



Administrative Package Cover Page

This file contains the following documents:

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0003996000

APPLICATION. Tenaska Frontier Partners, LTD., 14302 FNB Parkway, Omaha, Nebraska 68154, which owns a natural gas-fired electric generating station, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0003996000 (EPA I.D. No. TX0120146) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 2,500,000 gallons per day. The facility is located at 17500 State Highway 30, in the city of Shiro, in Grimes County, Texas 77876. The discharge route is from the plant site to an unnamed tributary of Sulphur Creek; thence to Sulphur Creek; thence to Gibbons Creek Reservoir; thence to Navasota River Below Lake Limestone. TCEQ received this application on July 26, 2024. The permit application will be available for viewing and copying at Navasota Public Library, reference desk, 1411 East Washington Avenue, Navasota, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application. <https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.9175,30.594166&level=18>

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

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

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

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

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

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

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

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

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

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

Further information may also be obtained from Tenaska Frontier Partners, LTD. at the address stated above or by calling Ms. Patricia Greene, Director, Environmental Programs, at 402-691-9553.

Issuance Date: September 10, 2024

Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

This template is a guide to assist applicant's in developing a plain language summary as required by [30 Texas Administrative Code Chapter 39 Subchapter H](#). Applicant's may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed 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 blanks 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 Texas Administrative Code §39.426](#), **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package.** For your convenience, a Spanish template has been provided below.

ENGLISH TEMPLATE FOR 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 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

Tenaska Frontier Partners, LTD. (CN600135081) operates the Tenaska Frontier Generating Station (RN100245539), a natural gas-fired electric generating facility. The facility is located at 17500 State Highway 30, in Shiro, Grimes County, Texas 77876.

This application is for the renewal of the facility's wastewater discharge permit which includes cooling tower blowdown and low volume wastewaters. The facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. Based on these guidelines, low volume wastewaters are monitored via an internal monitoring outfall (Outfall 101) for flow, total suspended solids, oil & grease, and iron. Wastewater treatment is via an oil/water separator. This wastewater is then used as partial makeup water for the cooling tower. Cooling tower blowdown is monitored at Outfall 001 for flow, CBOD, ammonia (as nitrogen), dissolved oxygen, copper, chromium, zinc, total dissolved solids, sulfate, and nitrate nitrogen. Wastewater treatment prior to Outfall 001 discharge includes pH adjust by carbon dioxide and aeration.

**TENASKA® FRONTIER
PARTNERS, LTD.**

14302 FNB Parkway
Omaha, Nebraska 68154-5212
402-691-9500

July 25, 2024

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

**RE: Tenaska Frontier Partners, LTD. – Grimes County TX
Application for Renewal of TPDES Permit No. WQ0003996000
(RN100245539; CN600135081)**

Dear Madam/Sir:

On behalf of Tenaska Frontier Partners, LTD., please find enclosed one original and two complete copies of the Texas Pollutant Discharge for Elimination System (“TPDES”) Permit No. WQ0003996000 application for renewal for the Tenaska Frontier Generating Station.

Payment of the application fee has been provided to the Financial Administration Division under separate cover. A copy of that payment submittal is included in the enclosed application, labeled as Attachment A.

Please contact me directly with any questions you may at (402) 691-9553 or via email at PGreene@tenaska.com. We look forward to working with you in processing this application.

Sincerely,

TENASKA FRONTIER PARTNERS, LTD.

By: Tenaska VI Partners, L.P., Its Managing General Partner

By: Tenaska VI, Inc., Its General Partner

Patricia Greene

Patricia Greene, CHMM
Director, Environmental Programs

Enclosures: One (1) original and two (2) copies of the TPDES renewal permit application

cc: Ross Billingsley, Tenaska Frontier Generating Station



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

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

APPLICANT NAME: Tenaska Frontier Partners, LTD.

PERMIT NUMBER (If new, leave blank): WQ00 03996000

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

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

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: Tenaska Frontier Partners, LTD.

Permit No.: WQ0003996000

EPA ID No.: TX0120146

Expiration Date: Jan 23 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: Not Applicable

For TCEQ Use Only	
Segment Number _____	County _____
Expiration Date _____	Region _____
Permit Number _____	

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

g. Application Fee

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

h. Payment Information

Mailed

Check or money order No.: 3901

Check or money order amt.: \$1,215.00

Named printed on check or money order: Tenaska Frontier Partners, LTD.

Epay

Voucher number: Click to enter text.

Copy of voucher attachment: Click to enter text.

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN600135081

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: Tenaska Frontier Partners, LTD.

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

Title: Vice President Credential: Click to enter text.

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

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>

Yes No

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): [Click 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 B](#)

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: [Click to enter text.](#) Full Name (Last/First Name): [Zigler / Austin](#)

Title: [Sr. Analyst, Environmental Programs](#) Credential: [Click to enter text.](#)

Organization Name: [Tenaska Frontier Partners, LTD.](#)

Mailing Address: [14302 FNB Parkway](#) City/State/Zip: [Omaha / NE / 68154](#)

Phone No: [\(402\) 758-6229](#) Email: [AZigler@tenaska.com](#)

b. Administrative Contact Technical Contact

Prefix: [Click to enter text.](#) Full Name (Last/First Name): [Greene / Patricia](#)

Title: [Director, Environmental Programs](#) Credential: [Click to enter text.](#)

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

Phone No: (402) 691-9553 Email: PGreene@tenaska.com

Attachment: None

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

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

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

Title: Vice President Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

Phone No: (402) 938-1625 Email: BHunt@tenaska.com

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

Title: Sr. Analyst, Environmental Programs Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

Phone No: (402) 758-6229 Email: AZigler@tenaska.com

Attachment: None

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

Title: Vice President Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

Phone No: (402) 938-1625 Email: BHunt@tenaska.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: Click to enter text. Full Name (Last/First Name): Zigler / Austin

Title: Sr. Analyst, Environmental Programs Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway

City/State/Zip: Omaha / NE / 68154

Phone No: (402) 758-6229

Email: AZigler@tenaska.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Click to enter text.

Full Name (Last/First Name): Greene / Patricia

Title: Director, Environmental Programs

Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway

City/State/Zip: Omaha / NE / 68154

Phone No: (402) 691-9553

Email: PGreene@tenaska.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: PGreene@tenaska.com

Fax: Click to enter text.

Regular Mail (USPS)

Mailing Address: Click to enter text.

City/State/Zip Code: Click to enter text.

c. Contact in the Notice

Prefix: Click to enter text.

Full Name (Last/First Name): Greene / Patricia

Title: Director, Environmental Programs

Credential: Click to enter text.

Organization Name: Tenaska Frontier Partners, LTD.

Phone No: (402) 691-9553

Email: PGreene@tenaska.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: Navasota Public Library

Location within the building: Reference Desk

Physical Address of Building: 1411 E. Washington Ave

City: Navasota County: Grimes

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? [Click to enter text.](#)

f. Plain Language Summary Template - Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment. Attachment: [Click to enter text.](#)

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: [Click to enter text.](#)

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

a. TCEQ issued Regulated Entity Number (RN), if available: RN100245539

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): Tenaska Frontier Generating Station

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: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

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

e. Ownership of facility: Public Private Both Federal

f. Owner of land where treatment facility is or will be: [Click to enter text.](#)

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

or Organization Name: Tenaska Frontier Partners, LTD.

Mailing Address: 14302 FNB Parkway City/State/Zip: Omaha / NE / 68154

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: None

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

Prefix: Not Applicable 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: Not Applicable 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. TD PES 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 C

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): Shiro

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

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: Not Applicable

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: Not Applicable

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: WQ0003996000

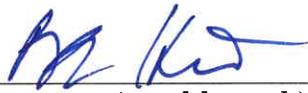
Applicant Name: Tenaska Frontier Partners, LTD.

Certification: I, Buck Hunt 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): Buck Hunt

Signatory title: Vice President

Signature: 
(Use blue ink)

Date: 07-24-2024

Subscribed and Sworn to before me by the said Buck Hunt

on this twenty-fourth day of July, 2024.

My commission expires on the ninth day of August, 2027.


Notary Public



[SEAL]

Sarpy
County, ~~Texas~~ Nebraska

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

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 D

**TENASKA® FRONTIER
PARTNERS, LTD.**

14302 FNB Parkway
Omaha, Nebraska 68154-5212
402-691-9500

July 18, 2024

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

RE: Tenaska Frontier Partners, LTD. – Grimes County TX
Renewal Application Fee Submittal
Application for Renewal of TPDES Permit No. WQ0003996000
(RN100245539; CN600135081)

Dear Madam/Sir:

On behalf of Tenaska Frontier Partners, LTD., please find enclosed check #3901 in the amount of \$1,215.00 for payment of the application fee for renewal of the above referenced permit.

Please contact me directly with any questions you may at (402) 691-9553 or via email at PGreene@tenaska.com.

Sincerely,

TENASKA FRONTIER PARTNERS, LTD.

By: Tenaska VI Partners, L.P., Its Managing General Partner
By: Tenaska VI, Inc., Its General Partner

Patricia Greene

Patricia Greene, CHMM
Director, Environmental Programs

Enclosures: One (1) Check and one (1) TCEQ Payment Submittal Form

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: WQ0003996000**

1. Check or Money Order Number: 3901
2. Check or Money Order Amount: \$1,215.00
3. Date of Check or Money Order: July 18 2024
4. Name on Check or Money Order: Tenaska Frontier Partners, LTD

5. APPLICATION INFORMATION

Name of Project or Site: Tenaska Frontier Generating Station

Physical Address of Project or Site: 17500 Highway 30 Shiro TX 77876

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: Not Applicable

Staple Check or Money Order in This Space

Greene, Patty

From: TrackingUpdates@fedex.com
Sent: Friday, July 19, 2024 9:48 AM
To: Greene, Patty
Subject: FedEx Shipment 777485811580: Your package has been delivered

Caution: External email, think before you click!



Hi. Your package was delivered Fri, 07/19/2024 at 9:34am.



Delivered to 12100 N INTERSTATE 35, AUSTIN, TX 78753
Received by T.WILLIAMS

[OBTAIN PROOF OF DELIVERY](#)

How was your delivery ?



TRACKING NUMBER [777485811580](#)

FROM	Tenaska Inc 14302 FNB PARKWAY OMAHA, NE, US, 68154
TO	TX Commission on Env Quality Cashier's Office, MC-214 12100 Park 35 Circle AUSTIN, TX, US, 78753
REFERENCE	9030
SHIPPER REFERENCE	9030
SHIP DATE	Thu 7/18/2024 05:49 PM
DELIVERED TO	Shipping/Receiving
PACKAGING TYPE	FedEx Envelope
ORIGIN	OMAHA, NE, US, 68154
DESTINATION	AUSTIN, TX, US, 78753
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



Easy options for your next shipment

There's no need to weigh packages or calculate shipping costs with FedEx One Rate®. Enjoy an easy shipping process with predictable pricing and complimentary flat-rate packaging options.

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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.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> 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 600135081		RN 100245539

SECTION II: Customer Information No changes or updates to Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)	
<input type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership <input type="checkbox"/> 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>	
Tenaska Frontier Partners, LTD			
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0010442010	14708081626	47-080816	
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input checked="" type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other: <input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant			
15. Mailing Address:		14302 FNB Parkway	
City	Omaha	State	NE
ZIP	68154	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 No changes or updates to Regulatory 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.)

Tenaska Frontier Generating Station

23. Street Address of the Regulated Entity:

17500 Highway 30

(No PO Boxes)

City	Shiro	State	TX	ZIP	77876	ZIP + 4

24. County

Grimes

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

35

38.82

95

55

3.25

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)

4911

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

Electric generating

34. Mailing Address:

17500 Highway 30

Address:

City	Shiro	State	TX	ZIP	77876	ZIP + 4

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

() -

() -

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.

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

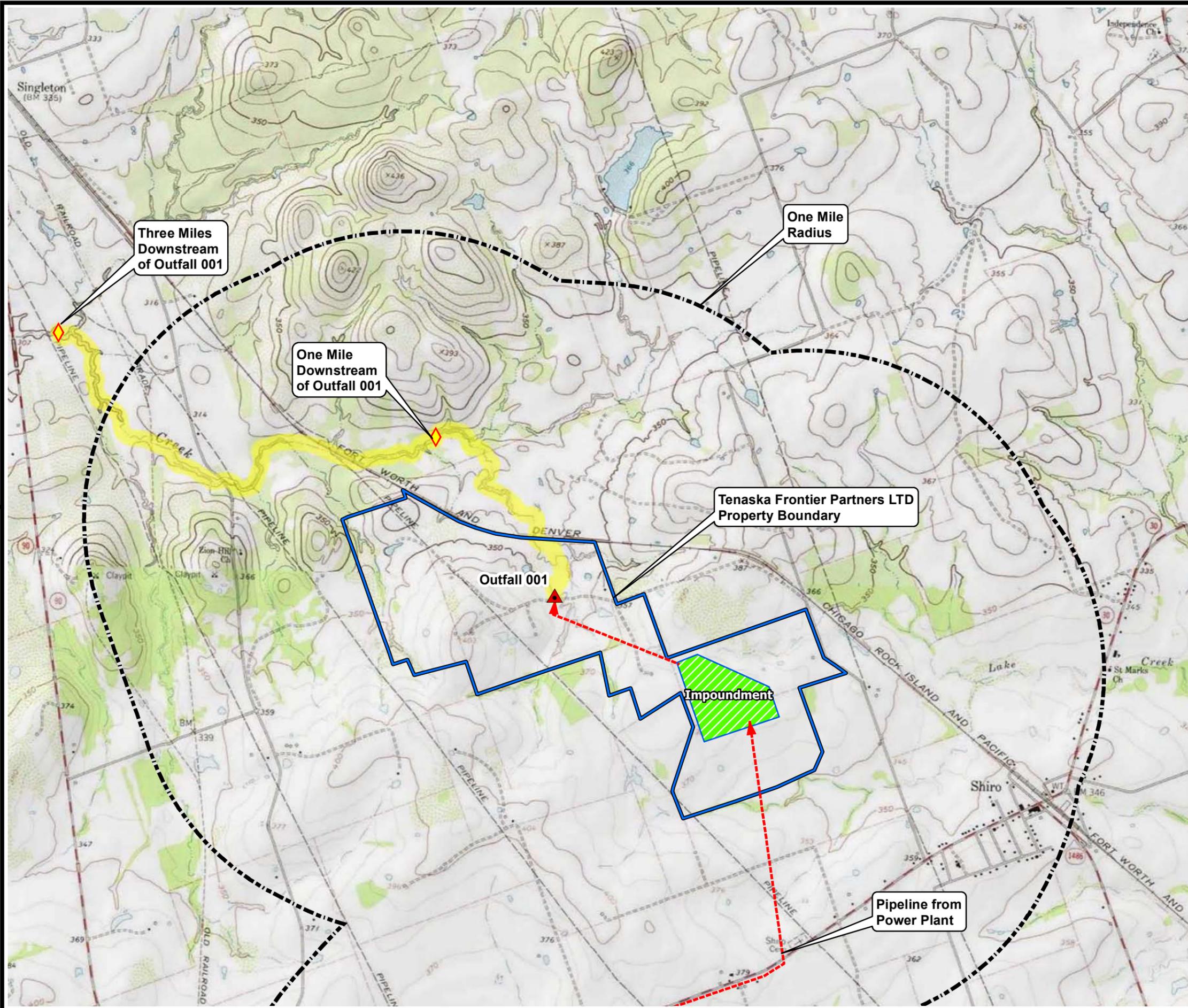
SECTION IV: Preparer Information

40. Name:	Patricia Greene	41. Title:	Director, Environmental Programs
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(402) 691-9553		() -	PGreene@tenaska.com

