Technical Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
   - English
   - Alternative Language (Spanish)
2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
   - English
   - Alternative Language (Spanish)
3. Second notice (NAPD-Notice of Preliminary Decision)
   - English
   - Alternative Language (Spanish)
4. Application materials *
5. Draft permit *
6. Technical summary or fact sheet *

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

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

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

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the

opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

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

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

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

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

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

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

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

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

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

Issuance Date: August 30, 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.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COMBINED

NOTICE OF RECEIPT OF APPLICATION
AND INTENT TO OBTAIN A WATER QUALITY PERMIT (NORI)

AND

NOTICE OF APPLICATION AND PRELIMINARY DECISION
FOR TPDES PERMIT FOR INDUSTRIAL WASTEWATER

AMENDMENT

Permit No. WQ0003996000

APPLICATION AND PRELIMINARY DECISION. Tenaska Frontier Partners, LTD., 14302 FNB Parkway, Omaha, NE, 68154, which operates Tenaska Frontier Generating Station, a natural gas-fired electricity generation station, has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0003996000 to remove effluent limitations and monitoring requirement for total copper at Outfall 001. This draft permit authorizes the discharge of cooling tower blowdown, boiler blowdown, water treatment wastes, water treatment filter backwash and previously monitored effluents (low volume waste sources from miscellaneous plant drains and chemical plant drains, and water from flushing/rinsing chemical (non-hydrocarbon) storage tanks, piping and other equipment), and stormwater on an intermittent and flow-variable basis at a daily average flow not to exceed 2,500,000 gallons per day via Outfall 001. The TCEQ received this application on July 26, 2024.

The facility is located at 17500 State Highway 30, in the city of Shiro, in Grimes County, Texas 77876. 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

The effluent is discharged via Outfall 001 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 in Segment No. 1209 of the Brazos River Basin. The unclassified receiving water use is minimal aquatic life use for the unnamed tributary of Sulphur Creek and Sulphur Creek. The designated uses for Segment No. 1209 are primary contact recreation, public water supply, and high aquatic life use.

In accordance with 30 Texas Administrative Code §307.5 and the TCEQ *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and

narrative criteria to protect existing uses will be maintained. This review has preliminarily determined that no water bodies with exceptional, high, or intermediate aquatic life uses are present within the stream reach assessed; therefore, no Tier 2 degradation determination is required. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

This combined notice is being issued because discharge route on the NORI was incorrect. It ommitted Gibbons Creek as part of the discharge route.

The TCEQ executive director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, executive director's preliminary decision, and draft permit are available for viewing and copying at the Navasota Public Library, 1411 East Washington Avenue, Navasota, Texas.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application. The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the 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 public comments, the Executive Director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments, along with the Executive Director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a 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.**

EXECUTIVE DIRECTOR ACTION. The Executive Director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

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 added to: (1) the permanent list for a specific applicant name and permit number; and (2) the mailing list for a specific county. If you wish to be placed on the permanent and the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at https://www.tceq.texas.gov/goto/comment **within 30 days from the date of newspaper publication of this notice.**

INFORMATION AVAILABLE ONLINE. For details about the status of the application, visit the Commissioners' Integrated Database at https://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. Public comments and requests must be submitted either electronically at https://www.tceq.texas.gov/goto/comment, 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 https://www.tceq.texas.gov/agency/decisions/participation/permitting-participation. Si desea información en Español, puede llamar al 1-800-687-4040.

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

Issued: July 14, 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

TPDES PERMIT NO.
WQ0003996000
[For TCEQ office use only -
EPA I.D. No. TX0120146]

This renewal replaces TPDES Permit No. WQ0003996000, issued on January 24, 2020.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

Tenaska Frontier Partners, LTD.

whose mailing address is

14302 FNB Parkway
Omaha, NE 68154

is authorized to treat and discharge wastes from Tenaska Frontier Generating Station, a natural gas-fired electricity generating station,

located at 17500 State Highway 30, on the south side of State Highway 30 approximately two miles southwest of the City of Shiro in Grimes County, Texas 77876

via Outfall 001 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 in Segment No. 1209 of the Brazos River Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, five years from the date of permit issuance.

ISSUED DATE:

_____
For the Commission

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge cooling tower blowdown, boiler blowdown, water treatment wastes [1], water treatment filter backwash, previously monitored effluents from internal Outfall 101 (low-volume waste sources [2], and water from flushing/rinsing chemical (non-hydrocarbon) storage tanks, piping, and other equipment), and stormwater subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 2.5 million gallons per day (MGD). The daily maximum flow shall not exceed 3.0 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	2.5 MGD	3.0 MGD	N/A	1/day [3]	Instantaneous
Carbonaceous Biochemical Oxygen Demand (5-day)	30	N/A	90	1/week [3]	Grab [4]
Ammonia Nitrogen	3.0	N/A	9.0	1/week [3]	Grab [4]
Dissolved Oxygen	2.0 minimum	N/A	N/A	1/week [3]	Grab [4]
Free Available Chlorine [5]	0.2	0.5	0.5	1/week [3,6]	Grab [4]
Total Chromium	Report	0.2	0.2	1/week [3]	Grab [4]
Total Zinc	0.209	0.442	0.442	1/week [3]	Grab [4]
Total Dissolved Solids	N/A	Report	N/A	1/month [3]	Grab [4]
Sulfate	N/A	1,060	1,060	1/month [3]	Grab [4]
Nitrate-Nitrogen	N/A	Report	N/A	1/month [3]	Grab [4]

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day by grab sample, when discharge occurs.

3. There must be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples must be taken at the following location: At Outfall 001, at a point after the weir of the impoundment pond after all wastewater has been commingled and prior to entering the unnamed tributary of Sulphur Creek.

[1] See Other Requirement No. 11.

[2] See Other Requirement No. 4.b.

[3] When discharging.

4 The permittee shall collect a composite sample when the facility is discharging directly to Outfall 001 and not pumping the discharge from the irrigation impoundment to Outfall 001. The permittee shall note on the Discharge Monitoring Report that a composite sample was collected during the month and the date(s) of composite sample(s) collection.

5 See Other Requirement Nos. 4. a. and 9.

6 Samples shall be representative of chlorination.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge low-volume waste sources [1] (from miscellaneous plant drains and chemical plant drains), and water from flushing/rinsing chemical (non-hydrocarbon) storage tanks, piping, and other equipment subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.082 million gallons per day (MGD). The daily maximum flow shall not exceed 0.5 MGD.

	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average lbs/day	Daily Maximum lbs/day	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	0.082 MGD	0.5 MGD	N/A	1/day	Meter
Total Suspended Solids	20.5	68.4	100	1/week	Grab
Oil and Grease	10.3	13.7	20	1/week	Grab
Total Iron	1.0 mg/L	1.0 mg/L	1.0	1/week	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day by grab sample.

3. There must be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples must be taken at the following location: At Internal Outfall 101, following the oil water separator and the chemical sump, prior to entering the cooling tower basin.

[1] See Other Requirement No. 4.b.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

    b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

    d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

    e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

    f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

        ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

    b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

    c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

    d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total

mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (Fecal coliform, *E. coli*, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD × Concentration, mg/L × 8.345).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

   a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(c).

   b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

   Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

   a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

   b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

   a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

   c. Records of monitoring activities shall include the following:

      i. date, time, and place of sample or measurement;
      ii. identity of individual who collected the sample or made the measurement;
      iii. date and time of analysis;
      iv. identity of the individual and laboratory who performed the analysis;
      v. the technique or method of analysis; and
      vi. the results of the analysis or measurement and quality assurance/quality control records.

      The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

   All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the regional office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the regional office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the regional office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:
      i. unauthorized discharges as defined in Permit Condition 2(g).
      ii. any unanticipated bypass that exceeds any effluent limitation in the permit.
      iii. violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the regional office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the regional office, orally or by facsimile transmission within 24 hours, and both the regional office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
      i. one hundred micrograms per liter (100 µg/L);
      ii. two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      iii. five (5) times the maximum concentration value reported for that pollutant in the permit application; or
      iv. the level established by the TCEQ.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. five hundred micrograms per liter (500 μg/L);
ii. one milligram per liter (1 mg/L) for antimony;
iii. ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. the level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. for the purpose of this paragraph, adequate notice shall include information on:

i. the quality and quantity of effluent introduced into the POTW; and
ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. violation of any terms or conditions of this permit;
ii. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment,

revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA §402, or any requirement imposed in a pretreatment program approved under the CWA §§402(a)(3) or 402(b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

      ii. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9; or

      iii. the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;
       ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
       iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

    b. This notification must indicate:

       i. the name of the permittee;
       ii. the permit number(s);
       iii. the bankruptcy court in which the petition for bankruptcy was filed; and
       iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

e. The term “industrial solid waste management unit” means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. volume of waste and date(s) generated from treatment process;
ii. volume of waste disposed of on-site or shipped off-site;
iii. date(s) of disposal;

iv. identity of hauler or transporter;
v. location of disposal site; and
vi. method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

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OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 9 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five working days to TCEQ Region 9 and the Enforcement Division (MC 224):

   Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the minimum analytical level (MAL) for the parameters specified above.

Pollutant	MAL (mg/L)
Chromium (Total)	0.003
Iron (Total)	0.007
Zinc (Total)	0.005

   When an analysis of an effluent sample for any of the parameters listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero (0) shall be used for that measurement when making calculations for the self-reporting form. This applies to determinations of daily maximum concentrations, calculations of loading and daily averages, and other reportable results.

   When a reported value is zero (0) based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form.

   > "The reported value(s) of zero (0) for [list parameter(s)] on the self-reporting form for [monitoring period date range] is based on the following conditions: 1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and 2) the analytical results contained no detectable levels above the specified MAL."

   When an analysis of an effluent sample for a pollutant indicates no detectable levels and the test method level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that pollutant, the level of detection achieved shall be used for that measurement when making calculations for the self-reporting form. A zero may not be used.

2. This provision supersedes and replaces Provision 1, Paragraph 1 of Monitoring and Reporting Requirements found on Page 4 of this permit.

   Monitoring results shall be provided at the intervals specified in this permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 – 319.12. Unless otherwise specified, a monthly effluent report shall be submitted for each month, to the location(s) specified on the reporting form or the instruction sheet, by the 25th day of the following month for each discharge which is described by this permit whether or not a discharge is made during that month. Monitoring results must be reported on the approved TPDES self-report form, Discharge Monitoring Report (DMR) Form EPA No. 3320-1, and signed and certified as required by Monitoring and Reporting Requirements No.10. Yes

3. There shall be no discharge of polychlorinated biphenyl compounds, such as those commonly used for transformer fluid.

4. Definitions.

   a. The term "free available chlorine" shall mean the value obtained using any of the "chlorine—free available" methods in Table IB in 40 CFR § 136.3(a) where the method has the capability of measuring free available chlorine, or other methods approved by the permitting authority.

   b. The term "low-volume waste sources" means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in 40 CFR part 423. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.

   c. The term "blowdown" means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices.

   d. The term "average concentration" as it relates to chlorine discharge means the average of analyses made over a single period of chlorine release which does not exceed two hours.

5. There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

6. This permit does not authorize the discharge of domestic wastewater. All domestic wastewater must be disposed of in an approved manner, such as routing to an approved on-site septic tank and drainfield system or to an authorized third party for treatment and disposal.

7. The 126 priority pollutants (Appendix A of 40 CFR Part 423) contained in chemicals added for cooling tower maintenance, except chromium and zinc, shall be limited in the discharge to "no detectable amount." If used, total chromium and total zinc shall be limited to the levels established on Page 2 of this permit. The use of other chemical additives, including phosphorous, is not authorized unless approval is obtained and limitations are established on a case-by-case basis in accordance with 40 CFR § 122.62(a).

8. Daily average flow – the arithmetic average of all determinations of the daily discharge volume within a period of one calendar month.

   This provision supersedes and replaces Provision 1.b., "Flow Measurements," as defined on page 3 of this permit.

9. Daily average concentration - the arithmetic average weighted-by-flow value of all effluent samples, composite or grab, within a period of one calendar month.

   This provision supersedes and replaces Provision 2.a., "Daily average concentration," as defined on page 3 of this permit.

   The facility may use continuous chlorination in the event that operations at the facility would be compromised if the facility were to chlorinate at the levels specified in 40 CFR § 423.12(b)(8), as long as the facility does not exceed the Free Available Chlorine limits for Outfall 001 found on page 2 of this permit.

10. COOLING WATER INTAKE STRUCTURE REQUIREMENTS

The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and the Region 9 Office of any change in the method by which the facility obtains water for cooling purposes. This notification must be submitted 30 days prior to any such change and must include a description of the planned changes. The TCEQ may, upon review of the notification, reopen the permit to include additional terms and conditions as necessary.

11. The term *water treatment wastes* includes, but is not limited to: cold lime water treatment wastes, demineralizer backwash, filter backwash, ion exchange water treatment system wastes, membrane regeneration wastes, and reverse osmosis reject water.

12. POND REQUIREMENTS

A wastewater pond must comply with the following requirements. A wastewater pond (or lagoon) is an earthen structure used to evaporate, hold, store, or treat water that contains a *waste* or *pollutant* or that would cause *pollution* upon *discharge* as those terms are defined in Texas Water Code §26.001, but does not include a pond that contains only stormwater.

A. This subsection is intentionally left blank.

B. An **existing** wastewater pond must be maintained to meet or exceed the original approved design and liner requirements; or, in the absence of original approved requirements, must be maintained to prevent unauthorized discharges of wastewater into or adjacent to water in the state. The permittee shall maintain copies of all liner construction and testing documents at the facility or in a reasonably accessible location and make the information available to the Executive Director upon request.

C. A **new** wastewater pond constructed after the issuance date of this permit must be lined in compliance with one of the following requirements if it will contain process wastewater as defined in 40 CFR §122.2. The Executive Director will review ponds that will contain only non-process wastewater on a case-by-case basis to determine whether the pond must be lined. If a pond will contain only non-process wastewater, the owner shall notify the Industrial Permits Team (MC-148) to obtain a written determination at least 90 days before the pond is placed into service and copy the TCEQ Compliance Monitoring Team (MC-224). The permittee must submit all information about the proposed pond contents that is reasonably necessary for the Executive Director to make a determination. If the Executive Director determines that a pond does not need to be lined, then the pond is exempt from C(1) through C(3) and D through G of POND REQUIREMENTS.

