

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

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Rebecca Huerta
City Secretary

DESCRIPTION OF APPLICATION

Applicant: City of Corpus Christi; Texas Pollutant Discharge Elimination System (TPDES)
Permit No. WQ0005289000 (EPA I.D. No. TX0139874)

Regulated activity: Industrial wastewater permit

Type of application: New permit

Request: New permit

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 has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit.

PROJECT DESCRIPTION AND LOCATION

The applicant proposes to operate Inner Harbor Desalination Plant, a seawater desalination facility.

The wastewater system consists of taking raw seawater and producing potable water. The wastestreams will be generated by pretreatment, membrane filtration, and desalination processes. The wastestreams from these processes will be comingled for discharge through Outfall 001. The initial phase of producing water is at 20 million gallons per day (MGD) with the final phase increase to 30 MGD.

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 facility for treatment and disposal.

The facility is located at the intersection of Nueces Bay Boulevard and West Broadway Street, in the City of Corpus Christi, Nueces County, Texas 78401.

Discharge Route and Designated Uses

The effluent is discharged directly to Corpus Christi Inner Harbor in Segment No. 2484 of the Bays and Estuaries. The designated uses for Segment No. 2484 are non-contact recreation and intermediate 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.

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Antidegradation Review

In accordance with 30 TAC §307.5 and TCEQ's *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. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Corpus Christi Inner Harbor, which has been identified as having intermediate aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

Summary of Antidegradation Review

Tier I - Existing uses and water quality sufficient to protect those existing uses must be maintained. The existing uses of the Corpus Christi Inner Harbor are Intermediate Aquatic Life Unit (ALU), non-contact recreation and additional uses where achievable in 30 TAC § 307.7(b)(5) such as navigation, seagrass propagation, and wetland water quality. The proposed discharge will be produced by removing salts and other constituents from ambient seawater using reverse osmosis. The proposed discharge will consist primarily of concentrated seawater. Of interest with this discharge is the salinity of the effluent and any potential effects on aquatic life and the salinity gradient in the receiving waters. The Texas Surface Water Quality Standards (TSWQS) do not have numeric criteria for salinity in tidal waters. However, narrative general criteria found in 30 TAC § 307.4 do apply. Narrative criteria where numeric criteria have not been established may include materials, nutrients, and salinity, (concentrations and relative ratios of dissolved minerals such as chloride, sulfate and TDS), The narrative criteria may also include, aesthetic parameters such as taste and odor, suspended solids, turbidity, foam and froth, and oil and grease. TSWQS provided that salinity gradients in estuaries must be maintained to support attainable estuarine-dependent aquatic life uses.¹

Aquatic life- Per TCEQ's diffuser memo, the maximum percent effluent at the edge of the aquatic life mixing zone (ALMZ) is 6.62%. Using this information, ambient water quality data, and the highest expected effluent salinity (at 50% recovery), salinity at the edge of the ALMZ was calculated to be 33.4 ppt with a rise over ambient Inner Harbor salinities of 1.8 ppt. This is well within salinity tolerances of sensitive red drum larva (20-35 ppt) and therefore not acutely toxic to sensitive aquatic life. *Salinity Tolerance in Larvae of Spotted Seatrout, Red Drum and Atlantic Croaker, Holt and Banks 1989* and more recent bioassays performed by Dr. Nielsen (U.T. Marine Science Institute Port Aransas) as evidence submitted for SOAH hearing for another desalination facility (TPDES No. WQ0005253000). Other factors to consider are that the calculations and comparisons focus only on salinities at the edge of the ALMZ, and that mixing of the effluent with the receiving water will continue beyond the mixing zone, further pushing the mixed water salinity concentrations closer to background concentrations.

Note that as indicated by the designated intermediate aquatic life use for the Inner Harbor, any sensitive aquatic species that may permanently or temporarily reside in the Inner Harbor, including red drum larvae, are expected to be very low in abundance. This is largely due to the fact that the Inner Harbor is a man-made ship channel and harbor area with a low diversity of aquatic habitats and is geographically situated farther away from more suitable habitats for sensitive species such as gulf passes, bays, and estuaries.

¹ 30 TAC §307.4(g)(3)

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Salinity gradient- In a response to a TCEQ request for information, the applicant performed CORMIX modeling taking into consideration other permitted discharge in the Corpus Christi Bay area. The results indicate that the overall salinity at the Nueces Bay Power Station (located within the Corpus Christi Inner Harbor which discharges once-through cooling water from the Inner Harbor to Nueces Bay) would be increased by 0.38 ppt. These results indicate there would be minimal effects to the salinity gradient of Nueces Bay and surrounding bay and estuary system.

Tier II- No activities subject to regulatory action that would cause degradation of waters that exceed fishable/swimmable quality are allowed unless it can be shown to the commission's satisfaction that the lowering of water quality is necessary for important economic or social development. Degradation is defined as a lowering of water quality by more than a de minimis extent, but not to the extent that an existing use is impaired. Water quality sufficient to protect existing uses must be maintained. Fishable/swimmable waters are defined as waters that have quality sufficient to support propagation of indigenous fish, shellfish, terrestrial life, and recreation in and on the water.

Water Quality- As indicated previously, calculated salinities at the edge of the ALMZ using the highest expected effluent salinities were well within salinity tolerances of sensitive red drum larvae and not expected to have acute or chronic impacts to red drum larvae or other sensitive aquatic life. This is based on *Salinity Tolerance in Larvae of Spotted Seatrout, Red Drum and Atlantic Croaker, Holt and Banks 1989*, and more recent bioassays performed by Dr. Nielsen (U.T. Marine Science Institute Port Aransas) as evidence submitted for the contested case hearing for another desalination facility (TPDES No. WQ0005253000). Publication of Dr. Nielsen's article is pending as of October 2024.

Nutrients- The effluent is not expected to include significant levels of nutrients. Therefore, nutrient limits are not included in this permit.

Dissolved oxygen modeling- As stated in the dissolved oxygen modeling review memo, the proposed discharge is not expected to contain significant levels of oxygen-demanding constituents. Dissolved oxygen concentrations in the receiving waters are expected to consistently be protected and maintained above the criterion established for the Corpus Christi Inner Harbor (3.0 mg/L).

Toxic criteria- The permit writer will screen the application using the effluent percentages provided in the Critical Conditions memo to determine compliance with TSWQS, and will include permit limits or monitoring as necessary based on TexTox screening calculations. Within 90 days of commencement of discharging, the applicant will be required to submit effluent data. This data will be run through TexTox calculations by the permit writer to ensure compliance with TSWQS. Based on the technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements or both.

Salinity Modeling

TCEQ and the applicant performed multiple analyses to investigate potential degradation from the proposed discharge, including consideration of potential impacts from other proposed desalination discharges. Based on these analyses, TCEQ concluded that the proposed discharge to the Inner Harbor will comply with water quality standards and antidegradation requirements. A summary of

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these evaluations is provided below. The TCEQ therefore does not see a need to employ an additional water quality modeling tool for this proposed discharge.

Summary of Salinity Modeling Performed with Consideration of Cumulative Impacts

Cornell Mixing Zone Expert System (CORMIX version 12.01.0) modeling was performed by the Applicant for the Corpus Christi Inner Harbor (Segment 2484) at 40% and 50% product water recovery rates and production capacity values at 20 and 30 MGD, equating to four different corresponding brine effluent discharge values of 23.45 MGD, 34.31 MGD, 35.17 MGD, and 51.47 MGD. From this modeling, the applicant calculated several types of water quality data applicable at the edges of various mixing zones (zone of initial dilution, aquatic life mixing zone, and human health mixing zone). This information incorporates ambient salinity, effluent salinity, ambient temperature, and effluent temperature, and provides percent effluent predictions by which net increase in salinity in parts per thousand (ppt), percent salinity increase, and average salinity (which includes mixed effluent and ambient water) can be derived under different combinations of ambient and effluent conditions. This analysis was done for all three mixing zones for two different scenarios. The initial analysis (scenario) included only the effects of the Corpus Christi Inner Harbor Desalination brine discharge itself on the salinity gradient within Inner Harbor using CORMIX modeling. The second analysis added an examination of potential cumulation salinity gradient effects in the Inner Harbor taking both the Corpus Christi Inner Harbor Desalination Plant and Corpus Christi Polymers (CC Polymers) (WQ0005019000) discharges into account, using derived from an existing TCEQ QUAL-TX modeling of the Inner Harbor that included the CC Polymers discharge to supplement the CORMIX results.

Using this combined information, mass balance analyses were performed to determine the long-term increase in ambient salinity expected at the Nueces Bay Power Station (NBPS) (WQ0001240000) cooling water intake. This NBPS intake is located in the Corpus Christi Inner Harbor and has a corresponding outfall that discharges into Nueces Bay (Segment 2482). The mass balance calculations indicate that at the full permitted discharge the salinity increase of 0.38 ppt is predicted at the NBPS intake.