SECTION V: Authorized Signature

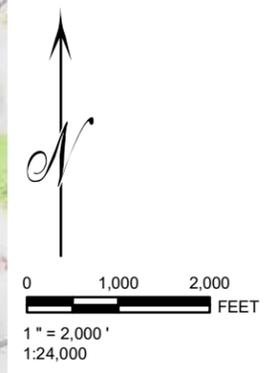
46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified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

Company:	Tenaska Frontier Partners, LTD.	Job Title:	Vice President
Name (In Print):	Buck Hunt	Phone:	(402) 691- 9500
Signature:		Date:	07-24-2024

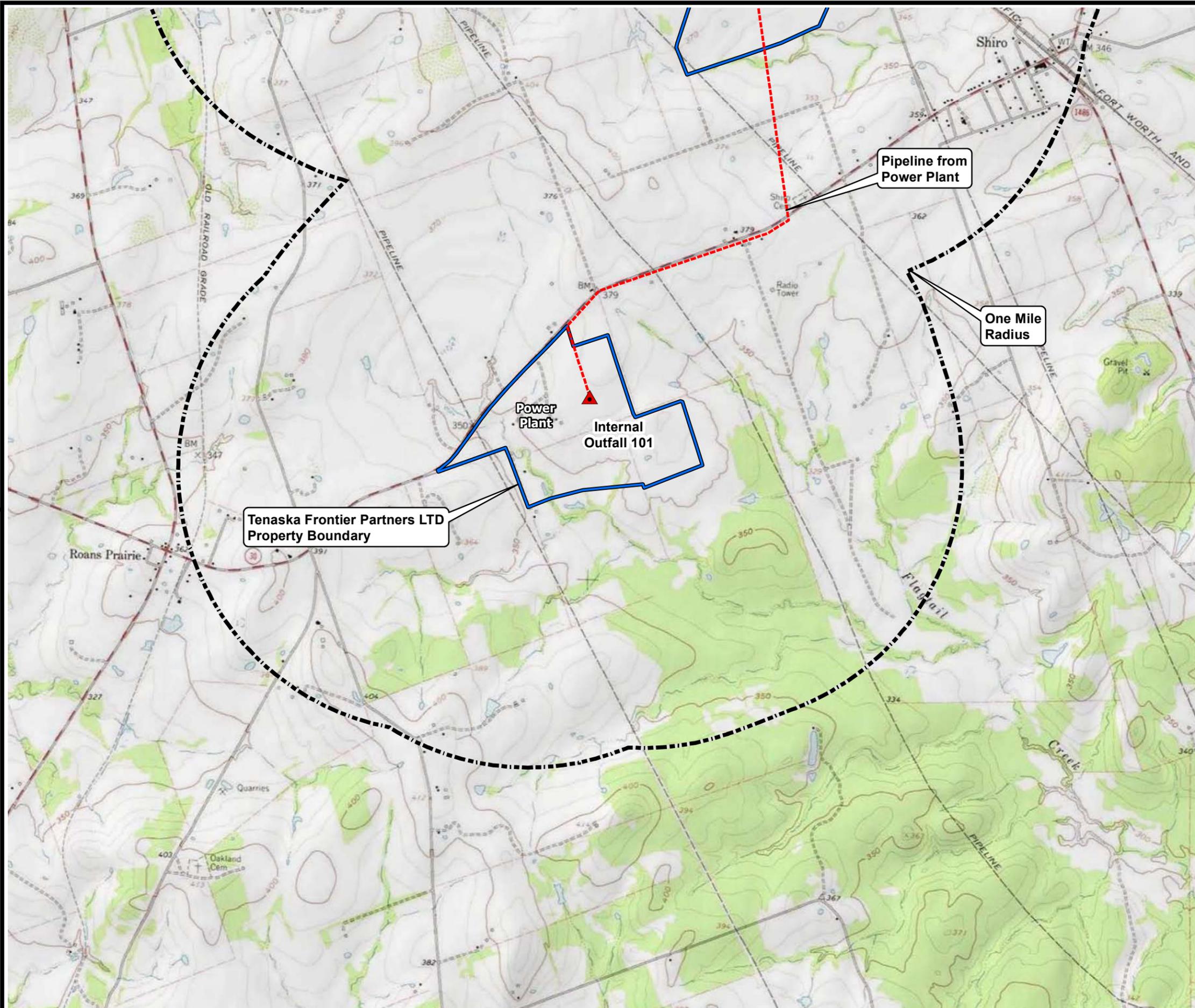


- LEGEND**
-  Tenaska Frontier Partners LTD Property Boundary
 -  One Mile Radius
 -  Outfalls
 -  Discharge Route
 -  Downstream Marker
 -  Pipeline
 -  Impoundment

SOURCE: USGS TOPOGRAPHIC QUADRANGLES 7.5 MINUTE
 SERIES: ROANS PRAIRIE, TX 1962 / SINGLETON, TX 1961

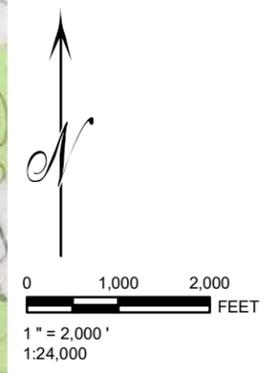


TENASKA FRONTIER PARTNERS LTD OMAHA, NEBRASKA		
ATTACHMENT C USGS MAP		
DRAWN BY: L WILSON	SCALE:	
CHECKED BY: J KOENINGS	AS NOTED	
APPROVED BY:	DATE PRINTED:	Page 1 of 2
DATE: February, 2016	2/29/2016	



- LEGEND**
-  Tenaska Frontier Partners LTD Property Boundary
 -  One Mile Radius
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 -  Impoundment

SOURCE: USGS TOPOGRAPHIC QUADRANGLES 7.5 MINUTE
 SERIES: ROANS PRAIRIE, TX 1962 / SINGLETON, TX 1961



TENASKA FRONTIER PARTNERS LTD OMAHA, NEBRASKA		
ATTACHMENT C USGS MAP		
DRAWN BY: L WILSON	SCALE: AS NOTED	Page 2 of 2
CHECKED BY: J KOENINGS	DATE PRINTED: 2/29/2016	
APPROVED BY:	DATE: February, 2016	

J:\Prj\Tenaska\Frontier Partners\TPDES 2016\USGS.mxd
 Printed By: Laurie on 2/29/2016, 10:20 AM

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: Tenaska Frontier Partners, LTD

Permit No. WQ00 03996000

EPA ID No. TX 0120146

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

17500 State Highway30, Shiro TX, 77876

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): Miss

First and Last Name: Patricia Greene

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

Title: Director, Environmental Programs

Mailing Address: 14302 FNB Parkway

City, State, Zip Code: Omaha, NE 68154

Phone No.: 402-691-9553 Ext.:

Fax No.:

E-mail Address: pgreene@tenaska.com

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

Not Applicable

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

Unnamed tributary to Sulphur Creek; thence to Sulphur Creek; thence to Gibbons Creek Reservoir; thence to Navasota River below Lake Limestone in Segment 1209 of the Brazos River Basin

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):

Not applicable; no new construction is planned.

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

Combined-cycle natural gas-fired electric generating station.

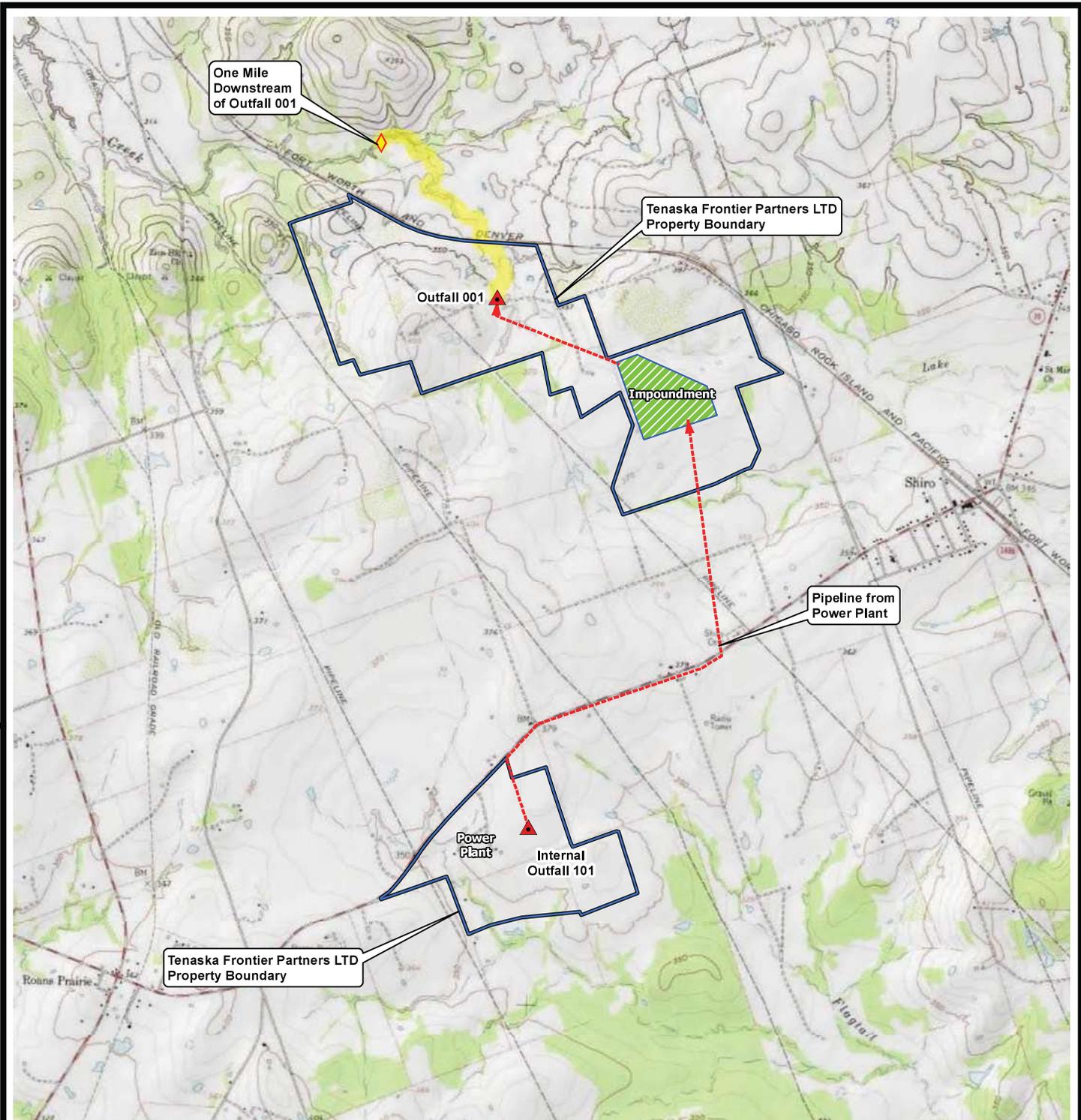
THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

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

Not applicable; no new construction or major amendments are planned.

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

Not applicable; no new construction or major amendments are planned.



Legend

-  Tenaska Frontier Partners LTD Property Boundary
-  Outfalls
-  Discharge Route
-  Downstream Marker
-  Pipeline
-  Impoundment



TENASKA FRONTIER PARTNERS LTD
OMAHA, NEBRASKA

ATTACHMENT D
SPIF MAP



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).

The facility is an 830 MW, combined-cycle, natural gas-fired, electric generating station equipped with three (3) combustion turbine generators, three (3) heat recovery stream generators equipped with natural gas-fired duct burners, and one (1) steam generator. Natural gas is the primary fuel for the combustion turbines with low sulfur No. 2 fuel oil as the backup generator.

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

Clarified water is obtained from the City of Huntsville. Wastewater is generated from cooling tower blowdown and low volume wastes (reject from water treatment such as reverse osmosis, miscellaneous plant drains, chemical building drains, and an oil/water separator). See the wastewater schematic diagram for additional details. Wastewater is discharged via Outfall 001 to an unnamed tributary of Sulphur Creek. Groundwater is utilized to supply the plant's potable water system. Sanitary sewage is disposed via an onsite septic system.

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	Steam	Electricity
Low Sulfur No. 2 Fuel Oil		

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 E](#)

- 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: [FEMA Flood Insurance Rate Map 48185C0275C](#)

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.

Chemical Neutralization Sump: neutralization; 7,481 gallon capacity sized to turnover sump four times per hour; Outfall 101. Temporary Neutralization Tank: neutralization of tank flush/rinse; flows to Chemical Neutralization Sump (Outfall 101) or Cooling Tower. Oil/Water Separator & Sump: oil/water separation; 8,000 gallon capacity; sized for 800 gpm; Outfall 101. Waste Water Sump: dechlorination via sodium bisulfite, only, to wastewater discharged directly from TFGS to Outfall 001; all wastewaters are combined prior to discharge to Outfall 001. pH Adjustment: pH adjust via carbon dioxide; sized for 3 MGD; wastewater discharged from the Impoundment to Outfall 001. Aeration: wastewater discharged from the Impoundment to Outfall 001.

