TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COMBINED

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

AND

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

AMENDMENT

PERMIT NO. WQ0004013000

APPLICATION AND PRELIMINARY DECISION. Equistar Chemicals, LP and LyondellBasell Acetyls, LLC, P.O. Drawer D, Deer Park, Texas 77536, which operate the Equistar Chemicals La Porte Complex, a facility that manufactures ethylene, propylene, polyethylene, acetyls (acetic acid and vinyl acetate monomer), and poly-*alpha*-olefins, have applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004013000 to modify Outfall 004 by authorizing the discharge of 860,000 gallons per day of cooling tower blowdown diverted from Outfall 004 to new Outfall 010; increase the permitted discharge of treated wastewater to a volume not to exceed a daily average flow of 1,220,000 gallons a day and a daily maximum flow of 1,600,000 gallons a day for Outfall 007; change the monitoring of biochemical oxygen demand (BOD) to carbonaceous biochemical oxygen demand (CBOD) for Outfall 007; increase the BOD limits for Outfalls 001, 004, and 007; remove the dissolved oxygen limit for Outfall 007; add wastewater sources to Outfalls 001, 003, 004, and 007; add new Outfall 009; **remove internal Outfalls 201 and 107; remove BOD and total suspended solids (TSS) limits from internal Outfalls 101, 104, 207, 307, and 407;** correct an error in the daily average limit for TSS for Outfall 004; modify the due dates for discharge monitoring reports; **increase the effluent limits for total aluminum and total zinc at Outfall 001; and increase or remove the effluent limits for total aluminum at Outfall 003.**

This combined notice has been issued because the requests to remove internal Outfalls 201 and 107 and to remove BOD and TSS limits from internal Outfalls 101, 104, 207, 307, and 407 were not included in the original NORI. The requests to increase the effluent limits on total aluminum and total zinc at Outfall 001 and increase or remove the effluent limits for total aluminum at Outfall 003 were received after publication of the original NORI. The discharge route description has been revised. The original NORI omitted the unnamed ditch (tidal) and Outfall 010. The point of contact at the end of the notice has been revised.

The draft permit authorizes the discharge of process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 2,600,000 gallons per day via Outfall 001; process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater on an intermittent and flow-variable basis via Outfall 003; process wastewater, utility wastewater, previously monitored effluent (treated domestic wastewater monitored at internal Outfall 104), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1,500,000 gallons per day via Outfall 004; stormwater, previously monitored effluent [untreated post first-flush process area stormwater, potable water, demineralized water, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) via internal Outfall 105], utility wastewater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, groundwater infiltration (continuous flow), raw water, wastewaters from the Decene Terminal, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 005; stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 006; treated process wastewater, utility wastewaters, previously monitored effluent (treated domestic wastewater from internal Outfalls 207, 307, and 407), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, water decanted from bio-solids, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1,220,000 gallons per day via Outfall 007; water decanted from bio-solids and stormwater from the land-farm area on an intermittent and flow-variable basis via Outfall 008; stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 009; and cooling tower blowdown at a daily average flow not to exceed 860,000 gallons per day via Outfall 010. The TCEQ received this application on April 3, 2018.

The facility is located at 1515 Miller Cut-Off Road, north of the City of La Porte, in Harris County, Texas 77571. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.
https://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=db5bac44afbc468bbddd360f8168250f&marker=-95.061592%2C29.711737&level=12

The effluent is discharged via Outfalls 001, 003, 004, 005, 006, 007, 008, and 009 to an unnamed ditch, **thence to an unnamed ditch (tidal),** thence to San Jacinto Bay; and **via Outfall 010 directly to San Jacinto Bay** in Segment No. 2427 of the Bays and Estuaries. The unclassified receiving water uses are minimal aquatic life use for the unnamed ditch and high aquatic life use for the unnamed ditch (tidal). The designated uses for Segment No. 2427 are primary contact recreation and high aquatic life use.

In accordance with Title 30 Texas Administrative Code Section 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 the unnamed ditch (tidal) or San Jacinto Bay, which have been identified as having high 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.

The TCEQ executive director reviewed this action for consistency with the Texas Coastal Management Program (CMP) goals and policies 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.

The TCEQ executive director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, executive director's preliminary decision, and draft permit are available for viewing and copying online at the https://www.lyondellbasell.com/laportecomplex.

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

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

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

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

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

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

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

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at www14.tceq.texas.gov/epic/eComment/ **within 30 days from the date of newspaper publication of this notice.**

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

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

Further information may also be obtained from Equistar Chemicals, LP and LyondellBasell Acetyls, LLC at the address stated above or by calling Ms. Chelsey Cobb at 713-209-1672.

Issuance Date: November 02, 2020

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004013000, U.S. Environmental Protection Agency (EPA) ID No. TX0119792, to discharge to water in the state

Issuing Office:	Texas Commission on Environmental Quality (TCEQ) P.O. Box 13087 Austin, Texas 78711-3087
Applicant:	Equistar Chemicals, LP and LyondellBasell Acetyls, LLC P.O. Drawer D Deer Park, Texas 77536
Prepared By:	Sarah A. Johnson Wastewater Permitting Section Water Quality Division (512) 239-4649
Date:	November 18, 2019; revised January 29, 2020, July 19, 2020, and September 14, 2020
Permit Action:	Major amendment with renewal; TPDES Permit No. WQ0004013000

I. 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 Texas Administrative Code (TAC) §305.127(1)(C)(i).

II. APPLICANT ACTIVITY

The applicants currently operate the Equistar Chemicals La Porte Complex, which manufactures ethylene, propylene, polyethylene, acetyls (acetic acid and vinyl acetate monomer), and poly-*alpha*-olefins.

III. DISCHARGE LOCATION

As described in the application, the facility is located at 1515 Miller Cut-Off Road, north of the City of La Porte, in Harris County, Texas. Discharge is via Outfalls 001, 003, 004, 005, 006, 007, 008, and 009 to an unnamed ditch, thence to an unnamed ditch (tidal), thence to San Jacinto Bay; and via Outfall 010 directly to San Jacinto Bay in Segment No. 2427 of the Bays and Estuaries.

IV. RECEIVING STREAM USES

The unclassified receiving water uses are minimal aquatic life use for the unnamed ditch and high aquatic life use for the unnamed ditch (tidal). The designated uses for Segment No. 2427 are primary contact recreation and high aquatic life use.

V. STREAM STANDARDS

The general criteria and numerical criteria that make up the stream standards are provided in 30 TAC §§ 307.1 - 307.10.

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the monthly effluent report data for the period November 2014 through August 2018. The "average of daily average" values presented in the following table are the average of all daily average values for the reporting period for each pollutant. The "maximum of daily maximum" values presented in the following table are the individual maximum values for the reporting period for each pollutant. Flows are expressed in million gallons per day (MGD); pH values are expressed in standard units (SU); and bacteria levels are expressed in colony-forming units (CFU) or most probable number (MPN) per 100 mL.

A. Flow

Outfall	Frequency	Average of Daily Average, MGD	Maximum of Daily Maximum, MGD
001	Continuous	0.974	4.31
101	Continuous	0.01	0.01
201	Continuous	0.151	5.3
003	Intermittent	12.059	100.5
004	Continuous	1.189	1.6
104	Continuous	0.011	0.1
005	Intermittent	0.259	24.6
105	Intermittent	0.870	8.7
006	Intermittent	0.969	11.93
007	Continuous	0.687	1
107	Continuous	0.01	0.01
207	Continuous	0.01	0.01
307	Continuous	0.01	0.01
407	Continuous	0.01	0.01
008	Intermittent	N/R [1]	N/R

B. Temperature

Outfall	Average of Daily Average, °F	Maximum of Daily Maximum, °F
001	80.7	104
007	79.7	95

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Biochemical Oxygen Demand, 5-day (BOD_5)	26.687	N/A [2]	222.6	N/A
	Total Suspended Solids (TSS)	95.07	N/A	1,492.5	N/A
	Total Organic Carbon (TOC)	95.341	N/A	298	N/A
	Total Residual Chlorine	N/A	N/A	N/A	0.35
	Aluminum, Total	2.025	0.2159	41.51	4.89
	Copper, Total	0.0786	0.00973	0.439	0.039
	Zinc, Total	0.354	0.039	2.89	0.34
	Acenaphthene	0.00168	N/A	0.00125	N/A

[1] Not required.
[2] Not applicable.

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Acenaphthylene	0.00188	N/A	0.0065	N/A
	Acrylonitrile [3]	0.03298	0.004054	0.10	0.0051
	Anthracene	0.00150	N/A	0.0131	N/A
	Benzene	0.00378	N/A	0.01	N/A
	Benzo(*a*)anthracene [3]	0.00148	0.000282	0.01	0.0006
	3,4-Benzofluoranthene	0.00169	N/A	0.0109	N/A
	Benzo(*k*)fluoranthene	0.00116	N/A	0.006	N/A
	Benzo(*a*)pyrene [3]	0.00132	0.000249	0.009	0.0005
	Bis(2-ethylhexyl) phthalate [3]	0.00738	N/A	0.0241	N/A
	Carbon Tetrachloride [3]	0.00600	N/A	0.0168	N/A
	Chlorobenzene	0.00584	N/A	0.017	N/A
	Chloroethane	0.01156	N/A	0.0318	N/A
	Chloroform	0.24656	N/A	1.3993	N/A
	Chrysene	0.00156	N/A	0.0114	N/A
	Di-*n*-butyl Phthalate	0.00228	N/A	0.018	N/A
	1,2-Dichlorobenzene	0.00276	N/A	0.0218	N/A
	1,3-Dichlorobenzene	0.00252	N/A	0.019	N/A
	1,4-Dichlorobenzene	0.00238	N/A	0.0182	N/A
	1,1-Dichloroethane	0.00328	N/A	0.0092	N/A
	1,2-Dichloroethane	0.00620	N/A	0.0185	N/A
	1,1-Dichloroethylene	0.00488	N/A	0.0139	N/A
	1,2-*trans*-Dichloroethylene	0.00544	N/A	0.0161	N/A
	1,2-Dichloropropane	0.00900	N/A	0.026	N/A
	1,3-Dichloropropylene	0.00888	N/A	0.030	N/A
	Diethyl Phthalate	0.00848	N/A	0.0198	N/A
	2,4-Dimethylphenol	0.00356	N/A	0.0231	N/A
	Dimethyl Phthalate	0.00164	N/A	0.0133	N/A
	4,6-Dinitro-*o*-cresol	0.00822	N/A	0.0278	N/A
	2,4-Dinitrophenol	0.00988	N/A	0.0633	N/A
	Ethylbenzene	0.00816	N/A	0.0236	N/A
	Fluoranthene	0.00220	N/A	0.0183	N/A
	Fluorene	0.00196	N/A	0.0158	N/A
	Hexachlorobenzene	0	0	0	0
	Hexachlorobutadiene	0.00296	N/A	0.0228	N/A
	Hexachloroethane [3]	0.00254	N/A	0.0226	N/A
	Methyl Chloride	0.00686	N/A	0.0262	N/A
	Methylene Chloride	0.01274	N/A	0.04	N/A
	Naphthalene	0.00198	N/A	0.0147	N/A
	Nitrobenzene	0.00278	N/A	0.0239	N/A
	2-Nitrophenol	0.00306	N/A	0.0213	N/A
	4-Nitrophenol	0.00350	N/A	0.0171	N/A

[3] The effluent data submitted in the monthly effluent report for this outfall indicated detectable levels below the established minimum analytical level provided in the existing permit. The permittee has verified that the data was erroneously reported as hard values and should have been represented as "non-detect" as allowed by existing Other Requirement No. 2. Therefore the TCEQ is considering these values as "non-detect."

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Phenanthrene [3]	0.00176	0.000194	0.0137	0.0007
	Phenol	0.00194	N/A	0.0120	N/A
	Pyrene	0.00198	N/A	0.0156	N/A
	Tetrachloroethylene	0.00838	N/A	0.0228	N/A
	Toluene	0.00394	N/A	0.0134	N/A
	1,2,4-Trichlorobenzene	0.00304	N/A	0.01	N/A
	1,1,1-Trichloroethane	0.00554	N/A	0.020	N/A
	1,1,2-Trichloroethane	0.00338	N/A	0.0097	N/A
	Trichloroethylene	0.01004	N/A	0.029	N/A
	Vinyl Chloride [3]	0.00552	N/A	0.0156	N/A
	pH	6.5 SU, min		8.6 SU	

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average, mg/L	Maximum of Daily Maximum, mg/L
101	BOD_5	8.4	20
	TSS	19.8	67
	E. coli	7 cfu/100 mL [4]	2,420 cfu/100 mL
	Total Residual Chlorine	0.3, min	N/A
201	BOD_5	5.77	24
	TSS	5.69	36
	E. coli	2 cfu/100 mL [3]	2,420 cfu/100 mL
	Total Residual Chlorine	0.1, min	N/A
003	BOD_5	4.19	24
	TSS	57.24	452
	TOC	N/A	15
	Oil and Grease	N/A	5.1
	Total Residual Chlorine	N/A	0.08
	Aluminum, Total	1.2385	3.13
	Copper, Total	0.00709	0.0120
	Zinc, Total	0.1375	0.2190
	Acenaphthene	N/A	0.00016
	Acenaphthylene	N/A	0.00014
	Acrylonitrile [3]	N/A	0.0050
	Anthracene	N/A	0.00050
	Benzene	N/A	0.0010
	Benzo(*a*)anthracene [3]	N/A	0.00027
	3,4-Benzofluoranthene	N/A	0.00015
	Benzo(*k*)fluoranthene	N/A	0.00042
	Benzo(*a*)pyrene [3]	N/A	0.0002
	Bis(2-ethylhexyl) phthalate [3]	N/A	0.00435
	Carbon Tetrachloride	N/A	0.00216
	Chlorobenzene	N/A	0.00193

4 Geometric mean of daily average.

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average, mg/L	Maximum of Daily Maximum, mg/L
003	Chloroethane	N/A	0.00407
	Chloroform	N/A	0.0468
	Chrysene	N/A	0.00019
	Di-*n*-butyl Phthalate	N/A	0.00032
	1,2-Dichlorobenzene	N/A	0.0002
	1,3-Dichlorobenzene	N/A	0.0002
	1,4-Dichlorobenzene	N/A	0.00013
	1,1-Dichloroethane	N/A	0.00118
	1,2-Dichloroethane	N/A	0.00238
	1,1-Dichloroethylene	N/A	0.00179
	1,2-*trans*-Dichloroethylene	N/A	0.00207
	1,2-Dichloropropane	N/A	0.00332
	1,3-Dichloropropylene	N/A	0.0020
	Diethyl Phthalate	N/A	0.0010
	2,4-Dimethylphenol	N/A	0.00032
	Dimethyl Phthalate	N/A	0.00015
	4,6-Dinitro-*o*-cresol	N/A	0.00386
	2,4-Dinitrophenol	N/A	0.0088
	Ethylbenzene	N/A	0.00303
	Fluoranthene	N/A	0.00027
	Fluorene	N/A	0.00025
	Hexachlorobenzene [3]	N/A	0.00023
	Hexachlorobutadiene	N/A	0.00020
	Hexachloroethane [3]	N/A	0.00016
	Methyl Chloride	N/A	0.004
	Methylene Chloride	N/A	0.002
	Naphthalene	N/A	0.0004
	Nitrobenzene	N/A	0.0003
	2-Nitrophenol	N/A	0.00022
	4-Nitrophenol	N/A	0.0010
	Phenanthrene [3]	N/A	0.00029
	Phenol	N/A	0.00067
	Pyrene	N/A	0.00022
	Tetrachloroethylene	N/A	0.00292
	Toluene	N/A	0.00129
	1,2,4-Trichlorobenzene	N/A	0.0004
	1,1,1-Trichloroethane	N/A	0.0023
	1,1,2-Trichloroethane	N/A	0.00125
	Trichloroethylene	N/A	0.00372
	Vinyl Chloride [3]	N/A	0.002
	pH	6.0 SU, min	8.7 SU

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	BOD_5	34.8	4.09	342	54.6
	TSS	81.2	8.15	1,869.2	164
	TOC	240.7	24.36	545	50
	Oil and Grease	14.1	1.43	55	5
	Total Residual Chlorine	N/A	N/A	N/A	0.14
	Copper, Total	0.1337	0.01379	0.38	0.04
	Acenaphthene	0.00153	N/A	0.0065	N/A
	Acenaphthylene	0.00169	N/A	0.0079	N/A
	Acrylonitrile [3]	0.02246	0.00249	0.05519	0.005
	Anthracene	0.00142	N/A	0.0063	N/A
	Benzene	0.00820	N/A	0.022	N/A
	Benzo(*a*)anthracene [3]	0.00134	N/A	0.0048	N/A
	3,4-Benzofluoranthene	0.00187	N/A	0.00623	N/A
	Benzo(*k*)fluoranthene	0.00111	N/A	0.0028	N/A
	Benzo(*a*)pyrene [3]	0.00122	N/A	0.0043	N/A
	Bis(2-ethylhexyl) phthalate [3]	0.00571	N/A	0.02075	N/A
	Carbon Tetrachloride [3]	0.04392	N/A	0.251	N/A
	Chlorobenzene	0.00349	N/A	0.00935	N/A
	Chloroethane	0.07127	N/A	0.4	N/A
	Chloroform	0.04941	N/A	0.18355	N/A
	2-Chlorophenol	0.00186	N/A	0.0081	N/A
	Chrysene	0.00131	N/A	0.0055	N/A
	Di-*n*-butyl Phthalate	0.00202	N/A	0.0087	N/A
	1,2-Dichlorobenzene	0.00242	N/A	0.0105	N/A
	1,3-Dichlorobenzene	0.00233	N/A	0.0092	N/A
	1,4-Dichlorobenzene	0.00197	N/A	0.0088	N/A
	1,1-Dichloroethane	0.02892	N/A	0.168	N/A
	1,2-Dichloroethane	0.02968	N/A	0.16	N/A
	1,1-Dichloroethylene	0.00827	N/A	0.03	N/A
	1,2-*trans*-Dichloroethylene	0.00389	N/A	0.00954	N/A
	2,4-Dichlorophenol	0.00218	N/A	0.0085	N/A
	1,2-Dichloropropane	0.33086	N/A	1.489	N/A
	1,3-Dichloropropylene	0.00340	N/A	0.01106	N/A
	Diethyl Phthalate	0.01560	N/A	0.054	N/A
	2,4-Dimethylphenol	0.00320	N/A	0.0111	N/A
	Dimethyl Phthalate	0.00150	N/A	0.0065	N/A
	4,6-Dinitro-*o*-cresol	0.00749	N/A	0.01836	N/A
	2,4-Dinitrophenol	0.00827	N/A	0.04173	N/A
	2,4-Dinitrotoluene	0.00223	N/A	0.009	N/A
	2,6-Dinitrotoluene	0.00213	N/A	0.01	N/A
	Ethylbenzene	0.00480	N/A	0.01471	N/A
	Fluoranthene	0.00196	N/A	0.0088	N/A
	Fluorene	0.00174	N/A	0.0076	N/A
	Hexachlorobenzene	0	0	0	0
	Hexachlorobutadiene	0.00244	N/A	0.0097	N/A
	Hexachloroethane [3]	0.00226	N/A	0.0108	N/A

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	Methyl Chloride	0.00448	N/A	0.00969	N/A
	Methylene Chloride	0.01330	N/A	0.03578	N/A
	Naphthalene	0.00178	N/A	0.0071	N/A
	Nitrobenzene	0.00247	N/A	0.0115	N/A
	2-Nitrophenol	0.00273	N/A	0.0103	N/A
	4-Nitrophenol	0.00413	N/A	0.0082	N/A
	Phenanthrene [3]	0.00158	0.000214	0.0066	0.0008
	Phenol	0.00151	N/A	0.0058	N/A
	Pyrene	0.00177	N/A	0.0075	N/A
	Tetrachloroethylene	0.00510	N/A	0.01414	N/A
	Toluene	0.00350	N/A	0.01638	N/A
	1,2,4-Trichlorobenzene	0.00195	N/A	0.008	N/A
	1,1,1-Trichloroethane	0.00473	N/A	0.01117	N/A
	1,1,2-Trichloroethane	0.00260	N/A	0.00604	N/A
	Trichloroethylene	0.00687	N/A	0.01801	N/A
	Vinyl Chloride [3]	0.00414	N/A	0.00969	N/A
	pH	6.3 SU, min		10 SU	
	pH Range Excursions:				
	> 60 minutes	N/A		1	
	Monthly total	N/A		300 minutes	

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average, mg/L	Maximum of Daily Maximum, mg/L
104	BOD_5	4.8	73.6
	TSS	7.85	53
	E. coli	2 cfu/100 mL [3]	2,420 cfu/100 mL
	Total Residual Chlorine	1.0, min	N/A
005	TOC	5.83	32.2
	Oil and Grease	1.53	19
	pH	6.2 SU, min	9.5 SU
105	BOD_5	N/A	117.75
	TSS	N/A	238
	TOC	N/A	19
	Oil and Grease	N/A	67
	Acenaphthene	N/A	0.0008
	Acenaphthylene	N/A	0.000151
	Acrylonitrile [3]	N/A	0.0020
	Anthracene	N/A	0.0001
	Benzene	N/A	0.00307
	Benzo(*a*)anthracene [3]	N/A	0.0001
	3,4-Benzofluoranthene	N/A	0.0001
	Benzo(*k*)fluoranthene	N/A	0.0001
	Benzo(*a*)pyrene [3]	N/A	0.0001
	Bis(2-ethylhexyl) phthalate [3]	N/A	0.000698

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average, mg/L	Maximum of Daily Maximum, mg/L
105	Carbon Tetrachloride [3]	N/A	0.0003
	Chlorobenzene	N/A	0.00014
	Chloroethane	N/A	0.0004
	Chloroform	N/A	0.0128
	Chrysene	N/A	0.00008
	Di-*n*-butyl Phthalate	N/A	0.00015
	1,2-Dichlorobenzene	N/A	0.00017
	1,3-Dichlorobenzene	N/A	0.0002
	1,4-Dichlorobenzene	N/A	0.00013
	1,1-Dichloroethane	N/A	0.0002
	1,2-Dichloroethane	N/A	0.0002
	1,1-Dichloroethylene	N/A	0.0003
	1,2-*trans*-Dichloroethylene	N/A	0.0002
	1,2-Dichloropropane	N/A	0.0002
	1,3-Dichloropropylene	N/A	0.0002
	Diethyl Phthalate	N/A	0.002
	2,4-Dimethylphenol	N/A	0.00031
	Dimethyl Phthalate	N/A	0.0001
	4,6-Dinitro-*o*-cresol	N/A	0.008
	2,4-Dinitrophenol	N/A	0.0004
	Ethylbenzene	N/A	0.00121
	Fluoranthene	N/A	0.0001
	Fluorene	N/A	0.000192
	Hexachlorobenzene [3]	N/A	0.00011
	Hexachlorobutadiene	N/A	0.0002
	Hexachloroethane [3]	N/A	0.00039
	Methyl Chloride	N/A	0.0039
	Methylene Chloride	N/A	0.002
	Naphthalene	N/A	0.000931
	Nitrobenzene	N/A	0.00011
	2-Nitrophenol	N/A	0.00056
	4-Nitrophenol	N/A	0.00056
	Phenanthrene [3]	N/A	0.000201
	Phenol	N/A	0.00004
	Pyrene	N/A	0.00011
	Tetrachloroethylene	N/A	0.0002
	Toluene	N/A	0.00226
	1,2,4-Trichlorobenzene	N/A	0.00012
	1,1,1-Trichloroethane	N/A	0.0003
	1,1,2-Trichloroethane	N/A	0.0002
	Trichloroethylene	N/A	0.00032
	Vinyl Chloride [3]	N/A	0.0003
006	TOC	6.15	22
	Oil and Grease	1.50	5
	pH	6.4 SU, min	8.97 SU

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
007	BOD_5	27.5	5.03	307	58.7
	TSS	53.0	10.13	312.7	160
	TOC	121.2	21.47	297	47.3
	Total Residual Chlorine	N/A	N/A	N/A	0.94
	Ammonia Nitrogen	3.67	N/A	99.5	N/A
	Dissolved Oxygen	N/A	4.0, min	N/A	N/A
	Copper, Total	0.06730	0.011446	0.0941	0.015
	Zinc, Total	0.1803	0.02744	0.462	0.0615
	Acenaphthene	0.00128	N/A	0.006	N/A
	Acenaphthylene	0.00160	N/A	0.0076	N/A
	Acrylonitrile [3]	0.02638	0.00322	0.043	0.00509
	Anthracene	0.00124	N/A	0.0061	N/A
	Benzene	0.00291	N/A	0.00467	N/A
	Benzo(*a*)anthracene [3]	0.00114	0.000167	0.005	0.000559
	3,4-Benzofluoranthene	0.00106	N/A	0.005	N/A
	Benzo(*k*)fluoranthene	0.00084	N/A	0.002	N/A
	Benzo(*a*)pyrene [3]	0.00090	0.000149	0.004	0.0005
	Bis(2-ethylhexyl) phthalate [3]	0.00484	N/A	0.0153	N/A
	Carbon Tetrachloride [3]	0.00477	N/A	0.00768	N/A
	Chlorobenzene	0.00416	N/A	0.008	N/A
	Chloroethane	0.00850	N/A	0.014	N/A
	Chloroform	0.06058	N/A	0.1407	N/A
	2-Chlorophenol	0.00164	N/A	0.008	N/A
	Chrysene	0.00110	N/A	0.005	N/A
	Di-*n*-butyl Phthalate	0.00338	N/A	0.009	N/A
	1,2-Dichlorobenzene	0.00210	N/A	0.01	N/A
	1,3-Dichlorobenzene	0.00190	N/A	0.009	N/A
	1,4-Dichlorobenzene	0.00186	N/A	0.009	N/A
	1,1-Dichloroethane	0.00268	N/A	0.0063	N/A
	1,2-Dichloroethane	0.00523	N/A	0.00842	N/A
	1,1-Dichloroethylene	0.00362	N/A	0.006	N/A
	1,2-*trans*-Dichloroethylene	0.00438	N/A	0.007	N/A
	2,4-Dichlorophenol	NR	N/A	NR	N/A
	1,2-Dichloropropane	0.00722	N/A	0.012	N/A
	1,3-Dichloropropylene	0.0036	N/A	0.0074	N/A
	Diethyl Phthalate	0.00530	N/A	0.0112	N/A
	2,4-Dimethylphenol	0.00272	N/A	0.01	N/A
	Dimethyl Phthalate	0.00126	N/A	0.006	N/A
	4,6-Dinitro-*o*-cresol	0.00578	N/A	0.0135	N/A
	2,4-Dinitrophenol	0.00198	N/A	0.007	N/A
	2,4-Dinitrotoluene	0.00224	N/A	0.009	N/A
	2,6-Dinitrotoluene	0.00190	N/A	0.01	N/A
	Ethylbenzene	0.00770	N/A	0.086	N/A
	Fluoranthene	0.00174	N/A	0.009	N/A
	Fluorene	0.00152	N/A	0.007	N/A

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
007	Hexachlorobenzene	0	0	0	0
	Hexachlorobutadiene	0.00338	N/A	0.0093	N/A
	Hexachloroethane [3]	0.00204	N/A	0.01	N/A
	Methyl Chloride	0.00450	N/A	0.007	N/A
	Methylene Chloride	0.00728	N/A	0.011	N/A
	Naphthalene	0.00196	N/A	0.0126	N/A
	Nitrobenzene	0.00274	N/A	0.011	N/A
	2-Nitrophenol	0.00222	N/A	0.01	N/A
	4-Nitrophenol	0.00280	N/A	0.008	N/A
	Phenanthrene [3]	0.0013	0.000201	0.006	0.00076
	Phenol	0.0024	N/A	0.0216	N/A
	Pyrene	0.00196	N/A	0.007	N/A
	Tetrachloroethylene	0.00608	N/A	0.01	N/A
	Toluene	0.00321	N/A	0.0118	N/A
	1,2,4-Trichlorobenzene	0.00152	N/A	0.0034	N/A
	1,1,1-Trichloroethane	0.00506	N/A	0.008	N/A
	1,1,2-Trichloroethane	0.00264	N/A	0.0041	N/A
	Trichloroethylene	0.00828	N/A	0.013	N/A
	Vinyl Chloride [3]	0.00446	N/A	0.007	N/A
	pH	6.3 SU, min		8.8 SU	

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average, mg/L	Maximum of Daily Maximum, mg/L
107	BOD_5	17	30
	TSS	43.25	98
	E. coli	93 cfu/100 mL [3]	2,420 cfu/100 mL
	Total Residual Chlorine	1.2, min	N/A
207	BOD_5	6.97	38
	TSS	20.49	175
	E. coli	6 cfu/100 mL [3]	2,420 cfu/100 mL
	Total Residual Chlorine	0.1, min	N/A
307	BOD_5	7.53	23.9
	TSS	146.57	690
	E. coli	6 cfu/100 mL [3]	1086.2 cfu/100 mL
	Total Residual Chlorine	0.03, min	N/A
407	BOD_5	23.9	191
	TSS	97.33	721
	E. coli	4 cfu/100 mL [3]	2,420 cfu/100 mL
	Total Residual Chlorine	0.9, min	N/A
008	TOC	N/A	62.4
	Oil and Grease	N/A	2
	pH	7.2 SU, min	8.5 SU

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

D. Effluent Limitation Violations

Outfall	Pollutant (units)	Month/ Year	Daily Average		Daily Maximum	
			Limit	Reported	Limit	Reported
001	Flow (MGD)	8/2017	—	—	3.3	4.31
	Total Residual Chlorine (mg/L)	11/2014	—	—	0.1	0.35
		5/2015	—	—	0.1	0.3
	Aluminum, Total (mg/L)	3/2017	0.835	1.394	1.766	4.89
		12/2017	—	—	1.766	1.98
	Aluminum, Total (lbs/day)	3/2017	—	—	29.03	41.51
		12/2017	—	—	29.03	37.89
	Copper, Total (mg/L)	6/2016	0.015	0.021	0.0317	0.037
		7/2016	0.015	0.0159	—	—
		3/2017	0.015	0.016	0.0317	0.039
101	TSS (mg/L)	3/2015	30	30.6	—	—
		4/2015	30	47	45	67
	Total Residual Chlorine (mg/L)	4/2015	1.0, min	0.3	—	—
201	*E. coli* (cfu/100 mL)	1/2016	—	—	399	>2,419.6
	Total Residual Chlorine (mg/L)	4/2015	1.0, min	0.1	—	—
003	TSS (mg/L)	3/2018	151	452	214	452
	Aluminum, Total (mg/L)	8/2017	0.835	1.66	—	—
		8/2019	0.835	2.166	1.766	3.13
004	BOD_5 (lbs/day)	1/2016	—	—	265.2	342
	TSS (lbs/day)	6/2017	—	—	1,648	1,869.2
	Total Residual Chlorine (mg/L)	6/2017	—	—	0.1	0.14
	pH (SU)	11/2015	—	—	9.0	10.0
	pH range excursions > 60 min.	11/2015	—	—	0	1
104	BOD_5 (mg/L)	12/2017	—	—	45	73.6
	TSS (mg/L)	4/2015	—	—	45	50
		1/2017	—	—	45	53
005	Oil and Grease (mg/L)	1/2017	—	—	15	19
	pH (SU)	3/2018	—	—	9.0	9.5
105	BOD_5 (mg/L)	5/2015	—	—	80	117.75
	TSS (mg/L)	3/2015	—	—	149	177
		11/2015	—	—	149	200
		1/2016	—	—	149	238
		3/2017	—	—	149	166
		6/2019	—	—	149	178
	Oil and Grease (mg/L)	5/2015	—	—	15	67
		4/2017	—	—	15	54
		9/2018	—	—	15	37
007	BOD_5 (lbs/day)	9/2017	—	—	176.8	307
	Total Residual Chlorine (mg/L)	11/2014	—	—	0.1	0.94
	Ammonia Nitrogen (lbs/day)	5/2015	25	41.9	53	72.7
		3/2016	25	25.6	53	99.5

D. Effluent Limitation Violations

Outfall	Pollutant (units)	Month/ Year	Daily Average		Daily Maximum	
			Limit	Reported	Limit	Reported
007	Ammonia Nitrogen (lbs/day)	3/2018	25	28	53	62
107	TSS (mg/L)	2/2015	30	98	45	98
207	BOD_5 (mg/L)	10/2017	30	34.8	—	—
	TSS (mg/L)	9/2015	30	58	45	58
		7/2017	30	44	—	—
		8/2017	30	85	45	85
		9/2017	30	43.7	—	—
		10/2017	30	69.6	45	69.6
		11/2017	30	52.4	45	87
		12/2017	30	135.5	45	175
	E. coli (cfu/100 mL)	10/2016	126	135	399	816
		12/2016	—	—	399	547.5
		2/2017	126	200.8	399	488
		7/2017	—	—	399	980.4
	Total Residual Chlorine	10/2015	1.0, min	0.4	—	—
	(mg/L)	4/2017	1.0, min	0.1	—	—
		7/2017	1.0, min	0.3	—	—
307	TSS (mg/L)	7/2017	30	50	45	50
		10/2017	30	690	45	690
		11/2017	30	112	45	112
	E. coli (cfu/100 mL)	6/2017	126	362.7	399	1,086.2
	Total Residual Chlorine	9/2017	1.0, min	0.1	—	—
	(mg/L)	10/2107	1.0, min	0.03	—	—
407	BOD_5 (mg/L)	2/2015	30	191	45	191
	TSS (mg/L)	2/2015	30	54	45	54
		8/2017	30	49.5	45	49.5
		10/2017	30	721	45	721
		11/2017	30	46	45	46
	Total Residual Chlorine (mg/L)	10/2017	1.0, min	0.9	—	—

The table below summarizes the changes made to the draft permit to address these effluent limit violations.

Outfall	Permit Action
001	No changes have been made to requirements in the draft permit for flow or total residual chlorine because the violations were infrequent. The measurement frequencies for total aluminum and total copper have been increased from once per month to once per week, which is more appropriate for water quality-based effluent limits when the measured levels are near or exceeding the limits.

Outfall	**Permit Action**
101	The TSS limits have been removed from the draft permit because TSS is limited at Outfall 001. Removal of the TSS limits may also allow the facility to chlorinate more effectively.
201	Outfall 201 has been removed from the permit.
003	The limits on total aluminum have been increased based on information provided with the permit amendment request. No changes were made based on the single month of TSS violations.
004	No changes have been made to the draft permit because the violations were infrequent.
104	The BOD_5 and TSS limits have been removed from the draft permit because they are limited at Outfall 004.
005	No changes have been made to the draft permit because the violations were infrequent.
105	No changes have been made to the draft permit because the violations were infrequent.
007	No changes have been made to the draft permit because the violations were infrequent.
107	Outfall 107 has been removed from the permit
207	The BOD_5 and TSS limits have been removed from the draft permit because they are limited at Outfall 007. Removal of the BOD_5 and TSS limits may also allow the facility to chlorinate more effectively.
307	The BOD_5 and TSS limits have been removed from the draft permit because they are limited at Outfall 007. Removal of the BOD_5 and TSS limits may also allow the facility to chlorinate more effectively.
407	The BOD_5 and TSS limits have been removed from the draft permit because they are limited at Outfall 007. Removal of the BOD_5 and TSS limits may also allow the facility to chlorinate more effectively.

VII. DRAFT EFFLUENT LIMITATIONS

Effluent limitations are established in the draft permit as follows:

Outfall	**Pollutant**	**Daily Average**		**Daily Maximum**	
		lbs/day	**mg/L**	**lbs/day**	**mg/L**
001	Flow	2.6 MGD		3.3 MGD	
	Temperature	95 °F		105 °F	
	BOD_5	408	N/A	1,032	N/A
	TSS	782.6	N/A	2,554.5	N/A
	TOC	651	N/A	1,193	N/A
	Total Residual Chlorine	N/A	N/A	N/A	0.1
	Aluminum, Total	18.1	N/A	38.3	N/A
	Copper, Total [5]	0.291	0.0134	0.614	0.0283
	Copper, Total [6]	0.206	0.0095	0.436	0.0201

[5] Effluent limits are effective beginning on the date of permit issuance and lasting for three years.
[6] Effluent limits are effective beginning three years after the date of permit issuance and lasting through the date of permit expiration.