A wastewater pond that only contains domestic wastewater must comply with the design requirements in 30 TAC Chapter 217 and 30 TAC §309.13(d) in lieu of items C(1) through C(3) of this subparagraph.

(1) Soil liner: The soil liner must contain clay-rich soil material (at least 30% of the liner material passing through a #200 mesh sieve, liquid limit greater than or equal to 30, and plasticity index greater than or equal to 15) that completely covers the sides and bottom of the pond. The liner must be at least 3.0 feet thick. The liner material must be compacted in lifts of no more than 8 inches to 95% standard proctor density at the optimum moisture content in accordance with ASTM D698 to achieve a permeability less than or equal to 1×10^{-7} (≤ 0.0000001) cm/sec. For in-situ soil material that meets the permeability requirement, the material must be scarified at least 8 inches deep and then re-compacted to finished grade.

(2) Synthetic membrane: The liner must be a synthetic membrane liner at least 40 mils in thickness that completely covers the sides and the bottom of the pond. The liner material used must be compatible with the wastewater and be resistant to degradation (e.g., from ultraviolet light, chemical reactions, wave action, erosion, etc.). The liner material must be installed and maintained in accordance with the manufacturer's guidelines. A wastewater pond with a synthetic membrane liner must include an underdrain with a leak detection and collection system.

(3) Alternate liner: The permittee shall submit plans signed and sealed by a Texas-licensed professional engineer for any other equivalently protective pond lining method to the Industrial Permits Team (MC-148) and copy the Compliance Monitoring Team (MC-224).

D. For a pond that must be lined according to subparagraph C (including ponds with in-situ soil liners), the permittee shall provide certification, signed and sealed by a Texas-licensed professional engineer, stating that the completed pond lining and any required underdrain with leak detection and collection system for the pond meet the requirements in subparagraph C(1) – C(3) before using the pond. The certification shall include the following minimum details about the pond lining system: (1) pond liner type (in-situ soil, amended in-situ soil, imported soil, synthetic membrane, or alternative), (2) materials used, (3) thickness of materials, and (4) either permeability test results or a leak detection and collection system description, as applicable.

The certification must be provided to the TCEQ Water Quality Assessment Team (MC-150), Industrial Permits Team (MC-148), Compliance Monitoring Team (MC-224) and regional office. A copy of the liner certification and construction details (i.e., as-built drawings, construction QA/QC documentation, and post construction testing) must be kept on-site or in a reasonably accessible location (in either hardcopy or digital format) until the pond is closed.

E. Protection and maintenance requirements for a pond subject to subparagraph B or C (including ponds with in-situ soil liners).

(1) The permittee shall maintain a liner to prevent the unauthorized discharge of wastewater into or adjacent to water in the state.

(2) A liner must be protected from damage caused by animals. Fences or other protective devices or measures may be used to satisfy this requirement.

(3) The permittee shall maintain the structural integrity of the liner and shall keep the liner and embankment free of woody vegetation, animal burrows, and excessive erosion.

(4) The permittee shall inspect each pond liner and each leak detection system at least once per month. Evidence of damage or unauthorized discharge must be evaluated by a Texas-licensed professional engineer or Texas-licensed professional geoscientist within 30 days. The permittee is not required to drain an operating pond or to inspect below the waterline during these routine inspections.

a. A Texas-licensed professional engineer or Texas-licensed professional geoscientist must evaluate damage to a pond liner, including evidence of an unauthorized discharge without visible damage.

b. Pond liner damage must be repaired at the recommendation of a Texas-licensed professional engineer or Texas-licensed professional geoscientist. If the damage is significant or could result in an unauthorized discharge, then the repair must be documented and certified by a Texas-licensed professional engineer. Within 60 days after a repair is completed, the liner certification must be provided to the TCEQ Water

Quality Assessment Team (MC-150), Compliance Monitoring Section (MC-224), and regional office. A copy of the liner certification must be maintained at the facility or in a reasonably accessible location and made available to the Executive Director upon request.

c. A release determination and subsequent corrective action will be based on 40 CFR Part 257 or the Texas Risk Reduction Program (30 TAC Chapter 350), as applicable. If evidence indicates that an unauthorized discharge occurred, including evidence that the actual permeability exceeds the design permeability, the matter may also be referred to the TCEQ Enforcement Division to ensure the protection of the public and the environment.

F. For a pond subject to subparagraph B or C (including ponds with in-situ soil liners), the permittee shall have a Texas-licensed professional engineer perform an evaluation of each pond that requires a liner at least once every five years. The evaluation must include: (1) a physical inspection of the pond liner to check for structural integrity, damage, and evidence of leaking; (2) a review of the liner documentation for the pond; and (3) a review of all documentation related to liner repair and maintenance performed since the last evaluation. For the purposes of this evaluation, evidence of leaking also includes evidence that the actual permeability exceeds the design permeability. The permittee is not required to drain an operating pond or to inspect below the waterline during the evaluation. A copy of the engineer's evaluation report must be maintained at the facility or in a reasonably accessible location and made available to the Executive Director upon request.

G. For a pond subject to subparagraph B or C (including ponds with in-situ soil liners), the permittee shall maintain at least 2.0 feet of freeboard in the pond except when:

(1) the freeboard requirement temporarily cannot be maintained due to a large storm event that requires the additional retention capacity to be used for a limited period of time;

(2) the freeboard requirement temporarily cannot be maintained due to upset plant conditions that require the additional retention capacity to be used for treatment for a limited period of time; or

(3) the pond was not required to have at least 2.0 feet of freeboard according to the requirements at the time of construction.

13. Wastewater discharged via Outfall 001 must be sampled and analyzed for Polychlorinated Biphenyls from four (4) discharge events spaced at least one (1) week apart. The permittee shall report the flow at the respective discharges in MGD indicate whether the samples are composite or grab for each respective event. Samples collected after July 26, 2023 may be used to satisfy this requirement.

BIOMONITORING REQUIREMENTS

48-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival of the test organisms.

b. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute static renewal 48-hour definitive toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia)*. A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

2) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and submit a valid test for each test species during the required reporting period for that species. A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution. A repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a WET limit, a chemical-specific limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. Testing Frequency Reduction

1) If none of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.

2) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee shall resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:

1) a control mean survival of 90% or greater; and

2) a coefficient of variation percent (CV%) of 40 or less for both the control and critical dilution. However, if significant lethality is demonstrated, a CV% greater than 40 shall not invalidate the test. The CV% requirement does not apply when significant lethality occurs.

b. Statistical Interpretation

1) For the water flea and fathead minnow tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced in Part 1.b.

2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test results are interpreted and reported correctly. The document entitled “Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)” (EPA 821-B-00-004) provides guidance on determining the validity of test results.

3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 90% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

4) The NOEC is defined as the greatest effluent dilution at which no significant lethality is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which significant lethality is demonstrated. Significant lethality is defined as a statistically significant difference the survival of the test organism in a specified effluent dilution when compared to the survival of the test organism in the control.

5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2.

6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test

results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Item 2 will be used when making a determination of test acceptability.

7) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.

c. Dilution Water

1) Dilution water used in the toxicity tests must be the receiving water collected at a point upstream of the discharge point as close as possible to the discharge point but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall:

a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge; or

b) use the closest downstream perennial water unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;

b) the test indicating receiving water toxicity was carried out to completion; and

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.

3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of two composite samples from Outfall 001. The second composite sample will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for the subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b for every valid and invalid toxicity test initiated, whether carried to completion or not.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12-month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TEM3D, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the water flea, Parameter TOM3D, report the NOEC for survival.

3) For the water flea, Parameter TXM3D, report the LOEC for survival.

4) For the fathead minnow, Parameter TEM6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

5) For the fathead minnow, Parameter TOM6C, report the NOEC for survival.

6) For the fathead minnow, Parameter TXM6C, report the LOEC for survival.

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this part apply only when a toxicity test demonstrates significant lethality. Significant lethality was defined in Part 2.b.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates significant lethality. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

c. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform

multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE plan and schedule that are believed necessary as

a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

h. Based on the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

Dates and Times Composites Collected — Date Time / Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

Test initiated: _____am/pm _____ date
Dilution water used: _____ Receiving water _____ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (100%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____% effluent

2) LOEC survival = _____% effluent

TABLE 1 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

Dates and Times Composites Collected — Date Time / Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

* Coefficient of Variation = standard deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (100%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____% effluent

2) LOEC survival = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a WET limit, a best management practice, a chemical-specific limit, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. As the dilution series specified in the 48-Hour Acute Biomonitoring Requirements includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in Part 1.a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency.

2. Required Toxicity Testing Conditions

a. Test Acceptance – The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with Part 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 001.

2) The permittee shall collect the composite sample such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The sample shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, and October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

2) For the fathead minnow, Parameter TIE6C, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a “0” if the mean survival at 24

hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration for 24 hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50%, and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for

Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation that identifies the pollutant and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in Part 5.h. The report shall also specify a corrective action schedule for implementing the selected control mechanism.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementing corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

j. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

Appendix A
Calculated Technology-Based Effluent Limits

TEXTOX MENU #1 - INTERMITTENT STREAM

The water quality-based effluent limitations developed below are calculated using:

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Tenaska Frontier Partners , LTD
TPDES Permit No:	WQ0003996000
Outfall No:	001
Prepared By:	Aldo Guerrero
Date:	10/14/2024

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	Unnamed tributary of Sulphur Creek
Segment No:	1209
TSS (mg/L):	17
pH (Standard Units):	7.1
Hardness (mg/L as $CaCO_3$):	48
Chloride (mg/L):	44
Effluent Flow for Aquatic Life (MGD):	2.5
Critical Low Flow [7Q2] (cfs):	0
% Effluent for Acute Aquatic Life:	100

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	Source
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	60502.36	0.493		1.00	Assumed
Cadmium	6.60	-1.13	162028.99	0.266		1.00	Assumed
Chromium (total)	6.52	-0.93	237510.33	0.199		1.00	Assumed
Chromium (trivalent)	6.52	-0.93	237510.33	0.199		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	128667.18	0.314		2.64	Assumed
Lead	6.45	-0.80	292173.53	0.168		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	97419.10	0.376		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	129609.73	0.312		1.00	Assumed
Zinc	6.10	-0.70	173254.99	0.253		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*WLAa (µg/L)*	*LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	3.00	1.72	2.52	5.34
Aluminum	991	991	568	834	1765
Arsenic	340	690	395	580	1229
Cadmium	4.20194	15.8	9.04	13.2	28.1
Carbaryl	2.0	2.00	1.15	1.68	3.56

Chlordane	2.4	2.40	1.38	2.02	4.27
Chlorpyrifos	0.083	0.0830	0.0476	0.0699	0.147
Chromium (trivalent)	312.3426	1573	902	1325	2803
Chromium (hexavalent)	15.7	15.7	9.00	13.2	27.9
Copper	18.7764329	59.8	34.3	50.4	106
Cyanide (free)	45.8	45.8	26.2	38.5	81.6
4,4'-DDT	1.1	1.10	0.630	0.926	1.96
Demeton	N/A	N/A	N/A	N/A	N/A
Diazinon	0.17	0.170	0.0974	0.143	0.302
Dicofol [Kelthane]	59.3	59.3	34.0	49.9	105
Dieldrin	0.24	0.240	0.138	0.202	0.427
Diuron	210	210	120	176	374
Endosulfan I (*alpha*)	0.22	0.220	0.126	0.185	0.392
Endosulfan II (*beta*)	0.22	0.220	0.126	0.185	0.392
Endosulfan sulfate	0.22	0.220	0.126	0.185	0.392
Endrin	0.086	0.0860	0.0493	0.0724	0.153
Guthion [Azinphos Methyl]	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.52	0.520	0.298	0.438	0.926
Hexachlorocyclohexane (*gamma*) [Lindane]	1.126	1.13	0.645	0.948	2.00
Lead	28.80064	172	98.5	144	306
Malathion	N/A	N/A	N/A	N/A	N/A
Mercury	2.4	2.40	1.38	2.02	4.27
Methoxychlor	N/A	N/A	N/A	N/A	N/A
Mirex	N/A	N/A	N/A	N/A	N/A
Nickel	251.6487	668	383	563	1191
Nonylphenol	28	28.0	16.0	23.5	49.8
Parathion (ethyl)	0.065	0.0650	0.0372	0.0547	0.115
Pentachlorophenol	9.645582	9.65	5.53	8.12	17.1
Phenanthrene	30	30.0	17.2	25.2	53.4
Polychlorinated Biphenyls [PCBs]	2.0	2.00	1.15	1.68	3.56
Selenium	20	20.0	11.5	16.8	35.6
Silver	0.8	9.98	5.72	8.41	17.7
Toxaphene	0.78	0.780	0.447	0.657	1.38
Tributyltin [TBT]	0.13	0.130	0.0745	0.109	0.231
2,4,5 Trichlorophenol	136	136	77.9	114	242
Zinc	62.91742	248	142	209	442

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:

Aquatic Life ***Parameter***	***70% of Daily Avg. (µg/L)***	***85% of Daily Avg. (µg/L)***
Aldrin	1.76	2.14
Aluminum	584	709
Arsenic	406	493
Cadmium	9.30	11.2
Carbaryl	1.17	1.43
Chlordane	1.41	1.71
Chlorpyrifos	0.0489	0.0594
Chromium (trivalent)	927	1126
Chromium (hexavalent)	9.25	11.2
Copper	13.3	16.2
Cyanide (free)	27.0	32.7