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 F](#)

Item 3. Impoundments (Instructions, Page 40)

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

Yes No

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

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

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

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

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

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

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

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

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

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

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	C			
Associated Outfall Number	001			
Liner Type (C) (I) (S) or (A)	C			
Alt. Liner Attachment Reference	2 Ft Clay Liner			
Leak Detection System, Y/N	N			
Groundwater Monitoring Wells, Y/N	N			
Groundwater Monitoring Data Attachment	Not Applicable			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y			
Length (ft)	Not Applicable			
Width (ft)	Not Applicable			
Max Depth From Water Surface (ft), Not Including Freeboard	11			
Freeboard (ft)	2			
Surface Area (acres)	48			
Storage Capacity (gallons)	178 M			
40 CFR Part 257, Subpart D, Y/N	No			
Date of Construction	2000			

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

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)
001	30.624167	-95.92
IMP 101	30.593889	-95.916944

Outfall Location Description

Outfall No.	Location Description
001	At the overflow weir following the impoundment.
IMP 101	After the oil/water separator & chemical neutralization sump.

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

Outfall No.	Description of sampling point
001	Same as Outfall Location
IMP 101	Same as Outfall Location

Outfall Flow Information - Permitted and Proposed

Outfall No.	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
001	2.5	3.0	2.5	3.0	
IMP 101	0.082	0.5	0.082	0.5	

Outfall Discharge - Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	Y	N	Instantaneous, weir
IMP 101	Y	N	In-line 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)
001	Y	N	N	Up to 24	Up to 31	Up to 12
IMP 101	Y	N	N	Up to 24	Up to 31	Up to 12

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 Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Cooling tower blowdown	1.5 (avg)	95%
Previously monitored effluent at IMP 101	0.082 (avg)	5%

Outfall No. IMP 101

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Miscellaneous plant drains	0.038	46.3%
Oil/water separator	0.038	46.3%
Chemical neutralization sump	0.006	7.4%

Outfall No. Click to enter text.

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow

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 G](#)

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	1.5 M	2.0 M
Boilers	3	60,000	120,000

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:

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.
Spring Branch Beneficial Land Application Site / Triple B Ag. LLC	#711025 / #25606

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: WET as required by the current permit.

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** [Click to enter text.](#)

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: [Attachment H](#)

- 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)

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	Not Applicable			
Owner				
Operator				

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

Yes No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. TX2360001

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

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.

[Click to enter text.](#)

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: Buck Hunt

Title: Vice President

Signature: _____

Date: 07-24-2024

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
Steam Electric Power Generating	423.15(a) 1982 NSPS

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
Not Applicable			

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
Not Applicable			

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

<p>Not Applicable</p>

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.

<p>All discharged wastewater is process wastewater and regulated by 40 CFR 423.15(a) 1982 NSPS</p>
--

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
Cooling tower blowdown	423.15(a)(10)(i)	Not Applicable	2000
Low volume wastewaters	413.15(a)(3)	Not Applicable	2000

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)

- 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): 02/06/2024-07/02/2024
- 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.](#)

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:** Not Applicable

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.: 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)	17	24	14	12
CBOD (5-day)	9	10	12	16
Chemical oxygen demand	273	183	243	190
Total organic carbon	31.8	20.4	29.6	23.8
Dissolved oxygen	10.5	9.1	9.7	9.3
Ammonia nitrogen	0.80	<0.05	0.96	1.25
Total suspended solids	100	82	122	60
Nitrate nitrogen	1.8	0.12	0.023	<0.020
Total organic nitrogen	12.1	7.49	9.85	6.27
Total phosphorus	0.836	0.803	1.06	0.512
Oil and grease	5.6	<4.9	<5.0	<4.9
Total residual chlorine	<0.10	0.30	<0.10	<0.10

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	1840	1800	1880	1620
Sulfate	735	672	677	573
Chloride	273	280	327	309
Fluoride	1.33	1.39	1.43	1.49
Total alkalinity (mg/L as CaCO3)	78.0	66.0	82.0	92.0
Temperature (°F)	71.6	72.3	72.9	77.9
pH (standard units)	7.42	7.62	7.23	7.34

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	230	181	263	182	2.5
Antimony, total	5.08	7.77	7.12	7.51	5
Arsenic, total	5.17	3.33	3.42	3.62	0.5
Barium, total	180	210	206	226	3
Beryllium, total	<0.500	<0.500	<0.500	<0.500	0.5
Cadmium, total	<0.625	<0.625	<0.625	<0.625	1
Chromium, total	1.99	1.66	0.796	0.755	3
Chromium, hexavalent	<3.0	<3.0	<3.0	<3.0	3
Chromium, trivalent	<3.0	<3.0	<3.0	<3.0	N/A
Copper, total	6	11	10	12	2
Cyanide, available	<5	<5	<10	<5	2/10
Lead, total	<0.500	<0.500	<0.500	<0.500	0.5
Mercury, total	6.09 ng/L	<5.32 ng/L	12.8 ng/L	12.1 ng/L	0.005/0.0005
Nickel, total	7.70	11.0	12.3	36.4	2
Selenium, total	1.08	1.83	1.58	<0.625	5
Silver, total	<0.2	<1	<1	<1	0.5
Thallium, total	<0.5	<1	<1	<0.1	0.5
Zinc, total	6	3	3	6	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.: 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	<2.00	<1.00	<1.00	<2.00	50
Anthracene	<0.980	<1.02	<0.999	<0.990	10
Benzene	<5.00	<5.00	<5.00	<5.00	10
Benzidine	<1.47	<1.54	<1.50	<1.49	50
Benzo(a)anthracene	<0.980	<1.02	<0.999	<0.990	5
Benzo(a)pyrene	<0.980	<1.02	<0.999	<0.990	5
Bis(2-chloroethyl)ether	<0.980	<1.02	<0.999	<0.990	10
Bis(2-ethylhexyl)phthalate	<7.35	<7.68	<7.49	<7.43	10
Bromodichloromethane [Dichlorobromomethane]	<5.00	<5.00	<5.00	<5.00	10
Bromoform	<10.0	<5.00	<5.00	<5.00	10
Carbon tetrachloride	<5.00	<5.00	<5.00	<5.00	2
Chlorobenzene	<5.00	<5.00	<5.00	<5.00	10
Chlorodibromomethane [Dibromochloromethane]	<5.00	<5.00	<5.00	<5.00	10
Chloroform	<5.00	<5.00	<5.00	<5.00	10
Chrysene	<0.980	<1.02	<0.999	<0.990	5
m-Cresol [3-Methylphenol]	<7.84	<8.20	<7.99	<7.92	10
o-Cresol [2-Methylphenol]	<0.980	<10.2	<9.99	<9.90	10
p-Cresol [4-Methylphenol]	<7.84	<8.20	<7.99	<7.92	10
1,2-Dibromoethane	<5.00	<5.00	<5.00	<5.00	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<4.90	<5.00	<5.00	<5.00	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<4.90	<5.00	<5.00	<5.00	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<4.90	<5.00	<5.00	<5.00	10
3,3'-Dichlorobenzidine	<1.96	<2.05	<2.00	<1.98	5
1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]	<5.00	<5.00	<5.00	<5.00	10
Dichloromethane [Methylene chloride]	<10.00	<5.10	<5.10	<5.10	20
1,2-Dichloropropane	<5.05	<5.00	<5.00	<5.00	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5.00	<5.00	<5.00	<5.00	10
2,4-Dimethylphenol	<0.980	<1.02	<0.999	<0.990	10
Di-n-Butyl phthalate	<7.12	<7.68	<7.49	<7.43	10
Ethylbenzene	<5.00	<5.00	<5.00	<5.00	10
Fluoride	1.33 mg/L	1.39 mg/L	1.43 mg/L	1.49 mg/L	500
Hexachlorobenzene	<0.949	<1.02	<0.999	<0.990	5
Hexachlorobutadiene	<0.977	<1.06	<1.03	<1.02	10
Hexachlorocyclopentadiene	<0.949	<1.02	<0.999	<0.990	10
Hexachloroethane	<1.90	<2.05	<2.00	<1.98	20
Methyl ethyl ketone	<5.00	<5.00	<5.00	<5.00	50
Nitrobenzene	<0.949	<1.02	<0.999	<0.990	10
N-Nitrosodiethylamine	<0.949	<1.02	<0.999	<0.990	20
N-Nitroso-di-n-butylamine	<0.949	<1.02	<0.999	<0.990	20
Nonylphenol	<31.5	<29.4	<29.7	<29.6	333
Pentachlorobenzene	<0.980	<1.02	<0.999	<0.990	20
Pentachlorophenol	<4.90	<5.12	<5.00	<4.95	5
Phenanthrene	<0.980	<1.02	<0.999	<0.990	10
Polychlorinated biphenyls (PCBs) (**)	NA	NA	NA	NA	0.2
Pyridine	<1.32	<1.38	<1.35	<1.34	20
1,2,4,5-Tetrachlorobenzene	<1.01	<1.06	<1.03	<1.02	20
1,1,2,2-Tetrachloroethane	<10.00	<5.00	<5.00	<5.00	10
Tetrachloroethene [Tetrachloroethylene]	<5.00	<5.00	<5.00	<5.00	10
Toluene	<5.00	<5.00	<5.00	<5.00	10
1,1,1-Trichloroethane	<5.00	<5.00	<5.00	<5.00	10
1,1,2-Trichloroethane	<10.00	<5.00	<5.00	<5.00	10
Trichloroethene [Trichloroethylene]	<5.00	<5.00	<5.00	<5.00	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	<4.90	<5.12	<5.00	<4.95	50
TTHM (Total trihalomethanes)	<0.010 mg/L	<0.005 mg/L	<0.005 mg/L	<0.005 mg/L	10
Vinyl chloride	<5.20	<5.00	<5.00	<5.00	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.: Not Applicable 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.: Not Applicable 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 [Fenprothrin]					—
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.: **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	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.9	0.14	<0.02	<0.02	—
Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfite (as SO3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.200				—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.116				7
Magnesium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Manganese, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.5
Molybdenum, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					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
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Organic Chemicals Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Pharmaceutical Preparations	439	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input checked="" type="checkbox"/> Steam Electric Power Plants	423	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> 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.: 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	<4.00	<4.00	<4.00	<4.00	50
Acrylonitrile	<2.00	<1.00	<1.00	<2.00	50
Benzene	<5.00	<5.00	<5.00	<5.00	10
Bromoform	<10.0	<5.00	<5.00	<5.00	10
Carbon tetrachloride	<5.00	<5.00	<5.00	<5.00	2
Chlorobenzene	<5.00	<5.00	<5.00	<5.00	10
Chlorodibromomethane	<5.00	<5.00	<5.00	<5.00	10
Chloroethane	<25.00	<5.60	<5.60	<5.60	50
2-Chloroethylvinyl ether	<5.00	<5.00	<5.00	<5.00	10
Chloroform	<5.00	<5.00	<5.00	<5.00	10
Dichlorobromomethane [Bromodichloromethane]	<5.00	<5.00	<5.00	<5.00	10
1,1-Dichloroethane	<5.00	<5.00	<5.00	<5.00	10
1,2-Dichloroethane	<5.00	<5.00	<5.00	<5.00	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5.00	<5.00	<5.00	<5.00	10
1,2-Dichloropropane	<5.05	<5.00	<5.00	<5.00	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5.00	<5.00	<5.00	<5.00	10
Ethylbenzene	<5.00	<5.00	<5.00	<5.00	10
Methyl bromide [Bromomethane]	<5.05	<5.00	<5.00	<5.00	50
Methyl chloride [Chloromethane]	<5.00	<5.00	<5.00	<5.00	50
Methylene chloride [Dichloromethane]	<10.00	<5.00	<5.00	<5.00	20
1,1,2,2-Tetrachloroethane	<10.00	<5.00	<5.00	<5.00	10
Tetrachloroethylene [Tetrachloroethene]	<5.00	<5.00	<5.00	<5.00	10
Toluene	<5.00	<5.00	<5.00	<5.00	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<5.00	<5.00	<5.00	<5.00	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	<5.00	<5.00	<5.00	<5.00	10
1,1,2-Trichloroethane	<10.00	<5.00	<5.00	<5.00	10
Trichloroethylene [Trichloroethene]	<5.00	<5.00	<5.00	<5.00	10
Vinyl chloride	<5.20	<5.00	<5.00	<5.00	10

* Indicate units if different from µg/L.

Table 9 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	<0.980	<1.02	<0.999	<0.990	10
2,4-Dichlorophenol	<0.980	<1.02	<0.999	<0.990	10
2,4-Dimethylphenol	<0.980	<1.02	<0.999	<0.990	10
4,6-Dinitro-o-cresol	<1.96	<2.05	<2.00	<1.98	50
2,4-Dinitrophenol	<1.96	<2.05	<2.00	<1.98	50
2-Nitrophenol	<0.980	<1.02	<0.999	<0.990	20
4-Nitrophenol	<0.980	<1.02	<0.999	<0.990	50
p-Chloro-m-cresol	<0.980	<1.02	<0.999	<0.990	10
Pentachlorophenol	<4.90	<5.12	<5.00	<4.95	5
Phenol	3.07	<1.02	<0.999	<0.990	10
2,4,6-Trichlorophenol	<1.96	<5.12	<2.00	<1.98	10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: **Not Applicable**

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.: **Not Applicable** Samples are (check one): Composite Grab

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

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

* Indicate units if different from µg/L.

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

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

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

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

- 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) 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.: **Not Applicable** 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.: **Not Applicable** 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 4.0: RECEIVING WATERS

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

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

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

Yes No

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

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

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

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

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

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

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

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

Yes No

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

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

Yes No

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

Item 3. Classified Segment (Instructions, Page 80)

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

Yes No

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: An unnamed tributary of Sulphur Creek

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: None

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: During dry weather, the stream bed is dry unless discharging from the outfall.