Outfall	**Pollutant**	**Daily Average**		**Daily Maximum**	
		lbs/day	**mg/L**	**lbs/day**	**mg/L**
001	Nonylphenol [5]	Report	Report	Report	Report
	Nonylphenol [6]	0.047	0.00219	0.100	0.00463
	Zinc, Total	3.08	N/A	6.50	N/A
	Acenaphthene	0.250	N/A	0.617	N/A
	Acenaphthylene	0.250	N/A	0.617	N/A
	Acrylonitrile	0.133	0.0061	0.282	0.0130
	Anthracene	0.250	N/A	0.617	N/A
	Benzene	0.749	N/A	1.760	N/A
	Benzo(*a*)anthracene	0.019	0.00086	0.039	0.00182
	3,4-Benzofluoranthene	0.263	N/A	0.630	N/A
	Benzo(*k*)fluoranthene	0.250	N/A	0.617	N/A
	Benzo(*a*)pyrene	0.011	0.00053	0.024	0.00113
	Bis(2-ethylhexyl) phthalate	1.248	N/A	3.05	N/A
	Carbon Tetrachloride	1.07	0.049	2.27	0.105
	Chlorobenzene	1.865	N/A	4.99	N/A
	Chloroethane	1.445	N/A	3.875	N/A
	Chloroform	1.458	N/A	4.269	N/A
	Chrysene	0.250	N/A	0.617	N/A
	Di-*n*-butyl Phthalate	0.263	N/A	0.565	N/A
	1,2-Dichlorobenzene	2.574	N/A	10.429	N/A
	1,3-Dichlorobenzene	1.865	N/A	4.99	N/A
	1,4-Dichlorobenzene	1.865	N/A	4.99	N/A
	1,1-Dichloroethane	0.289	N/A	0.775	N/A
	1,2-Dichloroethane	2.364	N/A	7.540	N/A
	1,1-Dichloroethylene	0.289	N/A	0.788	N/A
	1,2-*trans*-Dichloroethylene	0.328	N/A	0.867	N/A
	1,2-Dichloropropane	2.574	N/A	10.429	N/A
	1,3-Dichloropropylene	2.574	N/A	10.429	N/A
	Diethyl Phthalate	0.604	N/A	1.484	N/A
	2,4-Dimethylphenol	0.250	N/A	0.617	N/A
	Dimethyl Phthalate	0.250	N/A	0.617	N/A
	4,6-Dinitro-*o*-cresol	1.025	N/A	3.638	N/A
	2,4-Dinitrophenol	15.854	N/A	56.362	N/A
	Ethylbenzene	1.865	N/A	4.99	N/A
	Fluoranthene	0.289	N/A	0.709	N/A
	Fluorene	0.250	N/A	0.617	N/A
	Hexachlorobenzene	0.00015	7.3×10^{-6}	0.00033	15.4×10^{-6}
	Hexachlorobutadiene	1.865	N/A	4.99	N/A
	Hexachloroethane	0.405	N/A	0.857	N/A
	Methyl Chloride	1.445	N/A	3.875	N/A
	Methylene Chloride	0.473	N/A	2.233	N/A
	Naphthalene	0.250	N/A	0.617	N/A
	Nitrobenzene	26.23	1.209	55.49	2.557
	2-Nitrophenol	0.854	N/A	3.034	N/A
	4-Nitrophenol	2.128	N/A	7.566	N/A
	Phenanthrene	0.128	0.0059	0.271	0.0125
	Phenol	0.250	N/A	0.617	N/A
	Pyrene	0.263	N/A	0.630	N/A

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Tetrachloroethylene	0.683	N/A	2.154	N/A
	Toluene	0.368	N/A	0.972	N/A
	1,2,4-Trichlorobenzene	2.574	N/A	10.429	N/A
	1,1,1-Trichloroethane	0.289	N/A	0.775	N/A
	1,1,2-Trichloroethane	0.420	N/A	1.668	N/A
	Trichloroethylene	0.342	N/A	0.906	N/A
	Vinyl Chloride	0.844	N/A	1.78	N/A
	pH	6.0 SU, min		9.0 SU	

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
101	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
	E. coli	126 cfu or MPN /100 mL	399 cfu or MPN /100 mL
003	Flow	Report MGD	Report MGD
	BOD_5	15	30
	TSS	151	214
	TOC	N/A	55
	Oil and Grease	N/A	15
	Total Residual Chlorine	N/A	0.1
	Aluminum, Total	2.197	4.647
	Copper, Total	0.043	0.091
	Nonylphenol [5]	N/A	Report
	Nonylphenol [6]	0.0155	0.0328
	Zinc, Total	0.361	0.763
	Acenaphthene	N/A	0.010
	Acenaphthylene	N/A	0.010
	Acrylonitrile	N/A	0.050
	Anthracene	N/A	0.010
	Benzene	N/A	0.0147
	Benzo(*a*)anthracene	N/A	0.0051
	3,4-Benzofluoranthene	N/A	0.010
	Benzo(*k*)fluoranthene	N/A	0.0051
	Benzo(*a*)pyrene	N/A	0.0052
	Bis(2-ethylhexyl) phthalate	N/A	0.0284
	Carbon Tetrachloride	N/A	0.0418
	Chlorobenzene	N/A	0.0418
	Chloroethane	N/A	0.050
	Chloroform	N/A	0.0570
	Chrysene	N/A	0.0051
	Di-*n*-butyl Phthalate	N/A	0.010
	1,2-Dichlorobenzene	N/A	0.0874
	1,3-Dichlorobenzene	N/A	0.0418
	1,4-Dichlorobenzene	N/A	0.0418
	1,1-Dichloroethane	N/A	0.010
	1,2-Dichloroethane	N/A	0.0632
	1,1-Dichloroethylene	N/A	0.010

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
003	1,2-*trans*-Dichloroethylene	N/A	0.010
	1,2-Dichloropropane	N/A	0.0874
	1,3-Dichloropropylene	N/A	0.0874
	Diethyl Phthalate	N/A	0.0124
	2,4-Dimethylphenol	N/A	0.010
	Dimethyl Phthalate	N/A	0.010
	4,6-Dinitro-*o*-cresol	N/A	0.050
	2,4-Dinitrophenol	N/A	0.4728
	Ethylbenzene	N/A	0.0418
	Fluoranthene	N/A	0.010
	Fluorene	N/A	0.010
	Hexachlorobenzene	N/A	0.0874
	Hexachlorobutadiene	N/A	0.0418
	Hexachloroethane	N/A	0.0874
	Methyl Chloride	N/A	0.050
	Methylene Chloride	N/A	0.020
	Naphthalene	N/A	0.010
	Nitrobenzene	N/A	0.7055
	2-Nitrophenol	N/A	0.0254
	4-Nitrophenol	N/A	0.0634
	Phenanthrene	N/A	0.010
	Phenol	N/A	0.010
	Pyrene	N/A	0.010
	Tetrachloroethylene	N/A	0.0180
	Toluene	N/A	0.010
	1,2,4-Trichlorobenzene	N/A	0.0874
	1,1,1-Trichloroethane	N/A	0.010
	1,1,2-Trichloroethane	N/A	0.0139
	Trichloroethylene	N/A	0.010
	Vinyl Chloride	N/A	0.0189
	pH	6.0 SU, min	9.0 SU

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	Flow [7]	1.50 MGD		2.6 MGD	
	BOD_5	231	Report	567	Report
	TSS	459	Report	1,504	Report
	TOC	375	Report	688	Report
	Oil and Grease	71	10	106	15
	Total Residual Chlorine	N/A	N/A	N/A	0.1
	Temperature	N/A		Report °F	
	Dissolved Oxygen	N/A	3.0, min	N/A	N/A
	Copper, Total [5]	0.29	0.0232	0.61	0.0491
	Copper, Total [6]	0.128	0.0104	0.271	0.0220

[7] The total combined volume of cooling tower blowdown from Outfalls 004 and 010 must not exceed a daily average flow of 0.86 MGD and a daily maximum flow of 1.1 MGD.

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	Cyanide, Free [5]	Report	Report	Report	Report
	Cyanide, Free [6]	0.061	0.0050	0.131	0.0106
	Acenaphthene	0.115	N/A	0.310	N/A
	Acenaphthylene	0.115	N/A	0.310	N/A
	Acrylonitrile	0.073	0.0072	0.154	0.0154
	Anthracene	0.115	N/A	0.310	N/A
	Benzene	0.194	N/A	0.715	N/A
	Benzo(*a*)anthracene	0.023	N/A	0.049	N/A
	3,4-Benzofluoranthene	0.120	N/A	0.320	N/A
	Benzo(*k*)fluoranthene	0.115	N/A	0.310	N/A
	Benzo(*a*)pyrene	0.0063	N/A	0.0134	N/A
	Bis(2-ethylhexyl) phthalate	0.541	N/A	1.46	N/A
	Carbon Tetrachloride	0.094	N/A	0.199	N/A
	Chlorobenzene	0.078	N/A	0.147	N/A
	Chloroethane	0.546	N/A	1.40	N/A
	Chloroform	0.110	N/A	0.241	N/A
	2-Chlorophenol	0.162	N/A	0.515	N/A
	Chrysene	0.115	N/A	0.310	N/A
	Di-*n*-butyl Phthalate	0.141	N/A	0.299	N/A
	1,2-Dichlorobenzene	0.404	N/A	0.856	N/A
	1,3-Dichlorobenzene	0.162	N/A	0.231	N/A
	1,4-Dichlorobenzene	0.078	N/A	0.147	N/A
	1,1-Dichloroethane	0.115	N/A	0.310	N/A
	1,2-Dichloroethane	0.357	N/A	1.10	N/A
	1,1-Dichloroethylene	0.084	N/A	0.131	N/A
	1,2-*trans*-Dichloroethylene	0.110	N/A	0.283	N/A
	2,4-Dichlorophenol	0.205	N/A	0.588	N/A
	1,2-Dichloropropane	0.804	N/A	1.20	N/A
	1,3-Dichloropropylene	0.152	N/A	0.231	N/A
	Diethyl Phthalate	0.425	N/A	1.06	N/A
	2,4-Dimethylphenol	0.094	N/A	0.189	N/A
	Dimethyl Phthalate	0.099	N/A	0.247	N/A
	4,6-Dinitro-*o*-cresol	0.410	N/A	1.45	N/A
	2,4-Dinitrophenol	0.373	N/A	0.646	N/A
	2,4-Dinitrotoluene	0.594	N/A	1.49	N/A
	2,6-Dinitrotoluene	1.34	N/A	3.36	N/A
	Ethylbenzene	0.168	N/A	0.567	N/A
	Fluoranthene	0.131	N/A	0.357	N/A
	Fluorene	0.115	N/A	0.310	N/A
	Hexachlorobenzene	8.6×10^{-5}	8.6×10^{-6}	18.4×10^{-5}	18.3×10^{-6}
	Hexachlorobutadiene	0.103	N/A	0.217	N/A
	Hexachloroethane	0.110	N/A	0.283	N/A
	Methyl Chloride	0.452	N/A	0.998	N/A
	Methylene Chloride	0.210	N/A	0.467	N/A
	Naphthalene	0.115	N/A	0.310	N/A
	Nitrobenzene	0.141	N/A	0.357	N/A
	2-Nitrophenol	0.215	N/A	0.362	N/A
	4-Nitrophenol	0.378	N/A	0.651	N/A

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	Phenanthrene	0.079	0.0064	0.169	0.0137
	Phenol	0.078	N/A	0.136	N/A
	Pyrene	0.131	N/A	0.352	N/A
	Tetrachloroethylene	0.115	N/A	0.294	N/A
	Toluene	0.136	N/A	0.420	N/A
	1,2,4-Trichlorobenzene	0.357	N/A	0.736	N/A
	1,1,1-Trichloroethane	0.110	N/A	0.283	N/A
	1,1,2-Trichloroethane	0.110	N/A	0.283	N/A
	Trichloroethylene	0.110	N/A	0.283	N/A
	Vinyl Chloride	0.462	N/A	0.978	N/A
	pH	6.0 SU, min		9.0 SU	
	pH Range Excursions:				
	> 60 minutes	N/A		0	
	Monthly total	N/A		7 hours, 26 minutes	

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
104	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
	E. coli	126 cfu or MPN/100 mL	399 cfu or MPN/100 mL
005	Flow	Report MGD	Report MGD
	TOC	Report	55
	Oil and Grease	Report	15
	Cyanide, Free [5]	Report	Report
	Cyanide, Free [6]	0.0050	0.0106
	pH	6.0 SU, min	9.0 SU
105	Flow	Report MGD	Report MGD
	BOD_5	N/A	80
	TSS	N/A	149
	TOC	N/A	55
	Oil and Grease	N/A	15
	Acenaphthene	N/A	0.047
	Acenaphthylene	N/A	0.047
	Acrylonitrile	N/A	0.232
	Anthracene	N/A	0.047
	Benzene	N/A	0.134
	Benzo(*a*)anthracene	N/A	0.047
	3,4-Benzofluoranthene	N/A	0.048
	Benzo(*k*)fluoranthene	N/A	0.047
	Benzo(*a*)pyrene	N/A	0.048
	Bis(2-ethylhexyl) phthalate	N/A	0.258
	Carbon Tetrachloride	N/A	0.380
	Chlorobenzene	N/A	0.380
	Chloroethane	N/A	0.295
	Chloroform	N/A	0.325
	Chrysene	N/A	0.047
	Di-*n*-butyl Phthalate	N/A	0.043

Outfall	**Pollutant**	**Daily Average, mg/L**	**Daily Maximum, mg/L**
105	1,2-Dichlorobenzene	N/A	0.794
	1,3-Dichlorobenzene	N/A	0.380
	1,4-Dichlorobenzene	N/A	0.380
	1,1-Dichloroethane	N/A	0.059
	1,2-Dichloroethane	N/A	0.574
	1,1-Dichloroethylene	N/A	0.060
	1,2-*trans*-Dichloroethylene	N/A	0.066
	1,2-Dichloropropane	N/A	0.794
	1,3-Dichloropropylene	N/A	0.794
	Diethyl Phthalate	N/A	0.113
	2,4-Dimethylphenol	N/A	0.047
	Dimethyl Phthalate	N/A	0.047
	4,6-Dinitro-*o*-cresol	N/A	0.277
	2,4-Dinitrophenol	N/A	4.291
	Ethylbenzene	N/A	0.380
	Fluoranthene	N/A	0.054
	Fluorene	N/A	0.047
	Hexachlorobenzene	N/A	0.794
	Hexachlorobutadiene	N/A	0.380
	Hexachloroethane	N/A	0.794
	Methyl Chloride	N/A	0.295
	Methylene Chloride	N/A	0.170
	Naphthalene	N/A	0.047
	Nitrobenzene	N/A	6.402
	2-Nitrophenol	N/A	0.231
	4-Nitrophenol	N/A	0.576
	Phenanthrene	N/A	0.047
	Phenol	N/A	0.047
	Pyrene	N/A	0.048
	Tetrachloroethylene	N/A	0.164
	Toluene	N/A	0.074
	1,2,4-Trichlorobenzene	N/A	0.794
	1,1,1-Trichloroethane	N/A	0.059
	1,1,2-Trichloroethane	N/A	0.127
	Trichloroethylene	N/A	0.069
	Vinyl Chloride	N/A	0.172
006	Flow	Report MGD	Report MGD
	TOC	Report	55
	Oil and Grease	Report	15
	pH	6.0 SU, min	9.0 SU

Outfall	**Pollutant**	**Average of Daily Average**		**Maximum of Daily Maximum**	
		lbs/day	**mg/L**	**lbs/day**	**mg/L**
007	Flow	1.22 MGD		1.6 MGD	
	BOD_5	185	Report	370	Report
	TSS	406	Report	1,321	Report
	TOC	447	Report	906	Report

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
007	Total Residual Chlorine	N/A	N/A	N/A	0.1
	Ammonia Nitrogen	25	N/A	53	N/A
	Dissolved Oxygen	N/A	4.0, min	N/A	N/A
	Temperature	95°F		100°F	
	Copper, Total	0.109	0.0108	0.233	0.0229
	Cyanide, Free	N/A	Report	N/A	Report
	Acenaphthene	0.143	N/A	0.386	N/A
	Acenaphthylene	0.143	N/A	0.386	N/A
	Acrylonitrile	0.073	N/A	0.156	N/A
	Anthracene	0.143	N/A	0.386	N/A
	Benzene	0.242	N/A	0.889	N/A
	Benzo(*a*)anthracene	0.063	N/A	0.135	N/A
	3,4-Benzofluoranthene	0.150	N/A	0.399	N/A
	Benzo(*k*)fluoranthene	0.143	N/A	0.386	N/A
	Benzo(*a*)pyrene	0.0064	N/A	0.0135	N/A
	Bis(2-ethylhexyl) phthalate	0.673	N/A	1.69	N/A
	Carbon Tetrachloride	0.117	N/A	0.248	N/A
	Chlorobenzene	0.098	N/A	0.183	N/A
	Chloroethane	0.680	N/A	1.75	N/A
	Chloroform	0.527	N/A	1.44	N/A
	2-Chlorophenol	0.202	N/A	0.641	N/A
	Chrysene	0.143	N/A	0.386	N/A
	Di-*n*-butyl Phthalate	0.176	N/A	0.372	N/A
	1,2-Dichlorobenzene	0.503	N/A	1.06	N/A
	1,3-Dichlorobenzene	0.202	N/A	0.287	N/A
	1,4-Dichlorobenzene	0.098	N/A	0.183	N/A
	1,1-Dichloroethane	0.143	N/A	0.386	N/A
	1,2-Dichloroethane	0.444	N/A	1.38	N/A
	1,1-Dichloroethylene	0.104	N/A	0.163	N/A
	1,2-*trans*-Dichloroethylene	0.137	N/A	0.353	N/A
	2,4-Dichlorophenol	0.255	N/A	0.732	N/A
	1,2-Dichloropropane	1.00	N/A	1.50	N/A
	1,3-Dichloropropylene	0.189	N/A	0.287	N/A
	Diethyl Phthalate	0.529	N/A	1.32	N/A
	2,4-Dimethylphenol	0.117	N/A	0.235	N/A
	Dimethyl Phthalate	0.124	N/A	0.307	N/A
	4,6-Dinitro-*o*-cresol	0.510	N/A	1.81	N/A
	2,4-Dinitrophenol	0.464	N/A	0.804	N/A
	2,4-Dinitrotoluene	0.739	N/A	1.86	N/A
	2,6-Dinitrotoluene	1.66	N/A	4.19	N/A
	Ethylbenzene	0.209	N/A	0.706	N/A
	Fluoranthene	0.163	N/A	0.444	N/A
	Fluorene	0.143	N/A	0.386	N/A
	Hexachlorobenzene	8.8×10^{-5}	N/A	18.5×10^{-5}	N/A
	Hexachlorobutadiene	0.130	N/A	0.320	N/A
	Hexachloroethane	0.137	N/A	0.353	N/A
	Methyl Chloride	0.562	N/A	1.24	N/A

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
007	Methylene Chloride	0.261	N/A	0.582	N/A
	Naphthalene	0.143	N/A	0.386	N/A
	Nitrobenzene	0.176	N/A	0.444	N/A
	2-Nitrophenol	0.268	N/A	0.451	N/A
	4-Nitrophenol	0.471	N/A	0.811	N/A
	Phenanthrene	0.068	N/A	0.144	N/A
	Phenol	0.098	N/A	0.170	N/A
	Pyrene	0.163	N/A	0.438	N/A
	Tetrachloroethylene	0.143	N/A	0.366	N/A
	Toluene	0.170	N/A	0.523	N/A
	1,2,4-Trichlorobenzene	0.444	N/A	0.915	N/A
	1,1,1-Trichloroethane	0.137	N/A	0.353	N/A
	1,1,2-Trichloroethane	0.137	N/A	0.353	N/A
	Trichloroethylene	0.137	N/A	0.353	N/A
	Vinyl Chloride	0.466	N/A	0.987	N/A
	pH	6.0 SU, min		9.0 SU	

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
207	Flow	Report MGD	Report MGD
	E. coli	126 cfu or MPN/100 mL	399 cfu or MPN/100 mL
	Chlorine Residual	1.0, min	N/A
307	Flow	Report MGD	Report MGD
	E. coli	126 cfu or MPN/100 mL	399 cfu or MPN/100 mL
	Chlorine Residual	1.0, min	N/A
407	Flow	Report MGD	Report MGD
	E. coli	126 cfu or MPN/100 mL	399 cfu or MPN/100 mL
	Chlorine Residual	1.0, min	N/A
008	Flow	Report MGD	Report MGD
	TOC	N/A	75
	Oil and Grease	N/A	15
	Aluminum, Total [5]	N/A	Report
	Aluminum, Total [6]	N/A	1.766
	Cyanide, Free [5]	N/A	Report
	Cyanide, Free [6]	N/A	0.0055
	Zinc, Total	N/A	Report
	pH	6.0 SU, min	9.0 SU
009	Flow	Report MGD	Report MGD
	TOC	N/A	75
	Oil and Grease	N/A	15
	pH	6.0 SU, min	9.0 SU
010	Flow [7]	0.86 MGD	1.10 MGD
	Temperature	N/A	Report °F
	TSS	30	100
	Oil and Grease	15	20
	Free Available Chlorine	0.2	0.5
	pH	6.0 SU, min	9.0 SU

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant requested the following amendment that the executive director (ED) did not grant:

1. *Remove the dissolved oxygen limit for Outfall 007.*

   Based on the recommendations from the modeler in the memo dated October 30, 2018, a minimum dissolved oxygen limit of 4.0 mg/L is still necessary for Outfall 007.

The following changes have been made from the application that make the draft permit more stringent:

Outfall 001

1. Based on the current water quality-based screening and effluent data provided during development of the draft permit, effluent limits have been added for nonylphenol. A three-year compliance period has been included to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.
2. Based on the current water quality-based screening, effluent limits have been made more stringent for the following pollutants: total copper, acrylonitrile, benzo(*a*)pyrene, bis(2-ethylhexyl) phthalate (daily maximum only), carbon tetrachloride, hexachlorobenzene, hexachloroethane, phenanthrene, and vinyl chloride. A three-year compliance period has been included for total copper to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units. The remaining pollutants are being detected in the effluent; however, the self-reported levels are well below the screening values, so no compliance period appears to be necessary.
3. The measurement frequencies for total aluminum and total copper have been increased from once per month to once per week because self-reported data includes some violations of these limits.
4. The measurement frequency for hexachlorobenzene has been increased from once per year to once per quarter. This frequency is more consistent with TCEQ's *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* for limits that are required based on technology, are present in detectable amounts[8], and do not present a water quality concern. This pollutant is required to be regulated under 40 CFR Part 414, Subpart J and the water quality-based limits are more stringent than the required technology-based limits.
5. Single grab limits have been reduced for TOC, total zinc, carbon tetrachloride, hexachloroethane, and phenanthrene. See Appendix E for a table that compares the calculated single grab limit, existing grab limit, and minimum analytical level for each pollutant.

Outfall 003

6. Based on updated calculations, technology-based effluent limits for all pollutants listed in 40 CFR Part 414, Subpart J, have been reduced significantly. Previous permits included daily maximum limits that were equal to the concentrations specified for process wastewater in 40 CFR Part 414, Subpart J. However, the majority of the discharge from Outfall 003 consists of stormwater, which is not expected to contain these pollutants.

[8] Although hexachlorobenzene was not reported as being detected in the effluent, the non-detect level is greater than the water quality-based effluent limits in the permit. A measurement frequency of once per quarter is more appropriate than once per year for this pollutant.

7. Single grab limits for all pollutants listed in 40 CFR Part 414, Subpart J, have been reduced significantly based on the reductions in daily maximum limits discussed above.

8. Based on the current water quality-based screening, effluent limits for total zinc have been made more stringent. A three-year compliance period has been included for total zinc to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.

9. Based on the current water quality-based screening and effluent data provided during development of the draft permit, effluent limits have been added for nonylphenol. A three-year compliance period has been included to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.

10. The measurement frequencies for total aluminum, total copper, and total zinc have been increased from once per year to once per quarter. This frequency is more consistent with TCEQ's *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* for limits that are required based on water quality screening. Although more frequent monitoring and reporting could be imposed, once per quarter seems sufficient based on the intermittent nature of the discharge.

Outfall 004

11. Technology-based effluent limits for most pollutants were made more stringent because the relative proportion of process wastewater decreased over 60% compared to the previous permit application.

12. Based on the current water quality-based screening and effluent data provided during development of the draft permit, effluent limits have been added for free cyanide. A three-year compliance period has been included to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.

13. Based on current modeling of oxygen-demanding substances, a minimum dissolved oxygen limit of 3.0 mg/L has been added. Based on dissolved oxygen levels provided during development of the draft permit, the facility is not expected to have problems meeting the new limit; therefore, no compliance period was included.

14. Based on the current water quality-based screening, effluent limits have been made more stringent for the following pollutants: total copper, acrylonitrile, benzo(a)pyrene, hexachlorobenzene, phenanthrene, and vinyl chloride. A three-year compliance period has been included for total copper to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units. The remaining pollutants are being detected in the effluent; however, the levels are well below the screening values, so no compliance period appears to be necessary.

15. The measurement frequency for hexachlorobenzene has been increased from once per year to once per quarter. This frequency is more consistent with TCEQ's *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* for limits that are required based on technology, are present in detectable amounts[8], and do not present a water quality concern. This pollutant is required to be regulated under 40 CFR Part 414, Subpart J and the water quality-based limits are more stringent than the required technology-based limits.

16. Single grab limits have been reduced for most of the pollutants with technology-based effluent limits based on 40 CFR Part 414, Subpart J. See Appendix E for a table that compares the calculated single grab limit, existing grab limit, and minimum analytical level for each pollutant.

17. A self-expiring monitoring and reporting requirement for daily maximum temperature has been added because over 50% of the wastewater is cooling tower blowdown, a thermal wastewater.

Outfall 005

18. Based on the current water quality-based screening and effluent data provided during development of the draft permit, effluent limits have been added for free cyanide. A three-year compliance period has been included to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.

Outfall 007

19. Based on the current water quality-based screening, effluent limits have been made more stringent for the following pollutants: total copper, acrylonitrile, benzo(*a*)pyrene, hexachlorobenzene, phenanthrene, and vinyl chloride. A three-year compliance period has been included for total copper to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units. The remaining pollutants are being detected in the effluent; however, the levels are well below the screening values, so no compliance period appears to be necessary.
20. Based on the current water quality-based screening and effluent data provided during development of the draft permit, monitoring and reporting requirements have been added for free cyanide.
21. The measurement frequency for total copper has been increased from once per year to once per week because some of the self-reported data would have violated the final limits for daily average mass limits.
22. The measurement frequency hexachlorobenzene has been increased from once per year to once per quarter. This frequency is more consistent with TCEQ's *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* for limits that are required based on technology, are present in detectable amounts[8], and do not present a water quality concern. The water quality-based limits are more stringent than the required technology-based limits.
23. Single grab limits have been added for ammonia nitrogen, dissolved oxygen, and temperature.
24. Single grab limits have been reduced for $CBOD_5$, total copper (final limits), acrylonitrile, and vinyl chloride. See Appendix E for a table that compares the calculated single grab limit, existing grab limit, and minimum analytical level for each pollutant.

Outfall 008

25. Monitoring and reporting requirements for daily average and daily maximum flow have been added, consistent with the requirements of 40 CFR § 122.44(i)(1)(ii).
26. Based on the current water quality-based screening and effluent data provided during development of the draft permit, daily maximum effluent limits have been added for total aluminum and free cyanide. A three-year compliance period has been included to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.
27. Based on the current water quality-based screening and effluent data provided during development of the draft permit, monitoring and reporting requirements have been added for total zinc.

28. Footnote 2 has been updated to specify that samples must be collected within the first hour after a discharge begins and at the specified measurement frequency thereafter for the duration of each discharge event.

Internal Outfalls 101, 104, 207, 307, and 407

29. A single grab limit for *E. coli* has been added.

Other Requirements

30. New Other Requirement No. 16 has been added to prohibit the use of flow augmentation for wastewater treatment in accordance with 40 CFR §125.3(f).

31. New Other Requirement No. 19 has been added requiring the permittee to plans and specifications prior to construction of any new domestic wastewater treatment facilities.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The permittee requested the following amendments that the ED recommends granting:

1. *Modify Outfall 004 by either relocating it or proposing new Outfall 010.*

   The draft permit includes new Outfall 010, which is authorized to discharge cooling tower blowdown at a daily average flow not to exceed 0.86 MGD. Outfall 004 still includes the cooling tower blowdown but the total combined volume of cooling tower blowdown discharged from Outfalls 004 and 010 must not exceed a daily average flow of 0.86 MGD and a daily maximum flow of 1.1 MGD.

2. *Increase the permitted discharge of treated wastewater to a volume not to exceed a daily average flow of 1.22 MGD and a daily maximum flow of 1.6 MGD for Outfall 007. Include an interim phase for the existing flows and a final phase for the proposed increased flows. In addition, use the permitted daily average flow of 1.0 MGD to calculate effluent limits in the interim phase.*

   The permittee subsequently requested a single phase for Outfall 007 with an increased permitted flow.

3. *Change the monitoring of biochemical oxygen demand (BOD) to carbonaceous biochemical oxygen demand (CBOD) for Outfall 007.*

   Based on the recommendations from the modeler, the effluent limits on BOD_5 have been changed to effluent limits on $CBOD_5$ at Outfall 007.

4. *Increase the BOD limits for Outfalls 001, 004, and 007.*

   Based on the recommendations from the modeler, the effluent limits on BOD_5 at Outfalls 001 and 004 and on $CBOD_5$ at Outfall 007 have been increased from those in the existing permit.

   Anti-backsliding Discussion
   San Jacinto Bay is currently attaining water quality standards for dissolved oxygen, which satisfies the requirements of Clean Water Act (CWA) §§402(o)(1) and 303(d)(4). According to the memo from the Standards Implementation Team dated October 17, 2018, a Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action and that numerical and narrative criteria to protect existing uses will be maintained. In compliance with CWA §402(o)(3), the revision complies with any applicable effluent guidelines (of which there are none) and water quality standards, including degradation.

For all these reasons, increasing the water quality-based effluent limits for BOD_5 at Outfalls 001 and 004 and for $CBOD_5$ at Outfall 007 meets anti-backsliding requirements.

5. *Add wastewater sources to Outfalls 001, 003, 004, and 007.*

Wastewater sources have been added to Outfalls 001, 003, 004, 005, 006, and 007 and internal Outfall 105 as shown in Attachment T-1, Table 2 of the permit application. Specifically, the following wastewater sources have been added to these outfalls:

Outfall	Wastewater Sources Added
001	Raw water, air conditioner condensate, laboratory wastewater, and commissioning wastewaters[9]
003	Raw water, air conditioner condensate, laboratory wastewater, and commissioning wastewaters
004	Fire system test water, potable water, construction stormwater, raw water, air conditioner condensate, laboratory wastewater, and commissioning wastewaters
005	Service water, construction stormwater, and commissioning wastewaters
006	Commissioning wastewaters
007	Fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, water decanted from bio-solids, raw water, air conditioner condensate, and commissioning wastewaters
105	Construction stormwater

6. *Add new Outfall 009.*

Outfall 009 has been added and is authorized to discharge stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, and commissioning wastewaters on an intermittent and flow-variable basis.

7. *Remove internal Outfalls 201 and 107.*

These internal outfalls have been removed. The reference to internal Outfall 201 in the list of waste streams authorized for discharge via Outfalls 001 and 003 has been removed. The reference to internal Outfall 107 in the list of waste streams authorized for discharge via Outfall 007 has been removed.

8. *Remove BOD and TSS limits from Outfalls 101, 104, 207, 307, and 407. BOD_5 and TSS are already limited at external Outfalls 001, 004, and 007, which is protective of any impacts to the receiving water.*

The ED agrees that the limits at external Outfalls 001, 004, and 007 provide adequate controls for BOD_5 and TSS. Therefore, the limits BOD_5 and TSS at internal Outfalls 101, 104, 207, 307, and 407 have been removed.

Anti-backsliding Discussion

The quantity of domestic wastewater received for treatment is small and flow-variable, which has made it difficult for the facility to meet limits for BOD_5 and TSS while

[9] Commissioning wastewaters include wastewaters such as equipment wash waters and hydrostatic test water.

effectively chlorinating to control bacteria. Since disinfection and control of bacteria is most appropriately performed on the domestic wastewater prior to it commingling with industrial wastewater, it seems more important to ensure that those processes take priority at internal Outfall 101. In order to avoid continuing violations of either the BOD_5 and TSS limits or the chlorine residual and *E. coli* limits at internal Outfalls 101, 104, 207, 307, and 407, the facility has temporarily taken all of its sanitary package treatment plants offline and has been hauling the domestic wastewater off-site for treatment and disposal. These conflicting treatment conditions at the sanitary package treatment plants are beyond the control of the permittee, and the permittee has no reasonable remedy to the situation. This qualifies as an exception to anti-backsliding, consistent with 40 CFR §122.44(l)(2)(i)(C).

9. *Correct an error in the daily average limit for TSS for Outfall 004. It appears that the daily average mass limit should have been 506 lbs/day.*

The daily average limit for TSS has been recalculated based on the information provided in the permit application. The relative flows of process and utility wastewaters have changed since the previous permit was issued, and the revised limit is 459 lbs/day in the interim phase of Outfall 004.

10. *Modify the due dates for discharge monitoring reports.*

Other Requirement No. 10 has been revised to read as follows:

10. <u>MONITORING AND REPORTING</u>

Monitoring results shall be provided at the intervals specified in the permit.

A. For pollutants that are monitored annually, effluent reports must be submitted by January 20th for monitoring conducted during the previous 12-month period (*i.e.*, January through December).

B. For pollutants that are monitored four times per year, effluent reports must be submitted by April 20th, July 20th, October 20th, and January 20th for monitoring conducted during the previous 3-month period (*i.e.*, January through March, April through June, July through September, and October through December, respectively).

11. *Increase the effluent limits on total aluminum and total zinc at Outfall 001.*

Based on a review of the fact sheet for the existing permit, the calculated mass limits for total aluminum and total zinc were intended to be included in the permit at Outfall 001 – Final Phase; however, they were not so included. The water quality-based mass limits calculated in this fact sheet are higher than the existing mass limits and have been included in the draft permit.

<u>Anti-backsliding Discussion</u>
San Jacinto Bay is currently attaining water quality standards for total zinc, which satisfies the requirements of Clean Water Act (CWA) §§402(o)(1) and 303(d)(4). There are no surface water quality standards criteria for total aluminum in a saltwater body. There are no listed impairments for total zinc or total aluminum for Segment No. 2427. According to the memo from the Standards Implementation Team dated October 17, 2018, a Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action and that numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 antidegradation review has preliminarily determined that no significant degradation of water quality is expected

in unnamed ditch (tidal), which has been identified as having high aquatic life use. This antidegradation review was confirmed in an email from Jenna R. Lueg of the Standards Implementation Team dated February 28, 2019. In compliance with CWA §402(o)(3), the revision complies with any applicable effluent guidelines (of which there are none) and water quality standards, including degradation.

For all these reasons, increasing the water quality-based effluent limits for total aluminum and total zinc at Outfall 001 meets anti-backsliding requirements.

12. *Increase or remove the effluent limits on total aluminum at Outfall 003.*

Based on a review of previous fact sheets, concentration limits for total aluminum were to be calculated based on acute criteria only and allowing for dilution because discharge only occurs during wet weather events. However, these limits were not included in the permit. The information has been resubmitted and the limits recalculated, and less stringent limits are proposed to be included in the draft permit. The ED has retained effluent limits at this time because the sampling frequency has been only once per year, which does not provide very much data to evaluate. The draft permit includes a sampling frequency of once per week to provide a bigger set of concentrations to use so that the need for limits versus monitoring and reporting requirements can be better evaluated at a future permit action.

<u>Anti-backsliding Discussion</u>
There are no surface water quality standards criteria for total aluminum in a saltwater body. According to the memo from the Standards Implementation Team dated October 17, 2018, a Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action and that numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 antidegradation review has preliminarily determined that no significant degradation of water quality is expected in unnamed ditch (tidal), which has been identified as having high aquatic life use. This antidegradation review was confirmed in an email from Jenna R. Lueg of the Standards Implementation Team dated February 28, 2019. In compliance with CWA §402(o)(3), the revision complies with any applicable effluent guidelines (of which there are none) and water quality standards, including degradation.

For all these reasons, increasing the water quality-based effluent limits for total aluminum at Outfall 003 meets anti-backsliding requirements.

The following additional changes have been made to the draft permit:

1. The facility name on page 1 has been changed from "LyondellBasell La Porte Complex" to "Equistar Chemicals La Porte Complex" to be consistent with the information provided in the permit application.

2. The facility location has been changed to include only the physical address and to specify that the location is "north of the City of La Porte, in Harris County" instead of in "La Porte, Harris County."

3. The discharge route on page 1 has been updated to clarify that the unnamed ditch becomes tidal and to add a separate discharge route for new Outfall 010.

4. Single grab limits have been recalculated at all outfalls (see Appendix E), and the values have increased as follows:

   <u>Outfall 001 –</u>: BOD_5, total aluminum, total copper, and most of the pollutants whose effluent limits are based on 40 CFR Part 414, Subpart J.

   <u>Outfall 004 –</u>: BOD_5 and total copper (interim).

<u>Outfall 007 – </u>: total copper, and most of the pollutants whose effluent limits are based on 40 CFR Part 414, Subpart J.

5. The term "total residual chlorine" has been changed to "chlorine residual" at internal Outfalls 101, 104, 207, 307, and 407 to be consistent with terminology for disinfection of domestic wastewater using chlorination.

6. The phrase "(based on peak flow)" has been removed from item 2 regarding disinfection for internal Outfalls 101, 104, 207, 307, and 407. The draft permit does not require measurement of peak flow, so this phrase is irrelevant.

7. The sample type for all pollutants at Outfall 003 has been changed from composite to grab because the outfall discharges on an intermittent basis.

8. The list of waste streams authorized for discharge via Outfall 005 has been revised for clarity. In the list of previously monitored effluent from Outfall 105, the term "utility wastewater" has been replaced with "potable water, demineralized water" to avoid confusion with utility wastewater that does not originate from Outfall 105.

9. At Outfall 007, the data submitted for total zinc was below the 70% of daily average screening value for water quality-based limits at the revised, higher permitted flow requested in the major amendment. Therefore, limitations for total zinc are not indicated and were not carried over into the proposed, higher flow phase. The concentration limits for acrylonitrile, benzo(*a*)anthracene, benzo(*a*)pyrene, hexachlorobenzene, and phenanthrene have not been continued. Effluent data submitted with the application indicated no detectable concentrations for these pollutants. Water quality-based mass limits are more stringent than the technology-based limits, however, concentration limitations are not indicated at this time.

10. At Outfall 008, the waste stream "utility decanted water from bio-solids" has been replaced by "water decanted from bio-solids" for clarity. A footnote has been added to refer to the Other Requirement No. 9, the definition of bio-solids, for this permit.

11. The standard permit conditions (pages 3-13) were updated to the current version (January 2016).

12. The Other Requirements section has been revised and renumbered. See following table for a summary. Other Requirement Nos. 6, 12, 15, 16, 18, 19, 21, and 22 are new provisions added to the draft permit.

Existing Other Requirement	Draft Other Requirement	Changes to existing requirement
1	1	
2	2	Revised
3	3	Revised
4	4	
5	5	Revised
6		Removed
7	7	Revised
8	8	
9	9	Revised

Existing Other Requirement	Draft Other Requirement	Changes to existing requirement
10	10	Revised
11	11	Revised
12	13	Revised
13	14	Revised
14		Removed
15		Removed
16	17	
17	20	
18	23	

13. Other Requirement No. 2 has been updated with the most current minimum analytical levels (MALs) from the *Procedures to Implement the Texas Surface Water Quality*

Standards (June 2010). MALs have been added for available cyanide and nonylphenol. The pollutants have been divided into separate tables for metals and cyanide, nonconventional compounds, acid compounds, base/neutral compounds, and volatile compounds.

14. Other Requirement No. 3 has been updated to include mixing zone definitions for new Outfall 009 and 010.
15. Other Requirement No. 5 has been updated to include the current language, which includes changing "31-day period" to "calendar month."
16. Existing Other Requirement No. 6 has been removed because neither the existing nor draft permit includes continuous temperature monitoring at any of the outfalls.
17. New Other Requirement No. 6 has been added to clarify sampling and reporting requirements at Outfall 008, which has two allowable points of discharge.
18. Other Requirement No. 7 has been updated to acknowledge that the permittee has submitted its thermal plume study plan, which is under review by TCEQ staff.
19. Other Requirement No. 9, the definition of bio-solids, has been updated to be more consistent with the language in 30 TAC § 335.1.
20. Other Requirement No. 11 has been revised. The chilling temperature has been updated.
21. New Other Requirement No. 12 has been added to describe the ponds that are recognized in this permit.
22. Existing Other Requirement No. 12 (now 13) has been replaced by current language regarding pond requirements.
23. Existing Other Requirement No. 14 has been removed because it is no longer applicable.
24. Existing Other Requirement No. 13 (now 14) has been updated to include notification requirements for the startup of new Outfalls 009 and 010.
25. Existing Other Requirement No. 15 has been removed because it is no longer applicable.
26. New Other Requirement No. 15 has been added specifying notification requirements in the event the facility changes its method of obtaining cooling water.
27. Existing Other Requirement No. 16 has been renumbered 17.
28. New Other Requirement No. 18 has been added to specify test methods for free cyanide. Existing Other Requirement No. 18 has been renumbered 22.
29. Existing Other Requirement No. 17 (renumbered 20) has been updated to require testing for new Outfalls 009 and 010 upon discharge. The effluent test result tables in Attachment A have also been updated to the current versions. 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.
30. New Other Requirement No. 21 has been added to specify the compliance schedule for meeting new or more stringent water quality-based effluent limits.
31. New Other Requirement No. 22 has been added to the draft permit. The permittee is hereby notified that the permit may be reviewed after the development of any new requirements concerning plastics in order to determine if the limitations and conditions contained therein are consistent with any new requirements. As a result of this review, the permit may be amended, pursuant to 30 TAC Section 305.62, to include additional requirements as necessary to protect human health and the environment

32. Attachment B, which specifies requirements for construction stormwater, has been updated to be consistent with the general permit for stormwater associated with construction activity that was issued on February 8, 2018.