4,4'-DDT	0.648	0.787
Demeton	N/A	N/A
Diazinon	0.100	0.121
Dicofol [Kelthane]	34.9	42.4
Dieldrin	0.141	0.171
Diuron	123	150
Endosulfan I (*alpha*)	0.129	0.157
Endosulfan II (*beta*)	0.129	0.157
Endosulfan sulfate	0.129	0.157
Endrin	0.0507	0.0615
Guthion [Azinphos Methyl]	N/A	N/A
Heptachlor	0.306	0.372
Hexachlorocyclohexane (*gamma*) [Lindane]	0.663	0.806
Lead	101	123
Malathion	N/A	N/A
Mercury	1.41	1.71
Methoxychlor	N/A	N/A
Mirex	N/A	N/A
Nickel	394	478
Nonylphenol	16.5	20.0
Parathion (ethyl)	0.0383	0.0465
Pentachlorophenol	5.68	6.90
Phenanthrene	17.6	21.4
Polychlorinated Biphenyls [PCBs]	1.17	1.43
Selenium	11.7	14.3
Silver	5.88	7.14
Toxaphene	0.459	0.558
Tributyltin [TBT]	0.0766	0.0930
2,4,5 Trichlorophenol	80.1	97.3
Zinc	146	177

Appendix B
TDS, Chloride, and Sulfate Screening Calculations

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 1 - Discharge to an Intermittent Stream

Applicant Name:	**Tenaska Frontier Partners, LTD**
Permit Number, Outfall:	**03996-000**
Segment Number:	**1209**

Enter values needed for screening:			**Data Source (edit if different)**
TDS CC - segment criterion - TDS	600	mg/L	2010 TSWQS, Appendix A
Cl CC - segment criterion - chloride		mg/L	2010 TSWQS, Appendix A
SO4 CC - segment criterion - sulfate		mg/L	2010 TSWQS, Appendix A
TDS CE - average effluent concentration - TDS	1840	mg/L	Permit application
Cl CE - average effluent concentration - chloride		mg/L	Permit application
SO4 CE - average effluent concentration - sulfate		mg/L	Permit application

TDS Screening

The TDS screening value is determined by first calculating an initial TDS concentration, C_{TDS}, as follows:

C_{TDS} = (TDS CC / 500 mg/L) * 2,500 mg/L

Where:	C_{TDS} = TDS concentration used to determine Csv screening value TDS CC = TDS criterion at the first downstream segment 500 mg/L = the median TDS concentration in Texas streams 2,500 mg/L = the minimum TDS screening value

C_{TDS} = 3000 mg/L

The next step is to use the initial C_{TDS} to set the actual TDS screening value, TDS Csv, using the following table:

If C_{TDS}		**Then TDS Csv**
≤ 2,500 mg/L	=	2,500 mg/L
> 2,500 mg/L but ≤ 6,000 mg/L	=	C_{TDS}
> 6,000 mg/L	=	6,000 mg/L

Some specific types of intermittent streams have alternative screening values (Csv):

Specific Type of Intermittent Stream	If C_{TDS} is	Default Csv =
Dry except for short-term flow in	< 4,000 mg/L	4,000 mg/L
immediate response to rainfall.	≥ 4,000 mg/L	C_{TDS}
Constructed ditch conveying stormwater and	< 4,000 mg/L	4,000 mg/L
wastewater, considered water in the state.	≥ 4,000 mg/L	C_{TDS}
Within 3 miles of tidal waters.	—	6,000 mg/L

Once TDS Csv is established, the next step is to compare the effluent TDS concentration, TDS CE, to the screening value. Control measures, which may include effluent limitations, are considered for TDS if the effluent TDS is greater than the screening value.

Values needed for Screening			Data Source
TDS CE - average effluent TDS concentration	1840	mg/L	Permit application
TDS Csv - TDS screening value	**3000**	mg/L	Determined above

No control measures needed if:	1840	≤	3000
Consider control measures if:	1840	>	3000

No control measures needed for TDS

When effluent limitations are established in the permit, the daily average TDS limit is typically set equal to the TDS screening value. The daily maximum TDS limit is calculated as 2.12 times the daily average limit.

Total Dissolved Solids

Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Chloride Screening

If TDS limits are necessary or there are concerns about chloride, additional screening can be performed for chloride. First calculate the screening value for chloride, Cl Csv, as follows:

Cl Csv = (TDS Csv /TDS CC) * Cl CC

Where:	Cl Csv = chloride screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	Cl CC - chloride criterion at the first downstream segment

Cl Csv = **0** mg/L

Once the Cl Csv is established, the next step is to compare the effluent chloride concentration,

Cl CE, to the screening value. Control measures, which may include effluent limitations, are considered for chloride if the effluent chloride is greater than the screening value.

Values needed for Screening			Data Source
Cl CE - average effluent chloride concentration	0	mg/L	Permit application
Cl Csv - chloride screening value	0	mg/L	Determined above

No control measures needed if:	0	≤	0
Consider control measures if:	0	>	0

No control measures needed for chloride

When effluent limitations are established in the permit, the daily average chloride limit is typically set equal to the chloride screening value. The daily maximum chloride limit is calculated as 2.12 times the daily average limit.

Chloride			
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Sulfate Screening

If TDS limits are necessary or there are concerns about sulfate, additional screening can be performed for sulfate. First calculate the screening value for sulfate, SO4 Csv, as follows:

SO4 Csv = (TDS Csv /TDS CC) * SO4 CC

Where:	SO4 Csv = sulfate screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	SO4 CC - sulfate criterion at the first downstream segment

SO4 Csv = **0** mg/L

Once the SO4 Csv is established, the next step is to compare the effluent sulfate concentration, SO4 CE, to the screening value. Control measures, which may include effluent limitations, are considered for sulfate if the effluent sulfate is greater than the screening value.

Values needed for Screening			Data Source
SO4 CE - average effluent sulfate concentration	0	mg/L	Permit application
SO4 Csv - sulfate screening value	0	mg/L	Determined above

No control measures needed if:	0	≤	0

Consider control measures if:	0	>	0

No control measures needed for sulfate

When effluent limitations are established in the permit, the daily average sulfate limit is typically set equal to the sulfate screening value. The daily maximum sulfate limit is calculated as 2.12 times the daily average limit.

	Sulfate		
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 3 - Discharge to a Perennial Stream or River

Applicant Name:	**Tenaska Frontier Partners, LTD**
Permit Number, Outfall:	**03996-000**
Segment Number:	**1209**

Enter values needed for screening:			**Data Source (edit if different)**
QE - Average effluent flow	**2.25**	MGD	Permit application
QS - Perennial stream harmonic mean flow	**47.00**	cfs	Critical conditions memo
QE - Average effluent flow	**3.4813**	cfs	Calculated
CA - TDS - ambient segment concentration	**235**	mg/L	2010 IP, Appendix D
CA - chloride - ambient segment concentration	**44**	mg/L	2010 IP, Appendix D
CA - sulfate - ambient segment concentration	**42**	mg/L	2010 IP, Appendix D
CC - TDS - segment criterion	**600**	mg/L	2010 TSWQS, Appendix A
CC - chloride - segment criterion	**140**	mg/L	2010 TSWQS, Appendix A
CC - sulfate - segment criterion	**100**	mg/L	2010 TSWQS, Appendix A
CE - TDS - average effluent concentration	**1840**	mg/L	Permit application
CE - chloride - average effluent concentration	**273**	mg/L	Permit application
CE - sulfate - average effluent concentration	**735**	mg/L	Permit application

Screening Equation

$$CC \geq [(QS)(CA) + (QE)(CE)]/[QE + QS]$$

Preliminary Calculations Parameter	Load in River QSCA	Effluent Load QECE	New Concentration Equation 2	% Change in Ambient	% Change in Assim. Capacity
TDS	11045	6405.532	345.68	47.1	30.3
Chloride	2068	950.386	59.79	35.9	16.5
Sulfate	1974	2558.732	89.79	113.8	82.4

Permit Limit Calculations

TDS

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	5527.80
Calculate the LTA	LTA = WLA * 0.93	5140.86
Calculate the daily average	Daily Avg. = LTA * 1.47	**7557.06**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**15988.06**
Calculate 70% of the daily average	70% of Daily Avg. =	5289.94
Calculate 85% of the daily average	85% of Daily Avg. =	6423.50

No permit limitations needed if:	**1840**	**≤**	**5289.94**		
Reporting needed if:	**1840**	**>**	**5289.94**	**but ≤**	**6423.50**
Permit limits may be needed if:	**1840**	**>**	**6423.50**		

No permit limitations needed for TDS

Chloride

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	1436.08
Calculate the LTA	LTA = WLA * 0.93	1335.55
Calculate the daily average	Daily Avg. = LTA * 1.47	**1963.26**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**4153.57**
Calculate 70% of the daily average	70% of Daily Avg. =	1374.29
Calculate 85% of the daily average	85% of Daily Avg. =	1668.77

No permit limitations needed if:	**273**	**≤**	**1374.29**		
Reporting needed if:	**273**	**>**	**1374.29**	**but ≤**	**1668.77**
Permit limits may be needed if:	**273**	**>**	**1668.77**		

No permit limitations needed for chloride

Sulfate

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	883.05
Calculate the LTA	LTA = WLA * 0.93	821.23
Calculate the daily average	Daily Avg. = LTA * 1.47	**1207.22**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**2554.04**
Calculate 70% of the daily average	70% of Daily Avg. =	845.05
Calculate 85% of the daily average	85% of Daily Avg. =	1026.13

No permit limitations needed if:	**735**	**≤**	**845.05**		
Reporting needed if:	**735**	**>**	**845.05**	**but ≤**	**1026.13**
Permit limits may be needed if:	**735**	**>**	**1026.13**		

No permit limitations needed for sulfate

Appendix C
Comparison of Effluent Limits

The following table is a summary of technology-based effluent limitations calculated/assessed in the draft permit (Technology-Based), calculated/ assessed water quality-based effluent limitations (Water Quality-Based), and effluent limitations in the existing permit (Existing Permit). Effluent limitations appearing in bold are the most stringent of the three and are included in the draft permit.

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg mg/L	*Daily Max mg/L*	*Daily Avg mg/L*	*Daily Max mg/L*	*Daily Avg mg/L*	*Daily Max mg/L*
001	Flow	2.5 MGD	3.0 MGD	N/A	N/A	**2.5 MGD**	**3.0 MGD**
	Carbonaceous Biochemical Oxygen Demand (5-day)	N/A	N/A	30	N/A	**30**	N/A
	Ammonia Nitrogen	N/A	N/A	3.0	N/A	**3.0**	N/A
	Dissolved Oxygen	N/A	N/A	2.0 min.	N/A	**2.0 min.**	N/A
	Free Available Chlorine	0.2	0.0035	N/A	N/A	**0.2**	**0.5**
	Total Chromium	N/A	0.2	N/A	N/A	**Report**	**0.2**
	Total Zinc	N/A	N/A	**0.209**	**0.442**	0.280	0.594
	Total Dissolved Solids	N/A	N/A	N/A	Report	N/A	**Report**
	Sulfate	N/A	N/A	N/A	N/A	N/A	**1,060**
	Nitrate-Nitrogen	N/A	N/A	N/A	Report	N/A	**Report**
	pH	6.0 SU (min.)	9.0 SU (max.)	N/A	N/A	**6.0 SU min.**	**9.0 SU**
101	Flow	0.082 MGD	0.5 MGD	N/A	N/A	**0.082 MGD**	**0.5 MGD**
	Total Suspended Solids	20.5 lbs/day	68.4 lbs/day	N/A	N/A	**20.5 lbs/day**	**68.4 lbs/day**
	Oil and Grease	10.3 lbs/day	13.7 lbs/day	N/A	N/A	**10.3 lbs/day**	**13.7 lbs/day**
	Total Iron	N/A	N/A	N/A	N/A	**1.0**	**1.0**
	pH	6.0 SU (min.)	9.0 SU (max.)	N/A	N/A	**6.0 SU min.**	**9.0 SU**

STATEMENT OF BASIS/TECHNICAL SUMMARY AND
EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	Tenaska Frontier Partners, LTD.; Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0003996000 (EPA I.D. No. TX0120146)
Regulated activity:	Industrial wastewater permit
Type of application:	Major Amendment
Request:	Major Amendment with Renewal
Authority:	Federal Clean Water Act (CWA) §402; Texas Water Code (TWC) §26.027; 30 Texas Administrative Code (TAC) Chapter 305, Subchapters C-F, and Chapters 307 and 319; commission policies; and Environmental Protection Agency (EPA) guidelines

EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit will expire at midnight, five years from the date of permit issuance according to the requirements of 30 TAC §305.127(1)(C)(i).

REASON FOR PROJECT PROPOSED

The applicant applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment. The proposed amendment would authorize the removal of effluent limitations and monitoring requirements for total copper at Outfall 001 based on updated DMR data, as well as the implementation of the previously approved Total Copper WER.

PROJECT DESCRIPTION AND LOCATION

The applicant currently operates Tenaska Frontier Generating Station, a natural gas-fired electricity generation station (SIC 4911).

Wastewater generated at the facility consists of blowdown from cooling towers, and boilers; water treatment wastes; low-volume waste sources; water from flushing/rinsing chemical (non-hydrocarbon) storage tanks, piping, and other equipment; and stormwater which accumulates within containment areas. Groundwater is utilized to supply the plant's potable water system. Wastewater is routed to either the oil/water separator or the chemical waste sump. Water from the oil/water separator is sent to Outfall 101. Wastewater collected in the sump is then pumped to an impoundment where it is discharged via Outfall 001 or discharged directly to Outfall 001. Domestic wastewater generated on-site is routed to an onsite aerobic septic system and sanitary spray field. The discharge of domestic wastewater is not authorized by this permit.

The facility is located at 17500 State Highway 30, on the south side of State Highway 30 approximately two miles southwest of the City of Shiro in Grimes County, Texas.

Routes and Designated Uses

The effluent is discharged via Outfall 001 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 in Segment No. 1209 of the Brazos River Basin. The unclassified receiving water use is minimal aquatic life use for the unnamed tributary of Sulphur Creek and Sulphur Creek. The designated uses for Segment No. 1209 are primary contact recreation, public water supply, and

high aquatic life use. The effluent limits in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and revisions.