For Corpus Christi Bay (Segment 2481), a series of mass balance equations were used to analyze potential effects of the proposed discharge on the salinity gradient within Corpus Christi Bay. Two scenarios were run. One with no return water and one with return water. In this case, return water is the desalination product water after it has been used by the end customer, treated at a wastewater treatment facility and discharged back into the bay. The TDS concentration of the return water was assumed to be 5,500 milligrams per liter (mg/L) based on effluent quality of Flint Hills Resources (WQ0000457000) representing a typical discharge expected from an end product water user. The results of these mass balance calculations demonstrate that a salinity increase in Corpus Christi Bay of 0.1831 ppt is expected with no return water, and an increase of 0.0905 ppt with return water. This demonstrates minimal effects on the salinity gradient and overall TDS values in Corpus Christi Bay.

Using all of this information, the applicant included consideration of the Port of Corpus Christi Authority (POCCA) desalination discharge (WQ0005253000). The Applicant did not have access to the QUAL-TX files for POCCA discharge, so it based its evaluation on the permit conditions in the permit issued to POCCA, which includes percent effluent at the various mixing zones. Based on this information, the applicant concluded that cumulative effects, that include CC Polymers and POCCA permitted discharges, would be minimal.

Endangered Species Review

The discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the TPDES program September 14, 1998, October 21, 1998

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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. Though the piping plover, *Charadrius melodus* Ord, can occur in Nueces County, the discharge is not to a watershed of high priority per Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Impaired Water Bodies

Segment No. 2484 is currently listed on the state's inventory of impaired and threatened waters, the 2022 CWA §303(d) list. The listing is specifically for copper in water from U.S. Highway 181 to the Viola Turning Basin (entire segment) (AU 2484_01). The desalination process does not add additional copper to the segment. Therefore, it will not cause or contribute to the existing copper impairment.

Completed Total Maximum Daily Loads (TMDLs)

There are no completed TMDLs for Segment No. 2484.

Dissolved Oxygen

The proposed discharge is not expected to contain significant levels of oxygen-demanding constituents. Dissolved oxygen concentrations in the receiving waters are expected to consistently be protected and maintained above the criterion established for Corpus Christi Inner Harbor (3.0 mg/L).

Diffuser Analysis

Outfall 001 will consist of a submerged multi-port diffuser, located approximately 58 feet from the shoreline.

A mixing analysis of the discharge from Outfall 001 was conducted using the CORMIX 12.0GTD (Version 12.0.1.0) modeling software. This analysis relies, in part, on the documents titled *Technical Memorandum: City of Corpus Christi Desalination Study - Concentrate Modeling at Inner Harbor Channel - TPDES Permit No.: WQ0005289000* (July 26, 2021); *RFI Response Report: City of Corpus Christi TPDES Permit Application No. WQ0005289000 Response to the Request for Information (RFI)* (April 10, 2023); and *RFI Response Report: City of Corpus Christi TPDES Permit Application No. WQ0005289000 REVISION to Response to the Request for Information (RFI)* dated April 6, 2023 (May 8, 2023). Information contained in those documents was used in the development of the TCEQ CORMIX analysis. Based on this initial mixing analysis, the following critical effluent percentages were recommended:

Initial Phase - 20 MGD of produced water uses approximately 55.4 MGD of raw water and results in approximately 34.3 MGD of discharge at 40% reverse osmosis (RO) recovery. 20 MGD of produced water uses approximately 44.3 MGD of raw water and results in approximately 23.5 MGD of discharge at 50% RO recovery,

Chronic Aquatic Life Effluent Mixing Zone %:	20 MGD at 40% RO for 6.26 %
	20 MGD at 50% RO for 6.62 %
Acute Aquatic Life Effluent Zone of Initial Dilution %:	20 MGD at 40% RO for 8.76 %
	20 MGD at 50% RO for 9.26 %
Human Health Effluent %:	20 MGD at 40% RO for 4.87 %
	20 MGD at 50% RO for 5.15 %

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Final Phase - 30 MGD of produced water uses approximately 83.1 MGD of raw water and results in approximately 51.5 MGD of discharge at 40% RO recovery. 30 MGD of produced water uses approximately 66.5 MGD of raw water and results in approximately 35.2 MGD of discharge at 50% RO recovery.

Chronic Aquatic Life Effluent Mixing Zone %:	30 MGD at 40% RO for 6.08 %
	30 MGD at 50% RO for 6.24 %
Acute Aquatic Life Effluent Zone of Initial Dilution %:	30 MGD at 40% RO for 8.50 %
	30 MGD at 50% RO for 8.74 %
Human Health Effluent %:	30 MGD at 40% RO for 4.72 %
	30 MGD at 50% RO for 4.85 %

The highest predicted percent effluent results should be used for the general assessment of permit effluent limits. However, since the percent effluent predictions are higher during the Initial phase (20 MGD production capacity) than they are for the Ultimate phase (30 MGD production capacity), the percent effluent values used for permitting purposes may be partitioned separately for these two permit phases (though it should be noted that future reviews, once discharge commences, will also include CORMIX model runs performed using median discharge flows). These percent effluent values are also predicted to be the maximum effluent percentages at the edges of the regulatory mixing zones for the assessment of potential concerns about salinity impacts related to this discharge. It is recommended that only the highest percent effluent predictions for each regulatory mixing zone be used for screening purposes and for the derivation of effluent limits, though again, those percent effluent values may be applied with more specificity to correspond to the two different permit phases (production capacities).

SUMMARY OF EFFLUENT DATA

Self-reporting data is not available because the facility has not been constructed.

WHOLE EFFLUENT TOXICITY (WET) TESTING (BIOMONITORING)

Since this application is for an EPA-minor permit, WET testing is typically not recommended. However, the applicant requested chronic WET testing only. Therefore, 24-hour acute testing is not included.

The following information applies to Outfall 001 for marine chronic testing. We recommend the mysid shrimp (*Americamysis bahia*) and the inland silverside (*Menidia beryllina*) as test species and a chronic testing frequency of once per quarter for both test species. We recommend a dilution series of 3%, 5%, 6.2%, 6.6%, and 11% with a critical dilution of 6.6% for the interim phase and 6.2% for the ultimate (final) phase. The critical dilution is in accordance with the "Aquatic Life Criteria" section of the "Water Quality Based Effluent Limitations/Conditions" section.

This is a new facility that has yet to be constructed. Therefore, there is no WET testing history.

REASONABLE POTENTIAL (RP) DETERMINATION

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

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

DRAFT PERMIT CONDITIONS

The draft permit authorizes the discharge of water treatment wastes at a daily average flow not to exceed 34.3 MGD initial phase and 51.5 MGD final phase via Outfall 001.

Effluent limitations are established in the draft permit as follows:

Outfall	Pollutant	Daily Average		Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
001 Initial	Flow	34.3 MGD		41 MGD	
	Total Suspended Solids (TSS)	Report	Report	Report	Report
	Total Dissolved Solids (TDS)	Report	Report	Report	Report
	Chloride	Report	Report	Report	Report
	Sulfate	Report	Report	Report	Report
	Salinity	Report	Report, ppt	Report	Report, ppt
	pH (Standard Units, SU)	6.5 SU, min		9.0 SU	

Outfall	Pollutant	Daily Average		Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
001 Final	Flow	51.5 MGD		62 MGD	
	TSS	Report	Report	Report	Report
	TDS	Report	Report	Report	Report
001 Final	Chloride	Report	Report	Report	Report
	Sulfate	Report	Report	Report	Report
	Salinity	Report	Report, ppt	Report	Report, ppt
	pH (Standard Units, SU)	6.5 SU, min		9.0 SU	

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	27.814363 N	97.418753 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 (ELGs), where applicable, or on best professional judgment (BPJ) in the absence of guidelines.

The discharge of water treatment wastes resulting from desalination processes is not subject to any ELGs. Monitoring and reporting requirements for TSS have been included in the draft permit at Outfall 001 based upon BPJ due to the potential for elevated levels of suspended solids to be present in the discharge.

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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 October 18, 2023. 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.

No analytical data was submitted with the application because the facility has not been constructed. Other Requirement No. 8 has been added to the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Based on a review of the data, the permit may be reopened to add limitations or monitoring requirements, if needed.

Total Dissolved Solids (TDS), Chloride, and Sulfate Screening

Segment No. 2484, which receives the discharge from this facility, does not have criteria established for TDS, chloride, or sulfate in 30 TAC Chapter 307; therefore, no screening was performed for TDS, chloride, or sulfate in the effluent. However, the applicant performed extensive analyses and modeling to conclude that the discharge would not impact salinity gradients in the surrounding waters and that survival, growth, and reproduction of aquatic life would not be significantly impacted and provided their report as part of their application. In addition, monitoring and reporting requirements for TDS, chloride, and sulfate have been included in the draft permit at Outfall 001 based on the presence of water treatment wastes which will include elevated levels of these constituents in the proposed discharge. Other Requirement No. 8 has been added to the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Due to the nature of water treatment wastes, TDS, chloride, and sulfate monitoring is initially placed in the draft. Based on a review of the data, the permit may be reopened to add limitations or monitoring requirements, if needed.

pH Screening

The permit includes pH limits of 6.5 – 9.0 SU at Outfall 001, which discharges directly into Corpus Christi Inner Harbor, Segment No. 2484. The segment has these same pH standards and thus limits are protective of the segment criteria.