33. Attachment C, biomonitoring requirements, has been updated to be consistent with current TCEQ policies and practices. The dilution series for Outfalls 001, 004, and 007 have been revised. The biomonitoring method has been revised from "no observed effects concentration" and "lowest observed effects concentration" to Inhibition Concentration 25% Effect Level.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant applied to the TCEQ for a major amendment to Permit No. WQ0004013000 to make the following changes:

- modify Outfall 004 by either relocating it or proposing new Outfall 010;
- increase the permitted discharge of treated wastewater to a volume not to exceed a daily average flow of 1.22 MGD and a daily maximum flow of 1.6 MGD for Outfall 007;
- change the monitoring of biochemical oxygen demand (BOD) to carbonaceous biochemical oxygen demand (CBOD) for Outfall 007;
- increase the BOD limits for Outfalls 001, 004, and 007;
- remove the dissolved oxygen limit for Outfall 007;
- add wastewater sources to Outfalls 001, 003, 004, and 007;
- add new Outfall 009;
- remove internal Outfalls 201 and 107;
- remove BOD and total suspended solids (TSS) limits from internal Outfalls 101, 104, 207, 307, and 407;
- correct an error in the daily average limit for TSS for Outfall 004;
- modify the due dates for discharge monitoring reports;
- increase the effluent limits on total aluminum and total zinc at Outfall 001; and
- increase or remove the effluent limits on total aluminum at Outfall 003.

The existing permit authorizes the following discharges:

- process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfalls 101 and 201), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, and stormwater at a daily average flow not to exceed 1.97 MGD in the interim phase and 2.6 MGD in the final phase via Outfall 001;

- process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfalls 101 and 201), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, and stormwater on an intermittent and flow-variable basis via Outfall 003;
- process wastewater, utility wastewater, previously monitored effluent (treated domestic wastewater monitored at internal Outfall 104), hydrostatic test water, service water, demineralized water, *de minimis* spill clean-up water, steam condensate, and stormwater at a daily average flow not to exceed 1.5 MGD via Outfall 004;
- stormwater, previously monitored effluent [untreated post first-flush process area stormwater, utility wastewater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) via internal Outfall 105], untreated post first-flush process area stormwater, utility wastewater, and treated domestic wastewater), groundwater infiltration (continuous flow), raw water, fire system test water, wastewaters from the Decene Terminal, hydrostatic test water, potable water, demineralized water, steam condensate, and *de minimis* spill clean-up water on an intermittent and flow-variable basis via Outfall 005;
- stormwater, raw water, fire system test water, hydrostatic test water, service water, potable water, construction stormwater, demineralized water, steam condensate, and *de minimis* spill clean-up water on an intermittent and flow-variable basis via Outfall 006;
- treated process wastewater, utility wastewaters, previously monitored effluent (treated domestic wastewater from internal Outfalls 107, 207, 307, and 407), hydrostatic test water, and stormwater at a daily average flow not to exceed 1.0 MGD via Outfall 007; and
- utility decanted water from bio-solids and stormwater from the land-farm area on an intermittent and flow-variable basis via Outfall 008.

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.

B. WATER QUALITY SUMMARY

Discharge Routes

The discharge routes are via Outfalls 001, 003, 004, 005, 006, 007, 008, and 009 to an unnamed ditch, thence to an unnamed ditch (tidal), thence to San Jacinto Bay; and via Outfall 010 directly to San Jacinto Bay in Segment No. 2427 of the Bays and Estuaries. The unclassified receiving water uses are minimal aquatic life use for the unnamed ditch and high aquatic life use for the unnamed ditch (tidal). The designated uses for Segment No. 2427 are primary contact recreation and high aquatic life use. Effluent limitations and conditions established in the draft permit comply with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit can be found at Section X.D. of this fact sheet.

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 the unnamed ditch (tidal) or San Jacinto Bay, which have been identified as having high 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.

Endangered Species Review
The discharge from this permit 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's) biological opinion on the State of Texas authorization of the TPDES (September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic-dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS's 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. 2427 is currently listed on the state's inventory of impaired and threatened waters, the 2014 Clean Water Act Section 303(d) list. The listings are for dioxin in edible tissue and polychlorinated biphenyls (PCBs) in edible tissue through the entire segment [Assessment Unit (AU) 2427_01].

Effluent data submitted during development of the draft permit showed no detections of PCBs at any of the outfalls, and all detection levels complied with the specified minimum analytical level of 0.2 μg/L. Therefore, this permit action is not expected to contribute to the PCBs in edible tissue impairment in Segment No. 2427.

Information provided in the permit application for each outfall indicated that the permittee has no reason to believe that dioxin or any of its congeners may be present in the effluent. For this reason, this permit action is not expected to contribute to the dioxin in edible tissue impairment in Segment No. 2427.

Completed Total Maximum Daily Loads (TMDLs)
Segment No. 2427 is included in the agency's document *Fourteen Total Maximum Daily Loads for Nickel in the Houston Ship Channel System* (TMDL Project No. 1). The discharge was screened using the methods outlined in the documents *Procedures to Implement the Texas Surface Water Quality Standards* (*IP*), TCEQ, June 2010 and *Implementation Plan for Dissolved Nickel in the Houston Ship Channel* (TMDL Implementation Plan), TCEQ, July 2001. The discharge authorized in this draft permit was considered during the development of the TMDL and included in the waste load allocation. The TMDL indicates that the water quality criteria for dissolved nickel are generally being met in the Houston Ship Channel and a specific limit for nickel is not required by the Water Quality Assessment Team at this time.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Regulations in Title 40 of the Code of Federal Regulations (40 CFR) require that technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, or on best professional judgment (BPJ) in the absence of guidelines.

The draft permit authorizes the following discharges:

- process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 2.6 MGD via Outfall 001;
- process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater on an intermittent and flow-variable basis via Outfall 003;
- process wastewater, utility wastewater, previously monitored effluent (treated domestic wastewater monitored at internal Outfall 104), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1.5 MGD via Outfall 004;
- stormwater, previously monitored effluent [untreated post first-flush process area stormwater, potable water, demineralized water, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) via internal Outfall 105], utility wastewater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, groundwater infiltration (continuous flow), raw water, wastewaters from the Decene Terminal, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 005;
- stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 006;
- treated process wastewater, utility wastewaters, previously monitored effluent (treated domestic wastewater from internal Outfalls 207, 307, and 407), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, water decanted

from bio-solids, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1.22 MGD via Outfall 007;

- water decanted from bio-solids and stormwater from the land-farm area on an intermittent and flow-variable basis via Outfall 008;
- stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, and commissioning wastewaters on an intermittent and flow-variable basis via Outfall 009; and
- cooling tower blowdown at a daily average flow not to exceed 0.86 MGD via Outfall 010[7].

The discharge of process wastewaters via Outfalls 001 and 003 is subject to effluent limitations guidelines (ELGs) in 40 CFR Part 414, Subparts D and J. The discharge of process wastewaters via Outfall 004 is subject to ELGs in 40 CFR Part 414, Subparts F and I. The discharge of process wastewaters via Outfall 007 is subject to ELGs in 40 CFR Part 414, Subparts D, F, and I. The discharge of overflow from the process wastewater sewer via Internal Outfall 105 is subject to ELGs in 40 CFR Part 414, Subparts F and J. A new source determination was performed, and the discharge of process wastewaters is not a new source as defined at 40 CFR §122.2. Therefore, new source performance standards are not required for these discharges.

Discharges of domestic wastewater (monitored at internal Outfall 101 and discharged via Outfall 001; monitored at internal Outfall 104 and discharged via Outfall 004; and monitored at internal Outfalls 207, 307, and 407 and discharged via Outfall 007) are subject to requirements in 30 Texas Administrative Code (TAC) §309.4 (*Domestic Wastewater Treatment Limitations*).

The discharges of the following non-process wastewaters through various outfalls are not subject to ELGs, and technology-based effluent limitations are based on previous permits. These non-process wastewaters include: utility wastewater (primarily cooling tower blowdown and boiler blowdown), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, stormwater, groundwater infiltration, decanted water from biosolids, post first-flush process area stormwater, raw water, wastewaters from the Decene Terminal (raw water, firewater, wastewater, and stormwater), air conditioner condensate, laboratory wastewater, commissioning wastewaters, and cooling tower blowdown.

The Equistar Chemicals La Porte Complex consists of three operating units: (1) polymers, (2) olefins, and (3) acetyls, which produce ethylene, propylene, polyethylene, and acetyls (acetic acid and vinyl acetate monomer). A second company is co-located within the La Porte Complex, INEOS, which operates a poly-*alpha*-olefins unit that makes synthetic oil.

Description of Wastewater Treatment Processes

Outfall 001 – Process wastewaters from polymers production are routed to Skim Pond 001 for solids settling prior to discharge.

Outfall 003 – During periods of heavy rainfall or when maintenance is being performed on Outfall 001, process wastewaters from polymers production are routed to Skim Pond 003 for solids settling prior to discharge.

Outfall 004 – Process wastewaters from olefins production receive biological treatment, which includes wet air oxidation, equalization, and aeration/ clarification prior to discharge. Digested biosolids are routed to a filter press for liquid removal. Process area stormwater (first flush) is routed to a stormwater surge tank and then to an equalization tank and collection system prior to being routed to biological treatment.

Outfall 005 – Wastewaters receive treatment through physical separation prior to discharge.

Outfall 006 – Wastewaters are treated through surge and gravity separation prior to being discharged.

Outfall 007 – Process wastewaters from acetic acid, vinyl acetate monomer, and poly-*alpha*-olefin production receive biological treatment, which includes equalization and aeration/clarification prior to discharge. Solids from the Clarifier are piped to the Settling Basin. Solids from the Settling Basin are pumped to the Landfarm (an impoundment) for additional settling.

Outfall 008 – Stormwater and decanted water from the Landfarm receive no treatment prior to discharge.

Outfall 009 – Wastewaters will receive no treatment prior to discharge.

Outfall 010 – Cooling tower blowdown from the Olefins unit will receive no treatment prior to discharge.

Domestic wastewater from internal Outfalls 101, 104, 207, 307, and 407 receives primary and secondary treatment and disinfection in package plants prior to being discharged via Outfall 001 (from internal Outfall 101), Outfall 004 (from internal Outfall 104), Outfall 005 (from internal Outfall 104 and thence via internal Outfall 105), and Outfall 007 (from internal Outfalls 207, 307, and 407).

2. <u>CALCULATIONS</u>

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Outfall 001– Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: TSS, TOC, acenaphthene, acenaphthylene, anthracene, benzene, 3,4-benzofluoranthene, benzo(*k*)fluoranthene, bis(2-ethylhexyl) phthalate (daily average), chlorobenzene, chloroethane, chloroform, chrysene, di-*n*-butyl phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-*trans*-dichloroethylene, 1,2-dichloropropane, 1,3-dichloropropylene, diethyl phthalate, 2,4-dimethylphenol, dimethyl phthalate, 4,6-dinitro-*o*-cresol, 2,4-dinitrophenol, ethylbenzene, fluoranthene, fluorene, hexachlorobutadiene, methyl chloride, methylene chloride, naphthalene, nitrobenzene, 2-nitrophenol, 4-nitrophenol, phenol, pyrene, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, and pH.

Technology-based effluent limits have been included in the draft permit for BOD_5, replacing the existing water quality-based effluent limits.

Internal Outfall 101 – The technology-based effluent limit for chlorine residual has been carried forward in the draft permit.

Outfall 003 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: BOD_5, TSS, TOC, oil and grease, and pH.

More stringent technology-based effluent limits have been included in the draft permit for the following pollutants: acenaphthene, acenaphthylene, acrylonitrile, anthracene, benzene, benzo(*a*)anthracene, 3,4-benzofluoranthene, benzo(*k*)fluoranthene, benzo(*a*)pyrene, bis(2-ethylhexyl) phthalate, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, chrysene, di-*n*-butyl phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-*trans*-dichloroethylene, 1,2-dichloropropane, 1,3-dichloropropylene, diethyl phthalate, 2,4-dimethylphenol, dimethyl phthalate, 4,6-dinitro-*o*-cresol, 2,4-dinitrophenol, ethylbenzene, fluoranthene, fluorene, hexachlorobenzene, hexachlorobutadiene, hexachloroethane, methyl chloride, methylene chloride, naphthalene, nitrobenzene, 2-nitrophenol, 4-nitrophenol, phenanthrene, phenol, pyrene, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, and vinyl chloride.

Outfall 004 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: TOC, oil and grease, hexachlorobutadiene, and pH.

More stringent technology-based effluent limits have been included in the draft permit for the following pollutants: TSS, acenaphthene, acenaphthylene, anthracene, benzene, 3,4-benzofluoranthene, benzo(*k*)fluoranthene, bis(2-ethylhexyl) phthalate, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, 2-chlorophenol, chrysene, di-*n*-butyl phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-*trans*-dichloroethylene, 2,4-dichlorophenol, 1,2-dichloropropane, 1,3-dichloropropylene, diethyl phthalate, 2,4-dimethylphenol, dimethyl phthalate, 4,6-dinitro-*o*-cresol, 2,4-dinitrophenol, 2,4-dinitrotoluene, 2,6-dinitrotoluene, ethylbenzene, fluoranthene, fluorene, hexachloroethane, methyl chloride, methylene chloride, naphthalene, nitrobenzene, 2-nitrophenol, 4-nitrophenol, phenol, pyrene, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and trichloroethylene.

Technology-based effluent limits have been included in the draft permit for BOD_5, replacing the existing water quality-based effluent limits.

Internal Outfall 104 – The technology-based effluent limit for chlorine residual has been carried forward in the draft permit.

Outfall 005 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: TOC, oil and grease, and pH.

Internal Outfall 105 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: BOD_5, TSS, TOC, oil and grease, acenaphthene, acenaphthylene, acrylonitrile, anthracene, benzene, benzo(*a*)anthracene, 3,4-benzofluoranthene, benzo(*k*)fluoranthene, benzo(*a*)pyrene, bis(2-ethylhexyl) phthalate, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, chrysene, di-*n*-butyl phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-*trans*-dichloroethylene, 1,2-dichloropropane, 1,3-dichloropropylene, diethyl phthalate, 2,4-dimethylphenol, dimethyl phthalate, 4,6-dinitro-*o*-cresol, 2,4-dinitrophenol, ethylbenzene, fluoranthene, fluorene, hexachlorobenzene, hexachlorobutadiene, hexachloroethane, methyl chloride, methylene chloride, naphthalene, nitrobenzene, 2-nitrophenol, 4-nitrophenol, phenanthrene, phenol, pyrene, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, and vinyl chloride.

Outfall 006 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: TOC, oil and grease, and pH.

Outfall 007 – Technology-based effluent limits for this phase have been established as shown in the table below.

Internal Outfalls 207, 307, and 407 – The technology-based effluent limits for chlorine residual have been carried forward in the draft permit.

Outfall 008 – Technology-based effluent limits for the following pollutants have been carried forward in the draft permit: TOC, oil and grease, and pH.

Outfall 009 – Technology-based effluent limits for this new outfall have been established as shown in the table below.

Outfall 010 – Technology-based effluent limits for this new outfall have been established as shown in the table below.

The following technology-based effluent limitations are proposed in the draft permit:

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	BOD_5	408	N/A	1,032	N/A
	TSS	782.6	N/A	2,554.5	N/A
	TOC	651	N/A	1,193	N/A
	Acenaphthene	0.250	N/A	0.617	N/A
	Acenaphthylene	0.250	N/A	0.617	N/A
	Anthracene	0.250	N/A	0.617	N/A
	Benzene	0.749	N/A	1.760	N/A
	3,4-Benzofluoranthene	0.263	N/A	0.630	N/A
	Benzo(*k*)fluoranthene	0.250	N/A	0.617	N/A
	Bis(2-ethylhexyl) phthalate	1.248	N/A	—[10]	N/A
	Chlorobenzene	1.865	N/A	4.99	N/A

[10] The water quality-based limit is more stringent. See Appendix D.

Outfall	**Pollutant**	**Daily Average**		**Daily Maximum**	
		lbs/day	**mg/L**	**lbs/day**	**mg/L**
001	Chloroethane	1.445	N/A	3.875	N/A
	Chloroform	1.458	N/A	4.269	N/A
	Chrysene	0.250	N/A	0.617	N/A
	Di-*n*-butyl Phthalate	0.263	N/A	0.565	N/A
	1,2-Dichlorobenzene	2.574	N/A	10.429	N/A
	1,3-Dichlorobenzene	1.865	N/A	4.99	N/A
	1,4-Dichlorobenzene	1.865	N/A	4.99	N/A
	1,1-Dichloroethane	0.289	N/A	0.775	N/A
	1,2-Dichloroethane	2.364	N/A	7.540	N/A
	1,1-Dichloroethylene	0.289	N/A	0.788	N/A
	1,2-*trans*-Dichloroethylene	0.328	N/A	0.867	N/A
	1,2-Dichloropropane	2.574	N/A	10.429	N/A
	1,3-Dichloropropylene	2.574	N/A	10.429	N/A
	Diethyl Phthalate	0.604	N/A	1.484	N/A
	2,4-Dimethylphenol	0.250	N/A	0.617	N/A
	Dimethyl Phthalate	0.250	N/A	0.617	N/A
	4,6-Dinitro-*o*-cresol	1.025	N/A	3.638	N/A
	2,4-Dinitrophenol	15.854	N/A	56.362	N/A
	Ethylbenzene	1.865	N/A	4.99	N/A
	Fluoranthene	0.289	N/A	0.709	N/A
	Fluorene	0.250	N/A	0.617	N/A
	Hexachlorobutadiene	1.865	N/A	4.99	N/A
	Methyl Chloride	1.445	N/A	3.875	N/A
	Methylene Chloride	0.473	N/A	2.233	N/A
	Naphthalene	0.250	N/A	0.617	N/A
	Nitrobenzene	26.23	1.209	55.49	2.557
	2-Nitrophenol	0.854	N/A	3.034	N/A
	4-Nitrophenol	2.128	N/A	7.566	N/A
	Phenol	0.250	N/A	0.617	N/A
	Pyrene	0.263	N/A	0.630	N/A
	Tetrachloroethylene	0.683	N/A	2.154	N/A
	Toluene	0.368	N/A	0.972	N/A
	1,2,4-Trichlorobenzene	2.574	N/A	10.429	N/A
	1,1,1-Trichloroethane	0.289	N/A	0.775	N/A
	1,1,2-Trichloroethane	0.420	N/A	1.668	N/A
	Trichloroethylene	0.342	N/A	0.906	N/A
	pH	6.0 SU, min		9.0 SU	

Outfall	**Pollutant**	**Daily Average, mg/L**	**Daily Maximum, mg/L**
101	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
003	Flow	Report MGD	Report MGD
	BOD_5	15	30
	TSS	151	214
	TOC	N/A	55

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
003	Oil and Grease	N/A	15
	Acenaphthene	N/A	0.010
	Acenaphthylene	N/A	0.010
	Acrylonitrile	N/A	0.050
	Anthracene	N/A	0.010
	Benzene	N/A	0.0147
	Benzo(*a*)anthracene	N/A	0.0051
	3,4-Benzofluoranthene	N/A	0.010
	Benzo(*k*)fluoranthene	N/A	0.0051
	Benzo(*a*)pyrene	N/A	0.0052
	Bis(2-ethylhexyl) phthalate	N/A	0.0284
	Carbon Tetrachloride	N/A	0.0418
	Chlorobenzene	N/A	0.0418
	Chloroethane	N/A	0.050
	Chloroform	N/A	0.0570
	Chrysene	N/A	0.0051
	Di-*n*-butyl Phthalate	N/A	0.010
	1,2-Dichlorobenzene	N/A	0.0874
	1,3-Dichlorobenzene	N/A	0.0418
	1,4-Dichlorobenzene	N/A	0.0418
	1,1-Dichloroethane	N/A	0.010
	1,2-Dichloroethane	N/A	0.0632
	1,1-Dichloroethylene	N/A	0.010
	1,2-*trans*-Dichloroethylene	N/A	0.010
	1,2-Dichloropropane	N/A	0.0874
	1,3-Dichloropropylene	N/A	0.0874
	Diethyl Phthalate	N/A	0.0124
	2,4-Dimethylphenol	N/A	0.010
	Dimethyl Phthalate	N/A	0.010
	4,6-Dinitro-*o*-cresol	N/A	0.050
	2,4-Dinitrophenol	N/A	0.4728
	Ethylbenzene	N/A	0.0418
	Fluoranthene	N/A	0.010
	Fluorene	N/A	0.010
	Hexachlorobenzene	N/A	0.0874
	Hexachlorobutadiene	N/A	0.0418
	Hexachloroethane	N/A	0.0874
	Methyl Chloride	N/A	0.050
	Methylene Chloride	N/A	0.020
	Naphthalene	N/A	0.010
	Nitrobenzene	N/A	0.7055
	2-Nitrophenol	N/A	0.0254
	4-Nitrophenol	N/A	0.0634
	Phenanthrene	N/A	0.010
	Phenol	N/A	0.010
	Pyrene	N/A	0.010
	Tetrachloroethylene	N/A	0.0180

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
003	Toluene	N/A	0.010
	1,2,4-Trichlorobenzene	N/A	0.0874
	1,1,1-Trichloroethane	N/A	0.010
	1,1,2-Trichloroethane	N/A	0.0139
	Trichloroethylene	N/A	0.010
	Vinyl Chloride	N/A	0.0189
	pH	6.0 SU, min	9.0 SU

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	BOD_5	231	Report	567	Report
	TSS	459	Report	1,504	Report
	TOC	375	Report	688	Report
	Oil and Grease	71	10	106	15
	Acenaphthene	0.115	N/A	0.310	N/A
	Acenaphthylene	0.115	N/A	0.310	N/A
	Anthracene	0.115	N/A	0.310	N/A
	Benzene	0.194	N/A	0.715	N/A
	3,4-Benzofluoranthene	0.120	N/A	0.320	N/A
	Benzo(*k*)fluoranthene	0.115	N/A	0.310	N/A
	Bis(2-ethylhexyl) phthalate	0.541	N/A	1.46	N/A
	Carbon Tetrachloride	0.094	N/A	0.199	N/A
	Chlorobenzene	0.078	N/A	0.147	N/A
	Chloroethane	0.546	N/A	1.40	N/A
	Chloroform	0.110	N/A	0.241	N/A
	2-Chlorophenol	0.162	N/A	0.515	N/A
	Chrysene	0.115	N/A	0.310	N/A
	Di-*n*-butyl Phthalate	0.141	N/A	0.299	N/A
	1,2-Dichlorobenzene	0.404	N/A	0.856	N/A
	1,3-Dichlorobenzene	0.162	N/A	0.231	N/A
	1,4-Dichlorobenzene	0.078	N/A	0.147	N/A
	1,1-Dichloroethane	0.115	N/A	0.310	N/A
	1,2-Dichloroethane	0.357	N/A	1.10	N/A
	1,1-Dichloroethylene	0.084	N/A	0.131	N/A
	1,2-*trans*-Dichloroethylene	0.110	N/A	0.283	N/A
	2,4-Dichlorophenol	0.205	N/A	0.588	N/A
	1,2-Dichloropropane	0.804	N/A	1.20	N/A
	1,3-Dichloropropylene	0.152	N/A	0.231	N/A
	Diethyl Phthalate	0.425	N/A	1.06	N/A
	2,4-Dimethylphenol	0.094	N/A	0.189	N/A
	Dimethyl Phthalate	0.099	N/A	0.247	N/A
	4,6-Dinitro-*o*-cresol	0.410	N/A	1.45	N/A
	2,4-Dinitrophenol	0.373	N/A	0.646	N/A
	2,4-Dinitrotoluene	0.594	N/A	1.49	N/A
	2,6-Dinitrotoluene	1.34	N/A	3.36	N/A
	Ethylbenzene	0.168	N/A	0.567	N/A
	Fluoranthene	0.131	N/A	0.357	N/A

Outfall	Pollutant	Daily Average		Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
004	Fluorene	0.115	N/A	0.310	N/A
	Hexachlorobutadiene	0.103	N/A	0.217	N/A
	Hexachloroethane	0.110	N/A	0.283	N/A
	Methyl Chloride	0.452	N/A	0.998	N/A
	Methylene Chloride	0.210	N/A	0.467	N/A
	Naphthalene	0.115	N/A	0.310	N/A
	Nitrobenzene	0.141	N/A	0.357	N/A
	2-Nitrophenol	0.215	N/A	0.362	N/A
	4-Nitrophenol	0.378	N/A	0.651	N/A
	Phenol	0.078	N/A	0.136	N/A
	Pyrene	0.131	N/A	0.352	N/A
	Tetrachloroethylene	0.115	N/A	0.294	N/A
	Toluene	0.136	N/A	0.420	N/A
	1,2,4-Trichlorobenzene	0.357	N/A	0.736	N/A
	1,1,1-Trichloroethane	0.110	N/A	0.283	N/A
	1,1,2-Trichloroethane	0.110	N/A	0.283	N/A
	Trichloroethylene	0.110	N/A	0.283	N/A
	pH	6.0 SU, min		9.0 SU	
	pH Range Excursions:				
	> 60 minutes	0			
	Monthly total	7 hours, 26 minutes			

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
104	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
005	Flow	Report MGD	Report MGD
	TOC	Report	55
	Oil and Grease	Report	15
	pH	6.0 SU, min	9.0 SU
105	Flow	Report MGD	Report MGD
	BOD_5	N/A	80
	TSS	N/A	149
	TOC	N/A	55
	Oil and Grease	N/A	15
	Acenaphthene	N/A	0.047
	Acenaphthylene	N/A	0.047
	Acrylonitrile	N/A	0.232
	Anthracene	N/A	0.047
	Benzene	N/A	0.134
	Benzo(*a*)anthracene	N/A	0.047
	3,4-Benzofluoranthene	N/A	0.048
	Benzo(*k*)fluoranthene	N/A	0.047
	Benzo(*a*)pyrene	N/A	0.048
	Bis(2-ethylhexyl) phthalate	N/A	0.258
	Carbon Tetrachloride	N/A	0.380
	Chlorobenzene	N/A	0.380
	Chloroethane	N/A	0.295

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
105	Chloroform	N/A	0.325
	Chrysene	N/A	0.047
	Di-*n*-butyl Phthalate	N/A	0.043
	1,2-Dichlorobenzene	N/A	0.794
	1,3-Dichlorobenzene	N/A	0.380
	1,4-Dichlorobenzene	N/A	0.380
	1,1-Dichloroethane	N/A	0.059
	1,2-Dichloroethane	N/A	0.574
	1,1-Dichloroethylene	N/A	0.060
	1,2-*trans*-Dichloroethylene	N/A	0.066
	1,2-Dichloropropane	N/A	0.794
	1,3-Dichloropropylene	N/A	0.794
	Diethyl Phthalate	N/A	0.113
	2,4-Dimethylphenol	N/A	0.047
	Dimethyl Phthalate	N/A	0.047
	4,6-Dinitro-*o*-cresol	N/A	0.277
	2,4-Dinitrophenol	N/A	4.291
	Ethylbenzene	N/A	0.380
	Fluoranthene	N/A	0.054
	Fluorene	N/A	0.047
	Hexachlorobenzene	N/A	0.794
	Hexachlorobutadiene	N/A	0.380
	Hexachloroethane	N/A	0.794
	Methyl Chloride	N/A	0.295
	Methylene Chloride	N/A	0.170
	Naphthalene	N/A	0.047
	Nitrobenzene	N/A	6.402
	2-Nitrophenol	N/A	0.231
	4-Nitrophenol	N/A	0.576
	Phenanthrene	N/A	0.047
	Phenol	N/A	0.047
	Pyrene	N/A	0.048
	Tetrachloroethylene	N/A	0.164
	Toluene	N/A	0.074
	1,2,4-Trichlorobenzene	N/A	0.794
	1,1,1-Trichloroethane	N/A	0.059
	1,1,2-Trichloroethane	N/A	0.127
	Trichloroethylene	N/A	0.069
	Vinyl Chloride	N/A	0.172
006	Flow	Report MGD	Report MGD
	TOC	N/A	55
	Oil and Grease	N/A	15
	pH	6.0 SU, min	9.0 SU

Outfall	**Pollutant**	**Average of Daily Average**		**Maximum of Daily Maximum**	
		lbs/day	**mg/L**	**lbs/day**	**mg/L**
007	TSS	406	Report	1,321	Report
	TOC	447	Report	906	Report
	Acenaphthene	0.143	N/A	0.386	N/A
	Acenaphthylene	0.143	N/A	0.386	N/A
	Anthracene	0.143	N/A	0.386	N/A
	Benzene	0.242	N/A	0.889	N/A
	3,4-Benzofluoranthene	0.150	N/A	0.399	N/A
	Benzo(*k*)fluoranthene	0.143	N/A	0.386	N/A
	Bis(2-ethylhexyl) phthalate	0.673	N/A	WQ[9]	N/A
	Carbon Tetrachloride	0.117	N/A	0.248	N/A
	Chlorobenzene	0.098	N/A	0.183	N/A
	Chloroethane	0.680	N/A	1.75	N/A
	Chloroform	0.527	N/A	1.44	N/A
	2-Chlorophenol	0.202	N/A	0.641	N/A
	Chrysene	0.143	N/A	0.386	N/A
	Di-*n*-butyl Phthalate	0.176	N/A	0.372	N/A
	1,2-Dichlorobenzene	0.503	N/A	1.06	N/A
	1,3-Dichlorobenzene	0.202	N/A	0.287	N/A
	1,4-Dichlorobenzene	0.098	N/A	0.183	N/A
	1,1-Dichloroethane	0.143	N/A	0.386	N/A
	1,2-Dichloroethane	0.444	N/A	1.38	N/A
	1,1-Dichloroethylene	0.104	N/A	0.163	N/A
	1,2-*trans*-Dichloroethylene	0.137	N/A	0.353	N/A
	2,4-Dichlorophenol	0.255	N/A	0.732	N/A
	1,2-Dichloropropane	1.00	N/A	1.50	N/A
	1,3-Dichloropropylene	0.189	N/A	0.287	N/A
	Diethyl Phthalate	0.529	N/A	1.32	N/A
	2,4-Dimethylphenol	0.117	N/A	0.235	N/A
	Dimethyl Phthalate	0.124	N/A	0.307	N/A
	4,6-Dinitro-*o*-cresol	0.510	N/A	1.81	N/A
	2,4-Dinitrophenol	0.464	N/A	0.804	N/A
	2,4-Dinitrotoluene	0.739	N/A	1.86	N/A
	2,6-Dinitrotoluene	1.66	N/A	4.19	N/A
	Ethylbenzene	0.209	N/A	0.706	N/A
	Fluoranthene	0.163	N/A	0.444	N/A
	Fluorene	0.143	N/A	0.386	N/A
	Hexachlorobutadiene	0.130	N/A	0.320	N/A
	Hexachloroethane	0.137	N/A	0.353	N/A
	Methyl Chloride	0.562	N/A	1.24	N/A
	Methylene Chloride	0.261	N/A	0.582	N/A
	Naphthalene	0.143	N/A	0.386	N/A
	Nitrobenzene	0.176	N/A	0.444	N/A
	2-Nitrophenol	0.268	N/A	0.451	N/A
	4-Nitrophenol	0.471	N/A	0.811	N/A
	Phenol	0.098	N/A	0.170	N/A
	Pyrene	0.163	N/A	0.438	N/A
	Tetrachloroethylene	0.143	N/A	0.366	N/A

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		lbs/day	mg/L	lbs/day	mg/L
007	Toluene	0.170	N/A	0.523	N/A
	1,2,4-Trichlorobenzene	0.444	N/A	0.915	N/A
	1,1,1-Trichloroethane	0.137	N/A	0.353	N/A
	1,1,2-Trichloroethane	0.137	N/A	0.353	N/A
	Trichloroethylene	0.137	N/A	0.353	N/A
	pH	6.0 SU, min		9.0 SU	

Outfall	Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
207	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
307	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
407	Flow	Report MGD	Report MGD
	Chlorine Residual	1.0, min	N/A
008	Flow	Report MGD	Report MGD
	TOC	N/A	75
	Oil and Grease	N/A	15
	pH	6.0 SU, min	9.0 SU
009	Flow	Report MGD	Report MGD
	TOC	N/A	75
	Oil and Grease	N/A	15
	pH	6.0 SU, min	9.0 SU
010	TSS	30	100
	Oil and Grease	15	20
	Free Available Chlorine	0.2	0.5
	pH	6.0 SU, min	9.0 SU

3. 316(B) COOLING WATER INTAKE STRUCTURES (CWISs)

a. SCREENING

The facility obtains water for cooling purposes from the following sources:

- City of Houston, a public water system (PWS No. 1010013),
- Battleground Water Supply, a public water system (PWS No. 1013432), and
- on-site wells.

According to the rules applicable to CWISs (40 CFR § 125.91(c)), the use of water from a public water system for cooling purposes does not constitute the use of a CWIS; groundwater is not considered waters of the United States (WOTUS); and the facility does not own and operate any CWIS that withdraws from a WOTUS or other waters that may be considered WOTUS. Therefore, the facility is not subject to Clean Water Act (CWA) Section 316(b) or 40 CFR Part 125, Subpart J.

b. PERMIT ACTION

The draft permit requires the permittee to notify the TCEQ in the event of a change in procedure or a facility modification alters the method by which cooling water is obtained. Upon receipt of such notification, the TCEQ may reopen the permit to include additional terms and conditions as necessary.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The *Texas Surface Water Quality Standards* found at 30 TAC Chapter 307 state that surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. The methodology outlined in the TCEQ guidance document *Procedures to Implement the Texas Surface Water Quality Standards* (*IP*) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation that threatens human health. Calculated water quality-based effluent limits can be found in Appendix B of this fact sheet.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity databases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls. A comparison of technology-based effluent limits and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

The two-year maximum monthly average flow and two-year average monthly average flow values used were provided in the critical conditions memo based on data from September 2016 through August 2018.

Based on documentation from the previous review, the 7Q2 and harmonic mean were determined using 2011-2012 self-reported flows from upstream TPDES permitted outfalls, including Permit Nos. WQ0002107000 (Outfall 001), WQ0000534000 (Outfall 001), and WQ0000663000 (Outfall 001). Permit No. WQ0000534000 is no longer an active TPDES permit. In addition to these outfalls, the previous reviewer also included flows from Equistar's own TPDES outfalls. However, this approach is inconsistent with how upstream dilution is typically determined. It is TCEQ's general practice that flow from a permittee's own outfalls is not counted as dilution for its own permit. Therefore, the draft permit review omitted flows from Equistar's permitted outfalls in the calculation of the 7Q2 and harmonic mean in the ditch. Also note that Permit No. WQ0000534000 (Outfall 001) contributed 0.53 cfs to the overall 7Q2 and 0.95 cfs to the overall harmonic mean in the previous review. Since this permit is no longer active, the flow reduction in the ditch can also be attributed to this permit no longer discharging.

Initially, the surrogate freshwater segment number used for the intermittent receiving water body (i.e. the unnamed ditch) was changed from No. 1102 to No. 1016 because the permittee's outfalls are in river basin 10 (not 11). There are some variations between the Segment No. 1102 and No. 1016 watersheds, but what ultimately led to the change was Segment No. 1102's impairments for chloride in the 2002 and 2004 CWA 303(d)-list. Since segment numeric criteria in the Water Quality Standards is based on historic Surface Water Quality Monitoring (SWQM) data, the data used to assign the Standards criteria may have included measurements that were collected when the segment was 303(d)-listed for chloride. As a general practice, the TCEQ does not assign freshwater surrogate segments that are impaired for pH, TSS, hardness, and chloride. Therefore, it is also inappropriate to recommend a segment that was previously 303(d)-listed for one of these parameters.

2. AQUATIC LIFE CRITERIA

a. SCREENING

Outfall 001 –
Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the narrow tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during critical conditions. The estimated dilution for the chronic protection of aquatic life is calculated using the permitted daily average flow of 2.6 MGD and the 7Q2 of 0.55 cfs for the unnamed ditch (tidal). The estimated dilution for the acute protection of aquatic life is calculated using the permitted daily average flow of 2.6 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	96.7 %
Chronic Effluent % (unnamed ditch, tidal)	88.0%

Outfall 003
Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). Because discharge from Outfall 003 is intermittent and occurs only under wet weather conditions, only acute criteria were used for screening.

The ZID is defined as 60 feet downstream and 20 feet upstream from the point of discharge. Acute toxic criteria apply at the edge of the ZID. Relative drainage areas were used to determine the dilution under wet weather conditions for both the freshwater and tidal portions of the unnamed ditch. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	38 %
Acute Effluent % (unnamed ditch, tidal)	38 %

Outfall 004 –
Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the narrow tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during critical conditions. The estimated dilution for the chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 1.48 MGD and the 7Q2 of 0.55 cfs for the unnamed ditch (tidal). The estimated dilution for the acute protection of aquatic life is calculated using the two-year maximum monthly average flow of 1.48 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	94.3 %
Chronic Effluent % (unnamed ditch, tidal)	80.6 %

Outfall 005
Water quality-based effluent limitations are calculated from freshwater and marine saltwater life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the narrow tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during critical conditions. The estimated dilution for the chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 1.39 MGD and the 7Q2 of 0.55 cfs for the unnamed ditch (tidal). The estimated dilution for the acute protection of aquatic life is calculated using the two-year maximum monthly average flow of 1.39 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	94.0 %
Chronic Effluent % (unnamed ditch, tidal)	79.6 %

Outfall 006

Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the narrow tidal river.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the seven-day, two-year low-flow (7Q2) of the intermittent stream is 0.0 cfs. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during critical conditions. The estimated dilution for the chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 3.299 MGD and the 7Q2 of 0.55 cfs for the unnamed ditch (tidal). The estimated dilution for the acute protection of aquatic life is calculated using the two-year maximum monthly average flow of 3.299 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	97.4 %
Chronic Effluent % (unnamed ditch, tidal)	90.3 %

Outfall 007 –

Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the narrow tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during critical conditions. The estimated dilution for the chronic protection of aquatic life is calculated using the permitted daily average flow of 1.22 MGD and the 7Q2 of 0.55 cfs for the unnamed ditch (tidal). The estimated dilution for the acute protection of aquatic life is calculated using the permitted daily average flow of 1.22 MGD and 25% of the 7Q2. The following critical effluent percentages are being used:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	93.2 %
Chronic Effluent % (unnamed ditch, tidal)	77.4 %

Outfall 008

Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). Because discharge from Outfall 008 is intermittent and occurs only under wet weather conditions, only acute criteria were used for screening.