Antidegradation Review
In accordance with 30 Texas Administrative Code §307.5 and the TCEQ Procedures to Implement the Texas Surface Water Quality Standards (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. This review has preliminarily determined that no water bodies with exceptional, high, or intermediate aquatic life uses are present within the stream reach assessed; therefore, no Tier 2 degradation determination is required. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

Endangered Species Review
The Houston toad (*Bufo houstonensis* Sanders), an endangered aquatic-dependent species of critical concern, occurs within the Segment 1209's watershed as well as the United States Geological Survey hydrologic unit code 12070103. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only consider aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. Species distribution information for the Segment 1209 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Running Creek in Leon County, which is farther up the watershed from the facility associated with this permit action. Based upon this information, it is determined that the facility's discharge is not expected to impact the Houston toad. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Impaired Water Bodies
Segment No. 1209 is not currently listed on the State's inventory of impaired and threatened waters (the 2022 Clean Water Act Section 303(d) list). However, Gibbons Creek is listed for elevated bacteria levels in a portion of Gibbons Creek from confluence with Navasota River upstream to Gibbons Creek Reservoir dam in Grimes County (AU 1209I_01 & 1209I_02) and depressed dissolved oxygen in a portion of Gibbons Creek from confluence with Navasota River upstream to confluence with Dry Creek in Grimes County (AU 1209I_01). This discharge is upstream of the DO impairment portion. This application is for renewal of an existing authorization, it will not represent an increase in the permitted levels of oxygen-demanding constituents to the DO impairment portion.

Completed Total Maximum Daily Loads (TMDLs)
TMDL Project No. 111 has been approved for this segment: Two Total Maximum Daily Loads for Indicator Bacteria in the Navasota River below Lake Limestone.

On August 28, 2019 the Texas Commission on Environmental Quality (TCEQ) adopted Two Total Maximum Daily Loads for Indicator Bacteria in the Navasota River below Lake Limestone. The U.S. Environmental Protection Agency (USEPA) approved the TMDL on October 25, 2019. The TMDL addresses elevated levels of bacteria in two assessment units (AU) of a classified segment (Segment 1209, assessment units 1209_03 and 1209_05) in this watershed. The waste load allocation (WLA) for wastewater treatment facilities was established as the permitted flow for each facility multiplied by the geometric mean criterion for bacteria (E. coli). This gives an effective concentration limitation for E.

coli of 126 MPN per 100 mL. Future growth from existing or new permitted sources is not limited by these TMDLs as long as the sources do not exceed the limits provided. No draft permit limits for E. Coli are imposed on the permit as there is no known source of E. Coli in the facility. This draft permit is consistent with the requirements of the TMDL.

Dissolved Oxygen
This permit action is for renewal of an existing authorization. A dissolved oxygen modeling analysis was performed for this permit on September 26, 2024 by Xing Lu. Applicable water body uses and criteria, proposed permitted flow conditions, and modeling analytical procedures pertaining to this discharge situation remain unchanged from the previous review. Therefore, the existing effluent limits set of 30 mg/L $CBOD_5$, 3 mg/L NH_3-N and 2.0 mg/L DO are applicable to this permit.

SUMMARY OF EFFLUENT DATA
The following is a quantitative description of the discharge described in the monthly effluent report data for the period October 2019 through September 2024. The "Avg of Daily Avg" values presented in the following table are the average of all daily average values for the reporting period for each pollutant. The "Max of Daily Max" values presented in the following table are the individual maximum values for the reporting period for each pollutant. Flows are expressed in million gallons per day (MGD). All pH values are expressed in standard units (SU).

Flow

Outfall	Frequency	Avg of Daily Avg, MGD	Max of Daily Max, MGD
001	Intermittent	0.752	1.108
101	Intermittent	0.02	0.359

Effluent Characteristics

Outfall	Pollutant	Avg of Daily Avg	Max of Daily Max
		mg/L	mg/L
001	Carbonaceous Biochemical Oxygen Demand (5-day)	11.62	N/A
	Ammonia Nitrogen	0.526	N/A
	Dissolved Oxygen	5.0 minimum	N/A
	Total Copper	0.008	0.03
	Free Available Chlorine	0.186	0.400
	Total Chromium	0.001	0.025
	Total Zinc	0.025	0.666
	Total Dissolved Solids	N/A	2,710
	Nitrate-Nitrogen	N/A	2.1
	pH	6.7 SU minimum	8.6 SU
101	Total Suspended Solids	0.695 lbs/day	20.2 lbs/day
	Oil and Grease	1.063 lbs/day	6.7 lbs/day
	Total Iron	0.182	1.640
	pH	6.7 SU minimum	8.9 SU

Additional Total Copper DMR data for the period of October 2022 through May 2025 was submitted by the applicant on June 12, 2025, in an updated application requesting a major amendment.

Outfall	Pollutant	Avg of Daily Avg, MGD	Max of Daily Max, MGD
001	Total Copper	0.010	0.021

Effluent limit violations documented in the monthly effluent reports are summarized in the following table.

Effluent Limitation Violations

Outfall	Pollutant (mg/L)	Report Date	Daily Average		Daily Maximum	
			Limit	Reported	Limit	Reported
001	Zinc, total	12/31/2019	0.3	0.401	0.64	0.666
101	Iron, total	3/31/2020			1.0	1.64
	Iron, total	5/31/2024			1.0	1.26

The draft permit was not changed to address these effluent limit violations due to the intermittent nature of the violations, as they do not represent a consistent pattern of exceedance. Therefore, no further corrective action is necessary in the draft permit.

DRAFT PERMIT CONDITIONS

The draft permit authorizes the discharge of cooling tower blowdown, boiler blowdown, water treatment wastes, water treatment filter backwash, previously monitored effluents (includes low-volume waste sources, and water from flushing/rinsing chemical (non-hydrocarbon) storage tanks, piping, and other equipment), and stormwater on an intermittent and flow-variable basis at a daily average flow not to exceed 2,500,000 gallons per day via Outfall 001.

Effluent limitations are established in the draft permit as follows:

Outfall	Pollutant	Daily Avg	Daily Max
		mg/L	mg/L
001	Flow	2.5 MGD	3.0 MGD
	Carbonaceous Biochemical Oxygen Demand (5-day)	30	N/A
	Ammonia Nitrogen	3.0	N/A
	Dissolved Oxygen	2.0 minimum	N/A
	Free Available Chlorine	0.2	0.5
	Total Chromium	Report	0.2
	Total Zinc	0.209	0.442
	Total Dissolved Solids	N/A	Report
	Sulfate	N/A	1060
	Nitrate-Nitrogen	N/A	Report
	pH	6.0 SU minimum	9.0 SU
101	Flow	0.082 MGD	0.5 MGD
	Total Suspended Solids	20.5 lbs/day	68.4 lbs/day
	Oil and Grease	10.3 lbs/day	13.7 lbs/day
	Total Iron	1.0	1.0

Outfall	Pollutant	Daily Avg	Daily Max
		mg/L	mg/L
	pH	6.0 SU minimum	9.0 SU

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	30.624059 N	-95.919917 W

Technology-Based Effluent Limitations
Regulations in Title 40 of the Code of Federal Regulations (40 CFR) require that technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, or on best professional judgment (BPJ) in the absence of guidelines. Technology-based effluent limitations from 40 CFR Part 423 apply to the discharge the discharge of cooling tower blowdown and low volume wastes from this facility. Historically, the Tenaska Frontier Generating Station was not subject to 40 CFR part 423. However, applicability was established through discussions with the permittee and was confirmed by the U.S. Environmental Protection Agency (EPA) in 2014. Technology-based effluent limitations for this facility were originally based on BPJ using 40 CFR § 423.15(a) 1982 New Source Performance Standards (NSPS) as guidance and are consistent with requirements contained within 40 CFR Part 423.

A new source determination was performed and the discharge of cooling tower blowdown via Outfall 001 and low-volume wastewater via internal Outfall 101 is a new source as defined at 40 CFR § 122.2.

Outfall 001

Daily average and maximum effluent limitations for free available chlorine and total chromium at Outfall 001 were originally based on BPJ, and are in compliance with the technology-based effluent limits found in 40 CFR § 423.15 (a)(10)(i) for the discharge of cooling tower blowdown. Daily minimum and maximum effluent limitations for pH were originally based upon BPJ and are consistent with requirements in 40 CFR § 423.15 (a). These limitations are still protective and have been carried forward in the draft permit based on EPA's antibacksliding regulations in 40 CFR § 122.44(l).

Outfall 101

Daily average and maximum effluent limitations for TSS and oil and grease at internal Outfall 101 were originally based on BPJ, and are in compliance with the technology-based effluent limits found in 40 CFR § 423.15 (a)(3) for the discharge of low-volume waste sources. These limitations are still protective and have been carried forward in the draft permit based on EPA's anti-backsliding regulations in 40 CFR § 122.44(l).

Mass limit= Flow (0.082 MGD) × Concentration Limit (mg/l) × (8.345)

Calculated Mass limits

Outfall	Parameters	Daily average Concentration (mg/L)	Daily Average Loading lbs/day	Daily Max Concentration (mg/L)	Daily Max Loading lbs/day
101	Oil and Grease	10	10.3	20	13.7
	Total Suspended Solids	30	20.5	100	68.4

The concentration-based limit for total iron was originally based on BPJ and is consistent with 40 CFR § 423.15(a)(4) and 30 TAC Chapter 319 for similar metal cleaning wastestreams. While this facility is not authorized to discharge any metal cleaning wastes, this limitation cannot be removed without a major amendment due to requirements in 30 TAC 305.62(c). Technology-based limitations for pH are applied at internal Outfall 101 for low volume wastes per 40 CFR 432.15 (b)(1).

Water Quality-Based Effluent Limitations
Calculations of water quality-based effluent limitations for the protection of aquatic life and human health are presented in Appendix A. Aquatic life criteria established in Table 1 and human health criteria established in Table 2 of 30 TAC Chapter 307 are incorporated into the calculations, as are recommendations in the Water Quality Assessment Team's memorandum dated September 24, 2024. TCEQ practice for determining significant potential is to compare the reported analytical data from the facility against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

A site-specific water-effect-ratio (WER) of 2.64 was used for Total Copper based on 30 TAC 307, Appendix E.

Data reported in the applications was screened against the calculated water quality-based effluent limitations. None of the reported analytical data submitted with the application exceeded 70 or 85 percent of the calculated water quality-based effluent limitations; therefore, no additional effluent limitations or monitoring and reporting requirements have been included in the draft permit at this time.

The facility requested a major amendment to remove total copper limits. Total copper limits were recalculated using the WER. The applicant provided additional total copper DMR data from October 2022 to May 2025 in an updated application dated June 12, 2025. The additional data provided does not exceed 70 percent of the calculated daily average water quality-based effluent limitation.

Section 303(d)(4)(B) provides that a permittee may backslide from a water quality-based effluent limitation where water quality meets or exceeds applicable water quality standards, if the revision is consistent with the State's approved antidegradation policy. The water quality standard for total copper is being met or exceeded, therefore Section 303(d)(4)(B) allows the revision if antidegradation requirements were met. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. See Antidegradation Review section for more information.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The existing limits for total zinc are less stringent than the calculated water quality-based limits. More stringent limits for total zinc are established in this permit. No compliance period has been proposed in this draft permit.

Single Grab Limitations
The permittee is not required to monitor or report the effluent to demonstrate compliance with the single grab effluent limitations on Pages 2 and 2b of this permit. The purpose of the single grab limitations on Pages 2 and 2b of the permit is to provide TCEQ personnel an enforceable limitation to determine compliance when collection of composite samples is infeasible during routine inspections

or other site investigations.

Total Dissolved Solids (TDS), Chloride, and Sulfate Screening
The average concentration of sulfate in the effluent is greater than the segment criterion. Screening procedures and effluent limitations for sulfate are calculated using the methodology in the *Procedures to Implement the Texas Surface Water Quality Standards*, June 2010, and criteria in the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). Detailed calculations are presented in Appendix B. Based on the screening, the existing permit's daily maximum effluent limitation for sulfate has been retained in this draft permit. A monitoring/reporting requirement for TDS was established in the existing permit and continued in this draft permit.

pH Screening
The existing permit includes pH limits of 6.0 – 9.0 SU at Outfall 001, which discharges into an unclassified water body. Consistent with the procedures for pH screening that were submitted to EPA with a letter dated May 28, 2014, and approved by EPA in a letter dated June 2, 2014, requiring a discharge to an unclassified water body to meet pH limits of 6.0 – 9.0 standard units reasonably ensures instream compliance with *Texas Surface Water Quality Standards* pH criteria. These limits have been carried forward in the draft permit. Technology-based limitations for pH are applied at internal Outfall 101 for low volume wastes per 40 CFR 432.15 (b)(1).

316(b) Cooling Water Intake Structures
The facility obtains water from the City of Huntsville, a public water system (PWS No. TX2360001), for cooling purposes. According to the rules applicable to CWISs (40 CFR § 125.91(c)), the use of water from a public water system for cooling purposes does not constitute the use of a CWIS; therefore, the facility is not subject to CWA Section 316(b) or 40 CFR Part 125, Subpart J. The Other Requirement No. 14 has been added and require(s) the permittee to notify the TCEQ of any changes in the method by which cooling water is obtained. Upon receipt of such notification, the TCEQ may reopen the permit to include additional terms and conditions as necessary.

Whole Effluent Toxicity Testing (Biomonitoring)
Biomonitoring requirements are included in the draft permit at Outfall 001.

Freshwater 48-hour acute testing and 24-hour acute testing are required. For both tests, the water flea (*Ceriodaphnia dubia* or *Daphnia pulex*) and the fathead minnow (*Pimephales promelas*) are to be used as test species. A testing frequency of once per quarter is required. The dilution series is required to be of 32%, 42%, 56%, 75%, and 100% with a critical dilution of 100%.

For 24-hour acute testing, a testing frequency of once per six months is required.

In the past three years, the permittee has performed twelve 24-hour acute tests, with zero demonstrations of significant lethality (i.e., zero failures).

REASONABLE POTENTIAL (RP) DETERMINATION

In the past three years, the permittee has performed nine 48-hour acute tests, with zero demonstrations of significant toxicity (i.e., zero failures).

A reasonable potential determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of 48-hour acute WET testing. This determination was performed in accordance with the methodology

outlined in the TCEQ letter to the EPA dated December 28, 2015, and approved by the EPA in a letter dated December 28, 2015.

With zero failures, a determination of no RP was made and WET limits are not required. Both test species may be eligible for the testing frequency reduction after one year of quarterly testing.

SUMMARY OF CHANGES FROM APPLICATION

The following changes have been made from the application, which make the draft permit more stringent.