SUMMARY OF CHANGES FROM APPLICATION

No changes were made from the application.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on January 22, 2020, and additional information received on March 17 and 30, 2020; April 3, 8, 9, 14, 24, 27, and 28, 2020; May 4, 14, 19, and 21, 2020; April 10, 2023; and May 8, 2023.
2. TCEQ Rules.
3. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 1, 2018, as approved by EPA Region 6.
4. *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.

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5. *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.
6. *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.
7. *Procedures to Implement the Texas Surface Water Quality Standards* (IPs), Texas Commission on Environmental Quality, June 2010, as approved by EPA Region 6.
8. *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.
9. Memos from the Standards Implementation Team and Water Quality Assessment Team of the Water Quality Assessment Section of the TCEQ, including their diffuser memo.
10. *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.
11. EPA Effluent Guidelines: N/A.
12. Consistency with the Coastal Management Plan: The executive director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the General Land Office and has determined that the action is consistent with the applicable CMP goals and policies.
13. 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).
14. 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).
15. Letter dated April 10, 2023, from Katie Leatherwood, Environmental Scientist, Freese and Nichols, Inc., to TCEQ, City of Corpus Christi TPDES Permit Application No. WQ0005289000 Response to the Request for Information, with corrected table 1-2 on May 8, 2023.

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.

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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 Thomas E. Starr at (512) 239-4570.

Thomas E. Starr
Thomas E. Starr, P.E.

December 9, 2024
Date

Appendix A Calculated Water Quality-Based Effluent Limits

TEXTOX MENU #5 - BAY OR WIDE TIDAL RIVER

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

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Saltwater Aquatic Life

Table 2, 2018 Texas Surface Water Quality Standards for Human Health

"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	The City of Corpus Christi
TPDES Permit No:	WQ0005289000
Outfall No:	001 Initial
Prepared by:	Thomas Starr, P.E.
Date:	November 27, 2023

DISCHARGE INFORMATION

Receiving Waterbody:	Corpus Christi Inner Harbor
Segment No:	2484
TSS (mg/L):	9
Effluent Flow for Aquatic Life (MGD)	N/A
% Effluent for Chronic Aquatic Life (Mixing Zone):	6.62
% Effluent for Acute Aquatic Life (ZID):	9.26
Oyster Waters?	no
Effluent Flow for Human Health (MGD):	N/A
% Effluent for Human Health:	5.15

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

<i>Estuarine Metal</i>	<i>Intercept</i>		<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio</i>	
	<i>(b)</i>	<i>Slope (m)</i>				<i>(WER)</i>	<i>Source</i>
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Cadmium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (total)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (trivalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	13489.63	0.881		1.00	Assumed
Lead	6.06	-0.85	162181.01	0.381		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	5.86	-0.74	131825.67	0.431		1.00	Assumed
Zinc	5.36	-0.52	69183.10	0.591		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	SW Acute	SW Chronic	WLAa (µg/L)	WLAc (µg/L)	LTAa (µg/L)	LTAc (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
	Criterion (µg/L)	Criterion (µg/L)						
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	14.0	N/A	4.49	N/A	6.60	13.9
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	1609	1178	515	719	756	1601
Cadmium	40.0	8.75	432	132	138	80.6	118	250
Carbaryl	613	N/A	6620	N/A	2118	N/A	3113	6588
Chlordane	0.09	0.004	0.972	0.0604	0.311	0.0369	0.0541	0.114
Chlorpyrifos	0.011	0.006	0.119	0.0906	0.0380	0.0553	0.0558	0.118
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	11771	749	3767	457	671	1421
Copper	13.5	3.6	165	61.5	52.8	37.5	55.1	116
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	5.6	5.6	60.5	84.6	19.4	51.6	28.4	60.1
4,4'-DDT	0.13	0.001	1.40	0.0151	0.449	0.00921	0.0135	0.0286
Demeton	N/A	0.1	N/A	1.51	N/A	0.921	1.35	2.86
Diazinon	0.819	0.819	8.84	12.4	2.83	7.55	4.16	8.80
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	7.67	0.0302	2.45	0.0184	0.0270	0.0573
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (alpha)	0.034	0.009	0.367	0.136	0.117	0.0829	0.121	0.257
Endosulfan II (beta)	0.034	0.009	0.367	0.136	0.117	0.0829	0.121	0.257
Endosulfan sulfate	0.034	0.009	0.367	0.136	0.117	0.0829	0.121	0.257
Endrin	0.037	0.002	0.400	0.0302	0.128	0.0184	0.0270	0.0573
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.151	N/A	0.0921	0.135	0.286
Heptachlor	0.053	0.004	0.572	0.0604	0.183	0.0369	0.0541	0.114
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	1.73	N/A	0.553	N/A	0.812	1.71
Lead	133	5.3	3729	208	1193	127	186	394
Malathion	N/A	0.01	N/A	0.151	N/A	0.0921	0.135	0.286
Mercury	2.1	1.1	22.7	16.6	7.26	10.1	10.6	22.5
Methoxychlor	N/A	0.03	N/A	0.453	N/A	0.276	0.406	0.859
Mirex	N/A	0.001	N/A	0.0151	N/A	0.00921	0.0135	0.0286
Nickel	118	13.1	1274	198	408	121	177	375
Nonylphenol	7	1.7	75.6	25.7	24.2	15.7	23.0	48.7
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	163	145	52.2	88.5	76.7	162
Phenanthrene	7.7	4.6	83.2	69.5	26.6	42.4	39.1	82.7
Polychlorinated Biphenyls [PCBs]	10	0.03	108	0.453	34.6	0.276	0.406	0.859
Selenium	564	136	6091	2054	1949	1253	1842	3897
Silver	2	N/A	49.3	N/A	15.8	N/A	23.1	49.0
Toxaphene	0.21	0.0002	2.27	0.00302	0.726	0.00184	0.00270	0.00573
Tributyltin [TBT]	0.24	0.0074	2.59	0.112	0.829	0.0682	0.100	0.212
2,4,5 Trichlorophenol	259	12	2797	181	895	111	162	343
Zinc	92.7	84.2	1660	2108	531	1286	780	1651

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Fish Only</i>				
	<i>Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	115	2233	2077	3052	6458
Aldrin	1.147E-05	0.000223	0.000207	0.000304	0.000644
Anthracene	1317	25573	23783	34960	73964
Antimony	1071	20796	19340	28430	60148
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	581	11282	10492	15423	32629
Benzidine	0.107	2.08	1.93	2.84	6.00
Benzo(a)anthracene	0.025	0.485	0.451	0.663	1.40
Benzo(a)pyrene	0.0025	0.0485	0.0451	0.0663	0.140
Bis(chloromethyl)ether	0.2745	5.33	4.96	7.28	15.4
Bis(2-chloroethyl)ether	42.83	832	773	1136	2405
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala	7.55	147	136	200	424
Bromodichloromethane [Dichlorobromomethane]	275	5340	4966	7300	15444
Bromoform [Tribromomethane]	1060	20583	19142	28138	59530
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	893	831	1221	2583
Chlordane	0.0025	0.0485	0.0451	0.0663	0.140
Chlorobenzene	2737	53146	49425	72655	153713
Chlorodibromomethane [Dibromochloromethane]	183	3553	3305	4857	10277
Chloroform [Trichloromethane]	7697	149456	138994	204321	432272
Chromium (hexavalent)	502	9748	9065	13325	28192
Chrysene	2.52	48.9	45.5	66.8	141
Cresols [Methylphenols]	9301	180602	167960	246900	522354
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0388	0.0361	0.0530	0.112
4,4'-DDE	0.00013	0.00252	0.00235	0.00345	0.00730
4,4'-DDT	0.0004	0.00777	0.00722	0.0106	0.0224
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	9184	8542	12556	26564
1,2-Dibromoethane [Ethylene Dibromide]	4.24	82.3	76.6	112	238
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	11553	10745	15794	33415
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	3299	64058	59574	87574	185275
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	43.5	40.5	59.4	125
1,2-Dichloroethane	364	7068	6573	9662	20442
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1070175	995263	1463035	3095266
Dichloromethane [Methylene Chloride]	13333	258893	240771	353932	748796
1,2-Dichloropropane	259	5029	4677	6875	14545
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2311	2149	3158	6683
Dicofol [Kelthane]	0.30	5.83	5.42	7.96	16.8
Dieldrin	2.0E-05	0.000388	0.000361	0.000530	0.00112
2,4-Dimethylphenol	8436	163806	152339	223938	473775
Di- <i>n</i> -Butyl Phthalate	92.4	1794	1669	2452	5189
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000015	0.0000014	0.0000021	0.0000045
Endrin	0.02	0.388	0.361	0.530	1.12
Epichlorohydrin	2013	39087	36351	53436	113052
Ethylbenzene	1867	36252	33715	49560	104852
Ethylene Glycol	1.68E+07	326213592	303378641	445966601	943507572
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.00194	0.00181	0.00265	0.00561
Heptachlor Epoxide	0.00029	0.00563	0.00524	0.00769	0.0162
Hexachlorobenzene	0.00068	0.0132	0.0123	0.0180	0.0381
Hexachlorobutadiene	0.22	4.27	3.97	5.84	12.3