There is no ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute saltwater criteria are applied in the tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the EPA horizontal jet plume model to estimate dilution for discharges into sections of bays, estuaries, and wide tidal rivers that are less than 400 feet wide. General assumptions used in the horizontal jet plume model are a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis the following critical effluent percentages are calculated based on an assumed daily average flow of ≤10 MGD:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	100 %

Outfall 009

Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or ZID for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are applied in the tidal portion of the ditch.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the 7Q2 of the intermittent stream is 0.0 cfs. TCEQ uses the EPA horizontal jet plume model to estimate dilution for discharges into sections of bays, estuaries, and wide tidal rivers that are less than 400 feet wide. General assumptions used in the horizontal jet plume model are a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis the following critical effluent percentages are calculated based on an assumed daily average flow of ≤10 MGD:

Acute Effluent % (unnamed ditch, freshwater)	100 %
Acute Effluent % (unnamed ditch, tidal)	100 %
Chronic Effluent % (unnamed ditch, tidal)	100 %

Outfall 010

Water quality-based effluent limitations are calculated from saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

Acute saltwater criteria are applied at the edge of the ZID, and chronic saltwater criteria are applied at the edge of the aquatic life mixing zone.

The ZID for this discharge is defined as a volume within a radius of 50 feet from the point where the discharge enters San Jacinto Bay. The aquatic life mixing zone for this discharge is defined as a volume within a radius of 200 feet from the point where the discharge enters San Jacinto Bay.

TCEQ practice is to establish minimum estimated effluent percentages at the edges of the ZID and aquatic life mixing zone for discharges that are 10 MGD or less into bays, estuaries, or wide tidal rivers that are at least 400 feet wide. These critical effluent percentages are as follows:

Acute Effluent %	30%	Chronic Effluent %	8%

General Screening Procedures
Waste load allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the *Texas Surface Water Quality Standards*, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded.

Outfalls 001-007
From the WLA, a long-term average (LTA) is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The LTA is the long-term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level.

Outfalls 008-010
From the WLA, an LTA is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 99th percentile confidence level. The LTA is the long-term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level.

The lowest of the LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

For the unnamed freshwater ditch, assumptions used in deriving the effluent limitations include segment-specific values for TSS, pH, hardness, and chloride according to the *IP*. The following values were used from freshwater Segment No. 1016: 12 mg/L for TSS, 7.5 standard units for pH, and 82 mg/L for chloride. Hardness values from Segment No. 1016 and 1017 were combined, and the 15th percentile value used is 65 mg/L for hardness (as calcium carbonate, $CaCO_3$). For additional details on the calculation of water quality-based effluent limitations, refer to the *IP*.

For the unnamed ditch (tidal) and San Jacinto Bay, assumptions used in deriving the effluent limitations include the segment-specific value for TSS according to the *IP*, which is 12 mg/L. For additional details on the calculation of water quality-based effluent limitations, refer to the *IP*.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application equals or 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 equals or exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Outfall 001 –
Evaluation of Application Data
Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data for nonylphenol (average of nine samples = 5.76 µg/L) exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (1.86 µg/L). The following effluent limits have been placed in the draft permit:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Nonylphenol	0.047	0.00219	0.100	0.00463

An interim three-year compliance period is included in the draft permit for nonylphenol in accordance with 30 TAC § 307.2(f) because the facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Comparison of Existing Limits and Water Quality-Based Limits
The permittee requested that the existing mass limits for total aluminum and total zinc be reevaluated. Based on a review of the fact sheet for the existing permit, the calculated mass limits for total aluminum and total zinc based on the final phase flow of 2.6 MGD were intended to be included in the permit at Outfall 001 – Final Phase; however, they were not so included. The mass limits based on the interim phase flow were used instead. The water quality-based mass limits calculated in this fact sheet are higher than the existing mass limits and have been included in the draft permit as follows (no changes were made to the existing concentration limits for total aluminum):

Pollutant	Daily Average, lbs/day	Daily Maximum, lbs/day
Aluminum, Total	18.1	38.3
Zinc, Total	3.08	6.50

Recalculated effluent limits for total copper and phenanthrene are more stringent than the existing limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Copper, Total	0.206	0.0095	0.436	0.0201
Phenanthrene	0.128	0.0059	0.271	0.0125

No compliance period has been included in the draft permit for phenanthrene because it appears, based on self-reported data, the facility will have no problems meeting the revised limits.

The interim three-year compliance period that is being included in the draft permit for total copper.

Outfall 003

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data for nonylphenol (average of two samples = 16.0 µg/L) exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (13.2 µg/L). The following effluent limits have been placed in the draft permit:

Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
Nonylphenol	-	0.0328

Based on the intermittent nature of the discharge and a sampling frequency of only once per quarter, daily average limitations for nonylphenol are not appropriate. Only a daily maximum concentration limit has been added to the draft permit.

An interim three-year compliance period is included in the draft permit for nonylphenol in accordance with 30 TAC § 307.2(f) because the facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Comparison of Existing Limits and Water Quality-Based Limits

Effluent limits for total aluminum have been recalculated as part of the permit amendment request. The revised limits are less stringent and have been included in the draft permit as follows:

Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
Aluminum, Total	2.197	4.647

Effluent limits for total copper are still protective and have been carried forward in the draft permit.

Recalculated effluent limits for total zinc are more stringent than the existing limits and have been placed in the draft permit as follows:

Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
Zinc, Total	0.361	0.763

A three-year compliance period has been included for total zinc to allow the permittee time to evaluate sources, to evaluate treatment options, and to install any necessary treatment units.

Outfall 004 –

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data for free cyanide (average of 11 samples = 4.38 µg/L) exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (4.25 µg/L). The following effluent limits have been placed in the draft permit:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Cyanide, Free	0.061	0.0050	0.131	0.0106

An interim three-year compliance period is included in the draft permit for free cyanide in accordance with 30 TAC § 307.2(f) because the facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Comparison of Existing Limits and Water Quality-Based Limits

Recalculated effluent limits for total copper and phenanthrene are more stringent than the existing limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Copper, Total	0.128	0.0104	0.271	0.0220
Phenanthrene	0.079	0.0064	0.169	0.0137

No compliance period has been included in the draft permit for phenanthrene because it appears, based on self-reported data, the facility will have no problems meeting the revised limits.

An interim three-year compliance period is included in the draft permit for total copper in accordance with 30 TAC § 307.2(f) because 60% of the daily average concentrations that were self-reported from November 2014 through August 2018 would exceed the proposed limit. The facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Outfall 005

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data for free cyanide (one sample = 4.89 µg/L) exceeds 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (4.27 µg/L). The following effluent limits have been placed in the draft permit:

Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
Cyanide, Free	0.0050	0.0106

An interim three-year compliance period is included in the draft permit for free cyanide in accordance with 30 TAC § 307.2(f) because the facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Outfall 006
Evaluation of Application Data
Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Outfall 007 –
Evaluation of Application Data
Reported analytical data for free cyanide (average of four samples = 4.24 µg/L) exceeds 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (3.54 µg/L) but is less than 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (4.30 µg/L). Monitoring and reporting requirements have been included in the draft permit as follows:

Pollutant	Daily Average, mg/L	Daily Maximum, mg/L
Cyanide, Free	Report	Report

Comparison of Self-Reported Data and Water Quality-Based Limits
A comparison of self-reported data for total copper shows that effluent limits are still necessary. Self-reported daily average concentrations of total copper equaled or exceeded 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (11.1 µg/L) in three of the last four years. The following limits have been placed in the draft permit:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Copper, Total	0.109	0.0108	0.233	0.0229

An interim three-year compliance period is included in the draft permit for total copper in accordance with 30 TAC § 307.2(f) because 50% of the daily average mass loading and concentrations that were self-reported from November 2014 through August 2018 would exceed the proposed limit. The facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Comparison of Technology-based Limits and Water Quality-Based Limits
Calculated water quality-based limits for phenanthrene are more stringent than technology-based limits; therefore, the following limits have been placed in the draft permit:

Pollutant	Daily Average, lbs/day	Daily Maximum, lbs/day
Phenanthrene	0.068	0.144

Outfall 008
Evaluation of Application Data
Reported analytical data for total zinc (one sample, 54.7 µg/L) exceeds 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (53.6 µg/L) but is less than 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (65.1 µg/L). Monitoring and reporting requirements have been included in the draft permit as follows:

Pollutant	Daily Maximum, mg/L
Zinc, Total	Report

Reported analytical data for total aluminum (one sample, 4,250 µg/L) and free cyanide (one sample, 2.44 µg/L) exceed 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection (710 µg/L for total aluminum; 2.24 µg/L for free cyanide). The following limits have been placed in the draft permit:

Pollutant	Daily Maximum, mg/L
Aluminum, Total	1.766
Cyanide, Free	0.0055

An interim three-year compliance period is included in the draft permit for total aluminum and free cyanide in accordance with 30 TAC § 307.2(f) because the facility needs time to evaluate sources, evaluate treatment options, and install appropriate treatment equipment.

Outfall 009
Evaluation of Application Data
No analytical data is available for screening against water quality-based effluent limitations because the outfall is not yet operating. Other Requirement No. 20 requires testing for new Outfall 009 upon discharge. 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.

Outfall 010
Evaluation of Application Data
No analytical data is available for screening against water quality-based effluent limitations because the outfall is not yet operating. Other Requirement No. 20 requires testing for new Outfall 010 upon discharge. 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.

3. WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (7-DAY CHRONIC)

a. SCREENING AND REASONABLE POTENTIAL ANALYSIS

The existing permit includes chronic marine biomonitoring requirements at Outfalls 001, 004, and 007.

Outfall 001
In the past three years, the permittee performed 24 chronic tests, with no demonstrations of significant toxicity (*i.e.*, failure) by the mysid shrimp and no demonstrations of significant toxicity by the inland silverside.

A reasonable potential (RP) determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of chronic whole effluent toxicity (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 demonstrations of significant toxicity during the period of record for either test species, a determination of no reasonable potential was made.

All test results were used for this determination.

Outfall 004
In the past three years, the permittee performed 24 chronic tests, with no demonstrations of significant toxicity (*i.e.*, failure) by the mysid shrimp and no demonstrations of significant toxicity by the inland silverside.

A reasonable potential determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of 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 demonstrations of significant toxicity during the period of record for either test species, a determination of no reasonable potential was made.

All test results were used for this determination.

Outfall 007

In the past three years, the permittee performed 24 chronic tests, with no demonstrations of significant toxicity (*i.e.*, failure) by the mysid shrimp and no demonstrations of significant toxicity by the inland silverside.

A reasonable potential determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of 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 demonstrations of significant toxicity during the period of record for either test species, a determination of no reasonable potential was made.

All test results were used for this determination.

b. PERMIT ACTION

The provisions of this section apply to Outfalls 001, 004, and 007.

Based on information contained in the permit application, the TCEQ has determined that there may be pollutants present in the effluents that may have the potential to cause toxic conditions in the receiving stream.

WET testing (biomonitoring) is the most direct measure of potential toxicity, which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

i) Chronic static renewal 7-day survival and growth test using the mysid shrimp (*Mysidopsis bahia*). The frequency of the testing is once per quarter.

ii) Chronic static renewal 7-day larval survival and growth test using the inland silverside (*Menidia beryllina*). The frequency of the testing is once per quarter.

Toxicity tests is to be performed in accordance with protocols described in *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 the latest revision. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

This permit may be reopened to require effluent limits, additional testing, or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

If none of the first four consecutive quarterly tests demonstrates significant lethal or sublethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species. If one or more of the first four consecutive quarterly tests demonstrates significant sublethal effects, the permittee is required by the permit to continue quarterly testing for that species until four consecutive quarterly tests demonstrate no significant sublethal effects. At that time, the permittee may apply for the appropriate testing frequency reduction for that species. If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee is required by the permit to continue quarterly testing for that species until the permit is reissued.

c. DILUTION SERIES

The permit requires five dilutions in addition to the control (0% effluent) to be used in the toxicity tests.

Outfall 001 –
These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 88% effluent.

Outfall 004 –
These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 81% effluent.

Outfall 007 –
These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical dilution) is defined as 77% effluent.

The dilution series includes a dilution above the critical dilution, per the permittee's request. In addition, the critical dilution is not required to be in the dilution series when using IC25 methods. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone, which is discussed in Section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24-HOUR ACUTE)

a. SCREENING

The existing permit includes 24-hour acute marine biomonitoring requirements for Outfalls 001, 003, 004, and 007.

Outfall 001
In the past three years, the permittee has performed twelve 24-hour acute tests, with no demonstrations of significant mortality.

Outfall 003
In the past five years, the permittee has performed ten 24-hour acute tests, with no demonstrations of significant mortality.

Outfall 004
In the past three years, the permittee has performed twelve 24-hour acute tests, with no demonstrations of significant mortality.

Outfall 007
In the past three years, the permittee has performed twelve 24-hour acute tests, with no demonstrations of significant mortality.

Minimum 24-hour acute marine biomonitoring requirements are proposed in the draft permit as outlined below.

b. PERMIT ACTION

Twenty-four-hour 100% acute biomonitoring tests are required at Outfalls 001, 003, 004, and 007 at a frequency of once per six months for the life of the permit.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

i) Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia*). A minimum of five replicates with eight organisms per replicate are to be used for this test.

ii) Acute 24-hour static toxicity test using the inland silverside (*Menidia beryllina*). A minimum of five replicates with eight organisms per replicate are to be used for this test.

Toxicity tests are to be performed in accordance with protocols described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition (EPA-821-R-02-012) or the latest revision.

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of fish tissue found in Table 2 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

Outfall 001 –
Fish tissue bioaccumulation criteria are applied in the narrow tidal river for a discharge to an intermittent stream that enters the narrow tidal river within 3 miles downstream of the discharge point. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during average flow conditions. The estimated dilution is calculated using the permitted daily average flow of 2.6 MGD and the harmonic mean flow of

0.75 cfs for the unnamed ditch (tidal). The following critical effluent percentage is being used:

Human Health Effluent %: 84.3%

Outfall 003
Based on the intermittent nature of the discharge, fish tissue bioaccumulation criteria have not been applied to Outfall 003.

Outfall 004 –
Fish tissue bioaccumulation criteria are applied in the narrow tidal river for a discharge to an intermittent stream that enters the narrow tidal river within 3 miles downstream of the discharge point. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during average flow conditions. The estimated dilution is calculated using the two-year average monthly average flow of 1.205 MGD and the harmonic mean flow of 0.75 cfs for the unnamed ditch (tidal). The following critical effluent percentage is being used:

Human Health Effluent %: 71.3%

Outfall 005
Fish tissue bioaccumulation criteria are applied in the narrow tidal river for a discharge to an intermittent stream that enters the narrow tidal river within 3 miles downstream of the discharge point. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during average flow conditions. The estimated dilution is calculated using the two-year average monthly average flow of 0.236 MGD and the harmonic mean flow of 0.75 cfs for the unnamed ditch (tidal). The following critical effluent percentage is being used:

Human Health Effluent %: 32.7%

Outfall 006
Fish tissue bioaccumulation criteria are applied in the narrow tidal river for a discharge to an intermittent stream that enters the narrow tidal river within 3 miles downstream of the discharge point. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during average flow conditions. The estimated dilution is calculated using the two-year average monthly average flow of 0.866 MGD and the harmonic mean flow of 0.75 cfs for the unnamed ditch (tidal). The following critical effluent percentage is being used:

Human Health Effluent %: 64.1%

Outfall 007 –
Fish tissue bioaccumulation criteria are applied in the narrow tidal river for a discharge to an intermittent stream that enters the narrow tidal river within 3 miles downstream of the discharge point. TCEQ uses the mass balance equation to estimate dilution in the narrow tidal river during average flow conditions. The estimated dilution is calculated using the permitted daily average flow of 1.22 MGD and the harmonic mean flow of

0.75 cfs for the unnamed ditch (tidal). The following critical effluent percentage is being used:

Human Health Effluent %: 71.6%

Outfall 008
Based on the intermittent nature of the discharge, fish tissue bioaccumulation criteria have not been applied to Outfall 008.

Outfall 009
Fish tissue bioaccumulation criteria are applied in the bay, estuary, or wide tidal river for a discharge to an intermittent stream that enters a bay, estuary, or wide tidal river within 3 miles downstream of the discharge point. TCEQ uses the EPA horizontal jet plume model to estimate dilution for discharges into sections of bays, estuaries, or wide tidal rivers that are less than 400 feet wide. General assumptions used in the horizontal jet plume model are a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis, the following critical effluent percentage is calculated based on an assumed daily average flow of ≤ 10 MGD:

Human Health Effluent %: 60%

Outfall 010
Fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone for discharges into bays, estuaries and wide tidal rivers. The human health mixing zone for this discharge is defined as a 400-foot radius from the point where the discharge enters San Jacinto Bay. TCEQ practice is to establish a minimum estimated effluent percentage at the edge of the human health mixing zone for discharges that are 10 MGD or less into bays, estuaries, and wide tidal rivers that are at least 400 feet wide. This critical effluent percentage is:

Human Health Effluent %: 4%

General Screening Procedures
Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long-term average calculation is used, with only one long-term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

b. <u>PERMIT ACTION</u>

Outfall 001 –
Evaluation of Application Data
Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the

calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Comparison of Existing Limits and Recalculated Water Quality-Based Limits

Effluent limits for benzo(*a*)anthracene are still protective and have been carried forward in the draft permit.

Recalculated water quality-based effluent limits for acrylonitrile, benzo(*a*)pyrene, carbon tetrachloride, and hexachlorobenzene are more stringent than the existing water quality-based effluent limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Acrylonitrile	0.133	0.0061	0.282	0.0130
Benzo(*a*)pyrene	0.011	0.00053	0.024	0.00113
Carbon Tetrachloride	1.07	0.049	2.27	0.105
Hexachlorobenzene	1.5×10^{-4}	7.3×10^{-6}	3.3×10^{-4}	15.4×10^{-6}

Recalculated water quality-based effluent limits for bis(2-ethylhexyl) phthalate (daily maximum only), carbon tetrachloride, hexachloroethane, and vinyl chloride are more stringent than existing technology-based effluent limits and have been placed in the draft permit.

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Bis(2-ethylhexyl) phthalate	—	—	3.05	N/A
Hexachloroethane	0.405	N/A	0.857	N/A
Vinyl Chloride	0.844	N/A	1.78	N/A

Based on a review of self-reported data from the facility, no compliance period appears to be necessary for any of the pollutants listed above.

Outfall 003

None.

Outfall 004 –

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Comparison of Existing Limits and Recalculated Water Quality-Based Limits

Existing effluent limits for benzo(*a*)anthracene are still protective and have been carried forward in the draft permit.

Recalculated water quality-based effluent limits for acrylonitrile, benzo(*a*)pyrene, and hexachlorobenzene are more stringent than the existing water quality-based effluent limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Acrylonitrile	0.073	0.0072	0.154	0.0154
Benzo(*a*)pyrene	0.0063	N/A	0.0134	N/A
Hexachlorobenzene	8.6×10^{-5}	8.6×10^{-6}	18.4×10^{-5}	18.3×10^{-6}

Recalculated water quality-based effluent limits for vinyl chloride are more stringent than existing technology-based effluent limits and have been placed in the draft permit.

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Vinyl Chloride	0.462	N/A	0.978	N/A

Based on a review of self-reported data from the facility, no compliance period appears to be necessary for any of the pollutants listed above.

Outfall 005

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Outfall 006

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Outfall 007 –

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Comparison of Existing Limits and Water Quality-Based Limits

Existing effluent limits for benzo(*a*)anthracene are still protective and have been carried forward in the draft permit.

Recalculated water quality-based effluent limits for acrylonitrile, benzo(*a*)pyrene, and hexachlorobenzene are more stringent than the existing water quality-based effluent limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Acrylonitrile	0.073	0.0073	0.156	0.0154
Benzo(*a*)pyrene	0.0064	0.00063	0.0135	0.00133
Hexachlorobenzene	8.8×10^{-5}	8.6×10^{-6}	18.5×10^{-5}	18.2×10^{-6}

Based on a review of self-reported data from the facility, no compliance period appears to be necessary for any of the pollutants listed above.

Comparison of Technology-based Limits and Water Quality-Based Limits

Calculated water quality-based limits for acrylonitrile, benzo(*a*)anthracene, benzo(*a*)pyrene, bis(2-ethylhexyl) phthalate (daily maximum), hexachlorobenzene, and vinyl chloride are more stringent than technology-based limits and have been placed in the draft permit as follows:

Pollutant	Daily Average		Daily Maximum	
	lbs/day	mg/L	lbs/day	mg/L
Acrylonitrile	0.073	N/A	0.156	N/A
Benzo(*a*)anthracene	0.063	N/A	0.135	N/A
Benzo(*a*)pyrene	0.0064	N/A	0.0135	N/A
Bis(2-ethylhexyl) phthalate	—	—	1.69	N/A
Hexachlorobenzene	8.8×10^{-5}	N/A	18.5×10^{-5}	N/A
Vinyl Chloride	0.466	N/A	0.987	N/A

Outfall 008

Evaluation of Application Data

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

Outfall 009

Evaluation of Application Data

No analytical data is available for screening against water quality-based effluent limitations because the outfall is not yet operating. Other Requirement No. 20 requires testing for new Outfall 009 upon discharge. 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.

Outfall 010
Evaluation of Application Data
No analytical data is available for screening against water quality-based effluent limitations because the outfall is not yet operating. Other Requirement No. 20 requires testing for new Outfall 010 upon discharge. 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.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Segment No. 2427, which receives the discharges from this facility, is not designated as a public water supply. Screening reported analytical data of the effluent against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable.

b. PERMIT ACTION

None.

7. TOTAL DISSOLVED SOLIDS (TDS), CHLORIDE, AND SULFATE STANDARDS PROTECTION

a. SCREENING

Segment No. 2427, which receives the discharges 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.

b. PERMIT ACTION

None.

8. PROTECTION OF pH STANDARDS

a. SCREENING

Outfalls 001, 003-009
The existing permit includes pH limits of 6.0-9.0 SU at Outfalls 001, 003, 004, 005, 006, 007, and 008, which discharge into an unclassified water body. These limits have also been included the draft permit at new Outfall 009, which will discharge into an unclassified water body. Consistent with the procedures for pH screening that were submitted to EPA with a letter dated May 28, 2014, and approved by EPA in a letter dated June 2, 2014, requiring these discharges to unclassified water bodies to meet pH limits of 6.0-9.0 SU reasonably ensures instream compliance with *Texas Surface Water Quality Standards* pH criteria.

Outfall 010
The draft permit includes pH limits of 6.0-9.0 SU at new Outfall 010, which will discharge directly into San Jacinto Bay, Segment No. 2427. Screening was performed to ensure that these proposed pH limits would not cause a violation of the 6.5-9.0 SU pH criteria for San Jacinto Bay (see Appendix C).

b. PERMIT ACTION

Outfalls 001, 003-009
The existing pH limits of 6.0-9.0 SU are carried forward in the draft permit at Outfalls 001, 003, 004, 005, 006, 007, and 008 and are proposed in the draft permit at new Outfall 009.

Outfall 010
The proposed effluent limits of 6.0-9.0 SU are adequate to ensure that the discharge will not violate the pH criteria in San Jacinto Bay.

9. DISSOLVED OXYGEN (DO) PROTECTION

a. SCREENING

Only Outfalls 001, 004, and 007 are anticipated to contain oxygen-demanding constituents. The QUAL-TX model used for evaluating the impacts of these discharges to the segment is described and documented in the *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (September 2006). Based on model results, the following effluent limits are predicted to be adequate to maintain dissolved oxygen levels above the criteria of the unnamed ditch (2.0 mg/L), the tidal portion of the unnamed ditch (4.0 mg/L), and San Jacinto Bay (4.0 mg/L):

Outfall, phase	**Flow (MGD)**	**Dly Avg BOD_5/$CBOD_5$ (lbs/day)**[11]	**Dly Avg NH_3-N**[12] **(lbs/day)**	**Minimum DO (mg/L)**
001	2.60	408	—	—
004	1.50	231	—	3.0
007	1.22	185	25	4.0

Other effluent combinations may be appropriate and can be assessed upon request. Coefficients and kinetics used in the model for the ditch are a combination of site-specific, estimated, and standardized default values. The results of this evaluation can be reexamined upon receipt of information that conflicts with the assumptions employed in this analysis.

11 Limits at Outfalls 001 and 004 are for BOD_5; limits at Outfall 007 are for $CBOD_5$.
12 Ammonia nitrogen.

b. PERMIT ACTION

The following limits have been included in the draft permit. Daily maximum limits for BOD_5 at Outfalls 001 and 004 have been established at the calculated technology-based limits[13]. At Outfall 007, the daily maximum limits have been set equal to twice the daily average limits because the daily average limits are water quality-based. The daily maximum limits on NH_3-N at Outfall 007 have been carried forward in the draft permit.

Outfall, phase	BOD_5/$CBOD_5$ (lbs/day)[11]		NH_3-N (lbs/day)		Min DO (mg/L)
	Dly Avg	Dly Max	Dly Avg	Dly Max	
001	408	1,032	—	—	—
004	231	567	—	—	3.0
007	185	370	25	53	4.0

10. BACTERIA STANDARDS PROTECTION

a. SCREENING

The existing permit includes the following bacteria limits:

Internal Outfall	*E. coli* Daily Average, cfu or MPN/100 mL	*E. coli* Daily Maximum, cfu or MPN/100 mL
101	126	399
104	126	399
207	126	399
307	126	399
407	126	399

Each of the internal outfalls in the table above is a monitoring point for treated domestic wastewater.

b. PERMIT ACTION

The existing bacteria limits have been carried forward in the draft permit.

11. THERMAL STANDARDS PROTECTION

a. SCREENING

The existing permit includes the following temperature requirements:

Outfall, phase	Daily Average, °F	Daily Maximum, °F
001	95	105
007	95	100

[13] See Appendix A for calculations of technology-based effluent limits.

In addition, Other Requirement No. 7 of the existing permit requires the permittee to develop and submit to the TCEQ a plan to characterize the thermal plume in the receiving waters of the discharges made via Outfalls 001 and 007. The permittee submitted a thermal plume characterization study plan to the TCEQ on February 1, 2019. The study plan is under review by TCEQ staff.

b. PERMIT ACTION

The draft permit includes the following temperature requirements:

Outfall, phase	Daily Average, °F	Daily Maximum, °F
001	95	105
004	N/A	Report
007	95	100
010	N/A	Report

Existing temperature limits have been continued in the draft permit. A daily maximum monitoring and reporting requirement for temperature has been added to the interim phase of Outfall 004 because it discharges a significant fraction of cooling tower blowdown, a thermal wastewater. A daily maximum monitoring and reporting requirement for temperature has also been included at new Outfall 010 because it is proposed to discharge only cooling tower blowdown.

Other Requirement No. 7 has been revised to remove the thermal plume characterization study plan submittal requirement as it has been satisfied. In addition, Other Requirement No. 7 has been revised to include notification to the permittee that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility. Temperature limitations may be revised at a future date.

XI. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works. Pretreatment requirements are not proposed in the draft permit.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. 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, along with the executive director's preliminary decision, as contained in the technical summary or fact sheet, to the chief clerk. 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 proceeding.

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 Sarah A. Johnson at (512) 239-4649.

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMITS

TPDES Permit No. WQ0004013000 issued on October 31, 2014.

B. APPLICATION

TPDES wastewater permit application received on April 3, 2018.

C. 40 CFR CITATIONS

40 CFR Part 414 (BPT, BCT, and BAT).

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Letter dated April 29, 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 thermal evaluation procedures).

Letter dated May 12, 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 thermal evaluation procedures).

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).

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).

Letter dated December 28, 2015, from L'Oreal Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

Letter dated December 28, 2015, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

Letter dated April 17, 2018, from Velma Fuller, TCEQ, to Chris Freed, Equistar Chemicals (request for additional information for administrative report).

Letter dated May 22, 2018, from Heath McCartney, LyondellBasell, to Velma Fuller, TCEQ (additional information for administrative report).

Email dated May 23, 2018, from Velma Fuller, TCEQ, to Chris Freed, Equistar Chemicals (additional information request).

Email dated May 30, 2018, from Chris Freed, Equistar Chemicals, to Velma Fuller, TCEQ (additional information).

Email dated May 31, 2018, from Velma Fuller, TCEQ, to Chris Freed, Equistar Chemicals (request for list of counties within 100 statute miles downstream of the discharge points).

Email dated May 31, 2018, from Chris Freed, Equistar Chemicals, to Velma Fuller, TCEQ (list of counties).

TCEQ Interoffice Memorandum dated October 17, 2018, from Jenna R. Lueg of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated February 14, 2019, from Katie Cunningham of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Critical Conditions Memo).

TCEQ Interoffice Memorandum dated October 30, 2018, from Kristin L. Seiter of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Modeling Memo).

TCEQ Interoffice Memorandum dated October 25, 2018, from Brad Caston of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

Email dated October 25, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/ Kocurek (consultant) (question about mass limits for total aluminum and total zinc at Outfall 001 in the final phase).

Email dated October 31, 2018, from Dianna Kocurek, Tischler/Kocurek, to Karen V. Holligan, TCEQ (response to question about mass limits and additional request regarding total aluminum limits at Outfall 003).

Email dated November 1, 2018, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (effluent data).

Email dated November 2, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for drainage area of Outfall 003).

Email dated November 2, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for status of submittal of thermal plume characterization study plan).

Email dated November 7, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for confirmation that November 2, 2018 emails were received).

Email dated November 8, 2018, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (confirmation that emails were received and status update).

Email dated November 8, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (date range to check for thermal plume study plan).

Email dated November 12, 2018, from Chris Freed, Equistar Chemicals, to Karen V. Holligan, TCEQ (signed lab certification statements and previously submitted thermal plume study plan).

Email dated November 12, 2018, from Karen V. Holligan, TCEQ, to Chris Freed, Equistar Chemicals (feecback on previously submitted thermal plume study plan).

Email dated November 27, 2018, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (status update on drainage area for Outfall 003).

Email dated November 30, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (feedback on Outfall 003, drainage area needed).

Email dated November 30, 2018, from Dianna Kocurek, Tischler/Kocurek to Sarah A. Johnson, TCEQ (response to feedback on drainage area for Outfall 003).

Email dated December 17, 2018, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for status update and additional information regarding cooling water intake structure).

Email dated January 17, 2019, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for status update).

Email dated January 28, 2019, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (cooling water intake structure information).

Email dated February 1, 2019, from Chris Freed, Equistar Chemicals, to Karen V. Holligan, TCEQ (thermal plume study plan).

Email dated February 12, 2019, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (drainage area information for Outfall 003).

Email dated February 28, 2019, from Jenna Lueg of the Standards Implementation Team, Water Quality Assessment Section, to Karen V. Holligan of the Industrial Permits Team, Wastewater Permitting Section (confirmation of antidegradation review).

Email dated February 28, 2019, from Karen V. Holligan, TCEQ, to Dianna Kocurek, Tischler/Kocurek (request for additional information on cooling water source).

Email dated March 4, 2019, from Dianna Kocurek, Tischler/Kocurek to Karen V. Holligan, TCEQ (additional information on cooling water source).

E. MISCELLANEOUS

The *State of Texas 2014 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, November 19, 2015.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 6, 2014, as approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not yet approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not yet approved by EPA Region 6.

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).

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (EPA-821-R-02-012).

Procedures to Implement the Texas Surface Water Quality Standards, TCEQ, June 2010, as approved by EPA Region 6.

Procedures to Implement the Texas Surface Water Quality Standards, TCEQ, January 2003, for portions of the 2010 *IP* not approved by EPA Region 6.

Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

Appendix A
Calculated Technology-Based Effluent Limits

Outfall 001

The draft permit authorizes the discharge of process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 2.6 MGD.

New Source Determination and Applicable Guidelines

A new source determination was performed, and the discharge of process wastewater (including potentially contaminated stormwater[1]) is not considered a new source as defined in 40 CFR § 122.2. Therefore, new source performance standards are not required, and BAT[2], BCT[3] (reserved), and BPT[4] were used to develop technology-based effluent limits.

The discharge of treated process wastewater via Outfall 001 from this facility is subject to the following federal effluent limitations guidelines (ELGs):

40 CFR Part 414 – Organic Chemicals, Plastics, and Synthetic Fibers

Subpart D (*Thermoplastic Resins*) – 40 CFR § 414.41

Subpart J (*Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment*) – 40 CFR § 414.101

Conventional Pollutants – BOD_5, TSS, and pH

40 CFR Part 414, Subpart D Calculations

The applicable concentration limits from 40 CFR § 414.41 are as follows:

40 CFR 414 Subcategory	Effluent Limitations					
	BOD_5 (mg/L)		TSS (mg/L)		pH (SU)	
	Dly Avg	Dly Max	Dly Avg	Dly Max	Dly Min	Dly Max
Subpart D	24	64	40	130	6.0	9.0

The mass allocations for these waste streams are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where the wastewater flow is 1.624 MGD[5], and 8.345 is a conversion factor.

[1] According to the "Development Document for Effluent Limitations and Guidelines and Standards for Organic Chemicals, Plastics, and Synthetic Fibers Point Source Category, Vol. 1, EPA 440/1-87/009, October 1987, Table VII-50, page VII-157, contact rainwater (process area stormwater) is considered to be a process wastewater for the purposes of allocating pollutant loads limited in 40 CFR Part 414.

[2] BAT: Best Available Technology Economically Achievable

[3] BCT: Best Conventional Pollutant Control Technology

[4] BPT: Best Practicable Control Technology Currently Available

[5] See Attachment T-1, Table 3 of the permit application.

Subpart D – 40 CFR § 414.41:

$$\begin{aligned}
BOD_5 \text{ Dly Avg} &= 24 \text{ mg/L} \times 1.624 \text{ MGD} \times 8.345 = 325.254 \text{ lbs/day} \\
BOD_5 \text{ Dly Max} &= 64 \text{ mg/L} \times 1.624 \text{ MGD} \times 8.345 = 867.345 \text{ lbs/day} \\
\text{TSS Dly Avg} &= 40 \text{ mg/L} \times 1.624 \text{ MGD} \times 8.345 = 542.091 \text{ lbs/day} \\
\text{TSS Dly Max} &= 130 \text{ mg/L} \times 1.624 \text{ MGD} \times 8.345 = 1{,}761.796 \text{ lbs/day}
\end{aligned}$$

Utility Wastewater Allocations

Allocations for utility wastewaters were calculated using the same concentration estimates that were used to develop the existing permit. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.965 MGD[6], and 8.345 is a conversion factor.

Pollutant	Dly Avg (mg/L)	Dly Max (mg/L)	Dly Avg (lbs/day)	Dly Max (lbs/day)
BOD_5	10	20	80.529	161.058
TSS	30	100	241.587	805.292
pH	Between 6.0 and 9.0 SU			

Domestic Wastewater Allocations

Allocations for domestic wastewater were calculated based on the existing limits at internal Outfall 101 shown in the table below. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.010 MGD, the domestic wastewater flow, and 8.345 is a conversion factor.

Pollutant	Effluent Limits (mg/L)		Mass Allocations (lbs/day)	
	Dly Avg	Dly Max	Dly Avg	Dly Max
BOD_5	30	45	2.503	3.755
TSS	30	45	2.503	3.755
pH	Between 6.0 and 9.0 SU			

Allocation Summations

BOD_5

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	325.254	867.345
Utility Wastewater	80.529	161.058
Domestic Wastewater	2.503	3.755
Total =	408.286	1,032.158

6 See Attachment T-1, Table 3 of the permit application.

TSS

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	542.091	1,761.796
Utility Wastewater	241.587	805.292
Domestic Wastewater	2.503	3.755
Total =	786.181	2,570.843

Toxic Pollutants

40 CFR Part 414, Subpart J Calculations

Based on information submitted in the application, the facility will not generate either metal-bearing or cyanide-bearing waste streams as defined at 40 CFR § 414.101. Therefore, the draft permit does not establish technology-based mass allocations for toxic priority pollutant metals or total cyanide.