1. Effluent limitations for total zinc have become more stringent based on calculated water quality-based effluent limitations (the 2014 *Texas Surface Water Quality Standards*). Appendix A presents the calculated water quality-based effluent limitations, and Appendix C presents a comparison of existing effluent limitations and calculated water quality-based effluent limitations.

SUMMARY OF CHANGES FROM EXISTING PERMIT

The following changes have been made to the draft permit.

1. Pages 3-13 were updated (May 2021 version).
2. The Other Requirements section (beginning on page 14) was rearranged to assist with compliance monitoring.
3. The three-year compliance period for sulfate (Other Requirement #1) has been removed. The existing permit's limitations for sulfate have been retained in this draft permit. The Other Requirement section has been rearranged accordingly.
4. Gibbons Creek was excluded from the existing permit's discharge route. It has been added to the discharge route in this draft permit.
5. The language in Footnote #4 on page 2a of the proposed draft permit has been minimally modified for clarity.
6. Effluent limitations for total copper have been removed based on a major amendment request and updated DMR data provided to the TCEQ in an updated application on June 12, 2025. Total copper limits have been removed in accordance with anti-backsliding regulations in Section 303(d)(4)(B) of the Clean Water Act. See the Water Quality-Based Effluent Limitations section for additional information.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on July 26, 2024. Updated application received June 12, 2025.
2. Additional information received from the applicant on December 16, 2024, January 17, 2025, February 18, 2025, March 31, 2025, and April 28, 2025.
3. Existing permits: TPDES Permit No. WQ0003996000 issued on January 24, 2020.

4. TCEQ Rules.
5. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 1, 2018, as approved by EPA Region 6.
6. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not approved by EPA Region 6.
7. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not approved by EPA Region 6.
8. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not approved by EPA Region 6.
9. *Procedures to Implement the Texas Surface Water Quality Standards* (IPs), Texas Commission on Environmental Quality, June 2010, as approved by EPA Region 6.
10. *Procedures to Implement the Texas Surface Water Quality Standards*, Texas Commission on Environmental Quality, January 2003, for portions of the 2010 IPs not approved by EPA Region 6.
11. Memos from the Standards Implementation Team and Water Quality Assessment Team of the Water Quality Assessment Section of the TCEQ.
12. *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.
13. EPA Effluent Guidelines: 40 CFR Part 423.15(a).
14. Consistency with the Coastal Management Plan: N/A
15. Letter dated May 28, 2014, from L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for pH evaluation procedures).
16. Letter dated June 2, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for pH evaluation procedures).
17. Letter dated December 28, 2015, from L'Oreal Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).
18. Letter dated December 28, 2015, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the chief clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for reviewing and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent to the Chief Clerk, along with the Executive Director's preliminary decision contained in the technical summary or fact sheet. At that time, the Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant

must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment and is not a contested case hearing.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's response to comments and final decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's response to comments and final decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ commissioners for their consideration at a scheduled commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the commission grants a contested case hearing as described above, the commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application, contact Aldo Guerrero at (512) 239-4317.

Aldo Guerrero
Aldo Guerrero

6/25/2025
Date

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

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

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

Applications for oil and gas extraction operations subject to 40 CFR Part 435 must use the Oil and Gas Exploration and Production Administrative Report (TCEQ Form-20893 and 20893-inst[1]).

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)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	☐ $1,250	☐ $1,250	☒ $1,215	☐ $150
Major facility	N/A [2]	☐ $2,050	☐ $2,015	☐ $450

h. Payment Information

Mailed

Check or money order No.: 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): CNClick to enter text.

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

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

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

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

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

☐ Yes ☐ No

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

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

a. Complete one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: Attachment 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. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

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

☐ Yes ☒ No

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

☒ One-mile radius
☒ Applicant's property boundaries
☒ Labeled point(s) of discharge
☐ Effluent disposal site boundaries
☐ Sewage sludge disposal site
☒ Three-miles downstream information
☒ Treatment facility boundaries
☒ Highlighted discharge route(s)
☒ All wastewater ponds
☐ 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: _____ Date: 07-24-2024
(Use blue ink)

Subscribed and Sworn to before me by the said Buck Hunt

on this twenty-fourth day of July, 20 24.

My commission expires on the ninth day of August, 20 27.

_____
Notary Public

MAGGIE BRUNO
GENERAL NOTARIAL
SEAL
STATE OF NEBRASKA
Commission Expires
August 9, 2027

[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

Attachment A

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

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

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

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

TCEQ Use Only

TCEQ Core Data Form

Attachment B

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

SECTION I: General Information

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

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

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

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

☐ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

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:

☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

☐ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

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)*

(402) 691-9500		( ) -

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: ***(No PO Boxes)***	17500 Highway 30							
	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 (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (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**							
	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.

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

SECTION IV: Preparer Information

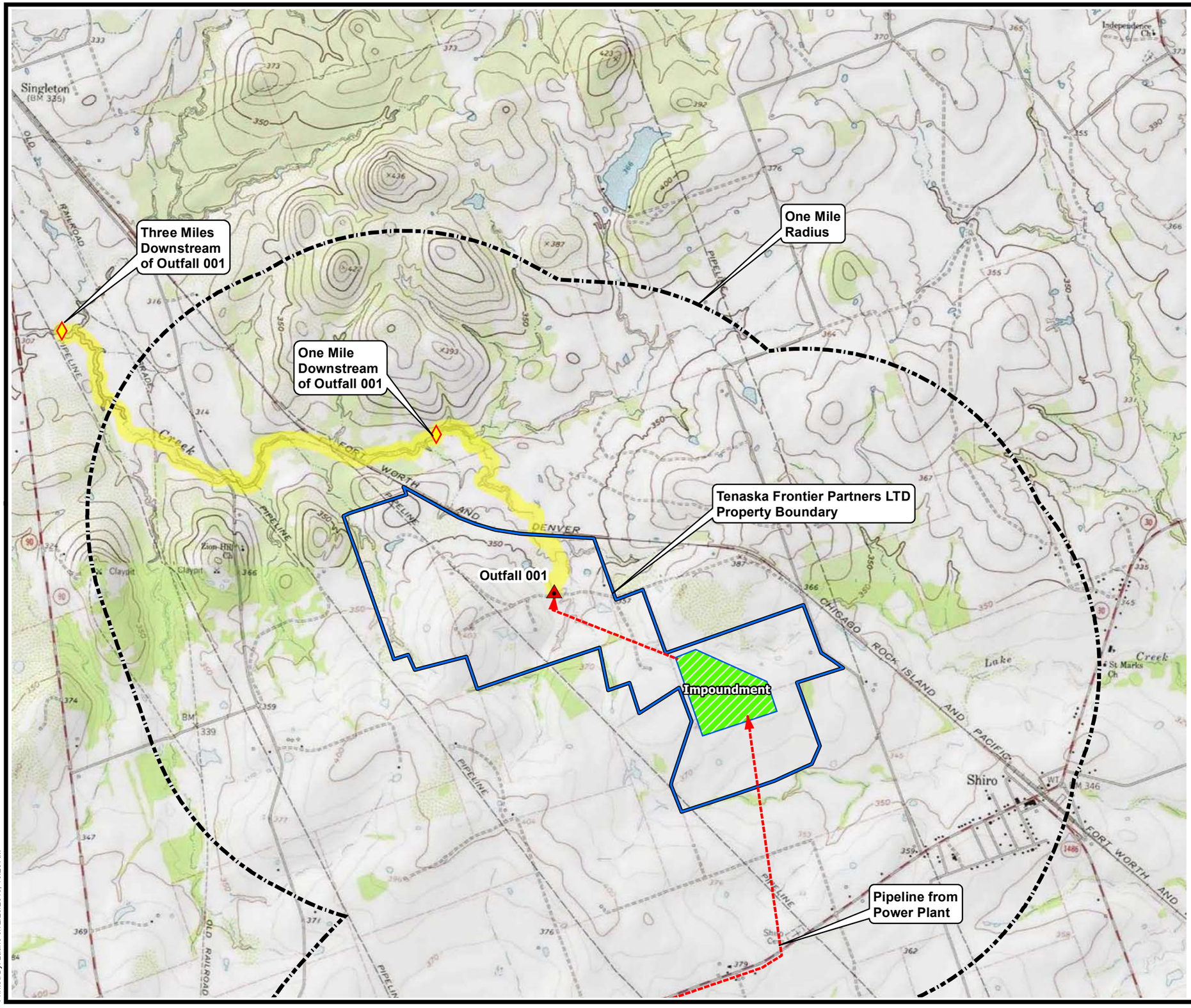
40. Name:	Patricia Greene	41. Title:	Director, Environmental Programs

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

N

0 1,000 2,000 FEET

1 " = 2,000 '
1:24,000

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*	

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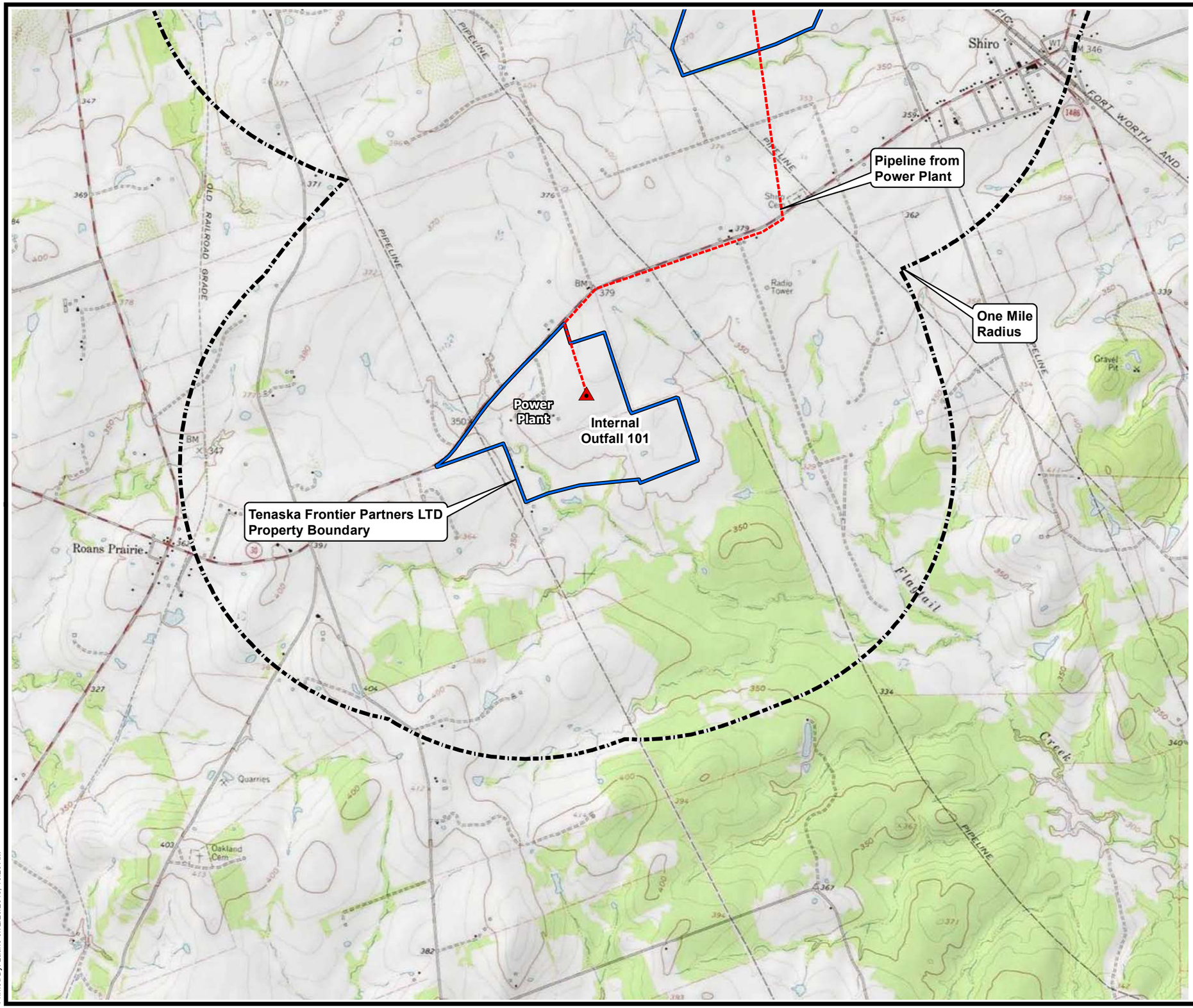
Printed By: Laurie on 2/29/2016, 10:20 AM



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

N

0 1,000 2,000 FEET

1 " = 2,000 '
1:24,000

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 2 of 2
DATE:	February, 2016	*2/29/2016*	

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Printed By: Laurie on 2/29/2016, 10:20 AM

Attachment D

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.: Click here to enter text. Fax No.: Click here to enter text.

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.