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Fish Only</i>				
	<i>Criterion</i> (µg/L)	<i>WLAh</i> (µg/L)	<i>LTAh</i> (µg/L)	<i>Daily Avg.</i> (µg/L)	<i>Daily Max.</i> (µg/L)
Hexachlorocyclohexane (<i>alpha</i>)	0.0084	0.163	0.152	0.222	0.471
Hexachlorocyclohexane (<i>beta</i>)	0.26	5.05	4.70	6.90	14.6
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.341	6.62	6.16	9.05	19.1
Hexachlorocyclopentadiene	11.6	225	209	307	651
Hexachloroethane	2.33	45.2	42.1	61.8	130
Hexachlorophene	2.90	56.3	52.4	76.9	162
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	310330	288607	424252	897567
Lead	3.83	193	180	263	558
Mercury	0.0250	0.485	0.451	0.663	1.40
Methoxychlor	3.0	58.3	54.2	79.6	168
Methyl Ethyl Ketone	9.92E+05	19262136	17913786	26333266	55711875
Methyl <i>tert</i> -butyl ether [MTBE]	10482	203534	189287	278251	588681
Nickel	1140	22136	20586	30262	64023
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	36369	33823	49719	105189
N-Nitrosodiethylamine	2.1	40.8	37.9	55.7	117
N-Nitroso-di- <i>n</i> -Butylamine	4.2	81.6	75.8	111	235
Pentachlorobenzene	0.355	6.89	6.41	9.42	19.9
Pentachlorophenol	0.29	5.63	5.24	7.69	16.2
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0124	0.0116	0.0169	0.0359
Pyridine	947	18388	17101	25138	53184
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	4.66	4.33	6.37	13.4
1,1,2,2-Tetrachloroethane	26.35	512	476	699	1479
Tetrachloroethylene [Tetrachloroethylene]	280	5437	5056	7432	15725
Thallium	0.23	4.47	4.15	6.10	12.9
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.214	0.199	0.292	0.617
2,4,5-TP [Silvex]	369	7165	6663	9795	20723
1,1,1-Trichloroethane	784354	15230175	14164063	20821171	44050234
1,1,2-Trichloroethane	166	3223	2998	4406	9322
Trichloroethylene [Trichloroethene]	71.9	1396	1298	1908	4037
2,4,5-Trichlorophenol	1867	36252	33715	49560	104852
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	320	298	438	926

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

Aquatic Life	70% of	85% of
Parameter	Daily Avg.	Daily Avg.
	(µg/L)	(µg/L)
Acrolein	N/A	N/A
Aldrin	4.62	5.61
Aluminum	N/A	N/A
Arsenic	529	643
Cadmium	82.9	100
Carbaryl	2179	2646
Chlordane	0.0379	0.0460
Chlorpyrifos	0.0391	0.0474
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	470	571
Copper	38.6	46.8
Copper (oyster waters)	N/A	N/A
Cyanide (free)	19.9	24.1
4,4'-DDT	0.00948	0.0115
Demeton	0.948	1.15
Diazinon	2.91	3.53
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0189	0.0230
Diuron	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.0853	0.103
Endosulfan II (<i>beta</i>)	0.0853	0.103
Endosulfan sulfate	0.0853	0.103
Endrin	0.0189	0.0230
Guthion [Azinphos Methyl]	0.0948	0.115
Heptachlor	0.0379	0.0460
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.568	0.690
Lead	130	158
Malathion	0.0948	0.115
Mercury	7.46	9.06
Methoxychlor	0.284	0.345
Mirex	0.00948	0.0115
Nickel	124	150
Nonylphenol	16.1	19.5
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	53.6	65.2
Phenanthrene	27.3	33.2
Polychlorinated Biphenyls [PCBs]	0.284	0.345
Selenium	1289	1565
Silver	16.2	19.7
Toxaphene	0.00189	0.00230
Tributyltin [TBT]	0.0701	0.0852
2,4,5 Trichlorophenol	113	138
Zinc	546	663

Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	2136	2594
Aldrin	0.000213	0.000258
Anthracene	24472	29716
Antimony	19901	24165
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	10796	13109
Benzidine	1.98	2.41
Benzo(a)anthracene	0.464	0.564
Benzo(a)pyrene	0.0464	0.0564
Bis(chloromethyl)ether	5.10	6.19
Bis(2-chloroethyl)ether	795	966
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala	140	170
Bromodichloromethane [Dichlorobromomethane]	5110	6205
Bromoform [Tribromomethane]	19696	23917
Cadmium	N/A	N/A
Carbon Tetrachloride	854	1037
Chlordane	0.0464	0.0564
Chlorobenzene	50858	61757
Chlorodibromomethane [Dibromochloromethane]	3400	4129
Chloroform [Trichloromethane]	143025	173673
Chromium (hexavalent)	9328	11327
Chrysene	46.8	56.8
Cresols [Methylphenols]	172830	209865
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0371	0.0451
4,4'-DDE	0.00241	0.00293
4,4'-DDT	0.00743	0.00902
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	8789	10672
1,2-Dibromoethane [Ethylene Dibromide]	78.7	95.6
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	11056	13425
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	61301	74437
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	41.6	50.5
1,2-Dichloroethane	6763	8213
1,1-Dichloroethylene [1,1-Dichloroethene]	1024125	1243580
Dichloromethane [Methylene Chloride]	247753	300842
1,2-Dichloropropane	4812	5844
1,3-Dichloropropene [1,3-Dichloropropylene]	2211	2685
Dicofol [Kelthane]	5.57	6.76
Dieldrin	0.000371	0.000451
2,4-Dimethylphenol	156757	190348
Di- <i>n</i> -Butyl Phthalate	1716	2084
Dioxins/Furans [TCDD Equivalents]	0.0000015	0.0000018
Endrin	0.371	0.451
Epichlorohydrin	37405	45420
Ethylbenzene	34692	42126
Ethylene Glycol	312176621	379071611
Fluoride	N/A	N/A
Heptachlor	0.00185	0.00225
Heptachlor Epoxide	0.00538	0.00654
Hexachlorobenzene	0.0126	0.0153
Hexachlorobutadiene	4.08	4.96

Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Hexachlorocyclohexane (<i>alpha</i>)	0.156	0.189
Hexachlorocyclohexane (<i>beta</i>)	4.83	5.86
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	6.33	7.69
Hexachlorocyclopentadiene	215	261
Hexachloroethane	43.2	52.5
Hexachlorophene	53.8	65.4
4,4'-Isopropylidenediphenol [Bisphenol A]	296976	360614
Lead	184	224
Mercury	0.464	0.564
Methoxychlor	55.7	67.6
Methyl Ethyl Ketone	18433286	22383276
Methyl <i>tert</i> -butyl ether [MTBE]	194775	236513
Nickel	21183	25722
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	34803	42261
N-Nitrosodiethylamine	39.0	47.3
N-Nitroso-di- <i>n</i> -Butylamine	78.0	94.7
Pentachlorobenzene	6.59	8.01
Pentachlorophenol	5.38	6.54
Polychlorinated Biphenyls [PCBs]	0.0118	0.0144
Pyridine	17597	21367
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	4.45	5.41
1,1,2,2-Tetrachloroethane	489	594
Tetrachloroethylene [Tetrachloroethylene]	5202	6317
Thallium	4.27	5.18
Toluene	N/A	N/A
Toxaphene	0.204	0.248
2,4,5-TP [Silvex]	6856	8326
1,1,1-Trichloroethane	14574820	17697996
1,1,2-Trichloroethane	3084	3745
Trichloroethylene [Trichloroethene]	1336	1622
2,4,5-Trichlorophenol	34692	42126
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	306	372

TEXTOX MENU #5 - BAY OR WIDE TIDAL RIVER

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

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Saltwater Aquatic Life

Table 2, 2018 Texas Surface Water Quality Standards for Human Health

"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	<u>The City of Corpus Christi</u>
TPDES Permit No:	<u>WQ0005289000</u>
Outfall No:	<u>001 Final</u>
Prepared by:	<u>Thomas Starr, P.E.</u>
Date:	<u>November 27, 2023</u>

DISCHARGE INFORMATION

Receiving Waterbody:	<u>Corpus Christi Inner Harbor</u>
Segment No:	<u>2484</u>
TSS (mg/L):	<u>9</u>
Effluent Flow for Aquatic Life (MGD)	<u>N/A</u>
% Effluent for Chronic Aquatic Life (Mixing Zone):	<u>6.24</u>
% Effluent for Acute Aquatic Life (ZID):	<u>8.74</u>
Oyster Waters?	<u>no</u>
Effluent Flow for Human Health (MGD):	<u>N/A</u>
% Effluent for Human Health:	<u>4.85</u>