Total (Permitted Daily Average) Flow from Outfall 001:	2.60 MGD
Subpart J Process Wastewater Flow:	1.624 MGD
Metal-Bearing Wastewater Flow:	0.0 MGD
Cyanide-Bearing Wastewater Flow:	0.0 MGD

Mass allocations for the toxic pollutants limited in Subpart J were calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (µg/L)/1000] × [1.624 (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (µg/L)/1000)] × [1.624 (MGD)] × 8.345

Single Grab (mg/L) = [Dly Max (µg/L)/1000] × 1.5 × [1.624 MGD/2.60 MGD]

Parameter	Dly Avg (µg/L)	Dly Max (µg/L)	Dly Avg (lbs/day)	Dly Max (lbs/day)	Single Grab (mg/L)
Acenaphthene	19	47	0.257	0.636	0.044
Acenaphthylene	19	47	0.257	0.636	0.044
Acrylonitrile	94	232	1.27	3.14	0.217
Anthracene	19	47	0.257	0.636	0.044
Benzene	57	134	0.772	1.81	0.125
Benzo(*a*)anthracene	19	47	0.257	0.636	0.044
3,4-Benzofluoranthene	20	48	0.271	0.650	0.045
Benzo(*k*)fluoranthene	19	47	0.257	0.636	0.044
Benzo(*a*)pyrene	20	48	0.271	0.650	0.045
Bis(2-ethylhexyl) phthalate	95	258	1.28	3.49	0.241
Carbon Tetrachloride	142	380	1.92	5.14	0.356
Chlorobenzene	142	380	1.92	5.14	0.356
Chloroethane	110	295	1.49	3.99	0.276
Chloroform	111	325	1.50	4.40	0.304
Chrysene	19	47	0.257	0.636	0.044
Di-*n*-butyl Phthalate	20	43	0.271	0.582	0.040
1,2-Dichlorobenzene	196	794	2.65	10.7	0.743
1,3-Dichlorobenzene	142	380	1.92	5.14	0.356
1,4-Dichlorobenzene	142	380	1.92	5.14	0.356
1,1-Dichloroethane	22	59	0.298	0.799	0.055
1,2-Dichloroethane	180	574	2.43	7.77	0.537
1,1-Dichloroethylene	22	60	0.298	0.813	0.056
1,2-*trans*-Dichloroethylene	25	66	0.338	0.894	0.061
1,2-Dichloropropane	196	794	2.65	10.7	0.743
1,3-Dichloropropylene	196	794	2.65	10.7	0.743

Parameter	Dly Avg (µg/L)	Dly Max (µg/L)	Dly Avg (lbs/day)	Dly Max (lbs/day)	Single Grab (mg/L)
Diethyl Phthalate	46	113	0.623	1.53	0.105
2,4-Dimethylphenol	19	47	0.257	0.636	0.044
Dimethyl Phthalate	19	47	0.257	0.636	0.044
4,6-Dinitro-*o*-cresol	78	277	1.05	3.75	0.259
2,4-Dinitrophenol	1,207	4,291	16.3	58.1	4.0
Ethylbenzene	142	380	1.92	5.14	0.356
Fluoranthene	22	54	0.298	0.731	0.050
Fluorene	19	47	0.257	0.636	0.044
Hexachlorobenzene	196	794	2.65	10.7	0.743
Hexachlorobutadiene	142	380	1.92	5.14	0.356
Hexachloroethane	196	794	2.65	10.7	0.743
Methyl Chloride	110	295	1.49	3.99	0.276
Methylene Chloride	36	170	0.487	2.30	0.159
Naphthalene	19	47	0.257	0.636	0.044
Nitrobenzene	2,237	6,402	30.3	86.7	6.0
2-Nitrophenol	65	231	0.880	3.13	0.216
4-Nitrophenol	162	576	2.19	7.80	0.539
Phenanthrene	19	47	0.257	0.636	0.044
Phenol	19	47	0.257	0.636	0.044
Pyrene	20	48	0.271	0.650	0.045
Tetrachloroethylene	52	164	0.704	2.22	0.153
Toluene	28	74	0.379	1.00	0.069
1,2,4-Trichlorobenzene	196	794	2.65	10.7	0.743
1,1,1-Trichloroethane	22	59	0.298	0.799	0.055
1,1,2-Trichloroethane	32	127	0.433	1.72	0.119
Trichloroethylene	26	69	0.352	0.935	0.064
Vinyl Chloride	97	172	1.31	2.33	0.161

Nonconventional Pollutants – TOC

The existing permit includes mass limits on TOC as follows:

Daily Average = 651 lbs/day
Daily Maximum = 1,193 lbs/day

These limits were developed using the permitted flow of 2.60 MGD and the following concentrations, which have been used to develop TOC limits starting with the permit issued in 2004:

Daily Average = 30 mg/L
Daily Maximum = 55 mg/L

The existing mass limits are still considered appropriate.

Internal Outfall 101

The draft permit authorizes the discharge of treated domestic wastewater on a continuous and flow-variable basis.

The existing permit includes daily average and daily maximum effluent limitations for BOD_5 and TSS based on the requirements for discharges of treated domestic wastewater in 30 TAC § 309.4. The existing permit also includes a minimum total residual chlorine limit of 1.0 mg/L based on disinfection requirements in 30 TAC § 309.3(g) and a pH range of 6.0-9.0 SU based on requirements in 30 TAC § 309.1(b). The permittee has requested that the limits on BOD_5 and TSS be removed from internal Outfall 101 because BOD_5 and TSS are already limited at external Outfall 001, which is protective of any impacts to the receiving water. Discussion with the permittee also revealed that because the quantity of domestic wastewater received for treatment is rather small and flow-variable, attempting to meet limits for BOD_5 and TSS while simultaneously chlorinating to control bacteria is quite difficult.

Since disinfection and control of bacteria is most appropriately performed on the domestic wastewater prior to it commingling with industrial wastewater, it seems more important to ensure that those processes take priority at internal Outfall 101. The limits at external Outfall 001 provide adequate controls for BOD_5 and TSS. Therefore, the limits BOD_5 and TSS at internal Outfall 101 have been removed. The following limits are still considered appropriate:

Parameter	**Limit**
Chlorine Residual	1.0 mg/L, minimum
pH	Between 6.0-9.0 SU

Outfall 003

The draft permit authorizes the discharge of process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater on an intermittent and flow-variable basis. Discharges from Outfall 003 occur when storm events and the resulting increase in stormwater volume causes the flow to exceed the sump pump capacity at Outfall 001. Wastewater volumes that exceed the sump pump capacity are routed to the skim pond and discharged over the skim pond weir via Outfall 003. Discharges via Outfall 003 are intermittent, and flows are highly variable. For this reason, all limits are expressed in concentration units rather than mass units.

New Source Determination and Applicable Guidelines

A new source determination was performed, and the discharge of process wastewater is not considered a new source as defined in 40 CFR § 122.2. Therefore, new source performance standards are not required, and BAT, BCT (reserved), and BPT were used to develop technology-based effluent limits.

The discharge of treated process wastewater via Outfall 003 from this facility is subject to the following federal ELGs:

40 CFR Part 414 – Organic Chemicals, Plastics, and Synthetic Fibers

Subpart D (*Thermoplastic Resins*) – 40 CFR § 414.41

Subpart J (*Direct Discharge Point Sources That Do Not Use End-of-Pipe Biological Treatment*) – 40 CFR § 414.101

Wastewater Flows

Discharges via Outfall 003 are expected to contain process, utility, and domestic wastewater as well as additional stormwater. The following flows and flow fractions were used to calculate concentration limits for parameters that are limited at Outfall 001:

Wastewater Type	Flow (MGD)	Flow Fraction
Process wastewater	1.624	0.1102
Utility wastewater	0.965	0.0654
Domestic wastewater	0.01	0.0007
Stormwater	12.144	0.8237
Total	14.743	1.0000

The total flow is the average of daily average flows discharged via Outfall 003 for the period November 2014 through August 2018 (the same time period used to summarize self-reported data in Section VI of this fact sheet). The flows for process, utility, and domestic wastewater are taken from Attachment T-1, Table 3, of the permit application. The remaining flow (12.144 MGD) is considered to be stormwater.

Conventional Pollutants – BOD_5, TSS, and pH

Concentrations of BOD_5 and TSS used for the various waste streams are presented in the following table, along with the source of the information.

Effluent limits of 6.0-9.0 SU for pH are also applicable.

Wastewater Type	BOD_5 (mg/L)		TSS (mg/L)		Source
	Dly Avg	Dly Max	Dly Avg	Dly Max	
Process wastewater	24	64	40	130	40 CFR § 414.41
Utility wastewater	10	20	30	100	Previous permits
Domestic wastewater	30	45	30	45	Existing limits at 101
Stormwater	15	30	179	238	Previous permits[7]

The overall concentrations are calculated as follows:

$$\Sigma \text{ (flow fraction} \times \text{concentration)}$$

Daily Average BOD_5 (mg/L) =

$(0.1102 \times 24) + (0.0654 \times 10) + (0.0007 \times 30) + (0.8237 \times 15) =$ **15.6 mg/L**

Daily Maximum BOD_5 (mg/L) =

$(0.1102 \times 64) + (0.0654 \times 20) + (0.0007 \times 45) + (0.8237 \times 30) =$ **33.1 mg/L**

Daily Average TSS (mg/L) =

$(0.1102 \times 40) + (0.0654 \times 30) + (0.0007 \times 30) + (0.8237 \times 179) =$ **153 mg/L**

Daily Maximum TSS (mg/L) =

$(0.1102 \times 130) + (0.0654 \times 100) + (0.0007 \times 45) + (0.8237 \times 238) =$ **216 mg/L**

Toxic Pollutants

The only portion of the wastewater that would be expected to contain the toxic pollutants regulated under 40 CFR § 414.101 is the process wastewater. Limits developed in previous permits were simply set at the concentrations specified in 40 CFR § 414.101; however, this overstates the quantities of these pollutants that should be present in the overall discharge, which is only about 11% process wastewater. The limits were calculated as follows:

Dly Max Limit (mg/L) = 0.1102 × Dly Max ELG (mg/L)

All recalculated daily maximum limits were compared to the minimum analytical level (MAL), and any limits that were lower than the MAL were set equal to the MAL. Boldface type in the following table indicates whether the Dly Max Limit or the MAL is the appropriate limit.

Parameter	Dly Max ELG (µg/L)	Dly Max ELG (mg/L)	Dly Max Limit (mg/L)	MAL (mg/L)
Acenaphthene	47	0.047	0.0051	**0.010**
Acenaphthylene	47	0.047	0.0051	**0.010**
Acrylonitrile	232	0.232	0.0255	**0.050**
Anthracene	47	0.047	0.0051	**0.010**
Benzene	134	0.134	**0.0147**	0.010
Benzo(*a*)anthracene	47	0.047	**0.0051**	0.005
3,4-Benzofluoranthene	48	0.048	0.0052	**0.010**

7 Previous permits used information obtained from an EPA stormwater study of residential, commercial, and industrial developed areas of 28 watersheds conducted by the National Urban Runoff Program (NURP) from 1978-1983. The study was summarized by EPA in a final Notice for National Pollutant Discharge Elimination System (NPDES) General Permits for Industrial Activity that was published September 9, 1992 (57 *Federal Register* 41236).

Parameter	**Dly Max ELG (µg/L)**	**Dly Max ELG (mg/L)**	**Dly Max Limit (mg/L)**	**MAL (mg/L)**
Benzo(*k*)fluoranthene	47	0.047	**0.0051**	0.005
Benzo(*a*)pyrene	48	0.048	**0.0052**	0.005
Bis(2-ethylhexyl) phthalate	258	0.258	**0.0284**	0.010
Carbon Tetrachloride	380	0.380	**0.0418**	0.002
Chlorobenzene	380	0.380	**0.0418**	0.010
Chloroethane	295	0.295	0.0325	**0.050**
Chloroform[8]	325	0.325	**0.0570**	0.010
Chrysene	47	0.047	**0.0051**	0.005
Di-*n*-butyl Phthalate	43	0.043	0.0047	**0.010**
1,2-Dichlorobenzene	794	0.794	**0.0874**	0.010
1,3-Dichlorobenzene	380	0.380	**0.0418**	0.010
1,4-Dichlorobenzene	380	0.380	**0.0418**	0.010
1,1-Dichloroethane	59	0.059	0.0065	**0.010**
1,2-Dichloroethane	574	0.574	**0.0632**	0.010
1,1-Dichloroethylene	60	0.060	0.0066	**0.010**
1,2-*trans*-Dichloroethylene	66	0.066	0.0072	**0.010**
1,2-Dichloropropane	794	0.794	**0.0874**	0.010
1,3-Dichloropropylene	794	0.794	**0.0874**	0.010
Diethyl Phthalate	113	0.113	**0.0124**	0.010
2,4-Dimethylphenol	47	0.047	0.0051	**0.010**
Dimethyl Phthalate	47	0.047	0.0051	**0.010**
4,6-Dinitro-*o*-cresol	277	0.277	0.0305	**0.050**
2,4-Dinitrophenol	4,291	4.291	**0.4728**	0.050
Ethylbenzene	380	0.380	**0.0418**	0.010
Fluoranthene	54	0.054	0.0059	**0.010**
Fluorene	47	0.047	0.0051	**0.010**
Hexachlorobenzene	794	0.794	**0.0874**	0.005
Hexachlorobutadiene	380	0.380	**0.0418**	0.010
Hexachloroethane	794	0.794	**0.0874**	0.020
Methyl Chloride	295	0.295	0.0325	**0.050**
Methylene Chloride	170	0.170	0.0187	**0.020**
Naphthalene	47	0.047	0.0051	**0.010**
Nitrobenzene	6,402	6.402	**0.7055**	0.010
2-Nitrophenol	231	0.231	**0.0254**	0.020
4-Nitrophenol	576	0.576	**0.0634**	0.050
Phenanthrene	47	0.047	0.0051	**0.010**
Phenol	47	0.047	0.0051	**0.010**
Pyrene	48	0.048	0.0052	**0.010**
Tetrachloroethylene	164	0.164	**0.0180**	0.010
Toluene	74	0.074	0.0081	**0.010**
1,2,4-Trichlorobenzene	794	0.794	**0.0874**	0.010
1,1,1-Trichloroethane	59	0.059	0.0065	**0.010**
1,1,2-Trichloroethane	127	0.127	**0.0139**	0.010
Trichloroethylene	69	0.069	0.0076	**0.010**
Vinyl Chloride	172	0.172	**0.0189**	0.010

8 Utility wastewater may also be expected to contain chloroform, so a flow fraction of 0.1756 (=0.1102+0.0654) was used to derive the daily maximum limit for chloroform.

Nonconventional Pollutants – TOC

The existing permit includes a limit on TOC as follows:

Daily Maximum = 55 mg/L

This limit is still considered appropriate for predominantly stormwater discharges.

Nonconventional Pollutants – Oil and Grease

The existing permit includes a limit on oil and grease as follows:

Daily Maximum = 15 mg/L

This limit is still considered appropriate for predominantly stormwater discharges.

Outfall 004

The draft permit authorizes the discharge of process wastewater, utility wastewater, previously monitored effluent (treated domestic wastewater monitored at internal Outfall 104), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1.5 MGD. The outfall will continue to include the discharge of cooling tower blowdown from the Olefins cooling tower, with the flexibility to route cooling tower blowdown to new Outfall 010.

New Source Determination

A new source determination was performed, and the discharge of process wastewater is not considered a new source as defined in 40 CFR § 122.2. Therefore, new source performance standards are not required, and BAT, BCT (reserved), and BPT were used to develop technology-based effluent limits.

The discharge of treated process wastewater via Outfall 004 from this facility is subject to the following federal ELGs:

40 CFR Part 414 – Organic Chemicals, Plastics, and Synthetic Fibers

Subpart F (*Commodity Organic Chemicals*) – 40 CFR § 414.61

Subpart I (*Direct Discharge Point Sources That Use End-of-Pipe Biological Treatment*) – 40 CFR § 414.91

Conventional Pollutants – BOD_5, TSS, and pH

40 CFR Part 414, Subpart F Calculations

The applicable concentration limits from 40 CFR § 414.61 are as follows:

40 CFR 414 Subcategory	Effluent Limitations					
	BOD_5 (mg/L)		TSS (mg/L)		pH (SU)	
	Dly Avg	Dly Max	Dly Avg	Dly Max	Dly Min	Dly Max
Subpart F	30	80	46	149	6.0	9.0

The mass allocations for these waste streams are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where the wastewater flow is 0.63 MGD[9], and 8.345 is a conversion factor.

Subpart F – 40 CFR § 414.61:

BOD_5 Dly Avg	=	30 mg/L	×	0.63 MGD	×	8.345	=	157.720 lbs/day
BOD_5 Dly Max	=	80 mg/L	×	0.63 MGD	×	8.345	=	420.588 lbs/day
TSS Dly Avg	=	46 mg/L	×	0.63 MGD	×	8.345	=	241.838 lbs/day
TSS Dly Max	=	149 mg/L	×	0.63 MGD	×	8.345	=	783.345 lbs/day

Utility Wastewater Allocations

9 See Attachment T-1, Table 3 of the permit application.

Allocations for utility wastewaters were calculated using the same concentration estimates that were used to develop the existing permit. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.86 MGD[10], and 8.345 is a conversion factor.

Pollutant	Dly Avg (mg/L)	Dly Max (mg/L)	Dly Avg (lbs/day)	Dly Max (lbs/day)
BOD_5	10	20	71.767	143.534
TSS	30	100	215.301	717.670
pH	Between 6.0 and 9.0 SU			

Domestic Wastewater Allocations

Allocations for domestic wastewater were calculated based on the existing limits at internal Outfall 104 shown in the table below. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.010 MGD, the domestic wastewater flow, and 8.345 is a conversion factor.

Pollutant	Effluent Limits (mg/L)		Mass Allocations (lbs/day)	
	Dly Avg	Dly Max	Dly Avg	Dly Max
BOD_5	30	45	2.503	3.755
TSS	30	45	2.503	3.755
pH	Between 6.0 and 9.0 SU			

Allocation Summations

BOD_5

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	157.720	420.588
Utility Wastewater	71.767	143.534
Domestic Wastewater	2.503	3.755
Total =	231.990	567.877

TSS

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	241.838	783.345
Utility Wastewater	215.301	717.670
Domestic Wastewater	2.503	3.755
Total =	459.642	1,504.77

[10] See Attachment T-1, Table 3 of the permit application.

Toxic Pollutants

40 CFR Part 414, Subpart I Calculations

Based on information submitted in the application, the facility will not generate either metal-bearing or cyanide-bearing waste streams as defined at 40 CFR Part 414, Appendix A. Therefore, the draft permit does not establish technology-based mass allocations for toxic priority pollutant metals or total cyanide.

Total (Permitted Daily Average) Flow from Outfall 001:	1.50	MGD
Subpart I Process Wastewater Flow:	0.63	MGD
Metal-Bearing Wastewater Flow:	0.0	MGD
Cyanide-Bearing Wastewater Flow:	0.0	MGD

Mass allocations for the toxic pollutants limited in Subpart I were calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (µg/L)/1000] × [0.63 (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (µg/L)/1000)] × [0.63 (MGD)] × 8.345

Single Grab (mg/L) = [Dly Max (µg/L)/1000] × 1.5 × [0.63 MGD/1.50 MGD]

Parameter	Daily Avg (µg/L)	Daily Max (µg/L)	Daily Avg (lbs/day)	Daily Max (lbs/day)	Single Grab (mg/L)
Acenaphthene	22	59	0.115	0.310	0.037
Acenaphthylene	22	59	0.115	0.310	0.037
Acrylonitrile	96	242	0.504	1.27	0.152
Anthracene	22	59	0.115	0.310	0.037
Benzene	37	136	0.194	0.715	0.085
Benzo(*a*)anthracene	22	59	0.115	0.310	0.037
3,4-Benzofluoranthene	23	61	0.120	0.320	0.038
Benzo(*k*)fluoranthene	22	59	0.115	0.310	0.037
Benzo(*a*)pyrene	23	61	0.120	0.320	0.038
Bis(2-ethylhexyl) phthalate	103	279	0.541	1.46	0.175
Carbon Tetrachloride	18	38	0.094	0.199	0.023
Chlorobenzene	15	28	0.078	0.147	0.017
Chloroethane	104	268	0.546	1.40	0.168
Chloroform	21	46	0.110	0.241	0.029
2-Chlorophenol	31	98	0.162	0.515	0.061
Chrysene	22	59	0.115	0.310	0.037
Di-*n*-butyl phthalate	27	57	0.141	0.299	0.035
1,2-Dichlorobenzene	77	163	0.404	0.856	0.102
1,3-Dichlorobenzene	31	44	0.162	0.231	0.027
1,4-Dichlorobenzene	15	28	0.078	0.147	0.017
1,1-Dichloroethane	22	59	0.115	0.310	0.037
1,2-Dichloroethane	68	211	0.357	1.10	0.132
1,1-Dichloroethylene	16	25	0.084	0.131	0.015
1,2-*trans*-Dichloroethylene	21	54	0.110	0.283	0.034
2,4-Dichlorophenol	39	112	0.205	0.588	0.070
1,2-Dichloropropane	153	230	0.804	1.20	0.144
1,3-Dichloropropylene	29	44	0.152	0.231	0.027
Diethyl phthalate	81	203	0.425	1.06	0.127
2,4-Dimethylphenol	18	36	0.094	0.189	0.022

Parameter	Daily Avg (µg/L)	Daily Max (µg/L)	Daily Avg (lbs/day)	Daily Max (lbs/day)	Single Grab (mg/L)
Dimethyl phthalate	19	47	0.099	0.247	0.029
4,6-Dinitro-*o*-cresol	78	277	0.410	1.45	0.174
2,4-Dinitrophenol	71	123	0.373	0.646	0.077
2,4-Dinitrotoluene	113	285	0.594	1.49	0.179
2,6-Dinitrotoluene	255	641	1.34	3.36	0.403
Ethylbenzene	32	108	0.168	0.567	0.068
Fluoranthene	25	68	0.131	0.357	0.042
Fluorene	22	59	0.115	0.310	0.037
Hexachlorobenzene	15	28	0.078	0.147	0.017
Hexachlorobutadiene	20	49	0.105	0.257	0.030
Hexachloroethane	21	54	0.110	0.283	0.034
Methyl Chloride	86	190	0.452	0.998	0.119
Methylene Chloride	40	89	0.210	0.467	0.056
Naphthalene	22	59	0.115	0.310	0.037
Nitrobenzene	27	68	0.141	0.357	0.042
2-Nitrophenol	41	69	0.215	0.362	0.043
4-Nitrophenol	72	124	0.378	0.651	0.078
Phenanthrene	22	59	0.115	0.310	0.037
Phenol	15	26	0.078	0.136	0.016
Pyrene	25	67	0.131	0.352	0.042
Tetrachloroethylene	22	56	0.115	0.294	0.035
Toluene	26	80	0.136	0.420	0.050
1,2,4-Trichlorobenzene	68	140	0.357	0.736	0.088
1,1,1-Trichloroethane	21	54	0.110	0.283	0.034
1,1,2-Trichloroethane	21	54	0.110	0.283	0.034
Trichloroethylene	21	54	0.110	0.283	0.034
Vinyl Chloride	104	268	0.546	1.40	0.168

Nonconventional Pollutants – TOC

The existing permit includes mass limits on TOC as follows:

Daily Average = 375 lbs/day
Daily Maximum = 688 lbs/day

These limits were developed using the permitted flow of 1.50 MGD and the following concentrations, which have been used to develop TOC limits starting with the permit issued in 2004:

Daily Average = 30 mg/L
Daily Maximum = 55 mg/L

The existing mass limits are still considered appropriate.

Nonconventional Pollutants – Oil and Grease

The existing permit includes limits on oil and grease as follows:

Daily Average = 10 mg/L
Daily Maximum = 15 mg/L

Daily Average = 71 lbs/day
Daily Maximum = 106 lbs/day

The concentration limits have been in the permit since at least 2000 and are still considered appropriate. The recalculated mass limits are as follows:

Daily Average = 125 lbs/day
Daily Maximum = 187 lbs/day

Internal Outfall 104

The draft permit authorizes the discharge of treated domestic wastewater on a continuous and flow-variable basis.

The existing permit includes daily average and daily maximum effluent limitations for BOD_5 and TSS based on the requirements for discharges of treated domestic wastewater in 30 TAC §309.4. The existing permit also includes a minimum total residual chlorine limit of 1.0 mg/L based on disinfection requirements in 30 TAC § 309.3(g) and a pH range of 6.0-9.0 SU based on requirements in 30 TAC § 309.1(b). The permittee has requested that the limits on BOD_5 and TSS be removed from internal Outfall 104 because BOD_5 and TSS are already limited at external Outfall 004, which is protective of any impacts to the receiving water. Discussion with the permittee also revealed that because the quantity of domestic wastewater received for treatment is rather small and flow-variable, attempting to meet limits for BOD_5 and TSS while simultaneously chlorinating to control bacteria is quite difficult.

Since disinfection and control of bacteria is most appropriately performed on the domestic wastewater prior to it commingling with industrial wastewater, it seems more important to ensure that those processes take priority at internal Outfall 104. The limits at external Outfall 004 provide adequate controls for BOD_5 and TSS. Therefore, the limits on BOD_5 and TSS at internal Outfall 104 have been removed. The following limits are still considered appropriate:

Parameter	Limit
Chlorine Residual	1.0 mg/L, minimum
pH	Between 6.0-9.0 SU

Outfall 005

The draft permit authorizes the discharge of stormwater, previously monitored effluent [untreated post first-flush process area stormwater, potable water, demineralized water, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) via internal Outfall 105], utility wastewater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, groundwater infiltration (continuous flow), raw water, wastewaters from the Decene Terminal, and commissioning wastewaters on an intermittent and flow-variable basis.

Discharges are predominantly stormwater, so based on EPA guidance on technology-based limits for stormwater discharges, the following limits are considered to be appropriate:

Parameter	Daily Maximum
TOC	55 mg/L
Oil and Grease	15 mg/L
pH	Between 6.0 and 9.0 SU

Internal Outfall 105

The draft permit authorizes the discharge of untreated post-first flush[11] process area stormwater, potable water, demineralized water, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) on an intermittent and flow-variable basis.

Under certain conditions, wastewater from the process wastewater sewer that would normally be routed to biological treatment and discharged via Outfall 004 may be diverted to Outfall 005. This diversion only occurs when (1) a sufficient quantity of stormwater runoff has occurred within the Olefins process area such that wastewater accumulates in the stormwater surge tank and storage system to the point that it must be diverted to Outfall 005, or (2) the quantity of stormwater runoff has overwhelmed the process wastewater sewer system pumps to the point that the wastewater must be diverted to Outfall 005. The surge tank and storage system for process area stormwater is capable of storing first flush stormwater from the Olefins process area, which is routed for treatment in the biological treatment system prior to discharge via Outfall 004.

Internal Outfall 105 was placed in the permit to ensure that the diverted wastewater meets daily maximum ELGs in 40 CFR 414, Subparts F and J. Because of the intermittent nature of the discharge, the effluent limitations are expressed as daily maximum effluent concentrations, with sampling being required to be conducted by grab sample.

11 Post-first flush stormwater is defined as any stormwater runoff from a 0.5-inch rain event lasting 20 minutes or longer. Any storm event that exceeds 0.5 inch in a 30-minute period or 1 inch in a 2-hour period may result in a flow rate within the process wastewater sewer which is greater than the pumping capacity of the process wastewater sewer system, which will require the wastewaters to be diverted to Outfall 005.

Parameter	Dly Max (mg/L)
BOD_5	80
TSS	149
Acenaphthene	0.047
Acenaphthylene	0.047
Acrylonitrile	0.232
Anthracene	0.047
Benzene	0.134
Benzo(*a*)anthracene	0.047
3,4-Benzofluoranthene	0.048
Benzo(*k*)fluoranthene	0.047
Benzo(*a*)pyrene	0.048
Bis(2-ethylhexyl) phthalate	0.258
Carbon Tetrachloride	0.380
Chlorobenzene	0.380
Chloroethane	0.295
Chloroform	0.325
Chrysene	0.047
Di-*n*-butyl Phthalate	0.043
1,2-Dichlorobenzene	0.794
1,3-Dichlorobenzene	0.380
1,4-Dichlorobenzene	0.380
1,1-Dichloroethane	0.059
1,2-Dichloroethane	0.574
1,1-Dichloroethylene	0.060
1,2-*trans*-Dichloroethylene	0.066
1,2-Dichloropropane	0.794
1,3-Dichloropropylene	0.794

Parameter	Dly Max (mg/L)
Diethyl Phthalate	0.113
2,4-Dimethylphenol	0.047
Dimethyl Phthalate	0.047
4,6-Dinitro-*o*-cresol	0.277
2,4-Dinitrophenol	4.291
Ethylbenzene	0.380
Fluoranthene	0.054
Fluorene	0.047
Hexachlorobenzene	0.794
Hexachlorobutadiene	0.380
Hexachloroethane	0.794
Methyl Chloride	0.295
Methylene Chloride	0.170
Naphthalene	0.047
Nitrobenzene	6.402
2-Nitrophenol	0.231
4-Nitrophenol	0.576
Phenanthrene	0.047
Phenol	0.047
Pyrene	0.048
Tetrachloroethylene	0.164
Toluene	0.074
1,2,4-Trichlorobenzene	0.794
1,1,1-Trichloroethane	0.059
1,1,2-Trichloroethane	0.127
Trichloroethylene	0.069
Vinyl Chloride	0.172

Based on EPA guidance on technology-based limits for stormwater discharges, the following limits are also considered to be appropriate:

Parameter	Daily Maximum
TOC	55 mg/L
Oil and Grease	15 mg/L

Outfall 006

The draft permit authorizes the discharge of stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, and commissioning wastewaters on an intermittent and flow-variable basis.

Discharges of wastewaters listed above are not subject to any ELGs. Discharges are predominantly stormwater, so based on EPA guidance on technology-based limits for stormwater discharges, the following limits are considered to be appropriate:

Parameter	**Daily Maximum**
TOC	55 mg/L
Oil and Grease	15 mg/L
pH	Between 6.0 and 9.0 SU

Outfall 007

The draft permit authorizes the discharge of treated process wastewater, utility wastewaters, previously monitored effluent (treated domestic wastewater from internal Outfalls 207, 307, and 407), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, water decanted from bio-solids, commissioning wastewaters, and stormwater at a daily average flow not to exceed 1.22 MGD.

New Source Determination and Applicable Guidelines

A new source determination was performed, and the discharge of process wastewater is not considered a new source as defined in 40 CFR § 122.2. Therefore, new source performance standards are not required, and BAT, BCT (reserved), and BPT were used to develop technology-based effluent limits.

The discharge of treated process wastewater via Outfall 007 from this facility is subject to the following ELGs:

40 CFR Part 414 – Organic Chemicals, Plastics, and Synthetic Fibers

Subpart D (*Thermoplastic Resins*) – 40 CFR § 414.41

Subpart F (*Commodity Organic Chemicals*) – 40 CFR § 414.61

Subpart I (*Direct Discharge Point Sources That Use End-of-Pipe Biological Treatment*) – 40 CFR § 414.91

Conventional Pollutants – BOD_5, TSS, and pH

Subparts D and F Calculations

The facility discharges a total of 0.643 MGD of process wastewater, of which 8.7% is subject to Subpart D (0.056 MGD) and 91.3% is subject to Subpart F (0.587 MGD). The permittee requested to increase the daily average permitted flow from 1.0 MGD to 1.22 MGD and stated that the flow percentages for the various waste streams will be the same as in the interim phase. Therefore, these flows have been multiplied by 1.22/1.0 to arrive at the final flows used in the calculation of mass allocations:

Subpart	Flow (MGD)
D	0.068
F	0.716

The following effluent limitations apply to wastewater subject to Subparts D and F:

40 CFR 414 Subcategories	Effluent Limitations					
	BOD_5 (mg/L)		TSS (mg/L)		pH (SU)	
	Dly Avg	Dly Max	Dly Avg	Dly Max	Dly Min	Dly Max
Subpart D	24	64	40	130	6.0	9.0
Subpart F	30	80	46	149	6.0	9.0

The total mass allocations for these waste streams are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where 8.345 is a conversion factor.

Subpart D – 40 CFR §414.41:

BOD_5 Dly Avg	=	24 mg/L	×	0.068 MGD	×	8.345	=	13.619 lbs/day
BOD_5 Dly Max	=	64 mg/L	×	0.068 MGD	×	8.345	=	36.317 lbs/day
TSS Dly Avg	=	40 mg/L	×	0.068 MGD	×	8.345	=	22.698 lbs/day
TSS Dly Max	=	130 mg/L	×	0.068 MGD	×	8.345	=	73.769 lbs/day

Subpart F – 40 CFR §414.61:

BOD_5 Dly Avg	=	30 mg/L	×	0.716 MGD	×	8.345	=	179.250 lbs/day
BOD_5 Dly Max	=	80 mg/L	×	0.716 MGD	×	8.345	=	478.001 lbs/day
TSS Dly Avg	=	46 mg/L	×	0.716 MGD	×	8.345	=	274.850 lbs/day
TSS Dly Max	=	149 mg/L	×	0.716 MGD	×	8.345	=	890.277 lbs/day

Summation of 40 CFR Part 414 BOD_5 and TSS loadings at Outfall 001:

BOD_5 Daily Average

Subpart D Process Wastewater =	13.619 lbs/day
Subpart F Process Wastewater =	179.250 lbs/day
Total BOD_5 Daily Average =	192.869 lbs/day

BOD_5 Daily Maximum

Subpart D Process Wastewater =	36.317 lbs/day
Subpart F Process Wastewater =	478.001 lbs/day
Total BOD_5 Daily Maximum =	514.318 lbs/day

TSS Daily Average

Subpart D Process Wastewater =	22.698 lbs/day
Subpart F Process Wastewater =	274.850 lbs/day
Total TSS Daily Average =	297.548 lbs/day

TSS Daily Maximum

Subpart D Process Wastewater =	73.769 lbs/day
Subpart F Process Wastewater =	890.277 lbs/day
Total TSS Daily Maximum =	964.046 lbs/day

Utility Wastewater Allocations

Allocations for utility wastewaters were calculated using the same concentration estimates that were used to develop the existing permit. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.422 MGD[12], and 8.345 is a conversion factor.

Pollutant	Dly Avg (mg/L)	Dly Max (mg/L)	Dly Avg (lbs/day)	Dly Max (lbs/day)
BOD_5	10	20	35.215	70.431
TSS	30	100	105.647	352.159
pH	Between 6.0 and 9.0 SU			

[12] See Attachment T-1, Table 3 of the permit application. The listed flow of 0.346 MGD has been multiplied by 1.22/1.0 to get the expanded flow of 0.422 MGD.

Domestic Wastewater Allocations

Allocations for domestic wastewater were calculated based on the existing limits at internal Outfalls 207, 307, and 407 shown in the table below. The mass allocations are calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (mg/L)] × [wastewater flow (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (mg/L)] × [wastewater flow (MGD)] × 8.345

where wastewater flow is equal to 0.013 MGD[13], the domestic wastewater flow, and 8.345 is a conversion factor.

Pollutant	Effluent Limits (mg/L)		Mass Allocations (lbs/day)	
	Dly Avg	Dly Max	Dly Avg	Dly Max
BOD_5	30	45	3.254	4.881
TSS	30	45	3.254	4.881
pH	Between 6.0 and 9.0 SU			

Allocation Summations

BOD_5

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	192.869	514.318
Utility Wastewater	35.215	70.431
Domestic Wastewater	3.254	4.881
Total =	231.338	589.630

TSS

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	297.548	964.046
Utility Wastewater	105.647	352.159
Domestic Wastewater	3.254	4.881
Total =	406.449	1,321.086

Toxic Pollutants

Subpart I Calculations

Based on information submitted in the application, the facility will not generate either metal-bearing or cyanide-bearing waste streams as defined at 40 CFR Part 414, Appendix A. Therefore, the draft permit does not establish technology-based mass allocations for toxic priority pollutant metals or total cyanide.

Total (Permitted Daily Average) Flow from Outfall 001: 1.22 MGD
Subpart I Process Wastewater Flow: 0.784 MGD
Metal-Bearing Wastewater Flow: 0.0 MGD
Cyanide-Bearing Wastewater Flow: 0.0 MGD

Mass allocations for the toxic pollutants limited in Subpart I were calculated as follows:

Dly Avg (lbs/day) = [Dly Avg (µg/L)/1000] × [0.784 (MGD)] × 8.345

Dly Max (lbs/day) = [Dly Max (µg/L)/1000)] × [0.784 (MGD)] × 8.345

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13 See Attachment T-1, Table 3 of the permit application. The listed flow of 0.011 MGD has been multiplied by 1.22/1.0 to get the expanded flow of 0.013 MGD.

Single Grab (mg/L) = [Dly Max (µg/L)/1000] × 1.5 × [0.784 MGD/1.22 MGD]

Parameter	Daily Avg (µg/L)	Daily Max (µg/L)	Daily Avg (lbs/day)	Daily Max (lbs/day)	Single Grab (mg/L)
Acenaphthene	22	59	0.143	0.386	0.056
Acenaphthylene	22	59	0.143	0.386	0.056
Acrylonitrile	96	242	0.628	1.58	0.233
Anthracene	22	59	0.143	0.386	0.056
Benzene	37	136	0.242	0.889	0.131
Benzo(*a*)anthracene	22	59	0.143	0.386	0.056
3,4-Benzofluoranthene	23	61	0.150	0.399	0.058
Benzo(*k*)fluoranthene	22	59	0.143	0.386	0.056
Benzo(*a*)pyrene	23	61	0.150	0.399	0.058
Bis(2-ethylhexyl) phthalate	103	279	0.673	1.82	0.268
Carbon Tetrachloride	18	38	0.117	0.248	0.036
Chlorobenzene	15	28	0.098	0.183	0.027
Chloroethane	104	268	0.680	1.75	0.258
Chloroform[14]	21	46	0.137	0.300	—[20]
2-Chlorophenol	31	98	0.202	0.641	0.094
Chrysene	22	59	0.143	0.386	0.056
Di-*n*-butyl phthalate	27	57	0.176	0.372	0.054
1,2-Dichlorobenzene	77	163	0.503	1.06	0.157
1,3-Dichlorobenzene	31	44	0.202	0.287	0.042
1,4-Dichlorobenzene	15	28	0.098	0.183	0.027
1,1-Dichloroethane	22	59	0.143	0.386	0.056
1,2-Dichloroethane	68	211	0.444	1.38	0.203
1,1-Dichloroethylene	16	25	0.104	0.163	0.024
1,2-*trans*-Dichloroethylene	21	54	0.137	0.353	0.052
2,4-Dichlorophenol	39	112	0.255	0.732	0.108
1,2-Dichloropropane	153	230	1.00	1.50	0.221
1,3-Dichloropropylene	29	44	0.189	0.287	0.042
Diethyl phthalate	81	203	0.529	1.32	0.195
2,4-Dimethylphenol	18	36	0.117	0.235	0.034
Dimethyl phthalate	19	47	0.124	0.307	0.045
4,6-Dinitro-*o*-cresol	78	277	0.510	1.81	0.267
2,4-Dinitrophenol	71	123	0.464	0.804	0.118
2,4-Dinitrotoluene	113	285	0.739	1.86	0.274
2,6-Dinitrotoluene	255	641	1.66	4.19	0.617
Ethylbenzene	32	108	0.209	0.706	0.104
Fluoranthene	25	68	0.163	0.444	0.065
Fluorene	22	59	0.143	0.386	0.056
Hexachlorobenzene	15	28	0.098	0.183	0.027
Hexachlorobutadiene	20	49	0.130	0.320	0.047
Hexachloroethane	21	54	0.137	0.353	0.052
Methyl Chloride	86	190	0.562	1.24	0.183
Methylene Chloride	40	89	0.261	0.582	0.085

14 Additional allocations have been calculated for chloroform in utility wastewater. See below.

Parameter	Daily Avg (µg/L)	Daily Max (µg/L)	Daily Avg (lbs/day)	Daily Max (lbs/day)	Single Grab (mg/L)
Naphthalene	22	59	0.143	0.386	0.056
Nitrobenzene	27	68	0.176	0.444	0.065
2-Nitrophenol	41	69	0.268	0.451	0.066
4-Nitrophenol	72	124	0.471	0.811	0.119
Phenanthrene	22	59	0.143	0.386	0.056
Phenol	15	26	0.098	0.170	0.025
Pyrene	25	67	0.163	0.438	0.064
Tetrachloroethylene	22	56	0.143	0.366	0.054
Toluene	26	80	0.170	0.523	0.077
1,2,4-Trichlorobenzene	68	140	0.444	0.915	0.135
1,1,1-Trichloroethane	21	54	0.137	0.353	0.052
1,1,2-Trichloroethane	21	54	0.137	0.353	0.052
Trichloroethylene	21	54	0.137	0.353	0.052
Vinyl Chloride	104	268	0.680	1.75	0.258

Additional Allocation for Chloroform

Effluent limitations for chloroform at Outfall 007 have historically included an allocation for the utility wastewater component. The mass allocations for chloroform in discharges of utility wastewater (cooling tower blowdown) via Outfall 007 are based on the effluent limitations for chloroform in 40 CFR Part 414, Subpart J. Those concentrations are as follows:

Daily Average = 0.111 mg/L
Daily Maximum = 0.325 mg/L

The additional mass allocations are calculated as follows:

Daily Average (lbs/day) = 0.111 mg/L × 0.422 MGD × 8.345 = 0.390
Daily Maximum (lbs/day) = 0.325 mg/L × 0.422 MGD × 8.345 = 1.144

The total mass limits for chloroform are therefore:

Chloroform

Waste Stream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	0.137	0.300
Utility Wastewater	0.390	1.144
Total =	0.527	1.444

The single grab limit for chloroform is calculated based on the daily maximum mass limit, the flow of process wastewater plus utility wastewater, and the permitted daily average flow as follows:

$$\text{Single Grab (mg/L)} = \frac{1.44 \text{ lbs/day}}{(0.784 \text{ MGD} + 0.422 \text{ MGD})(8.345)} \times 1.5 \times \frac{(0.784 \text{ MGD} + 0.422 \text{ MGD})}{1.22 \text{ MGD}}$$

$$= 0.213$$

Nonconventional Pollutants – TOC

The existing permit includes mass limits on TOC as follows:

Daily Average = 367 lbs/day
Daily Maximum = 743 lbs/day

These limits were developed using the permitted flow of 1.0 MGD and the following concentrations, which have been used to develop TOC limits in previous permits:

Daily Average = 44 mg/L
Daily Maximum = 89 mg/L

The mass limits have been recalculated for the increased flow of 1.22 MGD as follows:

Daily Average = 447 lbs/day
Daily Maximum = 906 lbs/day

Internal Outfalls 207, 307, and 407

The draft permit authorizes the discharge of treated domestic wastewater on a continuous and flow-variable basis.

