptNo: 1

Logged by: Christina N. Gemma 4/30/2024 12:35:00 PM

Completed By: Christina N. Gemma 4/30/2024 1:57:24 PM

Reviewed By: Salwa A. Najjar 4/30/2024 2:55:36 PM

C. Gemma
C. Gemma
Salwa Najjar

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☒ No ☐
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒
No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels? Yes ☒ No ☐
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met? Yes ☒ No ☐
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.9	Good	Not Present			
2	4.8	Good	Not Present			



ANALYTICAL REPORT

PREPARED FOR

Attn: Brad Rader
Earth Analytical Sciences Inc
4825 Ward Dr
Beaumont, Texas 77705

Generated 5/6/2024 1:40:57 PM

JOB DESCRIPTION

4D29044-01

JOB NUMBER

180-173213-1

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization



Generated
5/6/2024 1:40:57 PM

Authorized for release by
Debra Bowen, Project Manager I
Debra.Bowen@et.eurofinsus.com
(412)963-2445

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions/Glossary	5
Certification Summary	6
Sample Summary	7
Method Summary	8
Lab Chronicle	9
Client Sample Results	10
QC Sample Results	11
QC Association Summary	12
Chain of Custody	13
Receipt Checklists	14



Case Narrative

Client: Earth Analytical Sciences Inc
Project: 4D29044-01

Job ID: 180-173213-1

Job ID: 180-173213-1

Eurofins Pittsburgh

Job Narrative 180-173213-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 4/30/2024 10:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Pittsburgh

Definitions/Glossary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Laboratory: Eurofins Pittsburgh

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704528	03-31-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-173213-1	4D29044-01	Water	04/29/24 12:02	04/30/24 10:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Method Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	EET PIT

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

1
2
3
4
5
6
7
8
9
10
11
12
13

Lab Chronicle

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Client Sample ID: 4D29044-01
Date Collected: 04/29/24 12:02
Date Received: 04/30/24 10:30

Lab Sample ID: 180-173213-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	O ₂ A - 1677		1			467465	05/03/24 14:44	CMR	EET PIT
Instrument ID: ALPKEM3										

Laboratory References:
EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:
Lab: EET PIT
Batch Type: Analysis
CMR = Carl Reagle

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Client Sample ID: 4D29044-01

Lab Sample ID: 180-173213-1

Date Collected: 04/29/24 12:02

Matrix: Water

Date Received: 04/30/24 10:30

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available (EPA OIA - 1677)	0.020		a.aaya	00016	mg/L			05/03/24 14:44	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Sample Results

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-467465/25
Matrix: Water
Analysis Batch: 467465

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Available	ND		0.0020	0.0016	mg/L			05/03/24 14:34	1

Lab Sample ID: LCS 180-467465/26
Matrix: Water
Analysis Batch: 467465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Available	0.0501	0.0505		mg/L		101	82 - 132

QC Association Summary

Client: Earth Analytical Sciences Inc
Project/Site: 4D29044-01

Job ID: 180-173213-1

General Chemistry

Analysis Batch: 467465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-173213-1	4D29044-01	Total/NA	Water	OIA - 1677	
MB 180-467465/25	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-467465/26	Lab Control Sample	Total/NA	Water	OIA - 1677	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

SUBCONTRACT ORDER
Earth Analytical Sciences, Inc.
Project Number: 4D29044

RECEIVING LABORATORY:

Eurofins TestAmerica-Pittsburgh
301 Alpha Dr.
Pittsburgh, PA 15238
Phone : (412) 963-2447
Fax: N/A

SENDING LABORATORY:

Earth Analytical Sciences, Inc.
4825 Ward Dr.
Beaumont, TX 77705
Phone: 409-842-0658
Fax: 409-842-9793
Project Manager: Scott Boudreaux
scott@earthanalytical.com

Due Date: 05/09/24 11:00

State of Origin : TX		Comments	
PO Number :	4D29044	Container type & ID	Analysis
Sample ID	Sample Name	Matrix	Sampled
4D29044-01	Outfall 101 - Grab	Water	04/29/24 12:02
		Containers and Unique ID: Analyses	
		SUB. - Available Cyanide	
		250 mL - P, NAOH (L)	



180-173213 Chain of Custody

43027 1030
4/29/24 @ 1030
Received By
Date/Time
Received By
Date/Time

Login Sample Receipt Checklist

Client: Earth Analytical Sciences Inc

Job Number: 180-173213-1

Login Number: 173213

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	