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

<i>Estuarine Metal</i>	<i>Intercept</i>		<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	
	<i>(b)</i>	<i>Slope (m)</i>				<i>WER</i>	<i>Source</i>
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Cadmium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (total)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (trivalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	14552.76	0.884		1.00	Assumed
Lead	6.06	-0.85	177375.60	0.385		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	5.86	-0.74	142514.99	0.438		1.00	Assumed
Zinc	5.36	-0.52	73079.22	0.603		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	SW Acute	SW Chronic	WLAa (µg/L)	WLAc (µg/L)	LTAa (µg/L)	LTAc (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
	Criterion (µg/L)	Criterion (µg/L)						
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	14.9	N/A	4.76	N/A	6.99	14.8
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	1705	1250	546	763	801	1696
Cadmium	40.0	8.75	458	140	146	85.5	125	266
Carbaryl	613	N/A	7014	N/A	2244	N/A	3299	6980
Chlordane	0.09	0.004	1.03	0.0641	0.330	0.0391	0.0574	0.121
Chlorpyrifos	0.011	0.006	0.126	0.0962	0.0403	0.0587	0.0592	0.125
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	12471	795	3991	485	712	1507
Copper	13.5	3.6	175	65.2	55.9	39.8	58.5	123
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	5.6	5.6	64.1	89.7	20.5	54.7	30.1	63.7
4,4'-DDT	0.13	0.001	1.49	0.0160	0.476	0.00978	0.0143	0.0304
Demeton	N/A	0.1	N/A	1.60	N/A	0.978	1.43	3.04
Diazinon	0.819	0.819	9.37	13.1	3.00	8.01	4.40	9.32
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	8.12	0.0321	2.60	0.0196	0.0287	0.0608
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (alpha)	0.034	0.009	0.389	0.144	0.124	0.0880	0.129	0.273
Endosulfan II (beta)	0.034	0.009	0.389	0.144	0.124	0.0880	0.129	0.273
Endosulfan sulfate	0.034	0.009	0.389	0.144	0.124	0.0880	0.129	0.273
Endrin	0.037	0.002	0.423	0.0321	0.135	0.0196	0.0287	0.0608
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.160	N/A	0.0978	0.143	0.304
Heptachlor	0.053	0.004	0.606	0.0641	0.194	0.0391	0.0574	0.121
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	1.83	N/A	0.586	N/A	0.861	1.82
Lead	133	5.3	3951	221	1264	135	197	418
Malathion	N/A	0.01	N/A	0.160	N/A	0.0978	0.143	0.304
Mercury	2.1	1.1	24.0	17.6	7.69	10.8	11.3	23.9
Methoxychlor	N/A	0.03	N/A	0.481	N/A	0.293	0.431	0.912
Mirex	N/A	0.001	N/A	0.0160	N/A	0.00978	0.0143	0.0304
Nickel	118	13.1	1350	210	432	128	188	398
Nonylphenol	7	1.7	80.1	27.2	25.6	16.6	24.4	51.6
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	173	154	55.3	93.8	81.2	171
Phenanthrene	7.7	4.6	88.1	73.7	28.2	45.0	41.4	87.6
Polychlorinated Biphenyls [PCBs]	10	0.03	114	0.481	36.6	0.293	0.431	0.912
Selenium	564	136	6453	2179	2065	1329	1954	4134
Silver	2	N/A	52.2	N/A	16.7	N/A	24.5	51.9
Toxaphene	0.21	0.0002	2.40	0.00321	0.769	0.00196	0.00287	0.00608
Tributyltin [TBT]	0.24	0.0074	2.75	0.119	0.879	0.0723	0.106	0.224
2,4,5 Trichlorophenol	259	12	2963	192	948	117	172	364
Zinc	92.7	84.2	1758	2237	563	1364	827	1749

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Fish Only</i>				
	<i>Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	115	2371	2205	3241	6858
Aldrin	1.147E-05	0.000236	0.000220	0.000323	0.000684
Anthracene	1317	27155	25254	37123	78539
Antimony	1071	22082	20537	30188	63869
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	581	11979	11141	16377	34647
Benzidine	0.107	2.21	2.05	3.01	6.38
Benzo(a)anthracene	0.025	0.515	0.479	0.704	1.49
Benzo(a)pyrene	0.0025	0.0515	0.0479	0.0704	0.149
Bis(chloromethyl)ether	0.2745	5.66	5.26	7.73	16.3
Bis(2-chloroethyl)ether	42.83	883	821	1207	2554
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala	7.55	156	145	212	450
Bromodichloromethane [Dichlorobromomethane]	275	5670	5273	7751	16399
Bromoform [Tribromomethane]	1060	21856	20326	29878	63213
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	948	882	1296	2743
Chlordane	0.0025	0.0515	0.0479	0.0704	0.149
Chlorobenzene	2737	56433	52483	77149	163221
Chlorodibromomethane [Dibromochloromethane]	183	3773	3509	5158	10913
Chloroform [Trichloromethane]	7697	158701	147592	216960	459010
Chromium (hexavalent)	502	10351	9626	14150	29936
Chrysene	2.52	52.0	48.3	71.0	150
Cresols [Methylphenols]	9301	191773	178349	262173	554665
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0412	0.0384	0.0563	0.119
4,4'-DDE	0.00013	0.00268	0.00249	0.00366	0.00775
4,4'-DDT	0.0004	0.00825	0.00767	0.0112	0.0238
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitrol [Fenpropathrin]	473	9753	9070	13332	28207
1,2-Dibromoethane [Ethylene Dibromide]	4.24	87.4	81.3	119	252
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	12268	11409	16771	35482
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	3299	68021	63259	92990	196736
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	46.2	43.0	63.1	133
1,2-Dichloroethane	364	7505	6980	10260	21707
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1136371	1056825	1553532	3286726
Dichloromethane [Methylene Chloride]	13333	274907	255664	375825	795114
1,2-Dichloropropane	259	5340	4966	7300	15445
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2454	2282	3354	7096
Dicofol [Kelthane]	0.30	6.19	5.75	8.45	17.8
Dieldrin	2.0E-05	0.000412	0.000384	0.000563	0.00119
2,4-Dimethylphenol	8436	173938	161762	237790	503081
Di- <i>n</i> -Butyl Phthalate	92.4	1905	1772	2604	5510
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000016	0.0000015	0.0000022	0.0000048
Endrin	0.02	0.412	0.384	0.563	1.19
Epichlorohydrin	2013	41505	38600	56741	120045
Ethylbenzene	1867	38495	35800	52626	111338
Ethylene Glycol	1.68E+07	346391753	322144330	473552164	1001868865
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.00206	0.00192	0.00281	0.00596
Heptachlor Epoxide	0.00029	0.00598	0.00556	0.00817	0.0172
Hexachlorobenzene	0.00068	0.0140	0.0130	0.0191	0.0405
Hexachlorobutadiene	0.22	4.54	4.22	6.20	13.1

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

<i>Parameter</i>	<i>Fish Only</i>				
	<i>Criterion</i> (µg/L)	<i>WLAh</i> (µg/L)	<i>LTAh</i> (µg/L)	<i>Daily Avg.</i> (µg/L)	<i>Daily Max.</i> (µg/L)
Hexachlorocyclohexane (<i>alpha</i>)	0.0084	0.173	0.161	0.236	0.500
Hexachlorocyclohexane (<i>beta</i>)	0.26	5.36	4.99	7.32	15.5
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.341	7.03	6.54	9.61	20.3
Hexachlorocyclopentadiene	11.6	239	222	326	691
Hexachloroethane	2.33	48.0	44.7	65.6	138
Hexachlorophene	2.90	59.8	55.6	81.7	172
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	329526	306459	450494	953087
Lead	3.83	205	191	280	593
Mercury	0.0250	0.515	0.479	0.704	1.49
Methoxychlor	3.0	61.9	57.5	84.5	178
Methyl Ethyl Ketone	9.92E+05	20453608	19021856	27962127	59157971
Methyl <i>tert</i> -butyl ether [MTBE]	10482	216124	200995	295462	625094
Nickel	1140	23505	21860	32133	67983
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	38619	35915	52795	111696
N-Nitrosodiethylamine	2.1	43.3	40.3	59.1	125
N-Nitroso-di- <i>n</i> -Butylamine	4.2	86.6	80.5	118	250
Pentachlorobenzene	0.355	7.32	6.81	10.0	21.1
Pentachlorophenol	0.29	5.98	5.56	8.17	17.2
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0132	0.0123	0.0180	0.0381
Pyridine	947	19526	18159	26693	56474
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	4.95	4.60	6.76	14.3
1,1,2,2-Tetrachloroethane	26.35	543	505	742	1571
Tetrachloroethylene [Tetrachloroethylene]	280	5773	5369	7892	16697
Thallium	0.23	4.74	4.41	6.48	13.7
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.227	0.211	0.310	0.655
2,4,5-TP [Silvex]	369	7608	7076	10401	22005
1,1,1-Trichloroethane	784354	16172247	15040190	22109079	46774991
1,1,2-Trichloroethane	166	3423	3183	4679	9899
Trichloroethylene [Trichloroethene]	71.9	1482	1379	2026	4287
2,4,5-Trichlorophenol	1867	38495	35800	52626	111338
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	340	316	465	983