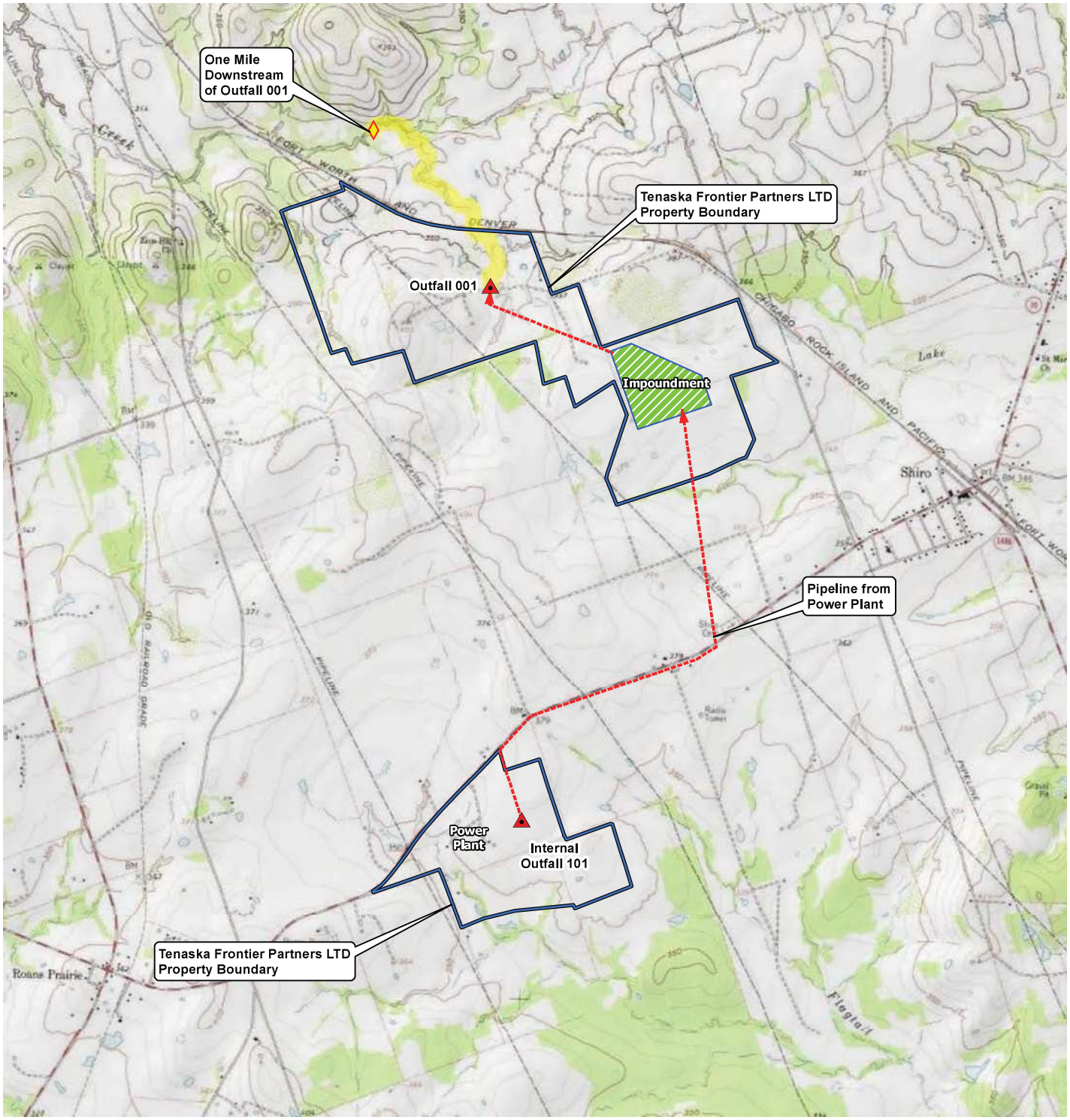
THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

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

N

0 1,500 3,000 FEET

1:36,000

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/0r 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: 02-24-2024

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.

Not Applicable

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.

All discharged wastewater is process wastewater and regulated by 40 CFR 423.15(a) 1982 NSPS

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
E. coli (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 [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	**Sample 1 (µg/L)***	**Sample 2 (µg/L)***	**Sample 3 (µg/L)***	**Sample 4 (µg/L)***	**MAL (µg/L)***
Endosulfan I (*alpha*)					0.01
Endosulfan II (*beta*)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (*alpha*)					0.05
Hexachlorocyclohexane (*beta*)					0.05
Hexachlorocyclohexane (*gamma*) [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	☐	☒					400
Color (PCU)	☐	☒					—
Nitrate-Nitrite (as N)	☒	☐	1.9	0.14	<0.02	<0.02	—
Sulfide (as S)	☐	☒					—
Sulfite (as SO3)	☐	☒					—
Surfactants	☒	☐	<0.200				—
Boron, total	☐	☒					20
Cobalt, total	☐	☒					0.3
Iron, total	☒	☐	0.116				7
Magnesium, total	☐	☒					20
Manganese, total	☐	☒					0.5
Molybdenum, total	☐	☒					1
Tin, total	☐	☒					5
Titanium, total	☐	☒					30

TABLE 7 (Instructions, Page 60)

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

☐ N/A

Table 7 for Applicable Industrial Categories

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

* Test if believed present.

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

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

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

Table 8 for Outfall No.: 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):

☐ oil field activities
☐ agricultural runoff
☐ upstream discharges
☐ urban runoff
☐ septic tanks
☒ other, specify: Not applicable; the outfall is located in the upper reaches of the creek.

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

☐ livestock watering
☐ non-contact recreation
☐ domestic water supply
☐ contact recreation
☐ fishing
☐ industrial water supply
☐ irrigation withdrawal
☐ navigation
☐ picnic/park activities
☒ other, specify: Drainage/flood control

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)

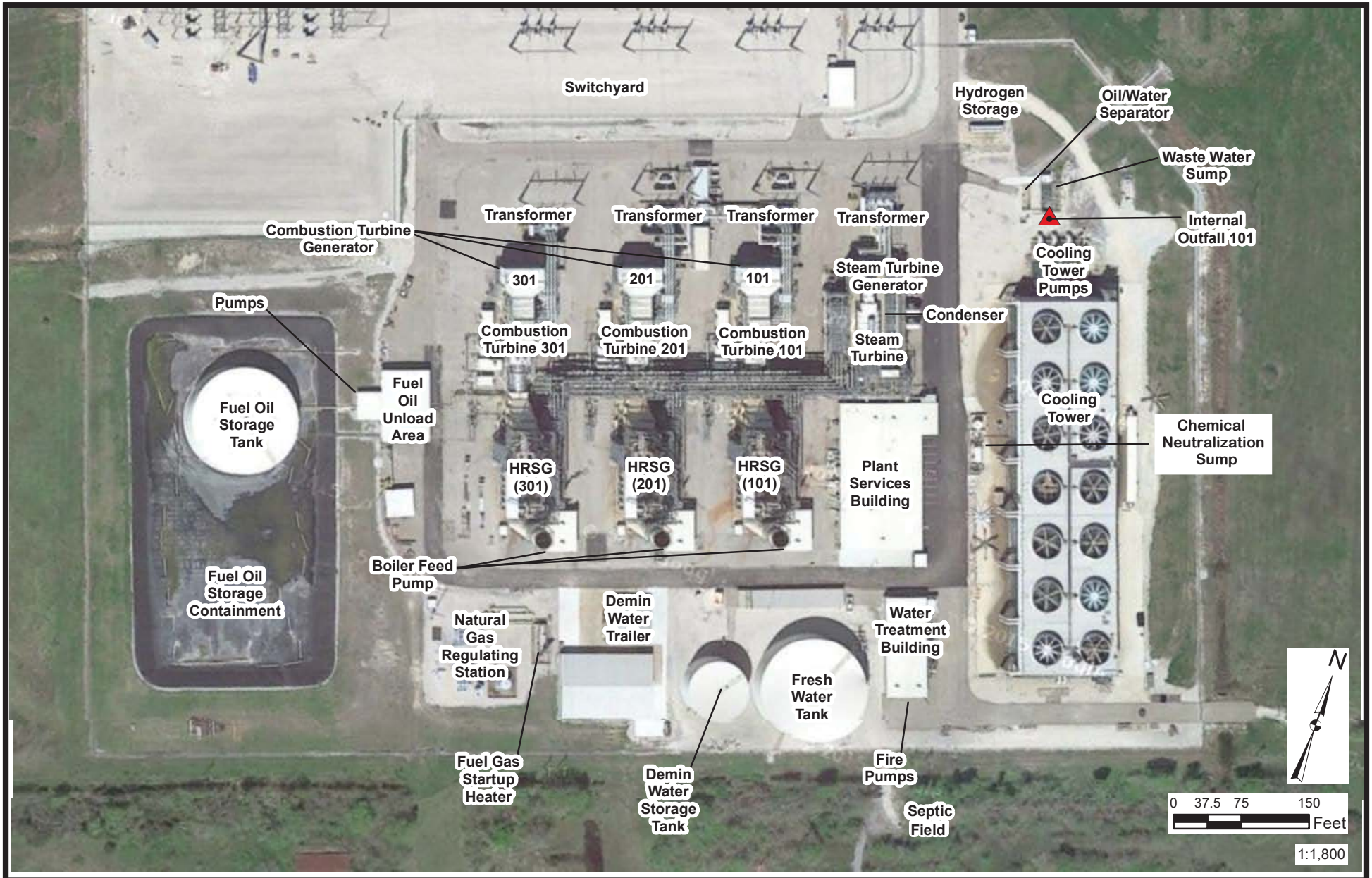
List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
002	☒	☐
003	☒	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

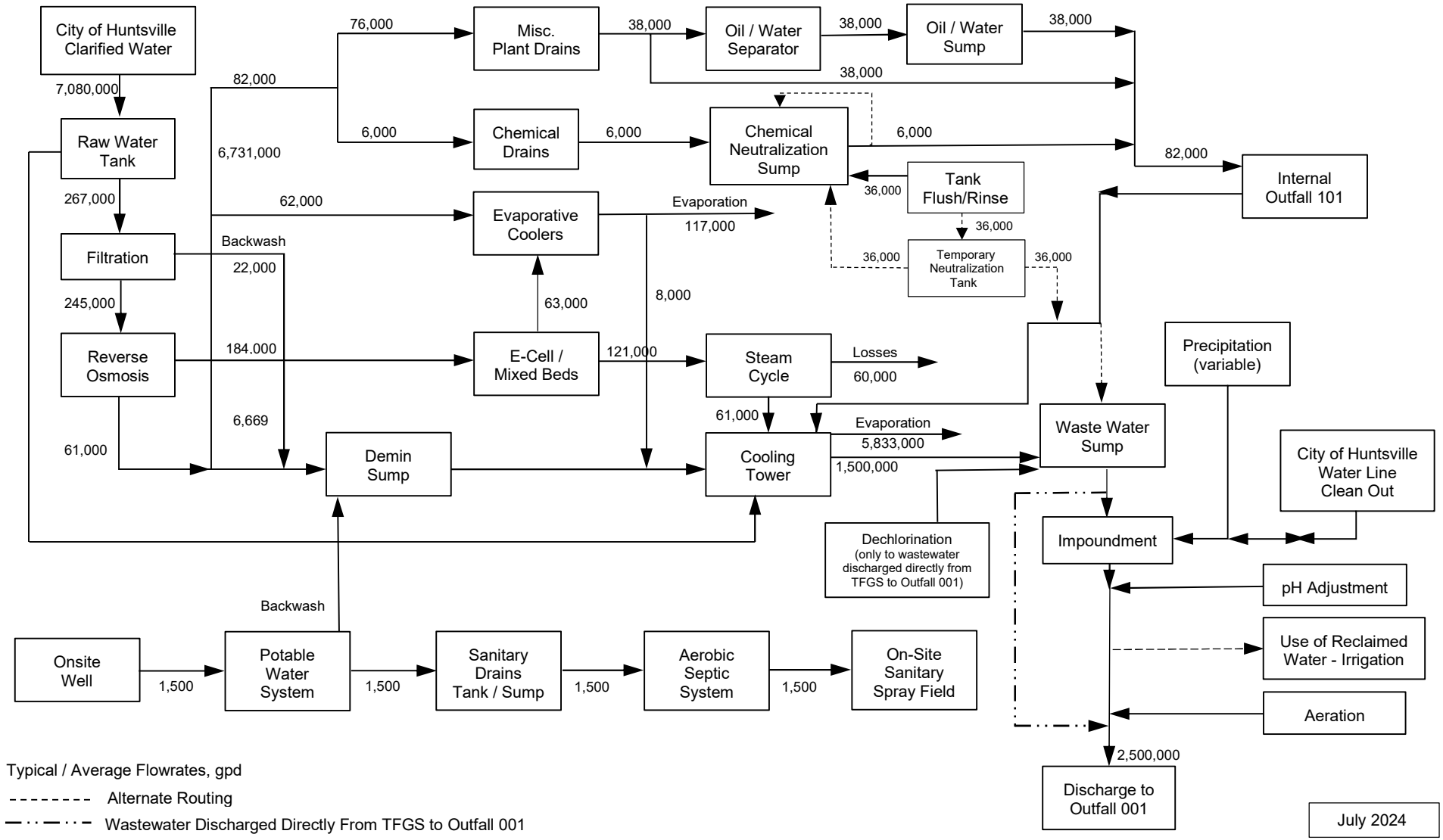
If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

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 PARTNERS, LTD.

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

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

VEOLIA

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 (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

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 (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. 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.

Information on toxicological effects

Acute toxicity Not known.

Product	Species	Test Results
GENGARD GN8022		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg

Components	Species	Test Results
CARBOXYLIC ACID POLYMER		
Acute		
Oral		
LD50	Rat	4563 mg/kg
Maleic acid (CAS 110-16-7)		
Acute		
Dermal		
LD50	Rabbit	1560 mg/kg
Inhalation		
LC50	Rat	> 2.88 mg/L, 4 Hour
Oral		
LD50	Rat	708 mg/kg

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

Respiratory or skin sensitization

Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	May cause an allergic skin reaction.

Germ cell mutagenicity 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).

VEOLIA

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 (CO2). Foam. Dry chemical powder.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. 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.

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

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

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 USDA (according to 1998 guidelines):
Registration No. – 147066
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations

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

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 (mgO2/g)	120 (calculated data)
- BOD 5 (mgO2/g)	4 (calculated data)
- BOD 28 (mgO2/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	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 NFPA: 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
References:	No data available
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information	Product and Company Identification: Physical States 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
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:

- CONTINUED ON NEXT PAGE -

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 -

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 spilt 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

- CONTINUED ON NEXT PAGE -

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 ºF

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	8-hour TWA PEL		1 mg/m³
CAS: 7664-38-2	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 -

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

National volatile organic compound emission standards (40 CFR Part 59):

V.O.C. (Subpart C - Consumer): 0 % weight

V.O.C. (Coatings) at 68 ºF: 0 kg/m³ (0 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 68 ºF:	Liquid
Appearance:	Not available
Color:	Not available
Odor:	Odorless
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	236 - 343 ºF
Vapour pressure at 68 ºF:	≤750 Pa
Vapour pressure at 122 ºF:	12381.01 Pa (12.38 kPa)
Evaporation rate at 68 ºF:	Non-applicable *

Product description:

Density at 68 ºF:	Non-applicable *
Relative density at 68 ºF:	1.573
Dynamic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 68 ºF:	Non-applicable *
Kinematic viscosity at 104 ºF:	Non-applicable *
Concentration:	Non-applicable *
pH:	<1 at 1 %
Vapour density at 68 ºF:	Non-applicable *
Partition coefficient n-octanol/water 68 ºF:	Non-applicable *
Solubility in water at 68 ºF:	Non-applicable *
Solubility properties:	Non-applicable *
Decomposition temperature:	>316 ºF
Melting point/freezing point:	-4 ºF
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *

Flammability:

Flash Point:	Non Flammable (>199.4 ºF)

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

- CONTINUED ON NEXT PAGE -

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 ºF:	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 -

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
Phosphoric acid	LD50 oral	3500 mg/kg	Rat
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

- CONTINUED ON NEXT PAGE -

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

- CONTINUED ON NEXT PAGE -

Phosphoric Acid 75%

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

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

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

(Contd. on Page 2)

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 1)

· **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 artifical 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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· **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/cm³ (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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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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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 responsiblity 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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· **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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· **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

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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).