The existing permit includes daily average and daily maximum effluent limitations for BOD_5 and TSS based on the requirements for discharges of treated domestic wastewater in 30 TAC §309.4. The existing permit also includes a minimum total residual chlorine limit of 1.0 mg/L based on disinfection requirements in 30 TAC § 309.3(g) and a pH range of 6.0-9.0 SU based on requirements in 30 TAC § 309.1(b). The permittee has requested that the limits on BOD_5 and TSS be removed from internal Outfalls 207, 307, and 407 because BOD_5 and TSS already limited at external Outfall 007, which is protective of any impacts to the receiving water. Discussion with the permittee also revealed that because the quantity of domestic wastewater received for treatment is rather small and flow-variable, attempting to meet limits for BOD_5 and TSS while simultaneously chlorinating to control bacteria is quite difficult.

Since disinfection and control of bacteria is most appropriately performed on the domestic wastewater prior to it commingling with industrial wastewater, it seems more important to ensure that those processes take priority at internal Outfalls 207, 307, and 407. The limits at external Outfall 007 provide adequate controls for BOD_5 and TSS. Therefore, the limits on BOD_5 and TSS at internal Outfalls 207, 307, and 407 have been removed. The following limits are still considered appropriate:

Parameter	Limit
Chlorine Residual	1.0 mg/L, minimum
pH	Between 6.0-9.0 SU

Outfall 008

The draft permit authorizes the discharge of water decanted from bio-solids and stormwater from the land-farm area on an intermittent and flow-variable basis.

Discharges of wastewaters listed above are not subject to any ELGs. Discharges are predominantly stormwater, so based on EPA guidance on technology-based limits for stormwater discharges, the following limits are considered to be appropriate:

Parameter	Daily Maximum
TOC	75 mg/L
Oil and Grease	15 mg/L
pH	Between 6.0 and 9.0 SU

Outfall 009

The draft permit authorizes the discharge of stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, and commissioning wastewaters on an intermittent and flow-variable basis.

Discharges of wastewaters listed above are not subject to any ELGs. Discharges are predominantly stormwater, so based on EPA guidance on technology-based limits for stormwater discharges, the following limits are considered to be appropriate:

Parameter	**Daily Maximum**
TOC	75 mg/L
Oil and Grease	15 mg/L
pH	Between 6.0 and 9.0 SU

Outfall 010

The draft permit authorizes the discharge of cooling tower blowdown at a daily average flow not to exceed 0.86 MGD.

The discharge of cooling tower blowdown is not subject to any ELGs. According to information provided in the application, cooling tower treatment chemicals will include Inhibitor AZ8104 (which contains chlorotolyltriazole sodium salt and dichlorotolyltriazole) and Spectrum NX1106 (which contains 5-chloro-2-methyl-4-isothiaolin-3-one). Because these chemicals include chlorine, effluent limits for free available chlorine have been established based on BPJ application of ELGs at 40 CFR § 423.12(b)(7). In addition, effluent limitations are established for TSS, oil and grease, and pH as follows based on BPJ and consistent with generally applied limitations for industrial discharges:

Parameter	**Daily Average (mg/L)**	**Daily Maximum (mg/L)**
TSS	30	100
Oil and Grease	15	20
Free Available Chlorine	0.2	0.5
pH	Between 6.0 and 9.0 SU	

Appendix B
Calculated Water Quality-Based Effluent Limits

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**001 - final phase**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	2.6	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
Critical Low Flow [7Q2] (cfs):	0.55	
% Effluent for Chronic Aquatic Life (Narrow Tidal River):	88.0	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	96.7	
Effluent Flow for Human Health (MGD):	2.6	
Harmonic Mean Flow (cfs):	0.75	
% Effluent for Human Health (Narrow Tidal River):	84.3	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	***FW Acute Criterion (µg/L)***	***SW Acute Criterion (µg/L)***	***SW Chronic Criterion (µg/L)***	***FW WLAa (µg/L)***	***SW WLAa (µg/L)***	***SW WLAc (µg/L)***	***FW LTAa (µg/L)***	***SW LTAa (µg/L)***	***SW LTAc (µg/L)***	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***
Aldrin	3.0	1.3	N/A	3.0	1.34	N/A	1.72	0.770	N/A	1.13	2.40
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	154	88.7	377	88.3	68.3	100	212
Cadmium	5.64	40.0	8.75	21.9	41.4	9.9	12.6	23.7	7.66	11.3	23.8
Carbaryl	2.0	613	N/A	2.0	634	N/A	1.15	363	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.093	0.0045	1.38	0.053	0.0035	0.0051	0.011
Chlorpyrifos	0.083	0.011	0.006	0.083	0.011	0.0068	0.048	0.0065	0.0053	0.0077	0.016
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1127	56.4	9.00	646	43.4	13.2	28.0
Copper	9.46	24.3	6.48	28.4	28.7	8.41	16.3	16.4	6.48	9.52	20.1
Cyanide (free)	45.8	5.6	5.6	45.8	5.79	6.37	26.2	3.32	4.90	4.88	10.3
4,4'-DDT	1.1	0.13	0.001	1.1	0.134	0.0011	0.630	0.077	0.00088	0.0013	0.0027
Demeton	N/A	N/A	0.1	N/A	N/A	0.114	N/A	N/A	0.088	0.129	0.272
Diazinon	0.17	0.819	0.819	0.17	0.847	0.93	0.097	0.485	0.717	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.734	0.0023	0.138	0.421	0.0018	0.0026	0.0054
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0079	0.012	0.024
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0079	0.012	0.024
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0079	0.012	0.024
Endrin	0.086	0.037	0.002	0.086	0.038	0.0023	0.049	0.022	0.0018	0.0026	0.0054
Guthion	N/A	N/A	0.01	N/A	N/A	0.011	N/A	N/A	0.0088	0.013	0.027
Heptachlor	0.52	0.053	0.004	0.52	0.055	0.0045	0.298	0.031	0.0035	0.0051	0.011
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	N/A	1.126	0.165	N/A	0.645	0.095	N/A	0.139	0.295
Lead	40.3	133	5.3	227	367	16.1	130	210	12.4	18.2	38.5
Malathion	N/A	N/A	0.01	N/A	N/A	0.011	N/A	N/A	0.0088	0.013	0.027
Mercury	2.4	2.1	1.1	2.4	2.17	1.25	1.38	1.24	0.96	1.42	2.99
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.034	N/A	N/A	0.026	0.039	0.082
Mirex	N/A	N/A	0.001	N/A	N/A	0.0011	N/A	N/A	0.00088	0.0013	0.0027
Nickel	325	118	13.1	789	122	14.9	452	69.9	11.5	16.9	35.7
Nonylphenol	28	7	1.7	28	7.24	1.93	16.0	4.15	1.49	2.19	4.63
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	15.6	10.9	8.26	8.95	8.40	12.1	25.7
Phenanthrene	30	7.7	4.6	30	7.96	5.23	17.2	4.56	4.03	5.92	12.5

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	FW Acute Criterion (µg/L)	SW Acute Criterion (µg/L)	SW Chronic Criterion (µg/L)	FW WLAa (µg/L)	SW WLAa (µg/L)	SW WLAc (µg/L)	FW LTAa (µg/L)	SW LTAa (µg/L)	SW LTAc (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10.3	0.034	1.15	5.93	0.026	0.039	0.082
Selenium	20	564	136	20	583	155	11.5	334	119	16.8	35.6
Silver	0.8	2	N/A	17.8	4.93	N/A	10.2	2.82	N/A	4.15	8.78
Toxaphene	0.78	0.21	0.0002	0.78	0.217	0.00023	0.447	0.124	0.00018	0.00026	0.00054
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.248	0.0084	0.074	0.142	0.0065	0.010	0.020
2,4,5 Trichlorophenol	136	259	12	136	268	13.6	77.9	153	10.5	15.4	32.7
Zinc	81.3	92.7	84.2	297	168	168	170	96.4	129	142	300

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	Fish Only Criterion (µg/L)	WLAh (µg/L)	LTAh (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
Acrylonitrile	3.8	4.51	4.19	6.16	13.0
Aldrin	0.0010	0.0012	0.0011	0.0016	0.0034
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1271	1182	1737	3675
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	609	566	832	1760
Benzidine	0.0020	0.0024	0.0022	0.0032	0.0069
Benzo(*a*)anthracene	3.28	3.89	3.62	5.32	11.3
Benzo(*a*)pyrene	0.33	0.392	0.364	0.535	1.13
Bis(chloromethyl)ether	0.44	0.522	0.485	0.714	1.51
Bis(2-chloroethyl) ether	10.06	11.9	11.1	16.3	34.5
Bis(2-ethylhexyl) phthalate	41	48.6	45.2	66.5	141
Bromodichloromethane (Dichlorobromomethane)	322	382	355	522	1105
Bromoform	2175	2581	2400	3528	7464
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	36.2	33.7	49.5	105
Chlordane	0.0081	0.010	0.0089	0.013	0.028
Chlorobenzene	5201	6171	5739	8436	17847
Chlorodibromomethane (Dibromochloromethane)	239	284	264	388	820
Chloroform	7143	8475	7881	11586	24511
Chromium (+6)	502	596	554	814	1723
Chrysene	327	388	361	530	1122
Cresols (Methylphenols)	9301	11035	10263	15086	31917
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.0070	0.0065	0.0096	0.0202
4,4'-DDE	0.0040	0.0047	0.0044	0.0065	0.0137
4,4'-DDT	0.0040	0.0047	0.0044	0.0065	0.0137
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	561	522	767	1623
1,2-Dibromoethane	4.24	5.03	4.68	6.88	14.5
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	1714	1594	2344	4959
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	5144	4784	7033	14879
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	0.522	0.485	0.714	1.51
1,2-Dichloroethane	553	656	610	897	1898
1,1-Dichloroethylene	23916	28375	26389	38791	82069
Dichloromethane (Methylene Chloride)	22222	26365	24519	36044	76256
1,2-Dichloropropane	226	268	249	367	776
1,3-Dichloropropene (1,3-Dichloropropylene)	211	250	233	342	724

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Dicofol	0.30	0.356	0.331	0.487	1.03
Dieldrin	0.001	0.0012	0.0011	0.0016	0.0034
2,4-Dimethylphenol	571	677	630	926	1959
Di-*n*-Butyl Phthalate	3010	3571	3321	4882	10329
Dioxins/Furans (TCDD Equivalents)	7.97E-08	9.46E-08	8.79E-08	1.29E-07	2.73E-07
Endrin	0.20	0.237	0.221	0.324	0.686
Ethylbenzene	7143	8475	7881	11586	24511
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0018	0.0017	0.0024	0.0051
Heptachlor Epoxide	0.00075	0.00089	0.00083	0.0012	0.0026
Hexachlorobenzene	0.0045	0.0053	0.0050	0.0073	0.0154
Hexachlorobutadiene	274	325	302	444	940
Hexachlorocyclohexane (*alpha*)	0.093	0.110	0.103	0.151	0.319
Hexachlorocyclohexane (*beta*)	0.33	0.392	0.364	0.535	1.13
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	7.36	6.84	10.1	21.3
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	13.7	12.7	18.7	39.5
Hexachlorophene	2.90	3.44	3.20	4.70	10.0
Lead	3.83	12.1	11.3	16.6	35.0
Mercury	0.0250	0.030	0.028	0.041	0.086
Methoxychlor	1.61	1.91	1.78	2.61	5.52
Methyl Ethyl Ketone	992000	1176947	1094561	1609004	3404084
Nickel	1140	1353	1258	1849	3912
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	2198	2045	3006	6359
N-Nitrosodiethylamine	2.1	2.49	2.32	3.41	7.21
N-Nitroso-di-*n*-Butylamine	4.2	4.98	4.63	6.81	14.4
Pentachlorobenzene	1.0	1.19	1.10	1.62	3.43
Pentachlorophenol	9.1	10.8	10.0	14.8	31.2
Polychlorinated Biphenyls (PCBs)	0.00064	0.00076	0.00071	0.0010	0.0022
Pyridine	947	1124	1045	1536	3250
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	0.84	0.783	1.15	2.44
1,1,2,2-Tetrachloroethane	40	47.5	44.1	64.9	137
Tetrachloroethylene	525	623	579	852	1802
Thallium	0.23	0.273	0.254	0.373	0.789
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0063	0.0058	0.0086	0.0182
2,4,5-TP (Silvex)	21	24.9	23.2	34.1	72.1
1,1,1-Trichloroethane	956663	1135022	1055570	1551688	3282823
1,1,2-Trichloroethane	295	350	325	478	1012
Trichloroethylene	82	97	90	133	281
2,4,5-Trichlorophenol	2435	2889	2687	3950	8356
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	28.5	26.5	38.9	82.4

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.793	0.963
Aluminum	584	710

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Arsenic	70.3	85.3
Cadmium	7.88	9.57
Carbaryl	1.18	1.43
Chlordane	0.0036	0.0044
Chlorpyrifos	0.0054	0.0066
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	6.66	8.09
Cyanide (free)	3.41	4.15
4,4'-DDT	0.00090	0.00109
Demeton	0.090	0.109
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.00180	0.00219
Diuron	124	150
Endosulfan (*alpha*)	0.0081	0.0098
Endosulfan (*beta*)	0.0081	0.0098
Endosulfan sulfate	0.0081	0.0098
Endrin	0.00180	0.00219
Guthion	0.0090	0.0109
Heptachlor	0.0036	0.0044
Hexachlorocyclohexane (*gamma*) (Lindane)	0.098	0.118
Lead	12.7	15.5
Malathion	0.0090	0.0109
Mercury	0.991	1.20
Methoxychlor	0.027	0.033
Mirex	0.00090	0.00109
Nickel	11.8	14.3
Nonylphenol	1.53	1.86
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.50	10.3
Phenanthrene	4.14	5.03
Polychlorinated Biphenyls (PCBs)	0.027	0.033
Selenium	11.8	14.3
Silver	2.91	3.53
Toxaphene	0.000180	0.000219
Tributyltin (TBT)	0.0067	0.0081
2,4,5 Trichlorophenol	10.8	13.1
Zinc	99.2	120

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	4.31	5.24
Aldrin	0.0011	0.0014
Anthracene	N/A	N/A
Antimony	1216	1477
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	582	707
Benzidine	0.0023	0.0028

Human Health	***70%***	***85%***
Parameter	***(μg/L)***	***(μg/L)***
Benzo(*a*)anthracene	3.72	4.52
Benzo(*a*)pyrene	0.375	0.455
Bis(chloromethyl)ether	0.500	0.607
Bis(2-chloroethyl) ether	11.4	13.9
Bis(2-ethylhexyl) phthalate	46.6	56.5
Bromodichloromethane (Dichlorobromomethane)	366	444
Bromoform	2469	2999
Cadmium	N/A	N/A
Carbon Tetrachloride	34.6	42.0
Chlordane	0.0092	0.0112
Chlorobenzene	5905	7171
Chlorodibromomethane (Dibromochloromethane)	271	330
Chloroform	8110	9848
Chromium (+6)	570	692
Chrysene	371	451
Cresols (Methylphenols)	10560	12823
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0067	0.0081
4,4'-DDE	0.0045	0.0055
4,4'-DDT	0.0045	0.0055
2,4'-D	N/A	N/A
Danitol	537	652
1,2-Dibromoethane	4.81	5.85
m-Dichlorobenzene (1,3-Dichlorobenzene)	1641	1992
o-Dichlorobenzene (1,2-Dichlorobenzene)	4923	5978
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	0.500	0.607
1,2-Dichloroethane	628	762
1,1-Dichloroethylene	27154	32973
Dichloromethane (Methylene Chloride)	25231	30637
1,2-Dichloropropane	257	312
1,3-Dichloropropene (1,3-Dichloropropylene)	240	291
Dicofol	0.341	0.414
Dieldrin	0.0011	0.0014
2,4-Dimethylphenol	648	787
Di-*n*-Butyl Phthalate	3418	4150
Dioxins/Furans (TCDD Equivalents)	9.05E-08	1.10E-07
Endrin	0.227	0.276
Ethylbenzene	8110	9848
Fluoride	N/A	N/A
Heptachlor	0.0017	0.0021
Heptachlor Epoxide	0.00085	0.00103
Hexachlorobenzene	0.0051	0.0062
Hexachlorobutadiene	311	378
Hexachlorocyclohexane (*alpha*)	0.106	0.128
Hexachlorocyclohexane (*beta*)	0.375	0.455
Hexachlorocyclohexane (*gamma*) (Lindane)	7.04	8.55
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	13.1	15.9
Hexachlorophene	3.29	4.00

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Lead	11.6	14.1
Mercury	0.028	0.034
Methoxychlor	1.83	2.22
Methyl Ethyl Ketone	1126303	1367654
Nickel	1294	1572
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	2104	2555
N-Nitrosodiethylamine	2.38	2.90
N-Nitroso-di-*n*-Butylamine	4.77	5.79
Pentachlorobenzene	1.14	1.38
Pentachlorophenol	10.3	12.5
Polychlorinated Biphenyls (PCBs)	0.00073	0.00088
Pyridine	1075	1306
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.806	0.979
1,1,2,2-Tetrachloroethane	45.4	55.1
Tetrachloroethylene	596	724
Thallium	0.261	0.317
Toluene	N/A	N/A
Toxaphene	0.0060	0.0073
2,4,5-TP (Silvex)	23.8	29.0
1,1,1-Trichloroethane	1086182	1318935
1,1,2-Trichloroethane	335	407
Trichloroethylene	93.1	113
2,4,5-Trichlorophenol	2765	3357
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	27.2	33.1

Calculation of Mass Limits from Concentration Limits
The parameters in the tables below have technology-based effluent limits that were calculated in Appendix A of this fact sheet. Mass limits have been calculated from the water quality-based effluent limits for these parameters to compare with the technology-based limits (see Appendix D). The concentration limits in the table have already been converted from µg/L to mg/L.

Mass limits were calculated as follows:

Limit (lbs/day) = Limit (µg/L)/1000 × Flow (MGD) × 8.345

where: Flow (MGD) = 2.6 (aquatic life) and = 2.6 (human health)

Where necessary, single grab limits will be calculated as follows:

Single Grab (mg/L) = 2 × Daily Max (mg/L)

Parameter	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***	***Daily Avg. (lbs/day)***	***Daily Max. (lbs/day)***	***Aquatic Life/ Human Health***
Aluminum, Total	835	1,766	18.1	38.3	Aquatic Life
Copper, Total	9.52	20.1	0.206	0.436	Aquatic Life
Zinc, Total	142	300	3.08	6.50	Aquatic Life

Parameter	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***	***Daily Avg. (lbs/day)***	***Daily Max. (lbs/day)***	***Aquatic Life/ Human Health***
Acrylonitrile	6.16	13.0	0.133	0.282	Human Health
Benzene	832	1,760	18.0	38.1	Human Health
Benzo(*a*)anthracene	5.32	11.3	0.115	0.245	Human Health
Benzo(*a*)pyrene	0.535	1.13	0.011	0.024	Human Health
Bis(2-ethylhexyl) phthalate	66.5	141	1.44	3.05	Human Health
Carbon Tetrachloride	49.5	105	1.07	2.27	Human Health
Chlorobenzene	8,436	17,847	183	387	Human Health
Chloroform	11,586	24,511	251	531	Human Health
Chrysene	530	1,122	11.4	24.3	Human Health
m-Dichlorobenzene (1,3-Dichlorobenzene)	2,344	4,959	50.8	107	Human Health
o-Dichlorobenzene (1,2-Dichlorobenzene)	7,033	14,879	152	322	Human Health
1,2-Dichloroethane	897	1,898	19.4	41.1	Human Health
1,1-Dichloroethylene	38,791	82,069	841	1,780	Human Health
Dichloromethane (Methylene Chloride)	36,044	76,256	782	1,654	Human Health
1,2-Dichloropropane	367	776	7.96	16.8	Human Health
1,3-Dichloropropene (1,3-Dichloropropylene)	342	724	7.42	15.7	Human Health
2,4-Dimethylphenol	926	1,959	20.0	42.5	Human Health
Di-*n*-Butyl Phthalate	4,882	10,329	105	224	Human Health
Ethylbenzene	11,586	24,511	251	531	Human Health
Hexachlorobenzene	0.0073	0.0154	0.00015	0.00033	Human Health
Hexachlorobutadiene	444	940	9.63	20.3	Human Health
Hexachloroethane	18.7	39.5	0.405	0.857	Human Health
Nitrobenzene	3,006	6,359	65.2	137	Human Health
Nonylphenol	2.19	4.63	0.047	0.100	Aquatic Life
Phenanthrene	5.92	12.5	0.128	0.271	Aquatic Life
Tetrachloroethylene	852	1,802	18.4	39.0	Human Health
1,1,1-Trichloroethane	1,551,688	3,282,823	33,667	71,227	Human Health
1,1,2-Trichloroethane	478	1,012	10.3	21.9	Human Health
Trichloroethylene	133	281	2.88	6.09	Human Health
Vinyl Chloride	38.9	82.4	0.844	1.78	Human Health

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**003**
Prepared by:	Karen Holligan
Date:	February 26, 2019

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	28.2	
% Effluent for Acute Aquatic Life (Intermittent):	38	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	38	

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

Stream/River Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	7.89	3.42	4.52	1.96	2.88	6.10
Aluminum	991	N/A	2608	N/A	1494	N/A	2197	4647
Arsenic	340	149	1732	392	993	225	330	699
Cadmium	5.64	40.0	57.7	105	33.0	60.3	48.6	103
Carbaryl	2.0	613	5.26	1613	3.02	924	4.43	9.38
Chlordane	2.4	0.09	6.32	0.237	3.62	0.136	0.199	0.422
Chlorpyrifos	0.083	0.011	0.218	0.029	0.125	0.017	0.024	0.052
Chromium (+3)	400	N/A	5205	N/A	2983	N/A	4385	9276
Chromium (+6)	15.7	1090	41.3	2868	23.7	1644	34.8	73.6
Copper	9.46	24.3	74.7	73.0	42.8	41.8	61.5	130
Cyanide (free)	45.8	5.6	121	14.7	69.1	8.44	12.4	26.3
4,4'-DDT	1.1	0.13	2.89	0.342	1.66	0.196	0.288	0.610
Demeton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diazinon	0.17	0.819	0.447	2.16	0.256	1.23	0.377	0.797
Dicofol	59.3	N/A	156	N/A	89.4	N/A	131	278
Dieldrin	0.24	0.71	0.632	1.87	0.362	1.07	0.532	1.13
Diuron	210	N/A	553	N/A	317	N/A	465	985
Endosulfan I (*alpha*)	0.22	0.034	0.579	0.089	0.332	0.051	0.075	0.159
Endosulfan II (*beta*)	0.22	0.034	0.579	0.089	0.332	0.051	0.075	0.159
Endosulfan sulfate	0.22	0.034	0.579	0.089	0.332	0.051	0.075	0.159
Endrin	0.086	0.037	0.226	0.097	0.130	0.056	0.082	0.174
Guthion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.52	0.053	1.37	0.139	0.784	0.080	0.117	0.249
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	2.96	0.421	1.70	0.241	0.355	0.750
Lead	40.3	133	597	933	342	535	503	1064
Malathion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury	2.4	2.1	6.32	5.53	3.62	3.17	4.65	9.85
Methoxychlor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mirex	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	325	118	2076	311	1190	178	262	553
Nonylphenol	28	7	73.7	18.4	42.2	10.6	15.5	32.8
Parathion (ethyl)	0.065	N/A	0.171	N/A	0.098	N/A	0.144	0.30
Pentachlorophenol	14.4	15.1	37.9	39.7	21.7	22.8	32.0	67.6
Phenanthrene	30	7.7	78.9	20.3	45.2	11.6	17.1	36.1
Polychlorinated Biphenyls (PCBs)	2.0	10	5.26	26.3	3.02	15.1	4.43	9.38

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Selenium	20	564	52.6	1484	30.2	850	44.3	93.8
Silver	0.8	2	46.9	12.5	26.8	7.18	10.6	22.3
Toxaphene	0.78	0.21	2.05	0.553	1.18	0.317	0.465	0.985
Tributyltin (TBT)	0.13	0.24	0.342	0.632	0.196	0.362	0.288	0.610
2,4,5 Trichlorophenol	136	259	358	682	205	391	301	638
Zinc	81.3	92.7	782	428	448	245	361	763

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	2.02	2.45
Aluminum	1538	1867
Arsenic	231	281
Cadmium	34.0	41.3
Carbaryl	3.10	3.77
Chlordane	0.140	0.170
Chlorpyrifos	0.017	0.021
Chromium (+3)	3069	3727
Chromium (+6)	24.4	29.6
Copper	43.1	52.3
Cyanide (free)	8.69	10.6
4,4'-DDT	0.202	0.245
Demeton	N/A	N/A
Diazinon	0.264	0.320
Dicofol	92.0	112
Dieldrin	0.372	0.452
Diuron	326	396
Endosulfan (*alpha*)	0.053	0.064
Endosulfan (*beta*)	0.053	0.064
Endosulfan sulfate	0.053	0.064
Endrin	0.057	0.070
Guthion	N/A	N/A
Heptachlor	0.082	0.100
Hexachlorocyclohexane (*gamma*) (Lindane)	0.248	0.301
Lead	352	427
Malathion	N/A	N/A
Mercury	3.26	3.96
Methoxychlor	N/A	N/A
Mirex	N/A	N/A
Nickel	183	222
Nonylphenol	10.9	13.2
Parathion (ethyl)	0.101	0.122
Pentachlorophenol	22.4	27.2
Phenanthrene	11.9	14.5
Polychlorinated Biphenyls (PCBs)	3.10	3.77
Selenium	31.0	37.7

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Silver	7.39	8.98
Toxaphene	0.326	0.396
Tributyltin (TBT)	0.202	0.245
2,4,5 Trichlorophenol	211	256
Zinc	252	307

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**004 - interim phase**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	1.48	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
Critical Low Flow [7Q2] (cfs):	0.55	
% Effluent for Chronic Aquatic Life (Narrow Tidal River):	80.6	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	94.3	
Effluent Flow for Human Health (MGD):	1.205	
Harmonic Mean Flow (cfs):	0.75	
% Effluent for Human Health (Narrow Tidal River):	71.3	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	N/A	3.0	1.38	N/A	1.72	0.790	N/A	1.16	2.46
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	158	96.7	377	90.5	74.5	109	232
Cadmium	5.64	40.0	8.75	21.9	42.4	10.9	12.6	24.3	8.36	12.3	26.0
Carbaryl	2.0	613	N/A	2.0	650	N/A	1.15	372	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.095	0.0050	1.38	0.055	0.0038	0.0056	0.0119
Chlorpyrifos	0.083	0.011	0.006	0.083	0.012	0.0074	0.048	0.0067	0.0057	0.0084	0.0178
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1155	61.5	9.00	662	47.4	13.2	28.0
Copper	9.46	24.3	6.48	28.4	29.4	9.18	16.3	16.9	7.07	10.4	22.0
Cyanide (free)	45.8	5.6	5.6	45.8	5.94	6.95	26.2	3.40	5.35	5.00	10.6
4,4'-DDT	1.1	0.13	0.001	1.1	0.138	0.0012	0.630	0.079	0.0010	0.0014	0.0030
Demeton	N/A	N/A	0.1	N/A	N/A	0.124	N/A	N/A	0.095	0.140	0.297
Diazinon	0.17	0.819	0.819	0.17	0.868	1.02	0.097	0.497	0.782	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.753	0.0025	0.138	0.431	0.0019	0.0028	0.0059
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0086	0.013	0.027
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0086	0.013	0.027
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0086	0.013	0.027
Endrin	0.086	0.037	0.002	0.086	0.039	0.0025	0.049	0.022	0.0019	0.0028	0.0059
Guthion	N/A	N/A	0.01	N/A	N/A	0.012	N/A	N/A	0.010	0.014	0.030
Heptachlor	0.52	0.053	0.004	0.52	0.056	0.0050	0.298	0.032	0.0038	0.0056	0.012
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	N/A	1.126	0.170	N/A	0.645	0.097	N/A	0.143	0.302
Lead	40.3	133	5.3	227	376	17.5	130	215	13.5	19.8	42.0
Malathion	N/A	N/A	0.01	N/A	N/A	0.012	N/A	N/A	0.010	0.014	0.030
Mercury	2.4	2.1	1.1	2.4	2.23	1.36	1.38	1.28	1.05	1.54	3.27
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.037	N/A	N/A	0.029	0.042	0.089
Mirex	N/A	N/A	0.001	N/A	N/A	0.0012	N/A	N/A	0.0010	0.0014	0.0030
Nickel	325	118	13.1	789	125	16.2	452	71.7	12.5	18.4	38.9
Nonylphenol	28	7	1.7	28	7.42	2.11	16.0	4.25	1.62	2.39	5.05
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	16.0	11.9	8.26	9.17	9.17	12.1	25.7
Phenanthrene	30	7.7	4.6	30	8.16	5.70	17.2	4.68	4.39	6.46	13.7
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10.6	0.037	1.15	6.07	0.029	0.042	0.089
Selenium	20	564	136	20	598	169	11.5	343	130	16.8	35.6

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Silver	0.8	2	N/A	17.8	5.05	N/A	10.2	2.89	N/A	4.25	9.00
Toxaphene	0.78	0.21	0.0002	0.78	0.223	0.00025	0.447	0.128	0.00019	0.00028	0.00059
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.254	0.0092	0.074	0.146	0.0071	0.010	0.022
2,4,5 Trichlorophenol	136	259	12	136	275	14.9	77.9	157	11.5	16.8	35.6
Zinc	81.3	92.7	84.2	297	172	183	170	98.8	141	145	307

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Acrylonitrile	3.8	5.33	4.96	7.28	15.4
Aldrin	0.0010	0.0014	0.0013	0.0019	0.0041
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1502	1397	2053	4344
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	719	669	983	2081
Benzidine	0.0020	0.0028	0.0026	0.0038	0.0081
Benzo(*a*)anthracene	3.28	4.60	4.28	6.29	13.3
Benzo(*a*)pyrene	0.33	0.463	0.430	0.633	1.34
Bis(chloromethyl)ether	0.44	0.617	0.574	0.844	1.78
Bis(2-chloroethyl) ether	10.06	14.1	13.1	19.3	40.8
Bis(2-ethylhexyl) phthalate	41	57.5	53.5	78.6	166
Bromodichloromethane (Dichlorobromomethane)	322	452	420	617	1306
Bromoform	2175	3050	2836	4170	8821
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	42.8	39.8	58.5	124
Chlordane	0.0081	0.0114	0.0106	0.016	0.033
Chlorobenzene	5201	7293	6783	9971	21094
Chlorodibromomethane (Dibromochloromethane)	239	335	312	458	969
Chloroform	7143	10016	9315	13693	28971
Chromium (+6)	502	704	655	962	2036
Chrysene	327	459	426	627	1326
Cresols (Methylphenols)	9301	13043	12130	17830	37723
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.0083	0.0077	0.011	0.024
4,4'-DDE	0.0040	0.0056	0.0052	0.0077	0.0162
4,4'-DDT	0.0040	0.0056	0.0052	0.0077	0.0162
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	663	617	907	1918
1,2-Dibromoethane	4.24	5.95	5.53	8.13	17.2
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	2026	1884	2770	5861
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	6080	5655	8312	17586
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	0.617	0.574	0.844	1.78
1,2-Dichloroethane	553	775	721	1060	2243
1,1-Dichloroethylene	23916	33537	31189	45848	96998
Dichloromethane (Methylene Chloride)	22222	31161	28980	42601	90128
1,2-Dichloropropane	226	317	295	433	917
1,3-Dichloropropene (1,3-Dichloropropylene)	211	296	275	404	856
Dicofol	0.30	0.421	0.391	0.575	1.22
Dieldrin	0.001	0.0014	0.0013	0.0019	0.0041

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
2,4-Dimethylphenol	571	801	745	1095	2316
Di-*n*-Butyl Phthalate	3010	4221	3925	5770	12208
Dioxins/Furans (TCDD Equivalents)	7.97E-08	1.12E-07	1.04E-07	1.53E-07	3.23E-07
Endrin	0.20	0.280	0.261	0.383	0.811
Ethylbenzene	7143	10016	9315	13693	28971
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0021	0.0020	0.0029	0.0061
Heptachlor Epoxide	0.00075	0.0011	0.0010	0.0014	0.0030
Hexachlorobenzene	0.0045	0.0063	0.0059	0.0086	0.0183
Hexachlorobutadiene	274	384	357	525	1111
Hexachlorocyclohexane (*alpha*)	0.093	0.130	0.121	0.178	0.377
Hexachlorocyclohexane (*beta*)	0.33	0.463	0.430	0.633	1.34
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	8.69	8.09	11.9	25.1
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	16.1	15.0	22.1	46.7
Hexachlorophene	2.90	4.07	3.78	5.56	11.8
Lead	3.83	14.3	13.3	19.6	41.4
Mercury	0.0250	0.035	0.033	0.048	0.101
Methoxychlor	1.61	2.26	2.10	3.09	6.53
Methyl Ethyl Ketone	992000	1391056	1293682	1901712	4023350
Nickel	1140	1599	1487	2185	4624
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	2598	2417	3552	7515
N-Nitrosodiethylamine	2.1	2.94	2.74	4.03	8.52
N-Nitroso-di-*n*-Butylamine	4.2	5.89	5.48	8.05	17.0
Pentachlorobenzene	1.0	1.40	1.30	1.92	4.06
Pentachlorophenol	9.1	12.8	11.9	17.4	36.9
Polychlorinated Biphenyls (PCBs)	0.00064	0.00090	0.00083	0.0012	0.0026
Pyridine	947	1328	1235	1815	3841
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	1.00	0.926	1.36	2.88
1,1,2,2-Tetrachloroethane	40	56.1	52.2	76.7	162
Tetrachloroethylene	525	736	685	1006	2129
Thallium	0.23	0.323	0.300	0.441	0.933
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0074	0.0069	0.010	0.021
2,4,5-TP (Silvex)	21	29.4	27.4	40.3	85.2
1,1,1-Trichloroethane	956663	1341504	1247598	1833969	3880031
1,1,2-Trichloroethane	295	414	385	566	1196
Trichloroethylene	82	115	107	157	333
2,4,5-Trichlorophenol	2435	3415	3176	4668	9876
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	33.7	31.3	46.0	97.3

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.813	0.987
Aluminum	584	710
Arsenic	76.6	93.1
Cadmium	8.60	10.4

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Carbaryl	1.18	1.43
Chlordane	0.0039	0.0048
Chlorpyrifos	0.0059	0.0072
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	7.27	8.83
Cyanide (free)	3.50	4.25
4,4'-DDT	0.00098	0.00119
Demeton	0.098	0.119
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.00197	0.00239
Diuron	124	150
Endosulfan (*alpha*)	0.0088	0.0107
Endosulfan (*beta*)	0.0088	0.0107
Endosulfan sulfate	0.0088	0.0107
Endrin	0.00197	0.00239
Guthion	0.0098	0.0119
Heptachlor	0.0039	0.0048
Hexachlorocyclohexane (*gamma*) (Lindane)	0.100	0.121
Lead	13.9	16.9
Malathion	0.0098	0.0119
Mercury	1.08	1.31
Methoxychlor	0.029	0.036
Mirex	0.00098	0.00119
Nickel	12.9	15.6
Nonylphenol	1.67	2.03
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.50	10.3
Phenanthrene	4.52	5.49
Polychlorinated Biphenyls (PCBs)	0.029	0.036
Selenium	11.8	14.3
Silver	2.98	3.62
Toxaphene	0.000197	0.000239
Tributyltin (TBT)	0.0073	0.0088
2,4,5 Trichlorophenol	11.8	14.3
Zinc	102	123

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	5.10	6.19
Aldrin	0.0013	0.0016
Anthracene	N/A	N/A
Antimony	1437	1745
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	688	836
Benzidine	0.0027	0.0033
Benzo(*a*)anthracene	4.40	5.34
Benzo(*a*)pyrene	0.443	0.538

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Bis(chloromethyl)ether	0.590	0.717
Bis(2-chloroethyl) ether	13.5	16.4
Bis(2-ethylhexyl) phthalate	55.0	66.8
Bromodichloromethane (Dichlorobromomethane)	432	525
Bromoform	2919	3544
Cadmium	N/A	N/A
Carbon Tetrachloride	40.9	49.7
Chlordane	0.011	0.013
Chlorobenzene	6979	8475
Chlorodibromomethane (Dibromochloromethane)	321	389
Chloroform	9585	11639
Chromium (+6)	674	818
Chrysene	439	533
Cresols (Methylphenols)	12481	15156
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0079	0.0096
4,4'-DDE	0.0054	0.0065
4,4'-DDT	0.0054	0.0065
2,4'-D	N/A	N/A
Danitol	635	771
1,2-Dibromoethane	5.69	6.91
m-Dichlorobenzene (1,3-Dichlorobenzene)	1939	2355
o-Dichlorobenzene (1,2-Dichlorobenzene)	5819	7065
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	0.590	0.717
1,2-Dichloroethane	742	901
1,1-Dichloroethylene	32094	38971
Dichloromethane (Methylene Chloride)	29820	36211
1,2-Dichloropropane	303	368
1,3-Dichloropropene (1,3-Dichloropropylene)	283	344
Dicofol	0.403	0.489
Dieldrin	0.0013	0.0016
2,4-Dimethylphenol	766	930
Di-*n*-Butyl Phthalate	4039	4905
Dioxins/Furans (TCDD Equivalents)	1.07E-07	1.30E-07
Endrin	0.268	0.326
Ethylbenzene	9585	11639
Fluoride	N/A	N/A
Heptachlor	0.0020	0.0024
Heptachlor Epoxide	0.00101	0.00122
Hexachlorobenzene	0.0060	0.0073
Hexachlorobutadiene	368	446
Hexachlorocyclohexane (*alpha*)	0.125	0.152
Hexachlorocyclohexane (*beta*)	0.443	0.538
Hexachlorocyclohexane (*gamma*) (Lindane)	8.32	10.1
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	15.4	18.8
Hexachlorophene	3.89	4.73
Lead	13.7	16.6
Mercury	0.034	0.041

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Methoxychlor	2.16	2.62
Methyl Ethyl Ketone	1331199	1616455
Nickel	1530	1858
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	2487	3019
N-Nitrosodiethylamine	2.82	3.42
N-Nitroso-di-*n*-Butylamine	5.64	6.84
Pentachlorobenzene	1.34	1.63
Pentachlorophenol	12.2	14.8
Polychlorinated Biphenyls (PCBs)	0.00086	0.00104
Pyridine	1271	1543
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.953	1.16
1,1,2,2-Tetrachloroethane	53.7	65.2
Tetrachloroethylene	705	855
Thallium	0.309	0.375
Toluene	N/A	N/A
Toxaphene	0.0071	0.0086
2,4,5-TP (Silvex)	28.2	34.2
1,1,1-Trichloroethane	1283779	1558874
1,1,2-Trichloroethane	396	481
Trichloroethylene	110	134
2,4,5-Trichlorophenol	3268	3968
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	32.2	39.1

Calculation of Mass Limits from Concentration Limits

The parameters in the tables below have technology-based effluent limits that were calculated in Appendix A of this fact sheet. Mass limits have been calculated from the water quality-based effluent limits for these parameters to compare with the technology-based limits (see Appendix D). The concentration limits in the table have already been converted from µg/L to mg/L.