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

Aquatic Life	70% of	85% of
Parameter	Daily Avg.	Daily Avg.
	(µg/L)	(µg/L)
Acrolein	N/A	N/A
Aldrin	4.89	5.94
Aluminum	N/A	N/A
Arsenic	561	681
Cadmium	88.0	106
Carbaryl	2309	2804
Chlordane	0.0402	0.0488
Chlorpyrifos	0.0414	0.0503
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	498	605
Copper	40.9	49.7
Copper (oyster waters)	N/A	N/A
Cyanide (free)	21.0	25.6
4,4'-DDT	0.0100	0.0122
Demeton	1.00	1.22
Diazinon	3.08	3.74
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0201	0.0244
Diuron	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.0905	0.109
Endosulfan II (<i>beta</i>)	0.0905	0.109
Endosulfan sulfate	0.0905	0.109
Endrin	0.0201	0.0244
Guthion [Azinphos Methyl]	0.100	0.122
Heptachlor	0.0402	0.0488
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.602	0.731
Lead	138	168
Malathion	0.100	0.122
Mercury	7.91	9.60
Methoxychlor	0.301	0.366
Mirex	0.0100	0.0122
Nickel	131	160
Nonylphenol	17.1	20.7
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	56.8	69.0
Phenanthrene	29.0	35.2
Polychlorinated Biphenyls [PCBs]	0.301	0.366
Selenium	1368	1661
Silver	17.1	20.8
Toxaphene	0.00201	0.00244
Tributyltin [TBT]	0.0744	0.0903
2,4,5 Trichlorophenol	120	146
Zinc	578	703

Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	2269	2755
Aldrin	0.000226	0.000274
Anthracene	25986	31554
Antimony	21132	25660
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	11463	13920
Benzidine	2.11	2.56
Benzo(a)anthracene	0.493	0.598
Benzo(a)pyrene	0.0493	0.0598
Bis(chloromethyl)ether	5.41	6.57
Bis(2-chloroethyl)ether	845	1026
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) pthala	148	180
Bromodichloromethane [Dichlorobromomethane]	5426	6588
Bromoform [Tribromomethane]	20915	25397
Cadmium	N/A	N/A
Carbon Tetrachloride	907	1102
Chlordane	0.0493	0.0598
Chlorobenzene	54004	65577
Chlorodibromomethane [Dibromochloromethane]	3610	4384
Chloroform [Trichloromethane]	151872	184416
Chromium (hexavalent)	9905	12027
Chrysene	49.7	60.3
Cresols [Methylphenols]	183521	222847
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0394	0.0479
4,4'-DDE	0.00256	0.00311
4,4'-DDT	0.00789	0.00958
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	9332	11332
1,2-Dibromoethane [Ethylene Dibromide]	83.6	101
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	11740	14255
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	65093	79042
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	44.1	53.6
1,2-Dichloroethane	7182	8721
1,1-Dichloroethylene [1,1-Dichloroethene]	1087473	1320503
Dichloromethane [Methylene Chloride]	263077	319451
1,2-Dichloropropane	5110	6205
1,3-Dichloropropene [1,3-Dichloropropylene]	2348	2851
Dicofol [Kelthane]	5.91	7.18
Dieldrin	0.000394	0.000479
2,4-Dimethylphenol	166453	202122
Di- <i>n</i> -Butyl Phthalate	1823	2213
Dioxins/Furans [TCDD Equivalents]	0.0000016	0.0000019
Endrin	0.394	0.479
Epichlorohydrin	39719	48230
Ethylbenzene	36838	44732
Ethylene Glycol	331486515	402519340
Fluoride	N/A	N/A
Heptachlor	0.00197	0.00239
Heptachlor Epoxide	0.00572	0.00694
Hexachlorobenzene	0.0134	0.0162
Hexachlorobutadiene	4.34	5.27

Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Hexachlorocyclohexane (<i>alpha</i>)	0.165	0.201
Hexachlorocyclohexane (<i>beta</i>)	5.13	6.22
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	6.72	8.17
Hexachlorocyclopentadiene	228	277
Hexachloroethane	45.9	55.8
Hexachlorophene	57.2	69.4
4,4'-Isopropylidenediphenol [Bisphenol A]	315346	382920
Lead	196	238
Mercury	0.493	0.598
Methoxychlor	59.1	71.8
Methyl Ethyl Ketone	19573489	23767808
Methyl <i>tert</i> -butyl ether [MTBE]	206823	251143
Nickel	22493	27313
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	36956	44876
N-Nitrosodiethylamine	41.4	50.3
N-Nitroso-di- <i>n</i> -Butylamine	82.8	100
Pentachlorobenzene	7.00	8.50
Pentachlorophenol	5.72	6.94
Polychlorinated Biphenyls [PCBs]	0.0126	0.0153
Pyridine	18685	22689
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	4.73	5.75
1,1,2,2-Tetrachloroethane	519	631
Tetrachloroethylene [Tetrachloroethylene]	5524	6708
Thallium	4.53	5.51
Toluene	N/A	N/A
Toxaphene	0.217	0.263
2,4,5-TP [Silvex]	7280	8841
1,1,1-Trichloroethane	15476355	18792717
1,1,2-Trichloroethane	3275	3977
Trichloroethylene [Trichloroethene]	1418	1722
2,4,5-Trichlorophenol	36838	44732
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	325	395

Appendix B
Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits

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

Outfall	Pollutant	Technology-Based				Water Quality-Based			
		Daily Avg		Daily Max		Daily Avg		Daily Max	
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001 Initial	Flow	34.3 MGD		41 MGD		-	-	-	-
	Total Suspended Solids (TSS)	Report	Report	Report	Report	-	-	-	-
	Total Dissolved Solids (TDS)	-	-	-	-	Report	Report	Report	Report
	Chloride	-	-	-	-	Report	Report	Report	Report
	Sulfate	-	-	-	-	Report	Report	Report	Report
	pH	6.5 SU, minimum		9.0 SU		-	-	-	-
001 Final	Flow	51.5 MGD		62 MGD		-	-	-	-
	TSS	Report	Report	Report	Report	-	-	-	-
	TDS	-	-	-	-	Report	Report	Report	Report
	Chloride	-	-	-	-	Report	Report	Report	Report
	Sulfate	-	-	-	-	Report	Report	Report	Report
	pH	6.5 SU, minimum		9.0 SU		-	-	-	-



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

P.O. Box 13087
Austin, Texas 78711-3087

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

TPDES PERMIT NO.
WQ0005289000
*[For TCEQ office use only -
EPA I.D. No. TX0139874]*

City of Corpus Christi

whose mailing address is

P.O. Box 9277
Corpus Christi, Texas 78469

is authorized to treat and discharge wastes from Inner Harbor Desalination Plant, a seawater desalination facility (SIC 4941)

located at the intersection of Nueces Bay Boulevard and West Broadway Street, in the City of Corpus Christi, Nueces County, Texas 78401

directly to Corpus Christi Inner Harbor in Segment No. 2484 of the Bays and Estuaries

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

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001 Initial

1. During the period beginning upon the date of permit issuance and lasting through the date of expansion to the final phase, the permittee is authorized to discharge water treatment wastes ¹ subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 34.3 million gallons per day (MGD). The daily maximum flow shall not exceed 41 MGD.

Effluent Characteristics	Discharge Limitations				Minimum Self-Monitoring Requirements		
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
	lbs/day	mg/L	lbs/day	mg/L	mg/L		
Flow	34.3 MGD		41 MGD		N/A	Continuous	Totalizer
Total Suspended Solids	Report	Report	Report	Report	N/A	1/week	Grab
Total Dissolved Solids	Report	Report	Report	Report	N/A	1/week	Grab
Chloride	Report	Report	Report	Report	N/A	1/week	Grab
Sulfate	Report	Report	Report	Report	N/A	1/week	Grab
Salinity ²	Report	Report, ppt	Report	Report, ppt	N/A	1/week	Grab

2. The pH must not be less than 6.5 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 Outfall 001, following commingling of all wastewater and prior to the start-of-pipe to diffuser.

¹ See Other Requirement No. 3.

² See Other Requirement No. 11.B.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001 Final

1. During the period beginning upon the date of expansion to the final phase and lasting through the date of permit expiration, the permittee is authorized to discharge water treatment wastes ¹ subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 51.5 million gallons per day (MGD). The daily maximum flow shall not exceed 62 MGD.

Effluent Characteristics	Discharge Limitations				Minimum Self-Monitoring Requirements		
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	51.5 MGD		62 MGD		N/A	Continuous	Totalizer
Total Suspended Solids	Report	Report	Report	Report	N/A	1/week	Grab
Total Dissolved Solids	Report	Report	Report	Report	N/A	1/week	Grab
Chloride	Report	Report	Report	Report	N/A	1/week	Grab
Sulfate	Report	Report	Report	Report	N/A	1/week	Grab
Salinity ²	Report	Report, ppt	Report	Report, ppt	N/A	1/week	Grab

2. The pH must not be less than 6.5 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 Outfall 001, following commingling of all wastewater and prior to the start-of-pipe to diffuser.