Date and time of observation: June 2024, ~12 Noon

- 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):

<input type="checkbox"/> oil field activities	<input type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input type="checkbox"/> upstream discharges	<input checked="" type="checkbox"/> other, specify: <u>Not applicable; the outfall is located in the upper reaches of the creek.</u>

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

<input type="checkbox"/> livestock watering	<input type="checkbox"/> industrial water supply
<input type="checkbox"/> non-contact recreation	<input type="checkbox"/> irrigation withdrawal
<input type="checkbox"/> domestic water supply	<input type="checkbox"/> navigation
<input type="checkbox"/> contact recreation	<input type="checkbox"/> picnic/park activities
<input type="checkbox"/> fishing	<input checked="" type="checkbox"/> other, specify: <u>Drainage/flood control</u>

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

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

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

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

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

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)

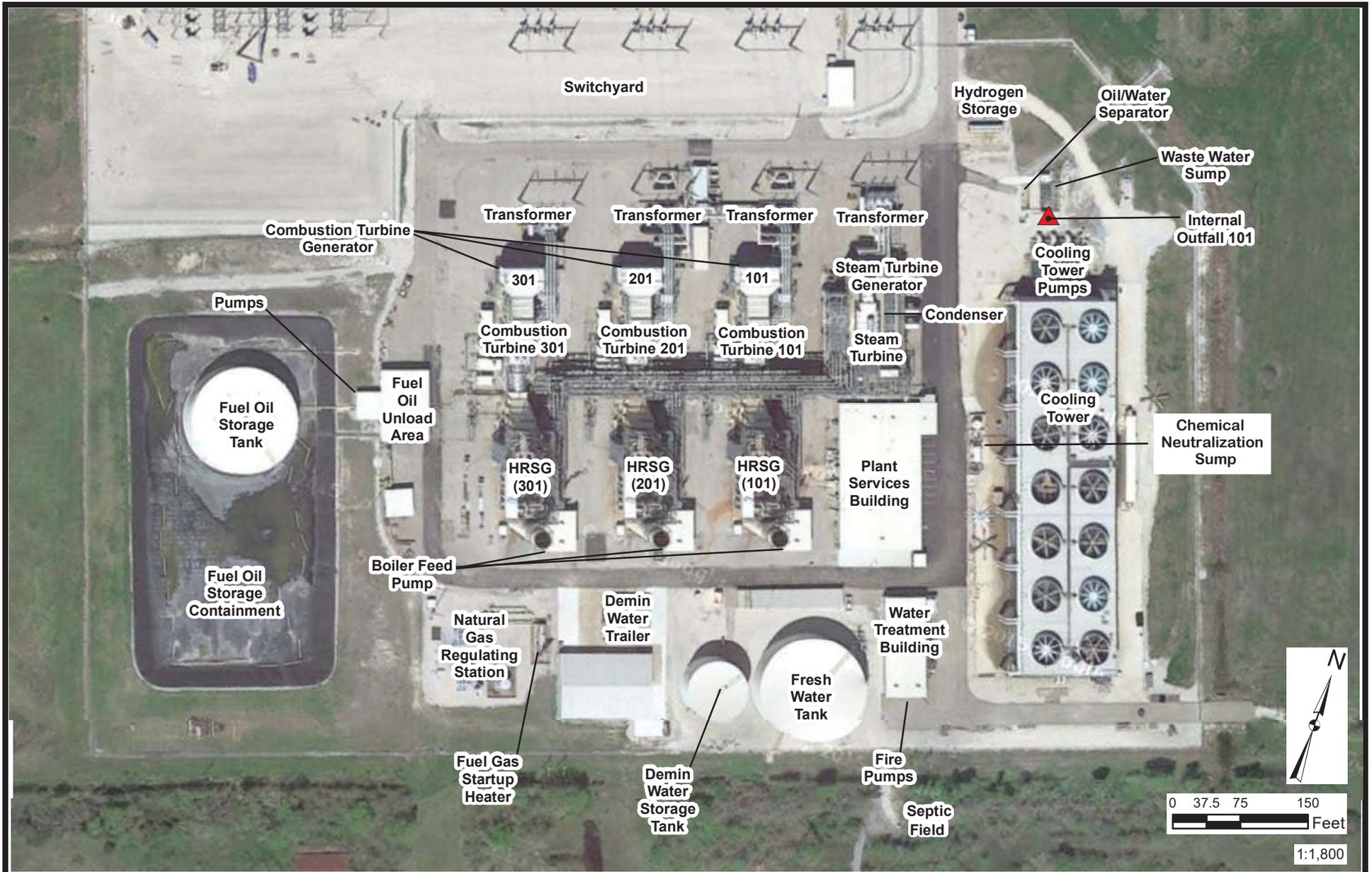
List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
002	<input checked="" type="checkbox"/>	<input type="checkbox"/>
003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

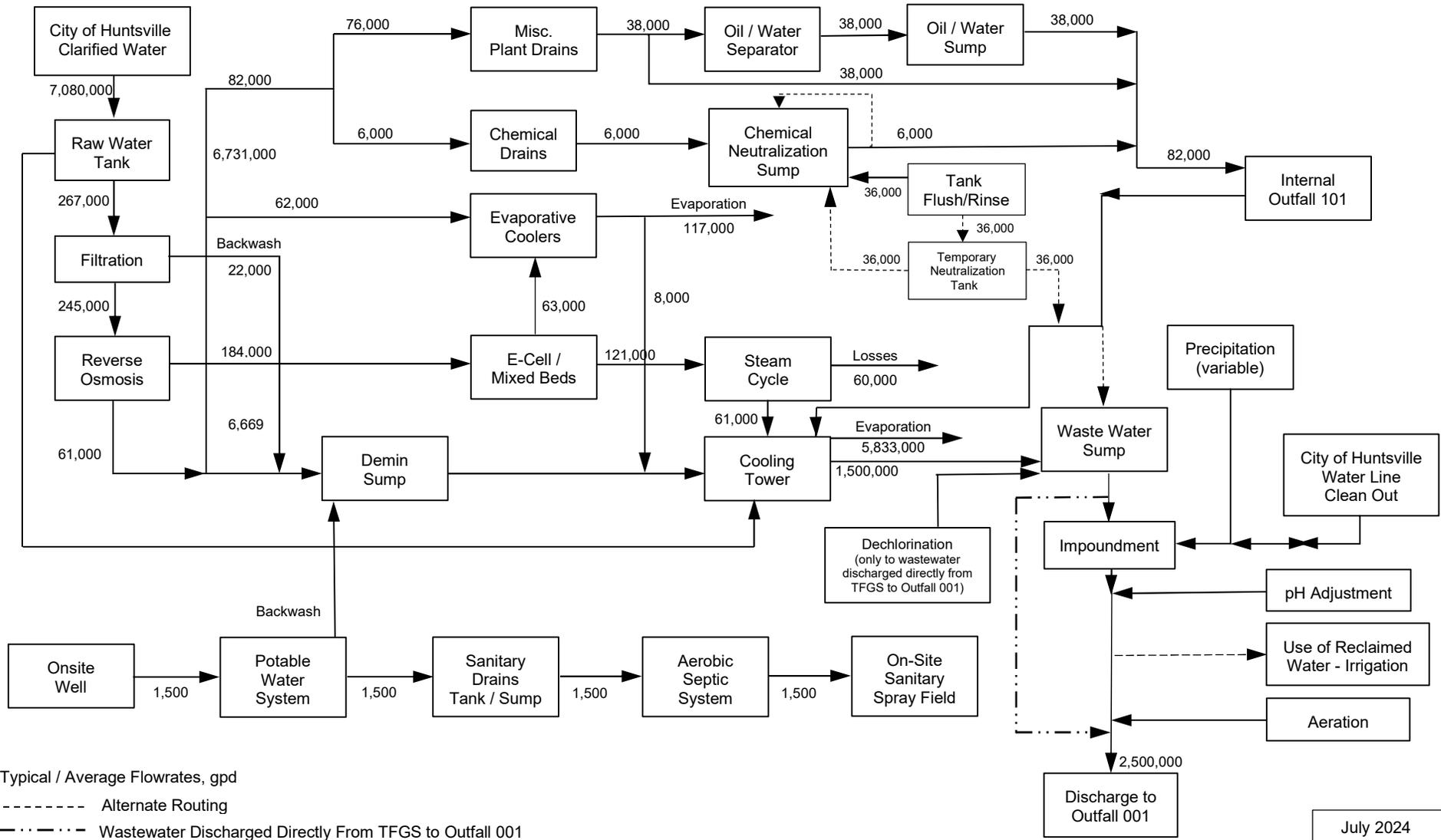
If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

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**.



TENASKA FRONTIER PARTNERS LTD
 OMAHA, NEBRASKA

ATTACHMENT E
 FACILITY MAP



TENASKA FRONTIER PARTNERS, LTD
OMAHA, NEBRASKA

ATTACHMENT F
FLOW DIAGRAM

Tenaska Frontier Generating Station
Application for Renewal of TPDES Permit No. WQ0003996000

Attachment G
Item 5. Cooling Tower and Boiler SDS Summary

Cooling Tower: all products listed are used during operation of the cooling tower in concentrations ranging from parts per million to parts per billion. Concentrations of these products in wastewater are anticipated to be non-detect. Affected outfall is Outfall 001.

- Foamtrol AF2082: antifoam
- Gengard GN8022: corrosion inhibitor
- Gengard GN8209: corrosion inhibitor
- Inhibitor ECP8130: corrosion inhibitor
- Phosphoric Acid: pH control, pH buffer
- Sodium Hypochlorite: biocide
- Sulfuric Acid: pH control

Boiler: all products listed are used during operation of the heat recovery steam generators (HRSGs) in concentrations ranging from parts per million to parts per billion. Concentrations of these products in wastewater are anticipated to be non-detect. Affected outfall is Outfall 001.

- Optisperse HP3100: boiler treatment
- Steamate HRGS24: steam condensate treatment



SAFETY DATA SHEET

FOAMTROL * AF2082

1. Identification

Product identifier FOAMTROL AF2082
Other means of identification None.
Recommended use Antifoam
Recommended restrictions None known.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
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
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

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 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, C16-18, Ethoxylated Propoxylated	68002-96-0	60 - 80
Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene)	9003-29-6	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	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. Wash with plenty of soap and water. 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	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	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	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. 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.
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.
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	Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. 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. Keep container tightly closed. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

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.
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 1910.34 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	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	Colorless to white
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	Not available.
Melting point/freezing point	-10 °F (-23 °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	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 10 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	0.96
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	< 0.01 %

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	182 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	3.9 (5% EMULSION)
Pour point	-5 °F (-21 °C)
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. None under normal conditions.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon.

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 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. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May cause respiratory irritation.

Product	Species	Test Results
FOAMTROL AF2082		

Acute

Oral

LD50	Rat	> 2000 mg/kg (Calculated according to GHS additivity formula)
------	-----	---

Components	Species	Test Results
Alcohols, C16-18, Ethoxylated Propoxylated (CAS 68002-96-0)		

Acute

Oral

LD50	Rat	2000 mg/kg
------	-----	------------

Butene, homopolymer (products derived from either/or But-1-ene/But-2-ene) (CAS 9003-29-6)

Acute

Dermal

LD50	Rabbit	> 2000 mg/kg
------	--------	--------------

Oral

LD50	Rat	> 10000 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	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 1910.1001-1053)	
Not listed.	
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
Aquatic			
Crustacea	LC50	Daphnia magna	764 mg/L, 48 hour
	NOEL	Daphnia magna	500 mg/L, 48 hour
Fish	LC50	Fathead Minnow	3232 mg/L, 96 hour
		Rainbow Trout	1109 mg/L, 96 hour
	NOEL	Fathead Minnow	1000 mg/L, 96 hour
		Rainbow Trout	500 mg/L, 96 hour

Persistence and degradability

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

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)

Propylene oxide (CAS 75-56-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Ethylene oxide (oxirane) (CAS 75-21-8)

Propylene oxide (CAS 75-56-9)

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 This product may be used as a defoaming agent in the manufacture of uncoated paper and paperboard at levels not exceeding 0.16% by weight by dry pulp.

US state regulations

California Proposition 65



WARNING: 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

1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (CAS 68515-48-0) Listed: December 20, 2013

1,4-DIOXANE (CAS 123-91-1) Listed: January 1, 1988

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: July 1, 1987

Propylene oxide (CAS 75-56-9) Listed: October 1, 1988
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 Jan-05-2015
Revision date Feb-19-2023
Version # 2.3
NFPA ratings Health: 2
Flammability: 0
Instability: 0

NFPA ratings



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
Exposure controls/personal protection: Appropriate engineering controls
Exposure controls/personal protection: Respiratory protection
Other information, including date of preparation or last revision: Prepared by
GHS: Classification

Prepared by This SDS has been prepared by Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).

* Trademark of Veolia. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN8022

1. Identification

Product identifier GENGARD GN8022
Other means of identification None.
Recommended use Corrosion inhibitor
Recommended restrictions None known.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
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
Sensitization, skin Category 1A
OSHA defined hazards Not classified.

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 dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated work clothing must 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 before reuse.

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
Maleic acid	110-16-7	0.1 - 1
CARBOXYLIC ACID POLYMER	TSRN 125438 - 5052P	

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	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 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	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. Skin irritation. May cause redness and pain. 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 (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. 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.
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.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. 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 in original tightly closed container. Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Eye wash fountain and emergency showers are recommended.

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.

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 1910.34 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 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

Physical state Not available.

Form Not available.