SAFETY DATA SHEET

1. Identification

Product identifier **Sulfuric Acid (77 to 100%)**

Other means of identification

SDS number 150000002271

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.

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			
Acute			
Crustacea	EC50	Daphnia magna	29 mg/l, 24 Hours
Fish	LC50	Lepomis macrochirus	16 - 28 mg/l, 96 Hours
Chronic			
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.

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 Yes

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) Not regulated.

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.

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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 (CO2).
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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OPTISPERSE HP3100

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/m3

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/m3	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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OPTISPERSE HP3100

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		
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
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 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.

SAFETY DATA SHEET

OPTISPERSE HP3100

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.

References	Safety data sheets of raw materials.
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

VEOLIA

SAFETY DATA SHEET
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/m3
		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/m3
		10 ppm
Ethanolamine (CAS 141-43-5)	STEL	15 mg/m3
		6 ppm
	TWA	8 mg/m3
		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		
Acute		
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

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)

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).

TENASKA® FRONTIER PARTNERS, LTD.

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

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

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

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 reurn 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.

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

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Compliance History Report

Compliance History Report for CN600135081, RN100245539, Rating Year 2024 which includes Compliance History (CH) components from September 1, 2019, through August 31, 2024.

Customer, Respondent, or Owner/Operator: CN600135081, Tenaska Frontier Partners, LTD. **Classification:** HIGH **Rating:** 0.00

Regulated Entity: RN100245539, TENASKA FRONTIER GENERATION STATION **Classification:** HIGH **Rating:** 0.00

Complexity Points: 17 **Repeat Violator:** NO

CH Group: 06 - Electric Power Generation

Location: 17500 HIGHWAY 30 SHIRO, TX 77876, GRIMES COUNTY

TCEQ Region: REGION 09 - WACO

ID Number(s):

AIR OPERATING PERMITS ACCOUNT NUMBER GK0077F
AIR OPERATING PERMITS PERMIT 1754
PUBLIC WATER SYSTEM/SUPPLY REGISTRATION 0930059
AIR NEW SOURCE PERMITS PERMIT 37391
AIR NEW SOURCE PERMITS ACCOUNT NUMBER GK0077F
AIR NEW SOURCE PERMITS REGISTRATION 141943
AIR NEW SOURCE PERMITS AFS NUM 4818500013
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX897
STORMWATER PERMIT TXR05DB08
WASTEWATER PERMIT WQ0003996000
WASTEWATER EPA ID TX0120146
WASTEWATER PERMIT 2E0000006
AIR EMISSIONS INVENTORY ACCOUNT NUMBER GK0077F
INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE REGISTRATION # (SWR) 86734

Compliance History Period: September 01, 2019 to August 31, 2024 **Rating Year:** 2024 **Rating Date:** 09/01/2024

Date Compliance History Report Prepared: November 25, 2024

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: July 26, 2019 to November 25, 2024

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: PT **Phone:** (512) 239-3581

Site and Owner/Operator History:

1) Has the site been in existence and/or operation for the full five year compliance period? YES
2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:
N/A

B. Criminal convictions:
N/A

C. Chronic excessive emissions events:
N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):

Item 1	August 22, 2019	(1601298)
Item 2	September 24, 2019	(1608208)
Item 3	November 25, 2019	(1620883)
Item 4	December 19, 2019	(1628217)

Item 5	February 25, 2020	(1642458)
Item 6	March 20, 2020	(1648968)
Item 7	May 19, 2020	(1661880)
Item 8	June 22, 2020	(1668418)
Item 9	July 24, 2020	(1675365)
Item 10	August 19, 2020	(1671146)
Item 11	August 20, 2020	(1682145)
Item 12	September 22, 2020	(1688709)
Item 13	October 23, 2020	(1695075)
Item 14	November 16, 2020	(1717832)
Item 15	December 18, 2020	(1717833)
Item 16	January 07, 2021	(1717834)
Item 17	January 20, 2021	(1696592)
Item 18	February 08, 2021	(1730879)
Item 19	March 22, 2021	(1730880)
Item 20	April 07, 2021	(1707538)
Item 21	April 22, 2021	(1730881)
Item 22	May 25, 2021	(1742718)
Item 23	June 24, 2021	(1748503)
Item 24	July 16, 2021	(1753467)
Item 25	August 12, 2021	(1750245)
Item 26	August 25, 2021	(1768195)
Item 27	September 20, 2021	(1768196)
Item 28	October 18, 2021	(1778731)
Item 29	November 17, 2021	(1785398)
Item 30	December 15, 2021	(1792437)
Item 31	January 21, 2022	(1800284)
Item 32	February 10, 2022	(1808114)
Item 33	March 02, 2022	(1795151)
Item 34	March 09, 2022	(1797186)
Item 35	March 21, 2022	(1815156)
Item 36	April 13, 2022	(1821724)
Item 37	May 12, 2022	(1844057)
Item 38	May 13, 2022	(1830624)
Item 39	June 22, 2022	(1836871)
Item 40	August 24, 2022	(1850216)
Item 41	September 16, 2022	(1857986)
Item 42	September 27, 2022	(1845885)
Item 43	October 18, 2022	(1852690)
Item 44	October 21, 2022	(1864340)
Item 45	November 01, 2022	(1853559)
Item 46	November 15, 2022	(1871248)
Item 47	December 16, 2022	(1877103)
Item 48	January 11, 2023	(1883914)
Item 49	February 16, 2023	(1891727)
Item 50	March 16, 2023	(1893807)
Item 51	March 22, 2023	(1900299)
Item 52	April 11, 2023	(1888684)
Item 54	May 12, 2023	(1914254)
Item 55	June 15, 2023	(1920861)
Item 56	June 23, 2023	(1969811)
Item 57	June 28, 2023	(1904796)
Item 58	July 14, 2023	(1927845)
Item 59	August 23, 2023	(1934788)
Item 60	September 18, 2023	(1940963)
Item 61	October 20, 2023	(1947762)
Item 62	November 16, 2023	(1953451)
Item 63	November 28, 2023	(1944080)

Item 64	December 19, 2023	(1963234)
Item 65	February 13, 2024	(1950246)
Item 66	February 15, 2024	(1978890)
Item 67	March 21, 2024	(1985452)
Item 68	March 26, 2024	(1981070)
Item 69	April 16, 2024	(1991994)
Item 70	April 24, 2024	(1975497)
Item 71	May 14, 2024	(1998428)
Item 72	July 19, 2024	(2012957)
Item 73	August 19, 2024	(2018773)
Item 74	September 17, 2024	(2025558)
Item 75	October 01, 2024	(2010278)

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):

A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

1 Date: 05/31/2024 (2005390)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

F. Environmental audits:

Notice of Intent Date: 06/23/2020 (1664229)

Disclosure Date: 01/19/2021

Viol. Classification: Moderate

Citation: 30 TAC Chapter 319, SubChapter A 319.11

Rqmt Prov: PERMIT M&R Req Provision 2

Description: Failure to ensure approved test method is used for free available chlorine wastewater analysis.

Viol. Classification: Moderate

Citation: 30 TAC Chapter 305, SubChapter F 305.125(11)(C)
30 TAC Chapter 319, SubChapter A 319.7

Rqmt Prov: PERMIT M&R Req. Provision 3.c.

Description: Failure to ensure complete and accurate monitoring activities records. Specifically, time entry discrepancies and missing QA/QC records were documented.

G. Type of environmental management systems (EMSs):

N/A

H. Voluntary on-site compliance assessment dates:

N/A

I. Participation in a voluntary pollution reduction program:

N/A

J. Early compliance:

N/A

Sites Outside of Texas:

N/A

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Xing Lu, P.E.
Modeler, Water Quality Assessment Team
Water Quality Assessment Section

Date: January 23, 2025

Subject: Tenaska Frontier Partners, LTD
Permit Renewal (WQ0003996000, TX0120146)
Discharge to a tributary of Navasota River below Lake Limestone (Segment No. 1209)

This memo supersedes the memo dated September 26, 2024.

The referenced applicant is proposing to renew its permit to discharge 2.5 MGD of cooling tower blowdown, boiler blowdown, water treatment wastes, water treatment filter backwash, previously monitored effluents from internal Outfall 101 (low-volume waste sources, and water from flushing/rinsing chemical storage tanks, piping, and other equipment), and stromwater from an electric power generating plant via Outfall 001 into the watershed of Navasota River below Lake Limestone (Segment No. 1209). The facility is located in Grimes County.

This permit action is for renewal of an existing authorization. A dissolved oxygen modeling analysis was previously performed for this permit on January 31, 2019, by Mark A. Rudolph. Applicable water body uses and criteria, proposed permitted flow conditions, and modeling analytical procedures pertaining to this discharge situation remain unchanged from the previous review. Therefore, the existing effluent limits set of 30 mg/L $CBOD_5$, 3 mg/L NH_3-N and 2.0 mg/L DO is applicable to this permit.

Segment No. 1209 is not currently listed on the State's inventory of impaired and threatened waters (the **2022** Clean Water Act Section 303(d) list). However, **Gibbons Creek** is listed for elevated bacteria levels in a portion of Gibbons Creek from confluence with Navasota River upstream to Gibbons Creek Reservoir dam in Grimes County (AU 1209I_01 & 1209I_02) and depressed dissolved oxygen in a portion of Gibbons Creek from confluence with Navasota River upstream to confluence with Dry Creek in Grimes County (AU 1209I_01). This discharge is upstream of the DO impairment portion. This application is for renewal of an existing authorization, it will not represent an increase in the permitted levels of oxygen-demanding constituents to the DO impairment part.

TMDL Project No. 111 has been approved for this segment: *Two Total Maximum Daily Loads for Indicator Bacteria in the Navasota River below Lake Limestone.*

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Xing Lu, P.E.
Modeler, Water Quality Assessment Team
Water Quality Assessment Section

Date: September 26, 2024

Subject: Tenaska Frontier Partners, LTD
Permit Renewal (WQ0003996000, TX0120146)
Discharge to a tributary of Navasota River below Lake Limestone (Segment No. 1209)

The referenced applicant is proposing to renew its permit to discharge 2.5 MGD of cooling tower blowdown, boiler blowdown, water treatment wastes, water treatment filter backwash, previously monitored effluents from internal Outfall 101 (low-volume waste sources, and water from flushing/rinsing chemical storage tanks, piping, and other equipment), and stromwater from an electric power generating plant via Outfall 001 into the watershed of Navasota River below Lake Limestone (Segment No. 1209). The facility is located in Grimes County.

This permit action is for renewal of an existing authorization. A dissolved oxygen modeling analysis was previously performed for this permit on January 31, 2019, by Mark A. Rudolph. Applicable water body uses and criteria, proposed permitted flow conditions, and modeling analytical procedures pertaining to this discharge situation remain unchanged from the previous review. Therefore, the existing effluent limits set of 30 mg/L $CBOD_5$, 3 mg/L NH_3-N and 2.0 mg/L DO is applicable to this permit.

Segment No. 1209 is not currently listed on the State's inventory of impaired and threatened waters (the **2022** Clean Water Act Section 303(d) list). However, **Gibbons Creek** is listed for elevated bacteria levels in a portion of Gibbons Creek from confluence with Navasota River upstream to Gibbons Creek Reservoir dam in Grimes County (AU 1209I_01 & 1209I_02) and depressed dissolved oxygen in a portion of Gibbons Creek from confluence with Navasota River upstream to confluence with Dry Creek in Grimes County (AU 1209I_01). This discharge is upstream of the DO impairment portion. This application is for renewal of an existing authorization, it will not represent an increase in the permitted levels of oxygen-demanding constituents to the DO impairment part.

TMDL Project No. 111 has been approved for this segment: *Two Total Maximum Daily Loads for Indicator Bacteria in the Navasota River below Lake Limestone*. In addition*, TMDL Project No. 85 has been approved for Caters Creek Watershed: Three Total Maximum Daily Loads for Indicator Bacteria in the Carters Creek Watershed.*

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Jenna R. Lueg, Standards Implementation Team
Water Quality Assessment Section
Water Quality Division

Date: 9/17/2024

Subject: Tenaska Frontier Partners, LTD; Permit no. WQ0003996000
Renewal; Application received 7/26/2024

The discharge route for the above referenced permit is 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 in Segment 1209 of the Brazos River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 Texas Administrative Code (TAC) §307.10) for Segment 1209 are primary contact recreation, public water supply, high aquatic use, and 5.0 mg/L dissolved oxygen.

Since the discharge is directly to an unclassified water body, the permit action was reviewed in accordance with 30 Texas Administrative Code §307.4(h) and (l) of the 2022 Texas Surface Water Quality Standards and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. Based on available information, a preliminary determination of the aquatic life uses in the area of the discharge impact has been performed and the corresponding dissolved oxygen criterion assigned.

Unnamed tributary of Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.
Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.

The Houston toad (*Bufo houstonensis* Sanders), an endangered aquatic-dependent species of critical concern, occurs within the Segment 1209's watershed as well as the United States Geological Survey hydrologic unit code 12070103. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only consider aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. Species distribution information for the Segment 1209 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Running Creek in Leon County, which is farther up the watershed from the facility associated with this

permit action. Based upon this information, it is determined that the facility's discharge is not expected to impact the Houston toad. The permit does not require EPA review with respect to the presence of endangered or threatened species.