¹ See Other Requirement No. 3.

² See Other Requirement No. 1.1.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 *n*th 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 × 8.34).
- 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 14 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 14 and Compliance Monitoring Team (MC 224): None.
2. The Executive Director reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the General Land Office and determined that the action is consistent with the applicable CMP goals and policies.
3. 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, supernate, filtrate, and reverse osmosis reject water.
4. **MIXING ZONES**

Initial Phase:

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 9.26 percent at the edge of the ZID. The ZID is defined as a 117.1-foot by 67.1-foot rectangle centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 50-foot radius circle.

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 6.62 percent at the edge of the chronic aquatic life mixing zone. The chronic aquatic life mixing zone is defined as a 380.4-foot by 330.4-foot rectangle centered on the diffuser with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle.

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 5.15 percent at the edge of the human health mixing zone. The human health mixing zone is defined as a 734.4-foot by 684.4-foot rectangle centered on the diffuser with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 400-foot radius circle.

Final Phase:

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 8.74 percent at the edge of the ZID. The ZID is defined as a 117.1-foot by 67.1-foot rectangle centered on the diffuser barrel with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 50-foot radius circle.

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 6.24 percent at the edge of the chronic aquatic life mixing zone. The chronic aquatic life mixing zone is defined as a 380.4-foot by 330.4-foot rectangle centered on the diffuser with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle.

The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 4.85 percent at the edge of the human health mixing zone. The human health mixing zone is defined as a 734.4-foot by 684.4-foot rectangle centered on the diffuser with the longer edge running parallel to the diffuser barrel. This area is approximately equal to the area of a 400-foot radius circle.

5. 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 facility for treatment and disposal.
6. The sludge from the treatment process must be dewatered, and disposed of in accordance with all the applicable rules of the TCEQ. The permittee shall ensure that the disposal of sludge does not cause any contamination of the ground or surface waters in the state. The permittee shall keep records of all sludge removed from the wastewater treatment plant site. Such records shall include the following information:
 - A. volume (dry weight basis) of sludge disposed of;
 - B. date of disposal;
 - C. identity and registration number of hauler;
 - D. location and registration or permit number of disposal site; and
 - E. method of final disposal.

The above records must be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least three (3) years.

7. Reporting requirements according to 30 TAC §§ 319.1-319.12 and any additional effluent reporting requirements contained in the permit are suspended from the effective date of the permit until plant startup or discharge, whichever occurs first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 14 Office, Applications Review and Processing Team (MC 148) of the Water Quality Division, and Compliance Monitoring Team (MC 224) at least forty-five days prior to plant startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007. Additionally, the written notice is required at least forty-five days prior to the final phase startup on Form 20007.
8. Wastewater discharged via Outfall 001 must be sampled and analyzed as directed below for those parameters listed in Tables 1, 2, and 3 of Attachment A of this permit. Analytical testing for Outfall 001 must be completed within 60 days of initial discharge. Results of the analytical testing must be submitted within 90 days of initial discharge to the TCEQ Industrial Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

Table 1: Analysis is required for all pollutants in Table 1. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of four sampling events that are each at least one week apart.

Table 2: Analysis is required for those pollutants in Table 2 that are used at the facility that could in any way contribute to contamination in the Outfall 001 discharge. Sampling and analysis must be conducted for a minimum of four sampling events that are each at least one week apart.

Table 3: For all pollutants listed in Table 3, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge. Sampling and analysis must be conducted for each pollutant believed present for a minimum of one sampling event.

The permittee shall report the flow at Outfall 001 in MGD in the attachment. The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

9. The permittee has completed a study of ambient water velocity and provided the results as an appendix to the modeling report. During the term of this permit, the permittee shall submit a report to the TCEQ Water Quality Assessment Section (MC-150) summarizing measured ambient water velocity at the location of Outfall 001. The report must include results of measurements of speed and direction of the tidal current collected at the depth of the proposed/installed diffuser barrel. The measurements shall capture velocities encompassing a complete tidal cycle and be collected during a period in which maximum tidal amplitude typically occurs.

10. NARRATIVE CRITERIA FOR SALINITY

The facility's discharge must be in accordance with the narrative criteria established in 30 TAC §307.4 (g)(3):

“Salinity gradients in estuaries must be maintained to support attainable estuarine dependent aquatic life uses. Numerical salinity criteria for Texas estuaries have not been established because of the high natural variability of salinity in estuarine systems, and because long-term studies by state agencies to assess estuarine salinities are still ongoing. Absence of numerical criteria must not preclude evaluations and regulatory actions based on estuarine salinity, and careful consideration must be given to all activities that may detrimentally affect salinity gradients.”

11. SALINITY MONITORING

- A. The permittee shall perform the following in order to assess the effectiveness of the effluent diffuser system, confirm nearfield modeling predictions, and characterize the potential effects of the discharge on the salinity gradient within the Corpus Christi Inner Harbor:
 1. Beginning at commencement of discharge and lasting through the permit expiration date, the permittee shall measure and record, on a quarterly frequency, salinity concentrations of influent, effluent, and the receiving waterbody at fixed sampling points. To the extent logistically possible, sampling at all locations shall occur concurrently. The permittee shall also gather available salinity data from TCEQ surface water quality monitoring (SWQM) stations in the Corpus Christi Inner Harbor and adjacent Corpus Christi Bay and Nueces Bay to evaluate trends.
 2. Within 180 days of permit issuance, the permittee shall submit a depth-integrated salinity monitoring plan for the Corpus Christi Inner Harbor to the TCEQ Standards Implementation Team (MC-150) and the TCEQ Compliance Monitoring Team (MC-224) for review and approval prior to any sampling. The sampling points in the receiving waterbody shall not be influenced, as much as possible, by any other contributions (e.g., additional discharges). The location of fixed sampling points in the receiving waterbody should be 330 feet from the center of the diffuser and 660 feet from the center of the diffuser. The permittee shall also identify the SWQM stations that will be utilized for trend analysis.
 3. Salinity measurements taken from all sampling points shall be either determined with properly calibrated, industry grade equipment or a properly collected grab sample analyzed for salinity at an accredited analytical laboratory.
 4. The permittee shall document significant rainfall amounts at the discharge location as recorded by the nearest, reliable weather station or rainfall gauge.

5. Collected influent salinity, effluent salinity, instream salinity, and rainfall data, as well as the salinity data trend analysis and diffuser effectiveness evaluation, shall be summarized and reported annually to the TCEQ Standards Implementation Team (MC-150) and the Industrial Permits Team (MC-148) of the TCEQ's Water Quality Division. The TCEQ will review these data to determine the appropriateness of the permit conditions and limitations.
- B. Effluent salinity and flow monitoring data required on page 2 and page 2a of this permit shall be submitted for review on a semi-annual basis to the TCEQ Standards Implementation Team (MC-150) upon commencement of discharge via Outfall 001. Effluent salinity data shall be reported for each weekly grab sample, and effluent flow shall be reported as an average of flow measurements for each day salinity samples are taken. The semi-annual time periods are defined as January through June and July through December of each calendar year during the permit term. Data may be submitted in spreadsheet format and are due at the end of the month following each semi-annual period, on July 31 and January 31. Based on a review of the submitted data, an amendment may be initiated by TCEQ staff to include additional limitations, monitoring requirements, or both to ensure protection of aquatic life and the salinity gradient.

Attachment A

Table 1 – Conventionals and Non-conventionals

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G		Effluent Concentration (mg/L)				
	Pollutant	Samp.	Samp.	Samp.	Samp.	Average	
Flow (MGD)							
BOD (5-day)							
CBOD (5-day)							
Chemical Oxygen Demand							
Total Organic Carbon							
Dissolved Oxygen							
Ammonia Nitrogen							
Total Suspended Solids							
Nitrate Nitrogen							
Total Organic Nitrogen							
Total Phosphorus							
Oil and Grease							
Total Residual Chlorine							
Total Dissolved Solids							
Sulfate							
Chloride							
Fluoride							
Total Alkalinity (mg/L as CaCO ₃)							
Salinity (ppt)							
Temperature (°F)							
pH (Standard Units; min/max)							

Table 2 – Metals

Pollutant	Effluent Concentration (µg/L) ¹					MAL ² (µg/L)
	Samp.	Samp.	Samp.	Samp.	Average	
Aluminum, Total						2.5
Antimony, Total						5
Arsenic, Total						0.5
Barium, Total						3
Beryllium, Total						0.5
Cadmium, Total						1
Chromium, Total						3
Chromium, Hexavalent						3
Chromium, Trivalent						N/A
Copper, Total						2
Cyanide, Free						10
Lead, Total						0.5

¹ Indicate units if different than µg/L.