Mass limits were calculated as follows:

Limit (lbs/day) = Limit (µg/L)/1000 × Flow (MGD) × 8.345

where: Flow (MGD) for Interim Phase = 1.48 (aquatic life)
= 1.205 (human health)

Where necessary, single grab limits will be calculated as follows:

Single Grab (mg/L) = 2 × Daily Max (mg/L)

Interim Phase

Parameter	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***	***Daily Avg. (lbs/day)***	***Daily Max. (lbs/day)***	***Aquatic Life/ Human Health***
Copper, Total	10.4	22.0	0.128	0.271	Aquatic Life
Cyanide, Free	5.00	10.6	0.061	0.131	Aquatic Life
Acrylonitrile	7.28	15.4	0.073	0.154	Human Health

Interim Phase

Parameter	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*	*Daily Avg. (lbs/day)*	*Daily Max. (lbs/day)*	*Aquatic Life/ Human Health*
Benzene	983	2,081	9.88	20.9	Human Health
Benzo(*a*)anthracene	6.29	13.3	0.063	0.133	Human Health
Benzo(*a*)pyrene	0.633	1.34	0.0063	0.0134	Human Health
Bis(2-ethylhexyl) phthalate	78.6	166	0.790	1.66	Human Health
Carbon Tetrachloride	58.5	124	0.588	1.24	Human Health
Chlorobenzene	9,971	21,094	100	212	Human Health
Chloroform	13,693	28,971	137	291	Human Health
Chrysene	627	1,326	6.30	13.3	Human Health
m-Dichlorobenzene (1,3-Dichlorobenzene)	2,770	5,861	27.8	58.9	Human Health
o-Dichlorobenzene (1,2-Dichlorobenzene)	8,312	17,586	83.5	176	Human Health
1,2-Dichloroethane	1,060	2,243	10.6	22.5	Human Health
1,1-Dichloroethylene	45,848	96,998	461	975	Human Health
Dichloromethane (Methylene Chloride)	42,601	90,128	428	906	Human Health
1,2-Dichloropropane	433	917	4.35	9.22	Human Health
1,3-Dichloropropene (1,3-Dichloropropylene)	404	856	4.06	8.60	Human Health
2,4-Dimethylphenol	1,095	2,316	11.0	23.2	Human Health
Di-*n*-Butyl Phthalate	5,770	12,208	58.0	122	Human Health
Ethylbenzene	13,693	28,971	137	291	Human Health
Hexachlorobenzene	0.0086	0.0183	0.000086	0.000184	Human Health
Hexachlorobutadiene	525	1,111	5.27	11.1	Human Health
Hexachloroethane	22.1	46.7	0.222	0.469	Human Health
Nitrobenzene	3,552	7,515	35.7	75.5	Human Health
Phenanthrene	6.46	13.7	0.079	0.169	Aquatic Life
Tetrachloroethylene	1,006	2,129	10.1	21.4	Human Health
1,1,1-Trichloroethane	1,833,969	3,880,031	18,441	39,016	Human Health
1,1,2-Trichloroethane	566	1,196	5.69	12.0	Human Health
Trichloroethylene	157	333	1.57	3.34	Human Health
Vinyl Chloride	46.0	97.3	0.462	0.978	Human Health

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**005**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	1.39	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
Critical Low Flow [7Q2] (cfs):	0.55	
% Effluent for Chronic Aquatic Life (Narrow Tidal River):	79.6	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	94.0	
Effluent Flow for Human Health (MGD):	0.236	
Harmonic Mean Flow (cfs):	0.75	
% Effluent for Human Health (Narrow Tidal River):	32.7	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	***FW Acute Criterion (µg/L)***	***SW Acute Criterion (µg/L)***	***SW Chronic Criterion (µg/L)***	***FW WLAa (µg/L)***	***SW WLAa (µg/L)***	***SW WLAc (µg/L)***	***FW LTAa (µg/L)***	***SW LTAa (µg/L)***	***SW LTAc (µg/L)***	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***
Aldrin	3.0	1.3	N/A	3.0	1.38	N/A	1.72	0.793	N/A	1.17	2.46
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	159	97.9	377	90.8	75.4	111	235
Cadmium	5.64	40.0	8.75	21.9	42.6	11.0	12.6	24.4	8.46	12.4	26.3
Carbaryl	2.0	613	N/A	2.0	652	N/A	1.15	374	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.096	0.0050	1.38	0.055	0.0039	0.0057	0.0120
Chlorpyrifos	0.083	0.011	0.006	0.083	0.012	0.0075	0.048	0.0067	0.0058	0.0085	0.0180
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1160	62.3	9.00	665	48.0	13.2	28.0
Copper	9.46	24.3	6.48	28.4	29.5	9.29	16.3	16.9	7.16	10.5	22.3
Cyanide (free)	45.8	5.6	5.6	45.8	5.96	7.03	26.2	3.41	5.41	5.02	10.6
4,4'-DDT	1.1	0.13	0.001	1.1	0.138	0.0013	0.630	0.079	0.0010	0.0014	0.0030
Demeton	N/A	N/A	0.1	N/A	N/A	0.126	N/A	N/A	0.097	0.142	0.301
Diazinon	0.17	0.819	0.819	0.17	0.871	1.03	0.097	0.499	0.792	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.755	0.0025	0.138	0.433	0.0019	0.0028	0.0060
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0087	0.013	0.027
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0087	0.013	0.027
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.036	0.011	0.126	0.021	0.0087	0.013	0.027
Endrin	0.086	0.037	0.002	0.086	0.039	0.0025	0.049	0.023	0.0019	0.0028	0.0060
Guthion	N/A	N/A	0.01	N/A	N/A	0.013	N/A	N/A	0.010	0.014	0.030
Heptachlor	0.52	0.053	0.004	0.52	0.056	0.0050	0.298	0.032	0.0039	0.0057	0.012
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	N/A	1.126	0.170	N/A	0.645	0.098	N/A	0.143	0.303
Lead	40.3	133	5.3	227	377	17.7	130	216	13.7	20.1	42.5
Malathion	N/A	N/A	0.01	N/A	N/A	0.013	N/A	N/A	0.010	0.014	0.030
Mercury	2.4	2.1	1.1	2.4	2.23	1.38	1.38	1.28	1.06	1.56	3.31
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.038	N/A	N/A	0.029	0.043	0.090
Mirex	N/A	N/A	0.001	N/A	N/A	0.0013	N/A	N/A	0.0010	0.0014	0.0030
Nickel	325	118	13.1	789	126	16.5	452	71.9	12.7	18.6	39.4
Nonylphenol	28	7	1.7	28	7.45	2.13	16.0	4.27	1.64	2.42	5.11
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	16.1	12.1	8.26	9.21	9.28	12.1	25.7
Phenanthrene	30	7.7	4.6	30	8.19	5.78	17.2	4.69	4.45	6.54	13.8
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10.6	0.038	1.15	6.10	0.029	0.043	0.090
Selenium	20	564	136	20	600	171	11.5	344	132	16.8	35.6

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Silver	0.8	2	N/A	17.8	5.07	N/A	10.2	2.90	N/A	4.27	9.03
Toxaphene	0.78	0.21	0.0002	0.78	0.223	0.00025	0.447	0.128	0.00019	0.00028	0.00060
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.255	0.0093	0.074	0.146	0.0072	0.011	0.022
2,4,5 Trichlorophenol	136	259	12	136	276	15.1	77.9	158	11.6	17.1	36.1
Zinc	81.3	92.7	84.2	297	173	186	170	99.2	143	146	308

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Acrylonitrile	3.8	11.6	10.8	15.9	33.6
Aldrin	0.0010	0.0031	0.0028	0.0042	0.0088
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	3271	3042	4472	9460
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	1567	1457	2142	4531
Benzidine	0.0020	0.0061	0.0057	0.0084	0.0177
Benzo(*a*)anthracene	3.28	10.0	9.32	13.7	29.0
Benzo(*a*)pyrene	0.33	1.01	0.937	1.38	2.91
Bis(chloromethyl)ether	0.44	1.34	1.25	1.84	3.89
Bis(2-chloroethyl) ether	10.06	30.7	28.6	42.0	88.9
Bis(2-ethylhexyl) phthalate	41	125	116	171	362
Bromodichloromethane (Dichlorobromomethane)	322	983	915	1344	2844
Bromoform	2175	6642	6177	9081	19212
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	93.1	86.6	127	269
Chlordane	0.0081	0.025	0.023	0.034	0.072
Chlorobenzene	5201	15884	14772	21715	45941
Chlorodibromomethane (Dibromochloromethane)	239	730	679	998	2111
Chloroform	7143	21815	20288	29823	63094
Chromium (+6)	502	1533	1426	2096	4434
Chrysene	327	999	929	1365	2888
Cresols (Methylphenols)	9301	28405	26417	38833	82156
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.018	0.017	0.025	0.052
4,4'-DDE	0.0040	0.012	0.011	0.017	0.035
4,4'-DDT	0.0040	0.012	0.011	0.017	0.035
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	1445	1343	1975	4178
1,2-Dibromoethane	4.24	12.9	12.0	17.7	37.5
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	4413	4104	6033	12764
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	13242	12315	18103	38300
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	1.34	1.25	1.84	3.89
1,2-Dichloroethane	553	1689	1571	2309	4885
1,1-Dichloroethylene	23916	73039	67926	99852	211251
Dichloromethane (Methylene Chloride)	22222	67866	63115	92779	196288
1,2-Dichloropropane	226	690	642	944	1996
1,3-Dichloropropene (1,3-Dichloropropylene)	211	644	599	881	1864
Dicofol	0.30	0.916	0.852	1.25	2.65
Dieldrin	0.001	0.0031	0.0028	0.0042	0.0088

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	***Fish Only Criterion (µg/L)***	***WLAh (µg/L)***	***LTAh (µg/L)***	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***
2,4-Dimethylphenol	571	1744	1622	2384	5044
Di-*n*-Butyl Phthalate	3010	9192	8549	12567	26587
Dioxins/Furans (TCDD Equivalents)	7.97E-08	2.43E-07	2.26E-07	3.33E-07	7.04E-07
Endrin	0.20	0.611	0.568	0.835	1.77
Ethylbenzene	7143	21815	20288	29823	63094
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0046	0.0043	0.0063	0.0132
Heptachlor Epoxide	0.00075	0.0023	0.0021	0.0031	0.0066
Hexachlorobenzene	0.0045	0.014	0.013	0.019	0.040
Hexachlorobutadiene	274	837	778	1144	2420
Hexachlorocyclohexane (*alpha*)	0.093	0.284	0.264	0.388	0.821
Hexachlorocyclohexane (*beta*)	0.33	1.01	0.937	1.38	2.91
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	18.9	17.6	25.9	54.8
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	35.2	32.7	48.1	102
Hexachlorophene	2.90	8.86	8.24	12.1	25.6
Lead	3.83	31.2	29.0	42.6	90.2
Mercury	0.0250	0.076	0.071	0.104	0.221
Methoxychlor	1.61	4.92	4.57	6.72	14.2
Methyl Ethyl Ketone	992000	3029551	2817483	4141699	8762371
Nickel	1140	3482	3238	4760	10070
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	5659	5263	7736	16368
N-Nitrosodiethylamine	2.1	6.41	5.96	8.77	18.5
N-Nitroso-di-*n*-Butylamine	4.2	12.8	11.9	17.5	37.1
Pentachlorobenzene	1.0	3.05	2.84	4.18	8.83
Pentachlorophenol	9.1	27.8	25.8	38.0	80.4
Polychlorinated Biphenyls (PCBs)	0.00064	0.00195	0.00182	0.0027	0.0057
Pyridine	947	2892	2690	3954	8365
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	2.17	2.017	2.96	6.27
1,1,2,2-Tetrachloroethane	40	122	114	167	353
Tetrachloroethylene	525	1603	1491	2192	4637
Thallium	0.23	0.702	0.653	0.960	2.03
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0162	0.0151	0.022	0.047
2,4,5-TP (Silvex)	21	64.1	59.6	87.7	185
1,1,1-Trichloroethane	956663	2921633	2717118	3994164	8450238
1,1,2-Trichloroethane	295	901	838	1232	2606
Trichloroethylene	82	250	233	342	724
2,4,5-Trichlorophenol	2435	7436	6916	10166	21508
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	73.3	68.2	100	212

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.816	0.990
Aluminum	584	710
Arsenic	77.6	94.2
Cadmium	8.71	10.6

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Carbaryl	1.18	1.43
Chlordane	0.0040	0.0048
Chlorpyrifos	0.0060	0.0072
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	7.36	8.94
Cyanide (free)	3.51	4.27
4,4'-DDT	0.00099	0.00121
Demeton	0.099	0.121
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.00199	0.00242
Diuron	124	150
Endosulfan (*alpha*)	0.0090	0.0109
Endosulfan (*beta*)	0.0090	0.0109
Endosulfan sulfate	0.0090	0.0109
Endrin	0.00199	0.00242
Guthion	0.0099	0.0121
Heptachlor	0.0040	0.0048
Hexachlorocyclohexane (*gamma*) (Lindane)	0.100	0.122
Lead	14.1	17.1
Malathion	0.0099	0.0121
Mercury	1.09	1.33
Methoxychlor	0.030	0.036
Mirex	0.00099	0.00121
Nickel	13.0	15.8
Nonylphenol	1.69	2.05
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.50	10.3
Phenanthrene	4.58	5.56
Polychlorinated Biphenyls (PCBs)	0.030	0.036
Selenium	11.8	14.3
Silver	2.99	3.63
Toxaphene	0.000199	0.000242
Tributyltin (TBT)	0.0074	0.0089
2,4,5 Trichlorophenol	11.9	14.5
Zinc	102	124

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	11.1	13.5
Aldrin	0.0029	0.0035
Anthracene	N/A	N/A
Antimony	3130	3801
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	1499	1821
Benzidine	0.0058	0.0071
Benzo(*a*)anthracene	9.59	11.6
Benzo(*a*)pyrene	0.964	1.17

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Bis(chloromethyl)ether	1.29	1.56
Bis(2-chloroethyl) ether	29.4	35.7
Bis(2-ethylhexyl) phthalate	120	146
Bromodichloromethane (Dichlorobromomethane)	941	1143
Bromoform	6357	7719
Cadmium	N/A	N/A
Carbon Tetrachloride	89.1	108
Chlordane	0.024	0.029
Chlorobenzene	15200	18457
Chlorodibromomethane (Dibromochloromethane)	698	848
Chloroform	20876	25349
Chromium (+6)	1467	1782
Chrysene	956	1160
Cresols (Methylphenols)	27183	33008
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0172	0.0209
4,4'-DDE	0.0117	0.0142
4,4'-DDT	0.0117	0.0142
2,4'-D	N/A	N/A
Danitol	1382	1679
1,2-Dibromoethane	12.4	15.0
m-Dichlorobenzene (1,3-Dichlorobenzene)	4223	5128
o-Dichlorobenzene (1,2-Dichlorobenzene)	12672	15388
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	1.29	1.56
1,2-Dichloroethane	1616	1963
1,1-Dichloroethylene	69896	84874
Dichloromethane (Methylene Chloride)	64945	78862
1,2-Dichloropropane	661	802
1,3-Dichloropropene (1,3-Dichloropropylene)	617	749
Dicofol	0.877	1.06
Dieldrin	0.0029	0.0035
2,4-Dimethylphenol	1669	2026
Di-*n*-Butyl Phthalate	8797	10682
Dioxins/Furans (TCDD Equivalents)	2.33E-07	2.83E-07
Endrin	0.585	0.710
Ethylbenzene	20876	25349
Fluoride	N/A	N/A
Heptachlor	0.0044	0.0053
Heptachlor Epoxide	0.0022	0.0027
Hexachlorobenzene	0.0132	0.0160
Hexachlorobutadiene	801	972
Hexachlorocyclohexane (*alpha*)	0.272	0.330
Hexachlorocyclohexane (*beta*)	0.964	1.17
Hexachlorocyclohexane (*gamma*) (Lindane)	18.1	22.0
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	33.6	40.8
Hexachlorophene	8.48	10.3
Lead	29.9	36.2
Mercury	0.073	0.089

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Methoxychlor	4.71	5.71
Methyl Ethyl Ketone	2899190	3520445
Nickel	3332	4046
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	5416	6576
N-Nitrosodiethylamine	6.14	7.45
N-Nitroso-di-*n*-Butylamine	12.3	14.9
Pentachlorobenzene	2.92	3.55
Pentachlorophenol	26.6	32.3
Polychlorinated Biphenyls (PCBs)	0.00187	0.00227
Pyridine	2768	3361
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	2.08	2.52
1,1,2,2-Tetrachloroethane	117	142
Tetrachloroethylene	1534	1863
Thallium	0.672	0.816
Toluene	N/A	N/A
Toxaphene	0.0155	0.0188
2,4,5-TP (Silvex)	61.4	74.5
1,1,1-Trichloroethane	2795915	3395039
1,1,2-Trichloroethane	862	1047
Trichloroethylene	240	291
2,4,5-Trichlorophenol	7116	8641
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	70.1	85.2

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**006**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	3.299	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
Critical Low Flow [7Q2] (cfs):	0.55	
% Effluent for Chronic Aquatic Life (Narrow Tidal River):	90.3	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	97.4	
Effluent Flow for Human Health (MGD):	0.866	
Harmonic Mean Flow (cfs):	0.75	
% Effluent for Human Health (Narrow Tidal River):	64.1	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	***FW Acute Criterion (µg/L)***	***SW Acute Criterion (µg/L)***	***SW Chronic Criterion (µg/L)***	***FW WLAa (µg/L)***	***SW WLAa (µg/L)***	***SW WLAc (µg/L)***	***FW LTAa (µg/L)***	***SW LTAa (µg/L)***	***SW LTAc (µg/L)***	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***
Aldrin	3.0	1.3	N/A	3.0	1.34	N/A	1.72	0.765	N/A	1.12	2.38
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	153	86.4	377	87.7	66.5	97.8	207
Cadmium	5.64	40.0	8.75	21.9	41.1	9.7	12.6	23.5	7.46	11.0	23.2
Carbaryl	2.0	613	N/A	2.0	630	N/A	1.15	361	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.092	0.0044	1.38	0.053	0.0034	0.0050	0.011
Chlorpyrifos	0.083	0.011	0.006	0.083	0.011	0.0066	0.048	0.0065	0.0051	0.0075	0.016
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1119	54.9	9.00	641	42.3	13.2	28.0
Copper	9.46	24.3	6.48	28.4	28.5	8.20	16.3	16.3	6.31	9.28	19.6
Cyanide (free)	45.8	5.6	5.6	45.8	5.75	6.20	26.2	3.30	4.78	4.84	10.2
4,4'-DDT	1.1	0.13	0.001	1.1	0.134	0.0011	0.630	0.076	0.00085	0.0013	0.0027
Demeton	N/A	N/A	0.1	N/A	N/A	0.111	N/A	N/A	0.085	0.125	0.265
Diazinon	0.17	0.819	0.819	0.17	0.841	0.91	0.097	0.482	0.699	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.729	0.0022	0.138	0.418	0.0017	0.0025	0.0053
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0077	0.011	0.024
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0077	0.011	0.024
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.035	0.010	0.126	0.020	0.0077	0.011	0.024
Endrin	0.086	0.037	0.002	0.086	0.038	0.0022	0.049	0.022	0.0017	0.0025	0.0053
Guthion	N/A	N/A	0.01	N/A	N/A	0.011	N/A	N/A	0.0085	0.013	0.027
Heptachlor	0.52	0.053	0.004	0.52	0.054	0.0044	0.298	0.031	0.0034	0.0050	0.011
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	N/A	1.126	0.164	N/A	0.645	0.094	N/A	0.138	0.293
Lead	40.3	133	5.3	227	364	15.7	130	209	12.1	17.7	37.5
Malathion	N/A	N/A	0.01	N/A	N/A	0.011	N/A	N/A	0.0085	0.013	0.027
Mercury	2.4	2.1	1.1	2.4	2.16	1.22	1.38	1.24	0.94	1.38	2.92
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.033	N/A	N/A	0.026	0.038	0.080
Mirex	N/A	N/A	0.001	N/A	N/A	0.0011	N/A	N/A	0.00085	0.0013	0.0027
Nickel	325	118	13.1	789	121	14.5	452	69.4	11.2	16.4	34.8
Nonylphenol	28	7	1.7	28	7.19	1.88	16.0	4.12	1.45	2.13	4.51
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	15.5	10.6	8.26	8.89	8.19	12.0	25.5
Phenanthrene	30	7.7	4.6	30	7.91	5.10	17.2	4.53	3.92	5.77	12.2
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10.3	0.033	1.15	5.88	0.026	0.038	0.080
Selenium	20	564	136	20	579	151	11.5	332	116	16.8	35.6

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Silver	0.8	2	N/A	17.8	4.89	N/A	10.2	2.80	N/A	4.12	8.72
Toxaphene	0.78	0.21	0.0002	0.78	0.216	0.00022	0.447	0.124	0.00017	0.00025	0.00053
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.246	0.0082	0.074	0.141	0.0063	0.009	0.020
2,4,5 Trichlorophenol	136	259	12	136	266	13.3	77.9	152	10.2	15.0	31.8
Zinc	81.3	92.7	84.2	297	167	164	170	95.7	126	141	298

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Acrylonitrile	3.8	5.93	5.51	8.10	17.1
Aldrin	0.0010	0.0016	0.0015	0.0021	0.0045
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1670	1554	2284	4832
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	800	744	1094	2314
Benzidine	0.0020	0.0031	0.0029	0.0043	0.0090
Benzo(*a*)anthracene	3.28	5.12	4.76	6.99	14.8
Benzo(*a*)pyrene	0.33	0.515	0.479	0.704	1.49
Bis(chloromethyl)ether	0.44	0.686	0.638	0.938	1.98
Bis(2-chloroethyl) ether	10.06	15.7	14.6	21.5	45.4
Bis(2-ethylhexyl) phthalate	41	63.9	59.5	87.4	185
Bromodichloromethane (Dichlorobromomethane)	322	502	467	687	1453
Bromoform	2175	3392	3155	4638	9812
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	47.6	44.2	65.0	138
Chlordane	0.0081	0.013	0.0117	0.017	0.037
Chlorobenzene	5201	8112	7544	11090	23463
Chlorodibromomethane (Dibromochloromethane)	239	373	347	510	1078
Chloroform	7143	11141	10361	15231	32224
Chromium (+6)	502	783	728	1070	2265
Chrysene	327	510	474	697	1475
Cresols (Methylphenols)	9301	14507	13492	19833	41959
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.0092	0.0086	0.013	0.027
4,4'-DDE	0.0040	0.0062	0.0058	0.0085	0.0180
4,4'-DDT	0.0040	0.0062	0.0058	0.0085	0.0180
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	738	686	1009	2134
1,2-Dibromoethane	4.24	6.61	6.15	9.04	19.1
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	2254	2096	3081	6519
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	6763	6290	9246	19561
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	0.686	0.638	0.938	1.98
1,2-Dichloroethane	553	863	802	1179	2495
1,1-Dichloroethylene	23916	37303	34692	50997	107891
Dichloromethane (Methylene Chloride)	22222	34661	32234	47385	100249
1,2-Dichloropropane	226	353	328	482	1020
1,3-Dichloropropene (1,3-Dichloropropylene)	211	329	306	450	952
Dicofol	0.30	0.468	0.435	0.640	1.35
Dieldrin	0.001	0.0016	0.0015	0.0021	0.0045

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
2,4-Dimethylphenol	571	891	828	1218	2576
Di-*n*-Butyl Phthalate	3010	4695	4366	6418	13579
Dioxins/Furans (TCDD Equivalents)	7.97E-08	1.24E-07	1.16E-07	1.70E-07	3.60E-07
Endrin	0.20	0.312	0.290	0.426	0.902
Ethylbenzene	7143	11141	10361	15231	32224
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0023	0.0022	0.0032	0.0068
Heptachlor Epoxide	0.00075	0.00117	0.00109	0.0016	0.0034
Hexachlorobenzene	0.0045	0.0070	0.0065	0.0096	0.0203
Hexachlorobutadiene	274	427	397	584	1236
Hexachlorocyclohexane (*alpha*)	0.093	0.145	0.135	0.198	0.420
Hexachlorocyclohexane (*beta*)	0.33	0.515	0.479	0.704	1.49
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	9.67	8.99	13.2	28.0
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	18.0	16.7	24.5	51.9
Hexachlorophene	2.90	4.52	4.21	6.18	13.1
Lead	3.83	15.9	14.8	21.8	46.1
Mercury	0.0250	0.039	0.036	0.053	0.113
Methoxychlor	1.61	2.51	2.34	3.43	7.26
Methyl Ethyl Ketone	992000	1547268	1438959	2115270	4475163
Nickel	1140	1778	1654	2431	5143
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	2890	2688	3951	8359
N-Nitrosodiethylamine	2.1	3.28	3.05	4.48	9.47
N-Nitroso-di-*n*-Butylamine	4.2	6.55	6.09	8.96	18.9
Pentachlorobenzene	1.0	1.56	1.45	2.13	4.51
Pentachlorophenol	9.1	14.2	13.2	19.4	41.1
Polychlorinated Biphenyls (PCBs)	0.00064	0.00100	0.00093	0.0014	0.0029
Pyridine	947	1477	1374	2019	4272
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	1.11	1.03	1.51	3.20
1,1,2,2-Tetrachloroethane	40	62.4	58.0	85.3	180
Tetrachloroethylene	525	819	762	1119	2368
Thallium	0.23	0.359	0.334	0.490	1.04
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0083	0.0077	0.011	0.024
2,4,5-TP (Silvex)	21	32.8	30.5	44.8	94.7
1,1,1-Trichloroethane	956663	1492151	1387701	2039920	4315749
1,1,2-Trichloroethane	295	460	428	629	1331
Trichloroethylene	82	128	119	175	370
2,4,5-Trichlorophenol	2435	3798	3532	5192	10985
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	37.4	34.8	51.2	108

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.787	0.956
Aluminum	584	710
Arsenic	68.5	83.1
Cadmium	7.68	9.33

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Carbaryl	1.18	1.43
Chlordane	0.0035	0.0043
Chlorpyrifos	0.0053	0.0064
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	6.49	7.89
Cyanide (free)	3.39	4.12
4,4'-DDT	0.00088	0.00107
Demeton	0.088	0.107
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.00176	0.00213
Diuron	124	150
Endosulfan (*alpha*)	0.0079	0.0096
Endosulfan (*beta*)	0.0079	0.0096
Endosulfan sulfate	0.0079	0.0096
Endrin	0.00176	0.00213
Guthion	0.0088	0.0107
Heptachlor	0.0035	0.0043
Hexachlorocyclohexane (*gamma*) (Lindane)	0.097	0.118
Lead	12.4	15.1
Malathion	0.0088	0.0107
Mercury	0.965	1.17
Methoxychlor	0.026	0.032
Mirex	0.00088	0.00107
Nickel	11.5	14.0
Nonylphenol	1.49	1.81
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.43	10.2
Phenanthrene	4.04	4.90
Polychlorinated Biphenyls (PCBs)	0.026	0.032
Selenium	11.8	14.3
Silver	2.88	3.50
Toxaphene	0.000176	0.000213
Tributyltin (TBT)	0.0065	0.0079
2,4,5 Trichlorophenol	10.5	12.8
Zinc	98.5	120

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	5.67	6.89
Aldrin	0.0015	0.0018
Anthracene	N/A	N/A
Antimony	1599	1941
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	766	930
Benzidine	0.0030	0.0036
Benzo(*a*)anthracene	4.90	5.94
Benzo(*a*)pyrene	0.493	0.598

Human Health *Parameter*	***70%*** ***(µg/L)***	***85%*** ***(µg/L)***
Bis(chloromethyl)ether	0.657	0.797
Bis(2-chloroethyl) ether	15.0	18.2
Bis(2-ethylhexyl) phthalate	61.2	74.3
Bromodichloromethane (Dichlorobromomethane)	481	584
Bromoform	3246	3942
Cadmium	N/A	N/A
Carbon Tetrachloride	45.5	55.3
Chlordane	0.0121	0.0147
Chlorobenzene	7763	9427
Chlorodibromomethane (Dibromochloromethane)	357	433
Chloroform	10662	12947
Chromium (+6)	749	910
Chrysene	488	593
Cresols (Methylphenols)	13883	16858
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0088	0.0107
4,4'-DDE	0.0060	0.0072
4,4'-DDT	0.0060	0.0072
2,4'-D	N/A	N/A
Danitol	706	857
1,2-Dibromoethane	6.33	7.68
m-Dichlorobenzene (1,3-Dichlorobenzene)	2157	2619
o-Dichlorobenzene (1,2-Dichlorobenzene)	6472	7859
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	0.657	0.797
1,2-Dichloroethane	825	1002
1,1-Dichloroethylene	35698	43347
Dichloromethane (Methylene Chloride)	33169	40277
1,2-Dichloropropane	337	410
1,3-Dichloropropene (1,3-Dichloropropylene)	315	382
Dicofol	0.448	0.544
Dieldrin	0.0015	0.0018
2,4-Dimethylphenol	852	1035
Di-*n*-Butyl Phthalate	4493	5456
Dioxins/Furans (TCDD Equivalents)	1.19E-07	1.44E-07
Endrin	0.299	0.362
Ethylbenzene	10662	12947
Fluoride	N/A	N/A
Heptachlor	0.0022	0.0027
Heptachlor Epoxide	0.00112	0.00136
Hexachlorobenzene	0.0067	0.0082
Hexachlorobutadiene	409	497
Hexachlorocyclohexane (*alpha*)	0.139	0.169
Hexachlorocyclohexane (*beta*)	0.493	0.598
Hexachlorocyclohexane (*gamma*) (Lindane)	9.25	11.2
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	17.2	20.9
Hexachlorophene	4.33	5.26
Lead	15.2	18.5
Mercury	0.037	0.045

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Methoxychlor	2.40	2.92
Methyl Ethyl Ketone	1480689	1797980
Nickel	1702	2066
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	2766	3359
N-Nitrosodiethylamine	3.13	3.81
N-Nitroso-di-*n*-Butylamine	6.27	7.61
Pentachlorobenzene	1.49	1.81
Pentachlorophenol	13.6	16.5
Polychlorinated Biphenyls (PCBs)	0.00096	0.00116
Pyridine	1414	1716
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	1.06	1.29
1,1,2,2-Tetrachloroethane	59.7	72.5
Tetrachloroethylene	784	952
Thallium	0.343	0.417
Toluene	N/A	N/A
Toxaphene	0.0079	0.0096
2,4,5-TP (Silvex)	31.3	38.1
1,1,1-Trichloroethane	1427944	1733932
1,1,2-Trichloroethane	440	535
Trichloroethylene	122	149
2,4,5-Trichlorophenol	3635	4413
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	35.8	43.5

TEXTOX MENU #9 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A NARROW 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**007 - final phase**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	1.22	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Narrow Tidal River):	12	
Critical Low Flow [7Q2] (cfs):	0.55	
% Effluent for Chronic Aquatic Life (Narrow Tidal River):	77.4	
% Effluent for Acute Aquatic Life (Narrow Tidal River):	93.2	
Effluent Flow for Human Health (MGD):	1.22	
Harmonic Mean Flow (cfs):	0.75	
% Effluent for Human Health (Narrow Tidal River):	71.6	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	N/A	3.0	1.39	N/A	1.72	0.799	N/A	1.17	2.49
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	160	101	377	91.6	77.6	114	241
Cadmium	5.64	40.0	8.75	21.9	42.9	11.3	12.6	24.6	8.70	12.8	27.1
Carbaryl	2.0	613	N/A	2.0	658	N/A	1.15	377	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.097	0.0052	1.38	0.055	0.0040	0.0058	0.0124
Chlorpyrifos	0.083	0.011	0.006	0.083	0.012	0.0077	0.048	0.0068	0.0060	0.0088	0.0186
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1169	64.1	9.00	670	49.3	13.2	28.0
Copper	9.46	24.3	6.48	28.4	29.8	9.56	16.3	17.1	7.36	10.8	22.9
Cyanide (free)	45.8	5.6	5.6	45.8	6.01	7.23	26.2	3.44	5.57	5.06	10.7
4,4'-DDT	1.1	0.13	0.001	1.1	0.139	0.0013	0.630	0.080	0.0010	0.0015	0.0031
Demeton	N/A	N/A	0.1	N/A	N/A	0.129	N/A	N/A	0.099	0.146	0.309
Diazinon	0.17	0.819	0.819	0.17	0.879	1.06	0.097	0.503	0.814	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.762	0.0026	0.138	0.436	0.0020	0.0029	0.0062
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.036	0.012	0.126	0.021	0.0089	0.013	0.028
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.036	0.012	0.126	0.021	0.0089	0.013	0.028
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.036	0.012	0.126	0.021	0.0089	0.013	0.028
Endrin	0.086	0.037	0.002	0.086	0.040	0.0026	0.049	0.023	0.0020	0.0029	0.0062
Guthion	N/A	N/A	0.01	N/A	N/A	0.013	N/A	N/A	0.010	0.015	0.031
Heptachlor	0.52	0.053	0.004	0.52	0.057	0.0052	0.298	0.033	0.0040	0.0058	0.012
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	N/A	1.126	0.172	N/A	0.645	0.098	N/A	0.145	0.306
Lead	40.3	133	5.3	227	381	18.3	130	218	14.1	20.7	43.7
Malathion	N/A	N/A	0.01	N/A	N/A	0.013	N/A	N/A	0.010	0.015	0.031
Mercury	2.4	2.1	1.1	2.4	2.25	1.42	1.38	1.29	1.09	1.61	3.40
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.039	N/A	N/A	0.030	0.044	0.093
Mirex	N/A	N/A	0.001	N/A	N/A	0.0013	N/A	N/A	0.0010	0.0015	0.0031
Nickel	325	118	13.1	789	127	16.9	452	72.5	13.0	19.1	40.5
Nonylphenol	28	7	1.7	28	7.51	2.20	16.0	4.30	1.69	2.48	5.26
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	16.2	12.4	8.26	9.28	9.55	12.1	25.7
Phenanthrene	30	7.7	4.6	30	8.26	5.94	17.2	4.73	4.57	6.72	14.2
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10.7	0.039	1.15	6.15	0.030	0.044	0.093
Selenium	20	564	136	20	605	176	11.5	347	135	16.8	35.6

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	FW Acute Criterion (µg/L)	SW Acute Criterion (µg/L)	SW Chronic Criterion (µg/L)	FW WLAa (µg/L)	SW WLAa (µg/L)	SW WLAc (µg/L)	FW LTAa (µg/L)	SW LTAa (µg/L)	SW LTAc (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
Silver	0.8	2	N/A	17.8	5.11	N/A	10.2	2.93	N/A	4.31	9.11
Toxaphene	0.78	0.21	0.0002	0.78	0.225	0.00026	0.447	0.129	0.00020	0.00029	0.00062
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.257	0.0096	0.074	0.148	0.0074	0.011	0.023
2,4,5 Trichlorophenol	136	259	12	136	278	15.5	77.9	159	11.9	17.5	37.1
Zinc	81.3	92.7	84.2	297	175	191	170	100	147	147	311

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	Fish Only Criterion (µg/L)	WLAh (µg/L)	LTAh (µg/L)	Daily Avg. (µg/L)	Daily Max. (µg/L)
Acrylonitrile	3.8	5.31	4.94	7.26	15.4
Aldrin	0.0010	0.0014	0.0013	0.0019	0.0040
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1497	1392	2046	4328
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	717	667	980	2073
Benzidine	0.0020	0.0028	0.0026	0.0038	0.0081
Benzo(*a*)anthracene	3.28	4.58	4.26	6.27	13.3
Benzo(*a*)pyrene	0.33	0.461	0.429	0.630	1.33
Bis(chloromethyl)ether	0.44	0.615	0.572	0.841	1.78
Bis(2-chloroethyl) ether	10.06	14.1	13.1	19.2	40.7
Bis(2-ethylhexyl) phthalate	41	57.3	53.3	78.3	166
Bromodichloromethane (Dichlorobromomethane)	322	450	418	615	1301
Bromoform	2175	3039	2826	4155	8790
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	42.6	39.6	58.3	123
Chlordane	0.0081	0.0113	0.0105	0.015	0.033
Chlorobenzene	5201	7268	6759	9935	21020
Chlorodibromomethane (Dibromochloromethane)	239	334	311	457	966
Chloroform	7143	9981	9282	13645	28868
Chromium (+6)	502	701	652	959	2029
Chrysene	327	457	425	625	1322
Cresols (Methylphenols)	9301	12997	12087	17768	37590
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.0082	0.0077	0.011	0.024
4,4'-DDE	0.0040	0.0056	0.0052	0.0076	0.0162
4,4'-DDT	0.0040	0.0056	0.0052	0.0076	0.0162
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	661	615	904	1912
1,2-Dibromoethane	4.24	5.92	5.51	8.10	17.1
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	2019	1878	2760	5840
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	6059	5635	8283	17524
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	0.615	0.572	0.841	1.78
1,2-Dichloroethane	553	773	719	1056	2235
1,1-Dichloroethylene	23916	33418	31079	45686	96656
Dichloromethane (Methylene Chloride)	22222	31051	28878	42450	89810
1,2-Dichloropropane	226	316	294	432	913
1,3-Dichloropropene (1,3-Dichloropropylene)	211	295	274	403	853
Dicofol	0.30	0.419	0.390	0.573	1.21
Dieldrin	0.001	0.0014	0.0013	0.0019	0.0040