Color Amber

Odor Slight

Odor threshold Not available.

pH (concentrated product) 2.4 Neat

Melting point/freezing point 20 °F (-7 °C)

Initial boiling point and boiling range 212 °F (100 °C)

Flash point Not Applicable

Evaporation rate Slower than Ether

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mmHg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1

Relative density 1.22

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 82 mPa.s

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	2.7 (5% Solution)
Pour point	25 °F (-4 °C)
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. 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**

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
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. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
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Information on toxicological effects

Acute toxicity	Not known.
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Product	Species	Test Results
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GENGARD GN8022

Acute**Oral**

LD50	Rat	> 5000 mg/kg
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Components	Species	Test Results
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CARBOXYLIC ACID POLYMER

Acute**Oral**

LD50	Rat	4563 mg/kg
------	-----	------------

Maleic acid (CAS 110-16-7)

Acute**Dermal**

LD50	Rabbit	1560 mg/kg
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Inhalation

LC50	Rat	> 2.88 mg/L, 4 Hour
------	-----	---------------------

Oral

LD50	Rat	708 mg/kg
------	-----	-----------

Skin corrosion/irritation	Causes skin irritation.
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Serious eye damage/eye irritation	Causes serious eye irritation.
--	--------------------------------

Respiratory or skin sensitization

Respiratory sensitization	This product is not expected to cause respiratory sensitization.
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Skin sensitization	May cause an allergic skin reaction.
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Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

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 likely, due to the form of the product.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
Aquatic			
Crustacea	LC50	Daphnia magna	715 mg/l, 48 Hours (Estimated, pH adjusted)
Fish	LC50	Fathead Minnow	258 mg/l, 96 Hours (Estimated, pH adjusted)

Persistence and degradability

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Maleic acid -0.48

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)

Maleic acid (CAS 110-16-7) 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
Respiratory or skin sensitization

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)

Acrylic acid (CAS 79-10-7)

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) 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 WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

California Proposition 65

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 May-25-2017

Revision date Feb-21-2023

Version # 2.3

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

NFPA ratings**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

Hazard(s) identification: Supplemental information
Exposure controls/personal protection: Appropriate engineering controls
Exposure controls/personal protection: Respiratory protection
Physical & Chemical Properties: Multiple Properties
Other information, including date of preparation or last revision: Prepared by

Prepared by

This SDS has been prepared by Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).

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SAFETY DATA SHEET

GENGARD* GN8209

1. Identification

Product identifier GENGARD GN8209
Other means of identification None.
Recommended use Corrosion inhibitor
Recommended restrictions None known.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
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
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.

Precautionary statement

Prevention Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Wear eye protection/face protection.

Response Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. 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.

Storage 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
Chlorotolyltriazole sodium salt	202420-04-0	1 - 2.5
Sodium hydroxide	1310-73-2	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	Move to fresh air. Get medical attention immediately.
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. Carbon dioxide (CO ₂). 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. Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers / tanks with water spray. 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. 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.
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. Never return spills to original containers for re-use.
Environmental precautions	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. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not mix with acidic material. Avoid prolonged exposure. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
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Conditions for safe storage, including any incompatibilities

Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use. 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 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/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

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. 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 1910.34 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

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 to dark brown

Odor

Slight ammonia

Odor threshold

Not available.

pH (concentrated product)

13.4

Melting point/freezing point

18 °F (-8 °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

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	1.2
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	40 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	12.3 (5% SOL.)
Pour point	23 °F (-5 °C)
VOC	0 % (Estimated)

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. None under normal conditions.
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.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
GENGARD GN8209		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg (Calculated according to GHS additivity formula)

Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rabbit	> 500 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	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 1910.1001-1053)		
Not listed.		
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	Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested. 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
Aquatic			
Crustacea	LC50	Daphnia magna	1088 mg/L, 48 hour (pH adjusted)
	NOEL	Daphnia magna	625 mg/L, 48 hour (pH adjusted)
Fish	LC50	Fathead Minnow	228.7 mg/L, 96 hour (pH adjusted)
		Rainbow Trout	81.1 mg/L, 96 hour (pH adjusted)
	NOEL	Fathead Minnow	125 mg/L, 96 hour (pH adjusted)
		Rainbow Trout	62.5 mg/L, 96 hour (pH adjusted)
Persistence and degradability	No data available		
	No data available		
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. 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	UN3266
UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium hydroxide, HALOGENATED AROMATIC HETEROCYCLE), RQ(Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Not available.
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, HALOGENATED AROMATIC HETEROCYCLE)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	No.
ERG Code	154
Special precautions for user	Not available.
IMDG	
UN number	UN3266
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium hydroxide, HALOGENATED AROMATIC HETEROCYCLE), RQ(Sodium hydroxide)
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	Not available.

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 (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 Corrosive to metal
Skin corrosion or irritation
Serious eye damage or eye irritation

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).

NSF Registered and/or meets Registration No. – 147066
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. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

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 Oct-10-2014

Revision date Feb-19-2023

Version # 5.3

NFPA ratings Health: 3
Flammability: 0
Instability: 0

NFPA ratings



List of abbreviations TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
COD: Chemical Oxygen Demand
IATA: International Air Transport 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 Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).

* Trademark of Veolia. May be registered in one or more countries.



SAFETY DATA SHEET

INHIBITOR ECP8130

1. Identification

Product identifier	INHIBITOR ECP8130
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	Industrial use only.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
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
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.
Precautionary statement	
Prevention	Keep only in original container. 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. Absorb spillage to prevent material damage.
Storage	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
Sodium hydroxide	1310-73-2	1 - 2.5
Halogenated Aromatic Heterocycle	TSRN 125438 - 7795	

Multi-constituent substance(s)

Chemical name	Common name and synonyms	CAS number	%
Reaction mass of sodium 4-chloro-5-alkylbenzotriazolide and sodium 5-chloro-4-alkylbenzotriazolide and sodium 4-chloro-7-alkylbenzotriazolide and sodium 5-chloro-6-alkylbenzotriazolide		N/A	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	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 (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.

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 get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. See Section 8 of the SDS for 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. Store in tightly closed container. 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. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Provide adequate ventilation. 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. 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

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

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

Not available.

Color

Light yellow

Odor	Characteristic
Odor threshold	Not available.
pH (concentrated product)	13.5 Neat
Melting point/freezing point	18 °F (-8 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	> 199 °F (> 93 °C) P-M(CC)
Evaporation rate	Slower than Ether
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mmHg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1
Relative density	1.21
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 mPa.s
Viscosity temperature	73 °F (23 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	12.5 (5% Solution)
VOC	0 % ESTIMATED

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. Aluminum.
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 Immediate effects: Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Delayed effects: Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Not classified.

Product	Species	Test Results
INHIBITOR ECP8130		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	> 5000 mg/kg
Components	Species	Test Results
Halogenated Aromatic Heterocycle		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rabbit	> 500 mg/kg
Multi-constituent substance(s)	Species	Test Results
Reaction mass of sodium 4-chloro-5-alkylbenzotriazolide and sodium 5-chloro-4-alkylbenzotriazolide and sodium 4-chloro-7-alkylbenzotriazolide and sodium 5-chloro-6-alkylbenzotriazolide		
Acute		
Dermal		
	Rabbit	> 2000 mg/kg
Oral		
	Rat	> 2000 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	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 1910.1001-1053)		
Not listed.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	Not classified.	
Specific target organ toxicity - single exposure	Not classified.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not classified.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological information

Ecotoxicity

Product		Species	Test Results	
Aquatic	Crustacea	ChV	Ceriodaphnia	141.4 mg/L, 7 D (pH adjusted)
		IC25	Ceriodaphnia	127.7 mg/L, 7 D (pH adjusted)
		LC50	Ceriodaphnia	405 mg/L, 48 H (pH adjusted)
			Daphnia magna	365.9 mg/L, 48 H (pH adjusted)
			Mysid Shrimp	182.1 mg/L, 96 H (pH adjusted)
		LOEL	Ceriodaphnia	200 mg/L, 7 D (pH adjusted)
		NOEL	Ceriodaphnia	250 mg/L, 48 H (pH adjusted)
				100 mg/L, 7 D (pH adjusted)
			Daphnia magna	250 mg/L, 48 H (pH adjusted)
			Mysid Shrimp	125 mg/L, 96 H (pH adjusted)
Fish	LC50	Fathead Minnow	163.4 mg/L, 96 H (pH adjusted)	
		Rainbow Trout	44.2 mg/L, 96 H (pH adjusted)	
	NOEL	Fathead Minnow	125 mg/L, 96 H (pH adjusted)	
		Rainbow Trout	31.3 mg/L, 96 H (pH adjusted)	

Persistence and degradability

- COD (mgO ₂ /g)	120 (calculated data)
- BOD 5 (mgO ₂ /g)	4 (calculated data)
- BOD 28 (mgO ₂ /g)	4 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	3 (calculated data)
- TOC (mg C/g)	44 (calculated data)

Bioaccumulative potential No data available.

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. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Sodium hydroxide, HALOGENATED AROMATIC HETEROCYCLE), RQ(Sodium hydroxide)
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)

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 UN1760

UN proper shipping name CORROSIVE LIQUID, N.O.S. (SODIUM HYDROXIDE, HALOGENATED AROMATIC HETEROCYCLE), RQ(Sodium hydroxide)

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.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not 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 Corrosive to metal
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Formaldehyde (CAS 50-00-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Formaldehyde (CAS 50-00-0)

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).

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sodium hydroxide (CAS 1310-73-2)

California Proposition 65



WARNING: WARNING: This product can expose you to Formaldehyde, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Formaldehyde (CAS 50-00-0) Listed: January 1, 1988

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-15-2020

Revision date Feb-22-2023

Version # 3.1

NFPA ratings Health: 3
Flammability: 0
Instability: 0

NFPA ratings



List of abbreviations	<p>DOT: Department of Transportation (49 CFR 172.101). GHS: Globally Harmonized System of Classification and Labeling of Chemicals. IARC: International Agency for Research on Cancer. OSHA: Occupational Safety & Health Administration. WHMIS: Workplace Hazardous Materials Information System. ACGIH: American Conference of Governmental Industrial Hygienists BOD: Biochemical Oxygen Demand CAS: Chemical Abstract Service Registration Number COD: Chemical Oxygen Demand NFFPA: National Fire Protection Association IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code LC50: Lethal Concentration, 50% LD50: Lethal Dose, 50% NOEL: No Observed Effect Level STEL: Short Term Exposure Limit TOC: Total Organic Carbon TSRN indicates a Trade Secret Registry Number is used in place of the CAS number. TWA: Time Weighted Average</p>
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	<p>Product and Company Identification: Physical States Hazard(s) identification: Supplemental information Composition / Information on Ingredients: Additional Components First-aid measures: Eye contact Handling and storage: Precautions for safe handling Transport Information: Material Transportation Information Other information, including date of preparation or last revision: Prepared by HazReg Data: Europe - EU GHS: Classification</p>
Prepared by	This SDS has been prepared by Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).

Phosphoric Acid 75%

Date of compilation: 6/25/2009 Revised: 12/22/2019 Version: 7.1 (Replaced 7)

SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

Phosphoric Acid 75%
Phosphoric acid

CAS: 7664-38-2

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Fertilizer; ph modifier; cleaner (injection systems); food additive; chemical treatment of metal surfaces; water treatment; acidifier

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Supplier

Skyhawk Chemicals, Inc.
701 N Post Oak Rd., Ste. 540
Houston, TX
77024
Tel: +1-713-957-2200
order@skyhawkchemicals.com

1.4 Emergency phone number:

CHEMTREC
1-800-424-9300
Acct# CCN721839

SECTION 2: HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture:

NFPA:

Health Hazards: 3
Flammability Hazards: 0
Instability Hazards: 0
Special Hazards: Non-applicable

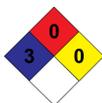
29 CFR 1910.1200:

Classification of this product has been carried out in accordance with paragraph (d) of § 1910.1200.

Met. Corr. 1: Corrosive to metals, Category 1, H290
Skin Corr. 1B: Skin corrosion, Category 1B, H314

2.2 Label elements:

NFPA:



29 CFR 1910.1200:

Danger



Hazard statements:

Met. Corr. 1: H290 - May be corrosive to metals
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage

Precautionary statements:



Phosphoric Acid 75%

Date of compilation: 6/25/2009 Revised: 12/22/2019 Version: 7.1 (Replaced 7)

SECTION 2: HAZARD(S) IDENTIFICATION (continued)

P260: Do not breathe mist
P280: Wear protective gloves/protective clothing/eye protection/face protection
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
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P405: Store locked up

2.3 Hazards not otherwise classified (HNOC):

Non-applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: H₃PO₄

Components:

Remaining components are non-hazardous and/or present at amounts below reportable limits. The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. Therefore, in accordance with Appendix D to § 1910.1200, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 7664-38-2	Phosphoric acid Met. Corr. 1: H290; Skin Corr. 1B: H314 - Danger	 70 - <80 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Other information:

Identification	Specific concentration limit
Phosphoric acid CAS: 7664-38-2	% (w/w) >=25: Skin Corr. 1B - H314 10<= % (w/w) <25: Skin Irrit. 2 - H315 % (w/w) >=25: Eye Dam. 1 - H318 10<= % (w/w) <25: Eye Irrit. 2 - H319

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

This product does not contain substances classified as hazardous for inhalation, however, in case of symptoms of intoxication remove the person affected from the exposure area and provide with fresh air. Seek medical attention if the symptoms get worse or persist.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and its inhalation, to the respiratory system. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administrate anything orally unless supervised by a doctor. Keep the person affected at rest.

4.2 Most important symptoms/effects, acute and delayed:

- CONTINUED ON NEXT PAGE -



Phosphoric Acid 75%

Date of compilation: 6/25/2009

Revised: 12/22/2019

Version: 7.1 (Replaced 7)

SECTION 4: FIRST-AID MEASURES (continued)

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Non-applicable

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable (and unsuitable) extinguishing media:

Product is non-flammable under normal conditions of storage, manipulation and use. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use full jet water as an extinguishing agent.

5.2 Specific hazards arising from the chemical:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Special protective equipment and precautions for fire-fighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Only properly trained personnel should be involved in firefighting. Evacuate nonessential personnel from the fire area. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

6.2 Environmental precautions:

The characteristic of corrosivity per RCRA could apply to the unused product if it becomes a waste material. The EPA hazardous waste number D002 could apply. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristics or listing.