² Minimum Analytical Level

Pollutant	Effluent Concentration ($\mu\text{g/L}$) ¹					MAL ² ($\mu\text{g/L}$)
	Samp.	Samp.	Samp.	Samp.	Average	
Mercury, Total						0.005
Nickel, Total						2
Selenium, Total						5
Silver, Total						0.5
Thallium, Total						0.5
Zinc, Total						5.0

Table 3 – Toxic Pollutants with Water Quality Criteria

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Samp. 1 ($\mu\text{g/L}$) ³	Samp. 2 ($\mu\text{g/L}$) ³	Samp. 3 ($\mu\text{g/L}$) ³	Samp. 4 ($\mu\text{g/L}$) ³	Avg. ($\mu\text{g/L}$) ³	MAL ($\mu\text{g/L}$)
Pollutant							
Acrolein							0.7
Acrylonitrile							50
Anthracene							10
Benzene							10
Benzidine							50
Benzo(a)anthracene							5
Benzo(a)pyrene							5
Bis(2-chloroethyl)ether							10
Bis(2-ethylhexyl) phthalate							10
Bromodichloromethane							10
Bromoform							10
Carbon Tetrachloride							2
Chlorobenzene							10
Chlorodibromomethane							10
Chloroform							10
Chrysene							5
Cresols							10
1,2-Dibromoethane							10
<i>m</i> -Dichlorobenzene							10
<i>o</i> -Dichlorobenzene							10
<i>p</i> -Dichlorobenzene							10
3,3'-Dichlorobenzidine							5
1,2-Dichloroethane							10
1,1-Dichloroethylene							10
Dichloromethane							20
1,2-Dichloropropane							10
1,3-Dichloropropylene							10
2,4-Dimethylphenol							10
Di- <i>n</i> -Butyl Phthalate							10
Epichlorohydrin							1,000
Ethylbenzene							10

³ Indicate units if different than $\mu\text{g/L}$.

Outfall No.:	<input type="checkbox"/> C <input type="checkbox"/> G	Samp. 1	Samp. 2	Samp. 3	Samp. 4	Avg.	MAL
Pollutant		(µg/L)³	(µg/L)³	(µg/L)³	(µg/L)³	(µg/L)³	(µg/L)
Ethylene Glycol							—
Fluoride							500
Hexachlorobenzene							5
Hexachlorobutadiene							10
Hexachlorocyclopentadiene							10
Hexachloroethane							20
4,4'-Isopropylidenediphenol [bisphenol A]							—
Methyl Ethyl Ketone							50
Methyl <i>tert</i> -butyl ether [MTBE]							—
Nitrobenzene							10
<i>N</i> -Nitrosodiethylamine							20
<i>N</i> -Nitroso-di- <i>n</i> -Butylamine							20
Nonylphenol							333
Pentachlorobenzene							20
Pentachlorophenol							5
Phenanthrene							10
Polychlorinated Biphenyls (PCBs) ⁴							0.2
Pyridine							20
1,2,4,5-Tetrachlorobenzene							20
1,1,2,2-Tetrachloroethane							10
Tetrachloroethylene							10
Toluene							10
1,1,1-Trichloroethane							10
1,1,2-Trichloroethane							10
Trichloroethylene							10
2,4,5-Trichlorophenol							50
TTHM (Total Trihalomethanes)							10
Vinyl Chloride							10

⁴ Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016. If all values are non-detects, enter the highest non-detect preceded by a "<" symbol.

CHRONIC BIOMONITORING REQUIREMENTS: MARINE

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 or growth of the test organisms.
- b. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified below and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," third edition (EPA-821-R-02-014) or its most recent update:
 - 1) Chronic static renewal 7-day survival and growth test using the mysid shrimp (*Americamysis bahia*) (Method 1007.0). A minimum of eight replicates with five organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.
 - 2) Chronic static renewal 7-day larval survival and growth test using the inland silverside (*Menidia beryllina*) (Method 1006.0). 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 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. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 3%, 5%, 6.2%, 6.6%, and 11% effluent. The critical dilution, defined as 6.6% effluent for the interim phase and 6.2% for the ultimate (final) phase, 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 toxicity, 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 toxicity, 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 toxicity, the permittee will 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 80% or greater;
- 2) a control mean dry weight of surviving mysid shrimp of 0.20 mg or greater;
- 3) a control mean dry weight for surviving unpreserved inland silverside of 0.50 mg or greater and 0.43 mg or greater for surviving preserved inland silverside.
- 4) a control coefficient of variation percent (CV%) between replicates of 40 or less in the growth and survival tests;
- 5) a critical dilution CV% of 40 or less in the growth and survival endpoints for either growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test;
- 6) a percent minimum significant difference of 37 or less for mysid shrimp growth; and
- 7) a percent minimum significant difference of 28 or less for inland silverside growth.

b. Statistical Interpretation

- 1) For the mysid shrimp and the inland silverside larval survival and growth 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 80% 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 effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is

demonstrated. A significant effect is herein defined as a statistically significant difference between the survival, reproduction, or growth of the test organism in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism in the control (0% effluent).

- 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 Part 1.b. 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 as close to the point of discharge as possible but 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 of 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 (i.e., 7 days); 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, reconstituted seawater. Upon approval, the permittee may substitute other 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 three composite samples from Outfall 001. The second and third composite samples 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 any 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 mysid shrimp, Parameter TLP3E, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For the mysid shrimp, Parameter TOP3E, report the NOEC for survival.
 - 3) For the mysid shrimp, Parameter TXP3E, report the LOEC for survival.
 - 4) For the mysid shrimp, Parameter TWP3E, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

- 5) For the mysid shrimp, Parameter TPP3E, report the NOEC for growth.
 - 6) For the mysid shrimp, Parameter TYP3E, report the LOEC for growth.
 - 7) For the inland silverside, Parameter TLP6J, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 8) For the inland silverside, Parameter TOP6J, report the NOEC for survival.
 - 9) For the inland silverside, Parameter TXP6J, report the LOEC for survival.
 - 10) For the inland silverside, Parameter TWP6J, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
 - 11) For the inland silverside, Parameter TPP6J, report the NOEC for growth.
 - 12) For the inland silverside, Parameter TYP6J, report the LOEC for growth.
- 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 test demonstrates a significant effect at the critical dilution. Significant effect and significant lethality were defined in Part 2.b. Significant sublethality is defined as a statistically significant difference in growth at the critical dilution when compared to the growth of the test organism in the control.

- a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. 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 the retests are performed due to a demonstration of significant lethality, and 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. 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.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

- c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in Part 4.a.

- d. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency.
- e. Regardless of whether retesting for lethal or sublethal effects or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

- a. Within 45 days of the retest that demonstrates significant lethality, or within 45 days of being so instructed due to multiple toxic events, 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, or within 90 days of being so instructed due to multiple toxic events, 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 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 and source of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which 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 herein 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 their control stalled the toxicity identification evaluation/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 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 implementation of corrective actions, specify a WET limit, specify a best management practice, and to 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 4)

MYSID SHRIMP SURVIVAL AND GROWTH

Dates and Times No. 1 FROM: _____ Date Time TO: _____ Date Time
 Composites No. 2 FROM: _____ TO: _____
 Collected No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

MYSID SHRIMP SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers								Mean Percent Survival			CV%*
	A	B	C	D	E	F	G	H	24h	48h	7 day	
0%												
3%												
5%												
6.2%												
6.6%												
11%												

* Coefficient of Variation = standard deviation x 100/mean

DATA TABLE FOR GROWTH OF MYSID SHRIMP

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	3%	5%	6.2%	6.6%	11%
A						
B						
C						
D						
E						

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	3%	5%	6.2%	6.6%	11%
F						
G						
H						
Mean Dry Weight (mg)						
CV%*						
PMSD						

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

Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (6.6%/6.2%): _____ YES _____ NO

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

Is the mean dry weight (growth) at 7 days significantly less than the control’s dry weight (growth) for the % effluent corresponding to non-lethal effects?

CRITICAL DILUTION (6.6%/6.2%): _____ YES _____ NO

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

a.) NOEC survival = _____% effluent

b.) LOEC survival = _____% effluent

c.) NOEC growth = _____% effluent

d.) LOEC growth = _____% effluent

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE MINNOW LARVAL SURVIVAL AND GROWTH TEST

Dates and Times No. 1 FROM: _____ Date Time TO: _____ Date Time
 Composites
 Collected No. 2 FROM: _____ TO: _____
 No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

INLAND SILVERSIDE SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers					Mean Percent Survival			CV%*
	A	B	C	D	E	24h	48h	7 days	
0%									
3%									
5%									
6.2%									
6.6%									
11%									

* Coefficient of Variation = standard deviation x 100/mean

TABLE 1 (SHEET 4 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

INLAND SILVERSIDE GROWTH

Percent Effluent	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV%*
	A	B	C	D	E		
0%							
3%							
5%							
6.2%							
6.6%							
11%							
PMSD							

Weights are for: ____ preserved larvae, or ____ unpreserved larvae

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

Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (6.6%/6.2%): _____ YES _____ NO

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

Is the mean dry weight (growth) at 7 days significantly less than the control’s dry weight (growth) for the % effluent corresponding to non-lethal effects?

CRITICAL DILUTION (6.6%/6.2%): _____ YES _____ NO

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

a.) NOEC survival = _____% effluent

b.) LOEC survival = _____% effluent

c.) NOEC growth = _____% effluent

d.) LOEC growth = _____% effluent