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Jenna R. Terven, Standards Implementation Team
Water Quality Assessment Section
Water Quality Division

Thru: Peter Schaefer, Standards Implementation Team Leader
Water Quality Assessment Section
Water Quality Division

Date: 6/20/2024

Subject: Tenaska Frontier Partners, LTD; Permit no. WQ0003996000
Major Amendment; Application received 7/26/2024

This review supersedes review form December 6, 2024.

The discharge route for the above referenced permit is 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 in Segment 1209 of the Brazos River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 Texas Administrative Code (TAC) §307.10) for Segment 1209 are primary contact recreation, public water supply, high aquatic use, and 5.0 mg/L dissolved oxygen.

A copper Water Effects Ratio value of 2.64 is applicable to this facility and can be found in Appendix E of the 2022 Texas Surface Water Quality Standards.

Since the discharge is directly to an unclassified water body, the permit action was reviewed in accordance with 30 Texas Administrative Code §307.4(h) and (l) of the 2022 Texas Surface Water Quality Standards and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. Based on available information, a preliminary determination of the aquatic life uses in the area of the discharge impact has been performed and the corresponding dissolved oxygen criterion assigned.

Unnamed tributary of Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.
Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.

In accordance with 30 Texas Administrative Code §307.5 and the TCEQ *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. This review has

preliminarily determined that no water bodies with exceptional, high, or intermediate aquatic life uses are present within the stream reach assessed; therefore, no Tier 2 degradation determination is required. No significant degradation of water quality is expected in water bodies with exceptional, high, or intermediate aquatic life uses downstream, and existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

The Houston toad (*Bufo houstonensis* Sanders), an endangered aquatic-dependent species of critical concern, occurs within the Segment 1209's watershed as well as the United States Geological Survey hydrologic unit code 12070103. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998, update). To make this determination for TPDES permits, TCEQ and EPA only consider aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. Species distribution information for the Segment 1209 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Running Creek in Leon County, which is farther up the watershed from the facility associated with this permit action. Based upon this information, it is determined that the facility's discharge is not expected to impact the Houston toad. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Based on the attached screening, no additional limits or monitoring requirements are needed for TDS, chloride, or sulfate. Regarding the primary screening for the immediate receiving water, the unnamed tributary of Sulphur Creek, chloride and sulfate screening are not needed based on the following:

Page 174 of the Procedures to Implement the Texas Surface Water Quality Standards (2010) (IPs) states that screening for TDS is usually sufficient unless the ionic ratios of chloride or sulfate are out of balance. It has been demonstrated that ionic imbalances cause WET testing failures by overwhelming the osmotic capacities of the organisms being tested. Consistent with TCEQ's EPA-approved WET testing procedures, a reasonable potential (RP) determination was made for this facility based on the last three years of WET testing data. A determination of no RP was made based on those results. Therefore, it can be concluded that the ionic ratios of dissolved solids are not skewed and are protective of aquatic life. Furthermore, consistent with our dissolved solids procedures as written in the TCEQ IPs, screening for chloride and sulfate is not required.

Note that additional dissolved solids screening was performed for the classified segment, Navasota River Below Lake Limestone (1209), including TDS, chloride, and sulfate, to ensure that segment numerical criteria would not be exceed at the segment. Based on this additional screening, segment criteria will be maintained and protected, therefore no additional limits or monitoring requirements are needed for TDS, chloride, or sulfate.

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Michael B. Pfeil, Standards Implementation Team
Water Quality Assessment Section
Water Quality Division

Date: September 27, 2024

Subject: Tenaska Frontier Partners
Tenaska Frontier GS
Permit No. WQ0003996000

WHOLE EFFLUENT TOXICITY (WET) TESTING (BIOMONITORING)

The following information applies to Outfall 001. We recommend freshwater 48-hour acute testing and 24-hour acute testing. For both tests, we recommend a water flea (*Ceriodaphnia dubia* or *Daphnia pulex*) and the fathead minnow (*Pimephales promelas*) as test species and a testing frequency of once per quarter. We recommend a dilution series of 32%, 42%, 56%, 75%, and 100% with a critical dilution of 100%. The critical dilution is in accordance with the "Aquatic Life Criteria" section of the "Water Quality Based Effluent Limitations/Conditions" section.

For 24-hour acute testing, we recommend a testing frequency of once per six months. In the past three years, the permittee has performed twelve 24-hour acute tests, with zero demonstrations of significant lethality (i.e., zero failures).

REASONABLE POTENTIAL (RP) DETERMINATION

In the past three years, the permittee has performed nine 48-hour acute tests, with zero demonstrations of significant toxicity (i.e., zero failures).

A reasonable potential determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of 48-hour acute WET testing. This determination was performed in accordance with the methodology outlined in the TCEQ letter to the EPA dated December 28, 2015, and approved by the EPA in a letter dated December 28, 2015.

With zero failures, a determination of no RP was made and WET limits are not required. Both test species may be eligible for the testing frequency reduction after one year of quarterly testing.

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Jenna R. Lueg, Standards Implementation Team
Water Quality Assessment Section
Water Quality Division

Date: 12/6/2024

Subject: Tenaska Frontier Partners, LTD; Permit no. WQ0003996000
Renewal; Application received 7/26/2024

This review supersedes review form September 17, 2024.

The discharge route for the above referenced permit is 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 in Segment 1209 of the Brazos River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 Texas Administrative Code (TAC) §307.10) for Segment 1209 are primary contact recreation, public water supply, high aquatic use, and 5.0 mg/L dissolved oxygen.

Since the discharge is directly to an unclassified water body, the permit action was reviewed in accordance with 30 Texas Administrative Code §307.4(h) and (l) of the 2022 Texas Surface Water Quality Standards and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. Based on available information, a preliminary determination of the aquatic life uses in the area of the discharge impact has been performed and the corresponding dissolved oxygen criterion assigned.

Unnamed tributary of Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.
Sulphur Creek; minimal aquatic life use, 2.0 mg/L dissolved oxygen.

The Houston toad (*Bufo houstonensis* Sanders), an endangered aquatic-dependent species of critical concern, occurs within the Segment 1209's watershed as well as the United States Geological Survey hydrologic unit code 12070103. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only consider aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. Species distribution information for the Segment 1209 watershed is provided by the USFWS and documents the toad's presence solely in the vicinity of Running

Creek in Leon County, which is farther up the watershed from the facility associated with this permit action. Based upon this information, it is determined that the facility's discharge is not expected to impact the Houston toad. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Based on the attached screening, no additional limits or monitoring requirements are needed for TDS, chloride, or sulfate. Regarding the primary screening for the immediate receiving water, the unnamed tributary of Sulphur Creek, chloride and sulfate screening are not needed based on the following:

Page 174 of the Procedures to Implement the Texas Surface Water Quality Standards (2010) (IPs) states that screening for TDS is usually sufficient unless the ionic ratios of chloride or sulfate are out of balance. It has been demonstrated that ionic imbalances cause WET testing failures by overwhelming the osmotic capacities of the organisms being tested. Consistent with TCEQ's EPA-approved WET testing procedures, a reasonable potential (RP) determination was made for this facility based on the last three years of WET testing data. A determination of no RP was made based on those results. Therefore, it can be concluded that the ionic ratios of dissolved solids are not skewed and are protective of aquatic life. Furthermore, consistent with our dissolved solids procedures as written in the TCEQ IPs, screening for chloride and sulfate is not required.

Note that additional dissolved solids screening was performed for the classified segment, Navasota River Below Lake Limestone (1209), including TDS, chloride, and sulfate, to ensure that segment numerical criteria would not be exceed at the segment. Based on this additional screening, segment criteria will be maintained and protected, therefore no additional limits or monitoring requirements are needed for TDS, chloride, or sulfate.

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate
Menu 1 - Discharge to an Intermittent Stream

Applicant Name:	**Tenaska Frontier Partners, LTD**
Permit Number, Outfall:	**03996-000**
Segment Number:	**1209**

Enter values needed for screening:			**Data Source (edit if different)**
TDS CC - segment criterion - TDS	600	mg/L	2010 TSWQS, Appendix A
Cl CC - segment criterion - chloride		mg/L	2010 TSWQS, Appendix A
SO4 CC - segment criterion - sulfate		mg/L	2010 TSWQS, Appendix A
TDS CE - average effluent concentration - TDS	1840	mg/L	Permit application
Cl CE - average effluent concentration - chloride		mg/L	Permit application
SO4 CE - average effluent concentration - sulfate		mg/L	Permit application

TDS Screening

The TDS screening value is determined by first calculating an initial TDS concentration, C_{TDS}, as follows:

C_{TDS} = (TDS CC / 500 mg/L) * 2,500 mg/L

Where:	C_{TDS} = TDS concentration used to determine Csv screening value
	TDS CC = TDS criterion at the first downstream segment
	500 mg/L = the median TDS concentration in Texas streams
	2,500 mg/L = the minimum TDS screening value

C_{TDS} = 3000 mg/L

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate
Menu 1 - Discharge to an Intermittent Stream

The next step is to use the initial C_{TDS} to set the actual TDS screening value, TDS Csv, using the following table:

If C_{TDS}		Then TDS Csv
≤ 2,500 mg/L	=	2,500 mg/L
> 2,500 mg/L but ≤ 6,000 mg/L	=	C_{TDS}
> 6,000 mg/L	=	6,000 mg/L

Some specific types of intermittent streams have alternative screening values (Csv):

Specific Type of Intermittent Stream	If C_{TDS} is	Default Csv =
Dry except for short-term flow in immediate response to rainfall.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C_{TDS}
Constructed ditch conveying stormwater and wastewater, considered water in the state.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C_{TDS}
Within 3 miles of tidal waters.	—	6,000 mg/L

Once TDS Csv is established, the next step is to compare the effluent TDS concentration, TDS CE, to the screening value. Control measures, which may include effluent limitations, are considered for TDS if the effluent TDS is greater than the screening value.

Values needed for Screening			Data Source
TDS CE - average effluent TDS concentration	1840	mg/L	Permit application
TDS Csv - TDS screening value	**3000**	mg/L	Determined above

No control measures needed if:	1840	≤	3000
Consider control measures if:	1840	>	3000

No control measures needed for TDS

Before establishing effluent limitations for TDS, review the "Final Evaluation and Additional Considerations for TDS" in the "Procedures to Implement the Texas Water Quality Standards." The specific circumstances may warrant an instream monitoring requirement or a source reduction plan rather than effluent limitations.

When effluent limitations are established in the permit, the daily average TDS limit is typically set equal to the TDS screening value. The daily maximum TDS limit is calculated as 2.12 times the daily average limit.

Total Dissolved Solids

Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate
Menu 1 - Discharge to an Intermittent Stream

Chloride Screening

If TDS limits are necessary or there are concerns about chloride, additional screening can be performed for chloride. First calculate the screening value for chloride, Cl Csv, as follows:

Cl Csv = (TDS Csv /TDS CC) * Cl CC

Where:	Cl Csv = chloride screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	Cl CC - chloride criterion at the first downstream segment

Cl Csv = **0** mg/L

Once the Cl Csv is established, the next step is to compare the effluent chloride concentration, Cl CE, to the screening value. Control measures, which may include effluent limitations, are considered for chloride if the effluent chloride is greater than the screening value.

Values needed for Screening			Data Source
Cl CE - average effluent chloride concentration	0	mg/L	Permit application
Cl Csv - chloride screening value	0	mg/L	Determined above

No control measures needed if:	0	≤	0
Consider control measures if:	0	>	0

No control measures needed for chloride

Before establishing effluent limitations for chloride, review the "Final Evaluation and Additional Considerations for TDS" in the "Procedures to Implement the Texas Water Quality Standards." The specific circumstances may warrant an instream monitoring requirement or a source reduction plan rather than effluent limitations.

When effluent limitations are established in the permit, the daily average chloride limit is typically set equal to the chloride screening value. The daily maximum chloride limit is calculated as 2.12 times the daily average limit.

Chloride

Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate
Menu 1 - Discharge to an Intermittent Stream

Sulfate Screening

If TDS limits are necessary or there are concerns about sulfate, additional screening can be performed for sulfate. First calculate the screening value for sulfate, SO4 Csv, as follows:

SO4 Csv = (TDS Csv /TDS CC) * SO4 CC

Where:	SO4 Csv = sulfate screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	SO4 CC - sulfate criterion at the first downstream segment

SO4 Csv = **0** mg/L

Once the SO4 Csv is established, the next step is to compare the effluent sulfate concentration, SO4 CE, to the screening value. Control measures, which may include effluent limitations, are considered for sulfate if the effluent sulfate is greater than the screening value.

Values needed for Screening			Data Source
SO4 CE - average effluent sulfate concentration	0	mg/L	Permit application
SO4 Csv - sulfate screening value	0	mg/L	Determined above

No control measures needed if:	0	≤	0
Consider control measures if:	0	>	0

No control measures needed for sulfate

Before establishing effluent limitations for sulfate, review the "Final Evaluation and Additional Considerations for TDS" in the "Procedures to Implement the Texas Water Quality Standards." The specific circumstances may warrant an instream monitoring requirement or a source reduction plan rather than effluent limitations.

When effluent limitations are established in the permit, the daily average sulfate limit is typically set equal to the sulfate screening value. The daily maximum sulfate limit is calculated as 2.12 times the daily average limit.

Sulfate

Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

TCEQ Interoffice Memorandum

To: Industrial Permits Team
Wastewater Permitting Section

From: Sarah Musgrove, Water Quality Assessment Team
Water Quality Assessment Section

Date: September 24, 2024

Subject: Tenaska Frontier Partners Ltd.
Wastewater Permit No. WQ003996000, Renewal
Critical Conditions Recommendation Memo

The following information applies to **Outfall 001**.

The TexTox menu number is **1** for an intermittent water body.

This discharge is to an unnamed tributary of Sulphur Creek.

Segment No.	1209
Critical Low Flow [7Q2] (cfs)	0
% Effluent for Acute Aquatic Life	100

Chronic aquatic life criteria do not apply. Human health criteria do not apply.

There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

OUTFALL LOCATION [1]

Outfall Number	Latitude	Longitude
001	30.624059 N	95.919917 W

[1] Latitude and Longitude values are approximations of the location for administrative purposes.