6.3 Methods and materials for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- Precautions for safe manipulation

Comply with the current standards 29 CFR 1910 Occupational Safety and Health Standards. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

Phosphoric Acid 75%

Date of compilation: 6/25/2009 Revised: 12/22/2019 Version: 7.1 (Replaced 7)

SECTION 7: HANDLING AND STORAGE (continued)

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Maximum Temp.: 95 °F

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace

Identification	Environmental limits	
	Phosphoric acid CAS: 7664-38-2	8-hour TWA PEL
	Ceiling Values - TWA PEL	

8.2 Appropriate engineering controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation, the information on clothing performance must be combined with professional judgment, and a clear understanding of the clothing application, to provide the best protection to the worker. All chemical protective clothing use must be based on a hazard assessment to determine the risks for exposure to chemicals and other hazards. Conduct hazard assessments in accordance with 29 CFR 1910.132.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	NON-disposable chemical protective gloves	The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin. Use gloves in accordance with manufacturer's use limitations and OSHA standard 1910.138 (29CFR)

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing. Use this PPE in accordance with manufacturer's use limitations and OSHA standard 1910.133 (29CFR)

E.- Bodily protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer's instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration. Use foot protection in accordance with manufacturer's use limitations and OSHA standard 1910.136 (29CFR)

- CONTINUED ON NEXT PAGE -

Phosphoric Acid 75%

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *
Explosive:	
Lower explosive limit:	Non-applicable *
Upper explosive limit:	Non-applicable *
9.2 Other information:	
Surface tension at 68 °F:	Non-applicable *
Refraction index:	Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:

Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Not applicable	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract

C- Contact with the skin and the eyes (acute effect):

- CONTINUED ON NEXT PAGE -



Phosphoric Acid 75%

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.

- Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.

IARC: Non-applicable

- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.

- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
	LD50 oral	3500 mg/kg	
Phosphoric acid CAS: 7664-38-2	LD50 dermal	2470 mg/kg	Rabbit
	LC50 inhalation	>5 mg/L (4 h)	

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity (aquatic and terrestrial, where available):

Not available

12.2 Persistence and degradability:

Not available

12.3 Bioaccumulative potential:

Not available

12.4 Mobility in soil:

Not available

12.5 Results of PBT and vPvB assessment:

Non-applicable

12.6 Other adverse effects:

Not described

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

Regulations related to waste management:

Legislation related to waste management:

40 CFR Part 261- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to 49 CFR on the Transport of Dangerous Goods:



- 14.1 UN number: UN1805
- 14.2 UN proper shipping name: PHOSPHORIC ACID, SOLUTION
- 14.3 Transport hazard class(es): 8
Labels: 8
- 14.4 Packing group, if applicable: III
- 14.5 Environmental hazard: No
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 38-16:



- 14.1 UN number: UN1805
- 14.2 UN proper shipping name: PHOSPHORIC ACID, SOLUTION
- 14.3 Transport hazard class(es): 8
Labels: 8
- 14.4 Packing group, if applicable: III
- 14.5 Environmental hazard: No
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2019:



- 14.1 UN number: UN1805
- 14.2 UN proper shipping name: PHOSPHORIC ACID, SOLUTION
- 14.3 Transport hazard class(es): 8
Labels: 8
- 14.4 Packing group, if applicable: III
- 14.5 Environmental hazard: No
- 14.6 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises
Physico-Chemical properties: see section 9
- 14.7 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Non-applicable



Phosphoric Acid 75%

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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

SARA Title III - Toxic Chemical Release Inventory Reporting (Section 313): Non-applicable
California Proposition 65 (the Safe Drinking Water and Toxic Enforcement Act of 1986): Non-applicable
The Toxic Substances Control Act (TSCA) : Phosphoric acid
Massachusetts RTK - Substance List: Phosphoric acid
New Jersey Worker and Community Right-to-Know Act: Phosphoric acid
New York RTK - Substance list: Phosphoric acid
Pennsylvania Worker and Community Right-to-Know Law: Phosphoric acid
CANADA-Domestic Substances List (DSL): Phosphoric acid
CANADA-Non-Domestic Substances List (NDSL): Non-applicable
NTP (National Toxicology Program): Non-applicable
Minnesota - Hazardous substances ERTK: Phosphoric acid
Rhode Island - Hazardous substances RTK: Phosphoric acid
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1096): Non-applicable
Hazardous substances release notification under CERCLA sections 102-103 (40 CFR Part 302): Phosphoric acid (5000 pounds)

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

The Toxic Substances Control Act (TSCA)
Occupational Safety and Health Standards (1910 Subpart Z - Toxic and Hazardous Substances)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Appendix d to §1910.1200 - Safety data sheets

Texts of the legislative phrases mentioned in section 2:

H290: May be corrosive to metals
H314: Causes severe skin burns and eye damage

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

29 CFR 1910.1200:

Met. Corr. 1: H290 - May be corrosive to metals
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Occupational Safety & Health Administration (OSHA).

Abbreviations and acronyms:

IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
CL50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon

Manufacturer Disclaimer: The information contained in this safety data sheet ("SDS") is based on sources, technical knowledge and current legislation. Furthermore, is based on data believed to be accurate; thus, the company does not assume any liability for its accuracy. The information provided herein cannot be considered a guarantee of the properties of this product and the same is simply a description of the security requirements. The use, occupational methodology and/or conditions for users of this product are not within our awareness or control. It is ultimately the responsibility of the user(s) to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information of this SDS only refers to this product, which should not be used for purposes other than those specified. Finally, the manner in which this product is used and whether there is any infringement of patents is the sole responsibility of the user(s).

END OF SAFETY DATA SHEET

Safety Data Sheet

according to 1907/2006/EC, Article 31

Date Printed: 04/05/2017

Version 3

Date Reviewed: 04/04/2017

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

· **Product Identifier:** Sodium Hypochlorite Solution (10-20%)

· **Synonyms:** Bleach

· **Product Use:** Various industrial uses.

· **Supplier:**

Skyhawk Chemicals Inc.
701 N Post Oak Rd., Ste 540
Houston, TX 79024 USA
+1 (713) 975-2200
E-Mail: order@skyhawkchemicals.com

· **Emergency Telephone Number:**

In case of a chemical emergency, contact CHEMTREC (24 hrs) at:
+1 (800) 424-9300 (United States, Canada, Puerto Rico, Virgin Islands)
Acct# 721839

* Section 2: Hazards Identification

· **Hazard Classification:**



GHS09

Aquatic Acute 2 H401 Toxic to aquatic life.



GHS05

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

· **Signal Word:** DANGER

· **Precautionary Statements:**

P260 Do not breathe dusts or mists.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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/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.

P309 If exposed or if you feel unwell:

P310 Immediately call a doctor.

P501 Dispose of contents/container in accordance with local regulations.

· **NFPA Ratings (scale 0 - 4):**



Health = 3

Fire = 0

Reactivity = 2

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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- **Additional Information:**

If you do not understand the hazards or safety precautions described in this data sheet, contact your supervisor or safety administrator before handling this product.

Section 3: Composition/Information on Ingredients

- **Dangerous Components:**

- **CAS No. Description**

7681-52-9 sodium hypochlorite, solution	10-20%
⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400	
1310-73-2 sodium hydroxide	≤5%
⚠ Skin Corr. 1A, H314	

Section 4: First Aid Measures

- **General information:**

Rescue personnel must wear appropriate protective equipment during removal of victims from contaminated areas.

- **After Inhalation:**

Remove victim to fresh air.
Administer oxygen if breathing is difficult.
Administer artificial respiration if breathing has stopped.
Onset of symptoms may be delayed up to 48 hours.
Get immediate medical attention.

- **After Skin Contact:**

Remove contaminated clothing and shoes. Wash affected area with soap and water.
Use caution to avoid spreading contamination while washing.
Delayed skin damage is possible if product is not completely washed off.
Get immediate medical attention.

- **After Eye Contact:**

In case of accidental contact, immediately flush eyes with water.
Hold eyelids open to ensure adequate flushing.
Remove contact lenses, if present and easy to do. Continue rinsing.
Get immediate medical attention.

- **After Swallowing:**

Rinse mouth.
Administer 1-2 glasses of water to dilute ingested material.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Get immediate medical attention.

- **Most Important Symptoms and Effects:** No further relevant information available.

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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Section 5: Firefighting Measures

- **Suitable Extinguishing Agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray.
- **Special Firefighting Hazards:**
Decomposes when heated. Decomposition products may cause containers to rupture or explode. May react vigorously with organic materials. Depending on temperature and concentration, decomposition products may include hypochlorous acid, sodium oxide, chlorine gas, sodium chlorate and oxygen. Sodium chlorate crystals may cause fire or explosion if subjected to friction or impact.
- **Protective Equipment:**
In the event of a fire, wear a NIOSH (USA) or CEN (EU) approved self-contained breathing apparatus (SCBA) and full protective clothing.
- **Additional Information:** Evacuate all non-essential personnel from the danger area.

Section 6: Accidental Release Measures

- **Personal Precautions, Protective Equipment and Emergency Procedures:**
In case of a spill or other accidental release of this material, contact your supervisor, safety administrator, or emergency response team immediately.
Restrict access to keep out unauthorized or unprotected personnel.
Stay upwind of spilled material.
Wear appropriate personal protective equipment during all clean-up activities. See Section 8 for more information.
Avoid inhalation and direct contact.
All clean-up personnel must be properly trained.
- **Environmental Precautions:**
Keep spilled material out of sewage/drainage systems and waterways.
This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center +1 (800) 424-8802 is required. See Section 15 for more information.
- **Methods for Containment and Clean-Up:**
Ensure adequate ventilation.
Secure the source of the leak if conditions are safe.
Use neutralizing agent.
Collect using an appropriate absorbent material such as clay or sand.
Place waste in an appropriate container for disposal.
Use care during clean-up to avoid exposure to the material and injury from broken containers.

Section 7: Handling and Storage

- **Precautions for Safe Handling:**
Ensure adequate ventilation.
Avoid inhalation and direct contact.
Wear appropriate personal protective equipment.
Do not mix with water without dilution and agitation to prevent potentially violent reaction.
Do not mix with acids, ammonia, alcohol, ethers or hydrocarbons.
- **Protection Against Fires and Explosions:** No special measures required.

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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- **Conditions for Safe Storage:**

Store in closed, properly labeled containers.

Protect containers from heat, physical damage, ignition sources and incompatible materials.

Have emergency equipment for fires and spills readily available.

- **Additional Information:**

If you do not understand the hazards or safety precautions described in this data sheet, contact your supervisor or safety administrator before handling this product.

Section 8: Exposure Controls/Personal Protection

- **Occupational Exposure Limits:**

7681-52-9 sodium hypochlorite, solution

WEEL (USA) Short-Term Value: 2 mg/m³

1310-73-2 sodium hydroxide

PEL (USA) Eight-Hour Value: 2 mg/m³

REL (USA) Ceiling Limit Value: 2 mg/m³

TLV (USA) Ceiling Limit Value: 2 mg/m³

- **Exposure Controls:**

Use local exhaust ventilation during open transfers.

Check ventilation for proper operation before starting work.

Ensure emergency eyewash and shower facilities are available.

- **General Protective and Hygienic Measures:**

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Follow all safety precautions, posted signs and warnings.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Respiratory Protection:**

An industrial hygiene risk assessment is required to determine appropriate respiratory protection.

An air-purifying respirator may be appropriate under limited exposure conditions.

Perform a respirator fit/seal check after donning.

Protection provided by air-purifying respirators is limited.

Wear a self-contained breathing apparatus (SCBA) if there is a potential for uncontrolled release, exposure levels are not known, or in other circumstances where air-purifying respirators may not provide adequate protection.

- **Hand Protection:**



Chemical resistant gloves.

Work gloves may be worn over chemical resistant gloves.

Wear a second pair of chemical resistant gloves for added protection.

Tape gloves to coveralls or suit, if worn.

Use caution when removing gloves to avoid exposure to hazardous chemicals.

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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· **Eye/Face Protection:**



Safety glasses with side shields.

Splash goggles/mono-goggles recommended during tasks with high potential for exposure.

· **Body Protection:**

Lab coat recommended for small scale operations.

Tasks with a high probability for splashing or skin contact may require:

Chemical resistant coveralls or apron.

Heavy duty chemical resistant boots.

· **Additional Information:**

If unusual exposures are expected, an industrial hygiene review of work practices, engineering controls and personal protective equipment is recommended.

Section 9: Physical/Chemical Properties

· Form:	Liquid
· Color:	Light yellow
· Odor:	Pungent
· Odor Threshold:	Not determined.
· pH Value at 20 °C (68 °F):	12.5
· Melting Point:	Not determined.
· Boiling Point:	Not determined.
· Flash Point:	Not applicable.
· Autoignition Temperature:	Not determined.
· Decomposition Temperature:	Not determined.
· Lower Explosive Limit (LEL):	Not determined.
· Upper Explosive Limit (UEL):	Not determined.
· Vapor Pressure at 20 °C (68 °F):	20 hPa (15 mm Hg)
· Density:	Not determined.
· Vapor Density at 20 °C (68 °F):	2.6 g/cm ³ (21.697 lbs/gal) (air = 1)
· Evaporation Rate:	Not determined.
· Solubility in Water:	Not determined.
· Partition Coefficient (n-octanol/water):	Not determined.
· Viscosity:	Not determined.

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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Section 10: Stability and Reactivity

- **Chemical Stability/Reactivity:** Stable if used and stored according to the specifications listed below.
- **Conditions to Avoid:**
 - Keep away from heat, sparks and open flames.
 - Keep away from incompatible materials.
 - Do not mix with water without dilution and agitation to prevent potentially violent reaction.
 - Do not mix with acids, ammonia, alcohol, ethers or hydrocarbons.
- **Possibility of Hazardous Reactions/Incompatible Materials:**
 - Keep away from strong acids and bases.
 - Keep away from strong oxidizers.
 - Contact with acids releases toxic gases.
- **Hazardous Decomposition Products:**
 - Decomposes when heated. Decomposition products may cause containers to rupture or explode. May react vigorously with organic materials. Depending on temperature and concentration, decomposition products may include hypochlorous acid, sodium oxide, chlorine gas, sodium chlorate and oxygen. Sodium chlorate crystals may cause fire or explosion if subjected to friction or impact.

* Section 11: Toxicological Information

- **Acute Toxicity:** No data available.
- **Relevant LD/LC50 Values:**
 - 7681-52-9 sodium hypochlorite, solution**
 - Oral LD50 5800 mg/kg (mouse)
 - 1310-73-2 sodium hydroxide**
 - Oral LD50 2000 mg/kg (rat)
- **Skin Irritation:**
 - Causes severe skin burns and eye damage.
- **Eye Irritation:**
 - Causes severe skin burns and eye damage.
 - Causes serious eye damage.
- **Respiratory Irritation:** May cause respiratory irritation.
- **Sensitization/Allergic Reaction:** No data available.
- **Subchronic/Chronic Toxicity:** No data available.

* Section 12: Ecological Information

- **Aquatic Toxicity:** Toxic to aquatic life.
- **Persistence and Degradability:** No data available.
- **Bioaccumulative Potential:** No data available.

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

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Section 13: Disposal Considerations

· **Disposal Instructions:**

Keep spilled material out of sewage/drainage systems and waterways.
 Maximize product recovery for reuse or recycling.
 Waste materials may be hazardous due to the pH/corrosivity.
 Dispose of waste in accordance with applicable laws and regulations.

· **Additional Information:**

It is the responsibility of the product user to determine at the time of disposal whether a material containing or derived from this product should be classified as hazardous waste.

* Section 14: Transport Information

· **UN Number:**

· **DOT, ADR, IMDG, IATA** UN1791

· **UN Proper Shipping Name:**

· **DOT:** RQ Hypochlorite solutions
 · **ADR:** 1791 Hypochlorite solutions
 · **IMDG:** HYPOCHLORITE SOLUTION, MARINE POLLUTANT
 · **IATA:** HYPOCHLORITE SOLUTION

· **Transport Hazard Class(es):**

· **DOT:**



· **Class:** 8 Corrosive substances

· **Label:** 8

· **ADR, IMDG**



· **Class:** 8 Corrosive substances

· **Label:** 8

· **IATA:**



· **Class:** 8 Corrosive substances

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Product Identifier: Sodium Hypochlorite Solution (10-20%)

(Contd. from Page 7)

- **Label:** 8

- **Packing Group:**
- **DOT, ADR, IMDG, IATA III**

- **Environmental Hazards:**
- **Marine Pollutant:** Yes
Symbol (fish and tree)
- **Special Marking (ADR):** Symbol (fish and tree)
- **Special Precautions:** Warning: Corrosive substances
- **EMS Number:** F-A,S-B
- **Segregation Groups:** Hypochlorites

- **Additional Information:**
- **DOT:**
- **Remarks:** This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center +1 (800) 424-8802 is required. See Section 15 for more information.

Shippers must consult transportation regulations for packaging instructions, quantity limitations and other regulatory information applicable to the desired mode of transport.

Section 15: Regulatory Information

- **U.S. Superfund Amendments & Reauthorization Act (SARA) 355 (Extremely Hazardous Substances):**
None of the ingredients are listed.
- **U.S. Superfund Amendments & Reauthorization Act (SARA) 313 (Specific Toxic Chemical Listings):**
None of the ingredients is listed.
- **U.S. Environmental Protection Agency Reportable Quantity:**
7681-52-9 sodium hypochlorite, solution: 100 lbs.
1310-73-2 sodium hydroxide: 1,000 lbs.
- **U.S. Toxic Substances Control Act (TSCA):**
All ingredients are listed.
- **California Proposition 65 Carcinogens:**
None of the ingredients is listed.
- **Canadian Domestic Substances List (DSL):**
All ingredients are listed.
- **Canadian Ingredient Disclosure List (limit 0.1%)**
None of the ingredients are listed.

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Safety Data Sheet

according to 1907/2006/EC, Article 31

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Date Reviewed: 04/04/2017

Product Identifier: Sodium Hypochlorite Solution (10-20%)

(Contd. from Page 8)

- **Canadian Ingredient Disclosure List (limit 1%):**

All ingredients are listed.

- **Container Labeling According to Regulation (EC) No 1272/2008:**

The product is classified and labeled according to the CLP regulation.

- **Hazard Pictograms:**



GHS09



GHS05

- **Signal Word: DANGER**

- **Hazard Statements:**

H401 Toxic to aquatic life.

H314 Causes severe skin burns and eye damage.

- **Precautionary Statements:**

P260 Do not breathe dusts or mists.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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/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.

P309 If exposed or if you feel unwell:

P310 Immediately call a doctor.

P501 Dispose of contents/container in accordance with local regulations.

Section 16: Other Information

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Skyhawk Chemicals, Inc. at the time it was prepared.

Skyhawk does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, Skyhawk cannot guarantee that these are the only hazards that exist.

Skyhawk assumes no legal responsibility for loss, damage or expense arising out of, or in any way connected with, the handling, storage, use or disposal of this product.

- **Abbreviations & Acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

(Contd. on Page 10)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Date Printed: 04/05/2017

Version 3

Date Reviewed: 04/04/2017

Product Identifier: Sodium Hypochlorite Solution (10-20%)

(Contd. from Page 9)

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labeling 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)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Sources & References:

* - Indicates that data has been updated from the previous version.

This Safety Data Sheet conforms to regulation 1907/2006/EC (REACH). This product has been classified in accordance with European CLP regulations (1272/2008/EC) and the U.S. Hazard Communication standard (29 CFR 1910.1200).

FPC

1. Identification

Product identifier	Sulfuric Acid (77 to 100%)
Other means of identification	
SDS number	15000002271
Recommended use	Raw material. Manufacture of inorganic base chemicals. Catalyst for oil refining industry. Manufacturing of pharmaceutical products. Textile products (incl. nonwoven fabric processing) - Bleaching agents, discharging agents. Paper and board products - Bleaching agents, stabilizers for bleaching bath. Chemical plating of metals.
Recommended restrictions	Not to be used as a biocidal product. Not to be used as a drain cleaner. Not to be used as a direct component of a cleaning product. Not to be used for cleaning sludge out of oil tanks.

Manufacturer/Importer/Supplier/Distributor information

Distributor

Company Name	Skyhawk Chemicals, Inc.
Address	701 N. Post Oak Rd., Ste. 540 Houston, TX 77024 United States of America
Telephone/Fax	Ph: 713-957-2200 or 800-535-2847, Fax: 713-957-0345
Email	order@skyhawkchemicals.com
Emergency phone number	CHEMTREC: 1-800-424-9300 (ACCT #CCN721839)

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.
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. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. 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. 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)	Reacts violently with water.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sulfuric acid	7664-93-9	77 - 100
Water	7732-18-5	0 - 23

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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. Flush thoroughly with water for at least 15 minutes. Call a physician or poison control center immediately. Apply compresses of ice water while patient is being transported to medical facilities. 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 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	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Reaction with water and surrounding materials will generate heat.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products include: Sulfur oxides.
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. Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Do not get water inside container.
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.
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Methods and materials for containment and cleaning up

This product is miscible in water. Should not be released into the environment. 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. Remove product with clean and dry vacuum truck or pump to storage/salvage vessel. Following product recovery, flush area with water. Neutralize with lime, soda ash or other alkali material.

Small Spills: Neutralize with lime, soda ash or other alkali material. Flush with plenty of water. Clean surface thoroughly to remove residual contamination.

Retain all contaminated water for removal and treatment. Put material in suitable, covered, labeled containers. 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. Do not contaminate water. 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. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. 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. 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
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	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

Wear chemical splash goggles in combination with a full-length face shield or an acid hood.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Skin protection

Other

Wear appropriate chemical resistant clothing. Full body chemical protective clothing. Chemical resistant gloves. Chemical resistant boots.

Respiratory protection

Wear a NIOSH-approved (or equivalent) respirator as needed.

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 light grey.

Odor Acrid.

Odor threshold Not available.

pH < 1

Melting point/freezing point -31 - 51.8 °F (-35 - 11 °C)

Initial boiling point and boiling range 379.4 - 620.6 °F (193 - 327 °C) (@ 760 mmHg)

Flash point Not available.

Evaporation rate < 1 (Butyl Acetate = 1.0)

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 < 0.3 mmHg (77°F/25°C)
< 0.6 mmHg (100 °F/38 °C)

Vapor density 3.4 (Air = 1)

Relative density 1.706 - 1.844

Relative density temperature 60.08 °F (15.6 °C)

Solubility(ies)

Solubility (water) Completely soluble. Reacts violently with water liberating sulfuric acid mist cloud.

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.

10. Stability and reactivity

Reactivity Reacts violently with water. Reacts violently with strong alkaline substances. This product may react with reducing agents.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Excessive heat. Contact with incompatible materials. Do not mix with other chemicals.

Incompatible materials Water. Organic material. Nitrates. Chlorates. Perchlorates. Carbides. Picrates. Cyanides. Sulfides. Bases. Strong oxidizing agents. Reducing agents. Metals.

Hazardous decomposition products Sulfur oxides.

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.

Eye contact Causes serious eye damage.

Ingestion Causes digestive tract burns. May be 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. May be harmful if swallowed.

Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
Dermal		
LD50	Rabbit	2000 mg/kg
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation Causes severe skin burns.

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 The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

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 Harmful to aquatic life with long lasting effects. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Components	Species	Test Results	
Sulfuric acid (CAS 7664-93-9)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	29 mg/l, 24 Hours
Fish	LC50	Lepomis macrochirus	16 - 28 mg/l, 96 Hours
<i>Chronic</i>			
Crustacea	NOEC	Invertebrates (Invertebrates)	0.15 mg/l
Fish	NOEC	Brook trout (Salvelinus fontinalis)	0.13 mg/l

Persistence and degradability The product is not expected to be biodegradable.

Sulfuric Acid (77 to 100%)

937342 Version #: 03 Revision date: 11-July-2018 Issue date: 09-May-2017

SDS US

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Bioaccumulative potential	The product is not expected to bioaccumulate.
Mobility in soil	This product is miscible in water.
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. 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.
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	UN1830
UN proper shipping name	Sulfuric acid
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	A3, A7, B3, B83, B84, IB2, N34, T8, TP2
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1830
UN proper shipping name	Sulphuric acid
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.

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	F-A, S-B
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. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

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)

Sulfuric acid (CAS 7664-93-9) Listed.

SARA 304 Emergency release notification

Sulfuric acid (CAS 7664-93-9) 1000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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)
Sulfuric acid	7664-93-9	1000	1000		

SARA 311/312 Hazardous chemical

Classified hazard categories Corrosive to metal
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)

Chemical name	CAS number	% by wt.
Sulfuric acid	7664-93-9	77 - 100

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)

Sulfuric acid (CAS 7664-93-9)

Safe Drinking Water Act (SDWA)

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sulfuric acid (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Sulfuric acid (CAS 7664-93-9) 20 %WV

DEA Exempt Chemical Mixtures Code Number

Sulfuric acid (CAS 7664-93-9) 6552

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US. Massachusetts RTK - Substance List

Sulfuric acid (CAS 7664-93-9)

US. New Jersey Worker and Community Right-to-Know Act

Sulfuric acid (CAS 7664-93-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Sulfuric acid (CAS 7664-93-9)

US. Rhode Island RTK

Sulfuric acid (CAS 7664-93-9)

California Proposition 65



WARNING: This product can expose you to Sulfuric acid, which is known to the State of California to cause cancer.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Sulfuric acid (CAS 7664-93-9)

Listed: March 14, 2003

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sulfuric acid (CAS 7664-93-9)

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 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 09-May-2017

Revision date 11-July-2018

Version # 03

NFPA ratings

**Disclaimer**

Skyhawk Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

OPTISPERSE HP3100

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture OPTISPERSE HP3100

Issue date 03/06/2009

Version number 7.4

Revision date 13/01/2022

Supersedes date 25/08/2020

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Water based internal boiler treatment chemical.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

SUEZ Water Technologies & Solutions (UK) Limited
Partnership

Hydro House

Newcombe Way

Orton Southgate

Peterborough

PE2 6SE

Tel.: +44 (0)1733 385444, Fax : 01733 391775

e-mail : emea.productregulatory.wts@suez.com

1.4. Emergency telephone number

Multilingual emergency number (24/7)

Europe, Middle East, Africa, Israel (Europe and English
language speaking countries):

+44(0)1235 239670

Middle East & Africa (speaking Arabic):

+44(0)1235 239671

National Poisons Information Centre

NHS Direct on 111

Or a doctor

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Corrosive to metals Category 1 H290 - May be corrosive to metals.

Health hazards

Skin corrosion/irritation Category 1A H314 - Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Category 1 H318 - Causes serious eye damage.

Hazard summary May be corrosive to metals. Causes severe skin burns and eye damage. Occupational exposure to the substance or mixture may cause adverse health effects.



SAFETY DATA SHEET

OPTISPERSE HP3100

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Sodium hydroxide

Hazard pictograms



Signal word: Danger

Hazard statements

H290: May be corrosive to metals.
H314: Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P234: Keep only in original packaging.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

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/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.
P310: Immediately call a POISON CENTRE/doctor.

Storage: Not available.

Disposal: Not available.

Supplemental label information: None.

2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Mixtures

Chemical description: Aqueous alkaline solution of phosphate

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Sodium hydroxide	5 - < 10	1310-73-2 215-185-5	01-2119457892-27	011-002-00-6	#

Classification: Met. Corr. 1;H290, Skin Corr. 1A;H314

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. #: This substance has been assigned Union workplace exposure limit(s).

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

4.1. Description of 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 centre 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 centre immediately.



SAFETY DATA SHEET

OPTISPERSE HP3100

Ingestion	Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
4.2. Most important symptoms and effects, both 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.
4.3. Indication of any 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.

SECTION 5: Firefighting measures

5.1. Extinguishing media	
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.
5.2. Special hazards arising from the substance or mixture	During fire, gases hazardous to health may be formed.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special fire fighting procedures	Move containers from fire area if you can do so without risk. Prevent spillage and fire-fighting water from entering in public sewers or the immediate environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapours. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
For emergency responders	Keep unnecessary personnel away. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material 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.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Do not breathe mist/vapours. 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.
7.2. 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. Store in tightly closed container. Keep only in the original container. Protect from freezing. Store away from incompatible materials (see Section 10 of the SDS).
7.3. Specific end use(s)	Only for industrial users



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	STEL	2 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Workers

Components	Value	Assessment factor	Notes
Sodium hydroxide (CAS 1310-73-2) Long-term, Local, Inhalation	1 mg/m ³	1	irritation respiratory tract

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

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

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.
CEN : EN 166

Skin protection

- Hand protection For prolonged or repeated skin contact use suitable protective gloves. Suitable gloves can be recommended by the glove supplier.
Gauntlet type neoprene gloves (Protection against unintentional short-term contact)
Gauntlet type rubber gloves (Protection against unintentional short-term contact)
Gauntlet type nitrile gloves (Protection against unintentional short-term contact)
Penetration time: > 480 min
Coating thickness: 0.5 mm
CEN : EN 374-1/2/3/4; EN 420

- Other Wear appropriate chemical resistant clothing.
CEN : EN ISO 13688; EN ISO 6530; EN ISO 6529; EN 14605

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. In case of insufficient ventilation, use a breathing mask with filter type: A2-P2
CEN : EN 140; EN 143; EN 149

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

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.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties



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Appearance	
Colour	Colourless to light yellow
Physical state	Liquid
Odour	Odourless.
Odour threshold	Not available.
pH (concentrated product)	> 13 Neat
pH in aqueous solution	12,4 (2,5% Solution)
Melting point/freezing point	-6 °C
Initial boiling point and boiling range	99 °C
Flash point	Not available.
Evaporation rate	Slower than Ether
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	18 mmHg
Vapour pressure temp.	21 °C
Vapour density	< 1
Relative density	1,11
Relative density temperature	21 °C
Solubility	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	12 mPa.s
Viscosity temperature	21 °C
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
Kinematic viscosity	Not available.
Particle characteristics	Not available.
9.2. Other information	
Pour point	-3 °C
Shelf life	180 Days
Specific gravity	1,11
VOC	0 % Calculated

SECTION 10: Stability and reactivity

10.1. Reactivity	May be corrosive to metals.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Do not freeze.
10.5. Incompatible materials	Strong oxidising agents, Metals.
10.6. Hazardous decomposition products	Phosphorus compounds.



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SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

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** May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product	Species	Test Results
OPTISPERSE HP3100		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 5000 mg/kg (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg (Calculated according to GHS additivity formula)

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rabbit	> 500 mg/kg

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory sensitisation Based on available data, the classification criteria are not met.

Skin sensitisation Based on available data, the classification criteria are not met.

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.

Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

Mixture versus substance information No information available.

11.2. Information on other hazards

Endocrine disrupting properties The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other information Not available.



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SECTION 12: Ecological information

12.1. Toxicity

Product	Species	Test Results	
OPTISPERSE HP3100			
Aquatic			
Crustacea	LC50	Daphnia magna	3300 mg/l, 48 hour (pH adjusted)
	NOEL	Daphnia magna	1250 mg/l, 48 hour (pH adjusted)
Fish	LC50	Fathead minnow	5020 mg/l, 96 hour (pH adjusted)
	NOEL	Fathead minnow	2750 mg/l, 96 hour (pH adjusted)

12.2. Persistence and degradability

No data is available on the degradability of this product. This product, being inorganic, has no TOC, BOD.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water (log Kow)

Not available.

Bioconcentration factor (BCF)

Not available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

12.6. Endocrine disrupting properties

The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. 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.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste

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. According to Hazardous Waste Regulations.

European List of Wastes (LoW) code recommendation : 15 01 10
 15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified.
 15 01 Packaging (including separately collected municipal packaging waste).
 15 01 10 Packaging containing residues of or contaminated by dangerous substances.
 Depending on the origin and state of the waste, other codes may be applicable too.

Disposal methods/information

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. According to Hazardous Waste Regulations.

European List of Wastes (LoW) code recommendation : 16 03 03
 16 Wastes not otherwise specified in the list.
 16 03 Off-specification batches and unused products.
 16 03 03 Inorganic wastes containing dangerous substances.
 Depending on the origin and state of the waste, other codes may be applicable too.

Special precautions

Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number UN1824



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OPTISPERSE HP3100

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

- Class** 8
- Subsidiary risk** -
- Tunnel restriction code** (E)

14.4. Packing group II

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

- Class** 8
- Subsidiary risk** -

14.4. Packing group II

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

- Class** 8
- Subsidiary risk** -

14.4. Packing group II

14.5. Environmental hazards No.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

- Class** 8
- Subsidiary risk** -

14.4. Packing group II

14.5. Environmental hazards No.

ERG Code Not available.

14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

- Class** 8
- Subsidiary risk** -

14.4. Packing group II

14.5. Environmental hazards

- Marine pollutant** No.

EmS F-A, S-B



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14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code Not established.

ADN; ADR; IATA; IMDG; RID



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Sodium hydroxide (CAS 1310-73-2)

75

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.



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**NSF Registered and/or meets
USDA (according to 1998
guidelines):** Registration No. – 146608
Category Code(s):
G5 Cooling and retort water treatment products
G6 Boiler treatment products, steam line products – food contact

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

*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).

SECTION 16: Other information

List of 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.
CEN: European Committee for Standardization.
CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
EC50: Effective Concentration 50%.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
LC50: Lethal Concentration 50%.
LD50: Lethal Dose 50%.
MARPOL: International Convention for the Prevention of Pollution from Ships.
NOEL: No observed effect level.
PBT: Persistent, bioaccumulative and toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TOC: Total Organic Carbon.
vPvB: Very persistent and very bioaccumulative.
COD: Chemical Oxygen Demand
EC-No: European Commission Number
BOD: Biochemical oxygen demand.
Safety data sheets of raw materials.

References

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Training information

Follow training instructions when handling this material.

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.

Based on EC Directive / Regulations

(EC) No 1907/2006 (REACH)
(EC) No 1272/2008
(EU) No 1357/2014

Further information

Correction in Section: 2,3,4,5,6,7,8,9,10,11,12



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STEAMATE* HRSG24

1. Identification

Product identifier	STEAMATE HRSG24
Other means of identification	None.
Recommended use	Steam condensate treatment.
Recommended restrictions	None known.

Company/undertaking identification

Veolia WTS USA, Inc.
3600 Horizon Blvd.
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 4
Health hazards	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
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Combustible liquid. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of damaging fertility.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces-No smoking. 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. Wash contaminated clothing 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 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
Ethanolamine	141-43-5	10 - 20
Cyclohexylamine	108-91-8	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 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 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. 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 The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. 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 Combustible liquid.

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. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

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.

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.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. 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. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. 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
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

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. 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 1910.34 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. When using do not 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	Liquid
Physical state	Liquid.
Form	Not available.
Color	Colorless to yellow
Odor	Amine odor
Odor threshold	Not available.
pH (concentrated product)	12.5 Neat
Melting point/freezing point	18 °F (-8 °C)
Initial boiling point and boiling range	Not available.
Flash point	144 °F (62 °C) P-M(CC)
Evaporation rate	Slower than Ether
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mmHg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 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	18 mPa.s
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
pH in aqueous solution	11.7 (5% Solution)
Pour point	23 °F (-5 °C)
VOC	24 % 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 heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong acids. Strong oxidizing agents. Aluminum.
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.
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

Product	Species	Test Results
STEAMATE HRSG24		
<u>Acute</u>		
Dermal		
LD50	Rabbit	2557 mg/kg (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	2052 mg/kg (Calculated according to GHS additivity formula)
Components	Species	Test Results

Cyclohexylamine (CAS 108-91-8)

Acute

Dermal

LD50 Rabbit 277 mg/kg

Oral

LD50 Rat 156 mg/kg

Ethanolamine (CAS 141-43-5)

Acute

Dermal

LD50 Rabbit 1025 mg/kg

Inhalation

Vapor

LC50 Rat > 1.5 mg/l, 4 Hour

Oral

LD50 Rat 1720 mg/kg

Skin corrosion/irritation Causes severe skin burns.

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 1910.1001-1053)

Not listed.

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 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.

12. Ecological information

Ecotoxicity

Product		Species	Test Results			
Aquatic	Crustacea	15% Mortality	Mysid Shrimp	5 mg/L, 96 H A no effect level cannot be defined.		
		ChV	Mysid Shrimp	7.07 mg/L, 7 D		
		IC25	Mysid Shrimp	5.7 mg/L, 7 D		
		LC50	Daphnia magna	12 mg/L, 48 H (Estimated)		
			Mysid Shrimp	6.3 mg/L, 96 H A no effect level cannot be defined.		
		LOEL	Mysid Shrimp	10 mg/L, 7 D		
		NOEL	Mysid Shrimp	5 mg/L, 7 D		
		Fish	ChV	Sheepshead Minnow	7.07 mg/L, 7 D	
				IC25	Sheepshead Minnow	7.3 mg/L, 7 D
				LC50	Fathead Minnow	13 mg/L, 96 H (Estimated)
Sheepshead Minnow	10 mg/L, 96 H					
LOEL	Sheepshead Minnow			10 mg/L, 7 D		
NOEL	Sheepshead Minnow			5 mg/L, 7 D		
			5 mg/L, 96 H			

Persistence and degradability

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.

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 UN2735
UN proper shipping name Amines, liquid, corrosive, n.o.s. (Ethanolamine, CYCLOHEXYLAMINE)
Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Special precautions for user Not available.

ERG number 153

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN2735
UN proper shipping name Amines, liquid, corrosive, n.o.s. (Ethanolamine, CYCLOHEXYLAMINE)
Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 153

Special precautions for user Not available.

IMDG

UN number UN2735
UN proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. (Ethanolamine, CYCLOHEXYLAMINE)
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 Not available.

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)

Not listed.

SARA 304 Emergency release notification

Cyclohexanamine (CAS 108-91-8) 10000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

Classified hazard categories

Flammable (gases, aerosols, liquids, or solids)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Reproductive toxicity
 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

Aniline (CAS 62-53-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Cyclohexylamine (CAS 108-91-8)

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)	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).

US state regulations

California Proposition 65



WARNING: WARNING: This product can expose you to Aniline, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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.

16. Other information, including date of preparation or last revision

Issue date Oct-30-2017

Revision date Feb-22-2023

Version # 2.1

NFPA ratings Health: 3
Flammability: 2
Instability: 0

NFPA ratings



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 This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by Veolia Water Technologies & Solutions' Regulatory Department (1-215-355-3300).

* Trademark of Veolia. May be registered in one or more countries.

Tenaska Frontier Generating Station
Application for Renewal of TPDES Permit No. WQ0003996000

Attachment H
Item 10. Off-Site / Third Party Wastes

Overview: The City of Huntsville provides clarified water to the Tenaska Frontier Generating Station (TFGS). This clarified water is provided via a dedicated pipeline owned and operated by the City of Huntsville to the TFGS. This pipeline includes a "pigging" system to allow cleaning of this pipeline if and when necessary. To date, cleaning ("pigging") of the pipeline has not been necessary.

Therefore, if/when cleaning of the pipeline is necessary:

- List of wastes received: The waste anticipated to be received would be any material from the clarified water which may have accumulated in the pipeline.
- Characterization of wastes received: The waste anticipated to be received would be any material from the clarified water which may have accumulated in the pipeline.
- Volumes of each waste received: To date, cleaning of the pipeline has not been necessary; therefore, the anticipated volume is unknown.
- Information of compatibility with on-site wastes: The waste anticipated to be received would be compatible with wastewater in the impoundment.
- Identified sources of wastes received: The waste anticipated to be received would be any material from the clarified water which may have accumulated in the pipeline.
- Name and address of generators: The City of Huntsville, 1212 Avenue M, Huntsville TX, 77340
- Description of the relationship of waste sources with facility's activities: The City of Huntsville provides clarified water to the TFGS.

Greene, Patty

From: TrackingUpdates@fedex.com
Sent: Friday, July 26, 2024 9:12 AM
To: Greene, Patty
Subject: FedEx Shipment 777612160443: Your package has been delivered

Caution: External email, think before you click!



Hi. Your package was delivered Fri, 07/26/2024 at 9:00am.



Delivered to 12100 N INTERSTATE 35, AUSTIN, TX 78753
Received by D.ALBA

OBTAIN PROOF OF DELIVERY

How was your delivery ?



TRACKING NUMBER [777612160443](#)

FROM	Tenaska Inc 14302 FNB PARKWAY OMAHA, NE, US, 68154
TO	TX Commission & Env Quality MC-148, App Review & Process Team 12100 Park 35 Circle AUSTIN, TX, US, 78753
REFERENCE	9030
SHIPPER REFERENCE	9030
SHIP DATE	Thu 7/25/2024 05:53 PM
DELIVERED TO	Shipping/Receiving
PACKAGING TYPE	FedEx Small Box
ORIGIN	OMAHA, NE, US, 68154
DESTINATION	AUSTIN, TX, US, 78753
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	5.00 LB
SERVICE TYPE	FedEx Standard Overnight



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Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 2, 2024

Mr. Austin Zigler,
Sr. Analyst, Environmental Programs
Tenaska Frontier Partners, LTD.
14302 FNB Parkway
Omaha, Nebraska 68154

RE: Application to Renew Permit No.: WQ0003996000 (EPA I.D. No. TX0120146)
Applicant Name: Tenaska Frontier Partners, LTD. (CN600135081)
Site Name: Tenaska Frontier Generating Station (RN100245539)
Type of Application: Renewal without changes

VIA EMAIL

Dear Mr. Zigler:

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

1. Please use the attached Plain Language Summary (PLS) Template to provide a plain language summary in English. **Please provide the PLS in a Microsoft Word document and return with response to this letter.**
2. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

[Should read: electric generating facility](#)

APPLICATION. Tenaska Frontier Partners, LTD., 14302 FNB Parkway, Omaha, Nebraska 68154, which owns a natural gas-fired electricity generation station, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0003996000 (EPA I.D. No. TX0120146) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 2,500,000 gallons per day. The facility is located at 17500 State Highway 30, in the city of Shiro, in Grimes County, Texas 77876. The discharge route is from the plant site to an unnamed tributary of Sulphur Creek; thence to Sulphur Creek; thence to Gibbons Creek Reservoir; thence to Gibbons Creek; thence to Navasota River Below Lake Limestone. TCEQ received this application on July 26, 2024. The permit application will be available for viewing and copying at Navasota Public Library, reference desk, 1411 East Washington Avenue, Navasota, 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.

Mr. Austin Zigler
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Permit No. WQ0003996000

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.9175,30.594166&level=18>

Further information may also be obtained from Tenaska Frontier Partners, LTD. at the address stated above or by calling Ms. Patricia Greene, Director, Environmental Programs, at 402-691-9553.

Please submit the complete response, addressed to my attention by August 16, 2024. If you should have any questions, please do not hesitate to contact me by phone at (512) 239-4658 or by email at rachel.ellis@tceq.texas.gov

Sincerely,



Rachel Ellis
Applications Review and Processing Team (MC148)
Water Quality Division
Texas Commission of Environmental Quality

re

Enclosure(s)

cc: Ms. Patricia Green, Director, Environmental Programs, Tenaska Frontier Partners, LTD., 14302 FNB Parkway, Omaha, Nebraska 68154