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
2,4-Dimethylphenol	571	798	742	1091	2308
Di-n-Butyl Phthalate	3010	4206	3912	5750	12165
Dioxins/Furans (TCDD Equivalents)	7.97E-08	1.11E-07	1.04E-07	1.52E-07	3.22E-07
Endrin	0.20	0.279	0.260	0.382	0.808
Ethylbenzene	7143	9981	9282	13645	28868
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0021	0.0019	0.0029	0.0061
Heptachlor Epoxide	0.00075	0.00105	0.00097	0.0014	0.0030
Hexachlorobenzene	0.0045	0.0063	0.0058	0.0086	0.0182
Hexachlorobutadiene	274	383	356	523	1107
Hexachlorocyclohexane (*alpha*)	0.093	0.130	0.121	0.178	0.376
Hexachlorocyclohexane (*beta*)	0.33	0.461	0.429	0.630	1.33
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	8.66	8.06	11.8	25.1
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	16.1	15.0	22.0	46.5
Hexachlorophene	2.90	4.05	3.77	5.54	11.7
Lead	3.83	14.3	13.3	19.5	41.3
Mercury	0.0250	0.035	0.032	0.048	0.101
Methoxychlor	1.61	2.25	2.09	3.08	6.51
Methyl Ethyl Ketone	992000	1386149	1289119	1895005	4009159
Nickel	1140	1593	1481	2178	4607
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	2589	2408	3540	7489
N-Nitrosodiethylamine	2.1	2.93	2.73	4.01	8.5
N-Nitroso-di-*n*-Butylamine	4.2	5.87	5.46	8.02	17.0
Pentachlorobenzene	1.0	1.40	1.30	1.91	4.04
Pentachlorophenol	9.1	12.7	11.8	17.4	36.8
Polychlorinated Biphenyls (PCBs)	0.00064	0.00089	0.00083	0.0012	0.0026
Pyridine	947	1323	1231	1809	3827
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	0.992	0.923	1.36	2.87
1,1,2,2-Tetrachloroethane	40	55.9	52.0	76.4	162
Tetrachloroethylene	525	734	682	1003	2122
Thallium	0.23	0.321	0.299	0.439	0.930
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0074	0.0069	0.010	0.021
2,4,5-TP (Silvex)	21	29.3	27.3	40.1	84.9
1,1,1-Trichloroethane	956663	1336772	1243198	1827501	3866345
1,1,2-Trichloroethane	295	412	383	564	1192
Trichloroethylene	82	115	107	157	331
2,4,5-Trichlorophenol	2435	3402	3164	4652	9841
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	33.5	31.2	45.8	97.0

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.822	1.00
Aluminum	584	710
Arsenic	79.8	96.9
Cadmium	8.95	10.9

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Carbaryl	1.18	1.43
Chlordane	0.0041	0.0050
Chlorpyrifos	0.0061	0.0075
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	7.57	9.19
Cyanide (free)	3.54	4.30
4,4'-DDT	0.0010	0.0012
Demeton	0.102	0.124
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.00205	0.00248
Diuron	124	150
Endosulfan (*alpha*)	0.0092	0.0112
Endosulfan (*beta*)	0.0092	0.0112
Endosulfan sulfate	0.0092	0.0112
Endrin	0.00205	0.00248
Guthion	0.010	0.012
Heptachlor	0.0041	0.0050
Hexachlorocyclohexane (*gamma*) (Lindane)	0.101	0.123
Lead	14.5	17.6
Malathion	0.010	0.012
Mercury	1.13	1.37
Methoxychlor	0.031	0.037
Mirex	0.0010	0.0012
Nickel	13.4	16.3
Nonylphenol	1.74	2.11
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.50	10.3
Phenanthrene	4.71	5.72
Polychlorinated Biphenyls (PCBs)	0.031	0.037
Selenium	11.8	14.3
Silver	3.01	3.66
Toxaphene	0.00020	0.00025
Tributyltin (TBT)	0.0076	0.0092
2,4,5 Trichlorophenol	12.3	14.9
Zinc	103	125

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	5.08	6.17
Aldrin	0.0013	0.0016
Anthracene	N/A	N/A
Antimony	1432	1739
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	686	833
Benzidine	0.0027	0.0032
Benzo(*a*)anthracene	4.39	5.33
Benzo(*a*)pyrene	0.441	0.536

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Bis(chloromethyl)ether	0.588	0.714
Bis(2-chloroethyl) ether	13.5	16.3
Bis(2-ethylhexyl) phthalate	54.8	66.6
Bromodichloromethane (Dichlorobromomethane)	431	523
Bromoform	2908	3532
Cadmium	N/A	N/A
Carbon Tetrachloride	40.8	49.5
Chlordane	0.011	0.013
Chlorobenzene	6955	8445
Chlorodibromomethane (Dibromochloromethane)	320	388
Chloroform	9552	11598
Chromium (+6)	671	815
Chrysene	437	531
Cresols (Methylphenols)	12437	15102
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0079	0.0096
4,4'-DDE	0.0053	0.0065
4,4'-DDT	0.0053	0.0065
2,4'-D	N/A	N/A
Danitol	632	768
1,2-Dibromoethane	5.67	6.88
m-Dichlorobenzene (1,3-Dichlorobenzene)	1932	2346
o-Dichlorobenzene (1,2-Dichlorobenzene)	5798	7041
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	0.588	0.714
1,2-Dichloroethane	739	898
1,1-Dichloroethylene	31980	38833
Dichloromethane (Methylene Chloride)	29715	36083
1,2-Dichloropropane	302	367
1,3-Dichloropropene (1,3-Dichloropropylene)	282	343
Dicofol	0.401	0.487
Dieldrin	0.0013	0.0016
2,4-Dimethylphenol	764	927
Di-*n*-Butyl Phthalate	4025	4887
Dioxins/Furans (TCDD Equivalents)	1.07E-07	1.29E-07
Endrin	0.267	0.325
Ethylbenzene	9552	11598
Fluoride	N/A	N/A
Heptachlor	0.0020	0.0024
Heptachlor Epoxide	0.0010	0.0012
Hexachlorobenzene	0.0060	0.0073
Hexachlorobutadiene	366	445
Hexachlorocyclohexane (*alpha*)	0.124	0.151
Hexachlorocyclohexane (*beta*)	0.441	0.536
Hexachlorocyclohexane (*gamma*) (Lindane)	8.29	10.1
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	15.4	18.7
Hexachlorophene	3.88	4.71
Lead	13.7	16.6
Mercury	0.033	0.041

Human Health	***70%***	***85%***
Parameter	***(μg/L)***	***(μg/L)***
Methoxychlor	2.15	2.61
Methyl Ethyl Ketone	1326503	1610754
Nickel	1524	1851
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	2478	3009
N-Nitrosodiethylamine	2.81	3.41
N-Nitroso-di-*n*-Butylamine	5.62	6.82
Pentachlorobenzene	1.34	1.62
Pentachlorophenol	12.2	14.8
Polychlorinated Biphenyls (PCBs)	0.00086	0.00104
Pyridine	1266	1538
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.949	1.15
1,1,2,2-Tetrachloroethane	53.5	64.9
Tetrachloroethylene	702	852
Thallium	0.308	0.373
Toluene	N/A	N/A
Toxaphene	0.0071	0.0086
2,4,5-TP (Silvex)	28.1	34.1
1,1,1-Trichloroethane	1279251	1553376
1,1,2-Trichloroethane	394	479
Trichloroethylene	110	133
2,4,5-Trichlorophenol	3256	3954
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	32.1	39.0

Calculation of Mass Limits from Concentration Limits

The parameters in the tables below have technology-based effluent limits that were calculated in Appendix A of this fact sheet. Mass limits have been calculated from the water quality-based effluent limits for these parameters to compare with the technology-based limits (see Appendix D). The concentration limits in the table have already been converted from μg/L to mg/L.

Mass limits were calculated as follows:

Limit (lbs/day) = Limit (μg/L)/1000 × Flow (MGD) × 8.345

where: Flow (MGD) = 1.22 (aquatic life) and = 1.22 (human health)

Where necessary, single grab limits will be calculated as follows:

Single Grab (mg/L) = 2 × Daily Max (mg/L)

Parameter	***Daily Avg. (μg/L)***	***Daily Max. (μg/L)***	***Daily Avg. (lbs/day)***	***Daily Max. (lbs/day)***	***Aquatic Life/ Human Health***
Copper, Total	10.8	22.9	0.109	0.233	Aquatic Life
Acrylonitrile	7.26	15.4	0.073	0.156	Human Health
Benzene	980	2,073	9.97	21.1	Human Health
Benzo(*a*)anthracene	6.27	13.3	0.063	0.135	Human Health
Benzo(*a*)pyrene	0.630	1.33	0.0064	0.0135	Human Health

Parameter	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***	***Daily Avg. (lbs/day)***	***Daily Max. (lbs/day)***	***Aquatic Life/ Human Health***
Bis(2-ethylhexyl) phthalate	78.3	166	0.797	1.69	Human Health
Carbon Tetrachloride	58.3	123	0.593	1.25	Human Health
Chlorobenzene	9,935	21,020	101	214	Human Health
Chloroform	13,645	28,868	138	293	Human Health
Chrysene	625	1,322	6.36	13.4	Human Health
m-Dichlorobenzene (1,3-Dichlorobenzene)	2,760	5,840	28.0	59.4	Human Health
o-Dichlorobenzene (1,2-Dichlorobenzene)	8,283	17,524	84.3	178	Human Health
1,2-Dichloroethane	1,056	2,235	10.7	22.7	Human Health
1,1-Dichloroethylene	45,686	96,656	465	984	Human Health
Dichloromethane (Methylene Chloride)	42,450	89,810	432	914	Human Health
1,2-Dichloropropane	432	913	4.39	9.29	Human Health
1,3-Dichloropropene (1,3-Dichloropropylene)	403	853	4.10	8.68	Human Health
2,4-Dimethylphenol	1,091	2,308	11.1	23.4	Human Health
Di-*n*-Butyl Phthalate	5,750	12,165	58.5	123	Human Health
Ethylbenzene	13,645	28,868	138	293	Human Health
Hexachlorobenzene	0.0086	0.0182	0.000088	0.000185	Human Health
Hexachlorobutadiene	523	1,107	5.32	11.2	Human Health
Hexachloroethane	22.0	46.5	0.223	0.473	Human Health
Nitrobenzene	3,540	7,489	36.0	76.2	Human Health
Phenanthrene	6.72	14.2	0.068	0.144	Aquatic Life
Tetrachloroethylene	1,003	2,122	10.2	21.6	Human Health
1,1,1-Trichloroethane	1,827,501	3,866,345	18,605	39,362	Human Health
1,1,2-Trichloroethane	564	1,192	5.74	12.1	Human Health
Trichloroethylene	157	331	1.59	3.36	Human Health
Vinyl Chloride	45.8	97.0	0.466	0.987	Human Health

TEXTOX MENU #10 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A 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 Freshwater and Saltwater Aquatic Life
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**008**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	≤10	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Bay/Tidal River):	12	
% Effluent for Acute Aquatic Life (Bay/Tidal River):	100	
Oyster Waters?	**No**	

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

Stream/River Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	***Intercept (b)***	***Slope (m)***	***Partition Coefficient (Kp)***	***Dissolved Fraction (Cd/Ct)***	***Source***	***Water Effect Ratio (WER)***	***Source***
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Chromium (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	3.0	1.3	1.72	0.416	0.612	1.29
Aluminum	991	N/A	991	N/A	568	N/A	835	1766
Arsenic	340	149	658	149	377	47.7	70.1	148
Cadmium	5.64	40.0	21.9	40.0	12.6	12.8	18.5	39.0
Carbaryl	2.0	613	2.0	613	1.15	196	1.68	3.56
Chlordane	2.4	0.09	2.4	0.09	1.38	0.029	0.042	0.090
Chlorpyrifos	0.083	0.011	0.083	0.011	0.048	0.0035	0.0052	0.0109
Chromium (+3)	400	N/A	1978	N/A	1133	N/A	1666	3525
Chromium (+6)	15.7	1090	15.7	1090	9.00	349	13.2	28.0
Copper	9.46	24.3	28.4	27.7	16.3	8.88	13.1	27.6
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	45.8	5.6	45.8	5.6	26.2	1.79	2.63	5.57
4,4'-DDT	1.1	0.13	1.1	0.13	0.630	0.042	0.061	0.129
Demeton	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diazinon	0.17	0.819	0.17	0.819	0.097	0.262	0.143	0.303
Dicofol	59.3	N/A	59.3	N/A	34.0	N/A	49.9	106
Dieldrin	0.24	0.71	0.24	0.71	0.138	0.227	0.202	0.428
Diuron	210	N/A	210	N/A	120	N/A	177	374
Endosulfan I (*alpha*)	0.22	0.034	0.22	0.034	0.126	0.011	0.016	0.034
Endosulfan II (*beta*)	0.22	0.034	0.22	0.034	0.126	0.011	0.016	0.034
Endosulfan sulfate	0.22	0.034	0.22	0.034	0.126	0.011	0.016	0.034
Endrin	0.086	0.037	0.086	0.037	0.049	0.012	0.017	0.037
Guthion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.52	0.053	0.52	0.053	0.298	0.017	0.025	0.053
Hexachlorocyclohexane (*gamma*) (Lindane)	1.126	0.16	1.126	0.16	0.645	0.051	0.075	0.159
Lead	40.3	133	227	355	130	113	167	353
Malathion	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury	2.4	2.1	2.4	2.1	1.38	0.672	0.988	2.09
Methoxychlor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mirex	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	325	118	789	118	452	37.8	55.5	117
Nonylphenol	28	7	28.0	7	16.0	2.24	3.29	6.97
Parathion (ethyl)	0.065	N/A	0.065	N/A	0.037	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	14.4	15.1	8.26	4.83	7.10	15.0

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Phenanthrene	30	7.7	30	7.7	17.2	2.46	3.62	7.66
Polychlorinated Biphenyls (PCBs)	2.0	10	2.0	10	1.15	3.20	1.68	3.56
Selenium	20	564	20	564	11.5	180	16.8	35.6
Silver	0.8	2	17.8	4.76	10.2	1.52	2.24	4.74
Toxaphene	0.78	0.21	0.78	0.21	0.447	0.067	0.099	0.209
Tributyltin (TBT)	0.13	0.24	0.13	0.24	0.074	0.077	0.110	0.232
2,4,5 Trichlorophenol	136	259	136	259	77.9	82.9	115	242
Zinc	81.3	92.7	297	163	170	52.1	76.5	162

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

Aquatic Life *Parameter*	*70% (µg/L)*	*85% (µg/L)*
Aldrin	0.428	0.520
Aluminum	584	710
Arsenic	49.1	59.6
Cadmium	12.9	15.7
Carbaryl	1.18	1.43
Chlordane	0.030	0.036
Chlorpyrifos	0.0036	0.0044
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	9.14	11.1
Copper (oyster waters)	N/A	N/A
Cyanide (free)	1.84	2.24
4,4'-DDT	0.043	0.052
Demeton	N/A	N/A
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.142	0.172
Diuron	124	150
Endosulfan (alpha)	0.011	0.014
Endosulfan (beta)	0.011	0.014
Endosulfan sulfate	0.011	0.014
Endrin	0.012	0.015
Guthion	N/A	N/A
Heptachlor	0.017	0.021
Hexachlorocyclohexane (Lindane)	0.053	0.064
Lead	117	142
Malathion	N/A	N/A
Mercury	0.691	0.840
Methoxychlor	N/A	N/A
Mirex	N/A	N/A
Nickel	38.9	47.2
Nonylphenol	2.30	2.80
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	4.97	6.04

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Phenanthrene	2.54	3.08
Polychlorinated Biphenyls (PCBs)	1.18	1.43
Selenium	11.8	14.3
Silver	1.57	1.91
Toxaphene	0.069	0.084
Tributyltin (TBT)	0.077	0.093
2,4,5 Trichlorophenol	80.2	97.4
Zinc	53.6	65.1

TEXTOX MENU #10 - INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A 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 Freshwater and Saltwater Aquatic Life
Table 2, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**009**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	unnamed ditch	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as $CaCO_3$) (Intermittent):	65	[Data from Segments 1016 and 1017]
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	≤10	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	unnamed ditch (tidal)	
Segment No.:	2427	
TSS (mg/L) (Bay/Tidal River):	12	
% Effluent for Chronic Aquatic Life (Bay/Tidal River):	100	
% Effluent for Acute Aquatic Life (Bay/Tidal River):	100	
Oyster Waters?	**No**	
Effluent Flow for Human Health (MGD):	≤10	
% Effluent for Human Health (Bay/Tidal River):	60	

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (Total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+3)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	N/A	3.0	1.3	N/A	1.72	0.416	N/A	0.612	1.29
Aluminum	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Arsenic	340	149	78	658	149	78	377	47.7	47.6	69.9	148
Cadmium	5.64	40.0	8.75	21.9	40.0	8.75	12.6	12.8	5.34	7.85	16.6
Carbaryl	2.0	613	N/A	2.0	613	N/A	1.15	196	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.09	0.004	1.38	0.029	0.0024	0.0036	0.0076
Chlorpyrifos	0.083	0.011	0.006	0.083	0.011	0.006	0.048	0.0035	0.0037	0.0052	0.011
Chromium (+3)	400	N/A	N/A	1978	N/A	N/A	1133	N/A	N/A	1666	3525
Chromium (+6)	15.7	1090	49.6	15.7	1090	49.6	9.00	349	30.3	13.2	28.0
Copper	9.46	24.3	6.48	28.4	27.7	7.40	16.3	8.88	4.51	6.64	14.0
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	45.8	5.6	5.6	45.8	5.6	5.6	26.2	1.79	3.42	2.63	5.57
4,4'-DDT	1.1	0.13	0.001	1.1	0.13	0.001	0.630	0.042	0.00061	0.00090	0.00190
Demeton	N/A	N/A	0.1	N/A	N/A	0.1	N/A	N/A	0.061	0.090	0.190
Diazinon	0.17	0.819	0.819	0.17	0.819	0.819	0.097	0.262	0.500	0.143	0.303
Dicofol	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	0.71	0.002	0.138	0.227	0.0012	0.0018	0.0038
Diuron	210	N/A	N/A	210	N/A	N/A	120	N/A	N/A	177	374
Endosulfan I (alpha)	0.22	0.034	0.009	0.22	0.034	0.009	0.126	0.011	0.0055	0.0081	0.0171
Endosulfan II (beta)	0.22	0.034	0.009	0.22	0.034	0.009	0.126	0.011	0.0055	0.0081	0.0171
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.034	0.009	0.126	0.011	0.0055	0.0081	0.0171
Endrin	0.086	0.037	0.002	0.086	0.037	0.002	0.049	0.012	0.0012	0.0018	0.0038
Guthion	N/A	N/A	0.01	N/A	N/A	0.01	N/A	N/A	0.0061	0.0090	0.0190
Heptachlor	0.52	0.053	0.004	0.52	0.053	0.004	0.298	0.017	0.0024	0.0036	0.0076
Hexachlorocyclohexane (Lindane)	1.126	0.16	N/A	1.126	0.16	N/A	0.645	0.051	N/A	0.075	0.159
Lead	40.3	133	5.3	227	355	14.1	130	113	8.62	12.7	26.8
Malathion	N/A	N/A	0.01	N/A	N/A	0.01	N/A	N/A	0.0061	0.0090	0.019
Mercury	2.4	2.1	1.1	2.4	2.1	1.1	1.38	0.672	0.671	0.986	2.09
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.03	N/A	N/A	0.018	0.027	0.057
Mirex	N/A	N/A	0.001	N/A	N/A	0.001	N/A	N/A	0.00061	0.00090	0.00190
Nickel	325	118	13.1	789	118	13.1	452	37.8	7.99	11.7	24.9
Nonylphenol	28	7	1.7	28.0	7	1.7	16.0	2.24	1.04	1.52	3.23
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	15.1	9.6	8.26	4.83	5.86	7.10	15.0
Phenanthrene	30	7.7	4.6	30	7.7	4.6	17.2	2.46	2.81	3.62	7.66
Polychlorinated Biphenyls (PCBs)	2.0	10	0.03	2.0	10	0.03	1.15	3.20	0.018	0.027	0.057

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (μg/L)*	*SW Acute Criterion (μg/L)*	*SW Chronic Criterion (μg/L)*	*FW WLAa (μg/L)*	*SW WLAa (μg/L)*	*SW WLAc (μg/L)*	*FW LTAa (μg/L)*	*SW LTAa (μg/L)*	*SW LTAc (μg/L)*	*Daily Avg. (μg/L)*	*Daily Max. (μg/L)*
Selenium	20	564	136	20	564	136	11.5	180	83.0	16.8	35.6
Silver	0.8	2	N/A	17.8	4.76	N/A	10.2	1.52	N/A	2.24	4.74
Toxaphene	0.78	0.21	0.0002	0.78	0.21	0.0002	0.447	0.067	0.00012	0.00018	0.00038
Tributyltin (TBT)	0.13	0.24	0.0074	0.13	0.24	0.0074	0.074	0.077	0.0045	0.0066	0.014
2,4,5 Trichlorophenol	136	259	12	136	259	12	77.9	82.9	7.32	10.8	22.8
Zinc	81.3	92.7	84.2	297	163	148	170	52.1	90.1	76.5	162

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (μg/L)*	*WLAh (μg/L)*	*LTAh (μg/L)*	*Daily Avg. (μg/L)*	*Daily Max. (μg/L)*
Acrylonitrile	3.8	6.33	5.89	8.66	18.3
Aldrin	0.0010	0.0017	0.0016	0.0023	0.0048
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1785	1660	2440	5163
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	855	795	1169	2473
Benzidine	0.0020	0.0033	0.0031	0.0046	0.0096
Benzo(*a*)anthracene	3.28	5.47	5.08	7.47	15.8
Benzo(*a*)pyrene	0.33	0.550	0.512	0.752	1.59
Bis(chloromethyl)ether	0.44	0.733	0.682	1.00	2.12
Bis(2-chloroethyl) ether	10.06	16.8	15.6	22.9	48.5
Bis(2-ethylhexyl) phthalate	41	68.3	63.6	93.4	198
Bromodichloromethane (Dichlorobromomethane)	322	537	499	734	1552
Bromoform	2175	3625	3371	4956	10485
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	50.8	47.3	69.5	147
Chlordane	0.0081	0.014	0.013	0.018	0.039
Chlorobenzene	5201	8668	8062	11850	25071
Chlorodibromomethane (Dibromochloromethane)	239	398	370	545	1152
Chloroform	7143	11905	11072	16275	34433
Chromium (+6)	502	837	778	1144	2420
Chrysene	327	545	507	745	1576
Cresols (Methylphenols)	9301	15502	14417	21192	44835
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.0098	0.0091	0.013	0.028
4,4'-DDE	0.0040	0.0067	0.0062	0.0091	0.0193
4,4'-DDT	0.0040	0.0067	0.0062	0.0091	0.0193
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	788	733	1078	2280
1,2-Dibromoethane	4.24	7.07	6.57	9.66	20.4
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	2408	2240	3292	6966
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	7227	6721	9880	20902
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	0.733	0.682	1.00	2.12
1,2-Dichloroethane	553	922	857	1260	2666
1,1-Dichloroethylene	23916	39860	37070	54493	115287
Dichloromethane (Methylene Chloride)	22222	37037	34444	50633	107121
1,2-Dichloropropane	226	377	350	515	1089
1,3-Dichloropropene (1,3-Dichloropropylene)	211	352	327	481	1017
Dicofol	0.30	0.500	0.465	0.684	1.45

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Dieldrin	0.001	0.0017	0.0016	0.0023	0.0048
2,4-Dimethylphenol	571	952	885	1301	2753
Di-*n*-Butyl Phthalate	3010	5017	4666	6858	14510
Dioxins/Furans (TCDD Equivalents)	7.97E-08	1.33E-07	1.24E-07	1.82E-07	3.84E-07
Endrin	0.20	0.333	0.310	0.456	0.964
Ethylbenzene	7143	11905	11072	16275	34433
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.0025	0.0023	0.0034	0.0072
Heptachlor Epoxide	0.00075	0.0013	0.0012	0.0017	0.0036
Hexachlorobenzene	0.0045	0.0075	0.0070	0.010	0.022
Hexachlorobutadiene	274	457	425	624	1321
Hexachlorocyclohexane (*alpha*)	0.093	0.155	0.144	0.212	0.448
Hexachlorocyclohexane (*beta*)	0.33	0.550	0.512	0.752	1.59
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	10.3	9.61	14.1	29.9
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	19.2	17.8	26.2	55.5
Hexachlorophene	2.90	4.83	4.50	6.61	14.0
Lead	3.83	17.0	15.8	23.3	49.2
Mercury	0.0250	0.042	0.039	0.057	0.121
Methoxychlor	1.61	2.68	2.50	3.67	7.76
Methyl Ethyl Ketone	992000	1653333	1537600	2260272	4781936
Nickel	1140	1900	1767	2597	5495
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	3088	2872	4222	8932
N-Nitrosodiethylamine	2.1	3.50	3.26	4.78	10.1
N-Nitroso-di-*n*-Butylamine	4.2	7.00	6.51	9.57	20.2
Pentachlorobenzene	1.0	1.67	1.55	2.28	4.82
Pentachlorophenol	9.1	15.2	14.1	20.7	43.9
Polychlorinated Biphenyls (PCBs)	0.00064	0.0011	0.0010	0.0015	0.0031
Pyridine	947	1578	1468	2158	4565
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	1.18	1.10	1.62	3.42
1,1,2,2-Tetrachloroethane	40	66.7	62.0	91.1	193
Tetrachloroethylene	525	875	814	1196	2531
Thallium	0.23	0.383	0.357	0.524	1.11
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.0088	0.0082	0.012	0.026
2,4,5-TP (Silvex)	21	35.0	32.6	47.8	101
1,1,1-Trichloroethane	956663	1594438	1482828	2179757	4611594
1,1,2-Trichloroethane	295	492	457	672	1422
Trichloroethylene	82	137	127	187	395
2,4,5-Trichlorophenol	2435	4058	3774	5548	11738
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	40.0	37.2	54.7	116

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	0.428	0.520
Aluminum	584	710
Arsenic	49.0	59.5

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Cadmium	5.49	6.67
Carbaryl	1.18	1.43
Chlordane	0.0025	0.0030
Chlorpyrifos	0.0036	0.0044
Chromium (+3)	1166	1416
Chromium (+6)	9.26	11.2
Copper	4.64	5.64
Copper (oyster waters)	N/A	N/A
Cyanide (free)	1.84	2.24
4,4'-DDT	0.00063	0.00076
Demeton	0.063	0.076
Diazinon	0.100	0.122
Dicofol	35.0	42.5
Dieldrin	0.0013	0.0015
Diuron	124	150
Endosulfan (alpha)	0.0056	0.0069
Endosulfan (beta)	0.0056	0.0069
Endosulfan sulfate	0.0056	0.0069
Endrin	0.0013	0.0015
Guthion	0.0063	0.0076
Heptachlor	0.0025	0.0030
Hexachlorocyclohexane (Lindane)	0.053	0.064
Lead	8.87	10.8
Malathion	0.0063	0.0076
Mercury	0.690	0.838
Methoxychlor	0.019	0.023
Mirex	0.00063	0.00076
Nickel	8.22	9.98
Nonylphenol	1.07	1.30
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	4.97	6.04
Phenanthrene	2.54	3.08
Polychlorinated Biphenyls (PCBs)	0.019	0.023
Selenium	11.8	14.3
Silver	1.57	1.91
Toxaphene	0.00013	0.00015
Tributyltin (TBT)	0.0046	0.0056
2,4,5 Trichlorophenol	7.53	9.15
Zinc	53.6	65.1

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	6.06	7.36
Aldrin	0.0016	0.0019
Anthracene	N/A	N/A
Antimony	1708	2074
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	818	994
Benzidine	0.0032	0.0039

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Benzo(*a*)anthracene	5.23	6.35
Benzo(*a*)pyrene	0.526	0.639
Bis(chloromethyl)ether	0.702	0.852
Bis(2-chloroethyl) ether	16.0	19.5
Bis(2-ethylhexyl) phthalate	65.4	79.4
Bromodichloromethane (Dichlorobromomethane)	514	624
Bromoform	3469	4212
Cadmium	N/A	N/A
Carbon Tetrachloride	48.6	59.1
Chlordane	0.013	0.016
Chlorobenzene	8295	10073
Chlorodibromomethane (Dibromochloromethane)	381	463
Chloroform	11393	13834
Chromium (+6)	801	972
Chrysene	522	633
Cresols (Methylphenols)	14835	18013
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0094	0.0114
4,4'-DDE	0.0064	0.0077
4,4'-DDT	0.0064	0.0077
2,4'-D	N/A	N/A
Danitol	754	916
1,2-Dibromoethane	6.76	8.21
m-Dichlorobenzene (1,3-Dichlorobenzene)	2305	2799
o-Dichlorobenzene (1,2-Dichlorobenzene)	6916	8398
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	0.702	0.852
1,2-Dichloroethane	882	1071
1,1-Dichloroethylene	38145	46319
Dichloromethane (Methylene Chloride)	35443	43038
1,2-Dichloropropane	360	438
1,3-Dichloropropene (1,3-Dichloropropylene)	337	409
Dicofol	0.478	0.581
Dieldrin	0.0016	0.0019
2,4-Dimethylphenol	911	1106
Di-*n*-Butyl Phthalate	4801	5830
Dioxins/Furans (TCDD Equivalents)	1.27E-07	1.54E-07
Endrin	0.319	0.387
Ethylbenzene	11393	13834
Fluoride	N/A	N/A
Heptachlor	0.0024	0.0029
Heptachlor Epoxide	0.0012	0.0015
Hexachlorobenzene	0.0072	0.0087
Hexachlorobutadiene	437	531
Hexachlorocyclohexane (*alpha*)	0.148	0.180
Hexachlorocyclohexane (*beta*)	0.526	0.639
Hexachlorocyclohexane (*gamma*) (Lindane)	9.89	12.0
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	18.4	22.3
Hexachlorophene	4.63	5.62

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Lead	16.3	19.8
Mercury	0.040	0.048
Methoxychlor	2.57	3.12
Methyl Ethyl Ketone	1582190	1921231
Nickel	1818	2208
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	2955	3589
N-Nitrosodiethylamine	3.35	4.07
N-Nitroso-di-*n*-Butylamine	6.70	8.13
Pentachlorobenzene	1.59	1.94
Pentachlorophenol	14.5	17.6
Polychlorinated Biphenyls (PCBs)	0.0010	0.0012
Pyridine	1510	1834
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	1.13	1.38
1,1,2,2-Tetrachloroethane	63.8	77.5
Tetrachloroethylene	837	1017
Thallium	0.367	0.445
Toluene	N/A	N/A
Toxaphene	0.0085	0.0103
2,4,5-TP (Silvex)	33.5	40.7
1,1,1-Trichloroethane	1525830	1852793
1,1,2-Trichloroethane	471	571
Trichloroethylene	131	159
2,4,5-Trichlorophenol	3884	4716
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	38.3	46.5

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, 2014 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Equistar Chemicals LP and LyondellBasell Acetyls, LLC
TPDES Permit No:	WQ0004013000
Outfall No:	**010**
Prepared by:	Karen Holligan
Date:	October 9, 2018

DISCHARGE INFORMATION

Receiving Waterbody:	San Jacinto Bay
Segment No:	2427
TSS (mg/L):	12
Effluent Flow for Aquatic Life (MGD)	≤10
% Effluent for Chronic Aquatic Life (Mixing Zone):	8
% Effluent for Acute Aquatic Life (ZID):	30
Oyster Waters?	**No**
Effluent Flow for Human Health (MGD):	≤10
% Effluent for Human Health:	4

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

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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 (+3)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	11830.13	0.876		**1.80**	**307, App E.**
Lead	6.06	-0.85	138897.98	0.375		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	115187.64	0.420		1.00	Assumed
Zinc	5.36	-0.52	62925.37	0.570		1.00	Assumed

AQUATIC LIFE
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	1.3	N/A	4.33	N/A	1.39	N/A	2.04	4.31
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	497	975	159	595	234	494
Cadmium	40.0	8.75	133	109	42.7	66.7	62.7	133
Carbaryl	613	N/A	2043	N/A	654	N/A	961	2034
Chlordane	0.09	0.004	0.300	0.050	0.096	0.031	0.045	0.095
Chlorpyrifos	0.011	0.006	0.037	0.075	0.012	0.046	0.017	0.036
Chromium (+3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (+6)	1090	49.6	3633	620	1163	378	556	1176
Copper	13.5	3.6	51.4	51.4	16.4	31.3	24.2	51.1
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	18.7	70.0	5.97	42.7	8.78	18.6
4,4'-DDT	0.13	0.001	0.433	0.013	0.139	0.008	0.011	0.024
Demeton	N/A	0.1	N/A	1.25	N/A	0.763	1.12	2.37
Diazinon	0.819	0.819	2.73	10.2	0.874	6.24	1.28	2.72
Dicofol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	2.37	0.025	0.757	0.015	0.022	0.047
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (*alpha*)	0.034	0.009	0.113	0.113	0.036	0.069	0.053	0.113
Endosulfan II (*beta*)	0.034	0.009	0.113	0.113	0.036	0.069	0.053	0.113
Endosulfan sulfate	0.034	0.009	0.113	0.113	0.036	0.069	0.053	0.113
Endrin	0.037	0.002	0.123	0.025	0.039	0.015	0.022	0.047
Guthion	N/A	0.01	N/A	0.125	N/A	0.076	0.112	0.237
Heptachlor	0.053	0.004	0.177	0.050	0.057	0.031	0.045	0.095
Hexachlorocyclohexane (*gamma*) (Lindane)	0.16	N/A	0.533	N/A	0.171	N/A	0.251	0.531
Lead	133	5.3	1182	177	378	108	158	335
Malathion	N/A	0.01	N/A	0.125	N/A	0.076	0.112	0.237
Mercury	2.1	1.1	7.00	13.8	2.24	8.39	3.29	6.97
Methoxychlor	N/A	0.03	N/A	0.375	N/A	0.229	0.336	0.711
Mirex	N/A	0.001	N/A	0.013	N/A	0.0076	0.011	0.024
Nickel	118	13.1	393	164	126	100	147	311
Nonylphenol	7	1.7	23.3	21.3	7.47	13.0	11.0	23.2
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	50.3	120	16.1	73.2	23.7	50.1
Phenanthrene	7.7	4.6	25.7	57.5	8.21	35.1	12.1	25.5
Polychlorinated Biphenyls (PCBs)	10	0.03	33.3	0.375	10.7	0.229	0.336	0.711
Selenium	564	136	1880	1700	602	1037	884	1871
Silver	2	N/A	15.9	N/A	5.08	N/A	7.47	15.8
Toxaphene	0.21	0.0002	0.700	0.0025	0.224	0.0015	0.0022	0.0047
Tributyltin (TBT)	0.24	0.0074	0.800	0.093	0.256	0.056	0.083	0.175
2,4,5 Trichlorophenol	259	12	863	150	276	91.5	135	285
Zinc	92.7	84.2	542	1847	174	1127	255	540

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Acrylonitrile	3.8	95.0	88.4	130	275
Aldrin	0.0010	0.025	0.023	0.034	0.072
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	26775	24901	36604	77441
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	12825	11927	17533	37094
Benzidine	0.0020	0.050	0.047	0.068	0.145
Benzo(*a*)anthracene	3.28	82.0	76.3	112	237
Benzo(*a*)pyrene	0.33	8.25	7.67	11.3	23.9
Bis(chloromethyl)ether	0.44	11.0	10.2	15.0	31.8
Bis(2-chloroethyl) ether	10.06	252	234	344	727
Bis(2-ethylhexyl) phthalate	41	1025	953	1401	2965
Bromodichloromethane (Dichlorobromomethane)	322	8050	7487	11005	23283
Bromoform	2175	54375	50569	74336	157269
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	30.5	763	709	1042	2205
Chlordane	0.0081	0.203	0.188	0.277	0.586
Chlorobenzene	5201	130025	120923	177757	376071
Chlorodibromomethane (Dibromochloromethane)	239	5975	5557	8168	17281
Chloroform	7143	178575	166075	244130	516492
Chromium (+6)	502	12550	11672	17157	36298
Chrysene	327	8175	7603	11176	23645
Cresols (Methylphenols)	9301	232525	216248	317885	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.0059	0.148	0.137	0.202	0.427
4,4'-DDE	0.0040	0.100	0.093	0.137	0.289
4,4'-DDT	0.0040	0.100	0.093	0.137	0.289
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol	473	11825	10997	16166	34201
1,2-Dibromoethane	4.24	106	98.6	145	307
m-Dichlorobenzene (1,3-Dichlorobenzene)	1445	36125	33596	49386	104484
o-Dichlorobenzene (1,2-Dichlorobenzene)	4336	108400	100812	148194	313525
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.44	11.0	10.2	15.0	31.8
1,2-Dichloroethane	553	13825	12857	18900	39986
1,1-Dichloroethylene	23916	597900	556047	817389	1729306
Dichloromethane (Methylene Chloride)	22222	555550	516662	759492	1606817
1,2-Dichloropropane	226	5650	5255	7724	16341
1,3-Dichloropropene (1,3-Dichloropropylene)	211	5275	4906	7211	15257
Dicofol	0.30	7.50	6.98	10.3	21.7
Dieldrin	0.001	0.025	0.023	0.034	0.072
2,4-Dimethylphenol	571	14275	13276	19515	41288
Di-*n*-Butyl Phthalate	3010	75250	69983	102874	217646
Dioxins/Furans (TCDD Equivalents)	7.97E-08	1.99E-06	1.85E-06	2.72E-06	5.76E-06
Endrin	0.20	5.00	4.65	6.84	14.5

HUMAN HEALTH
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	***Fish Only Criterion (µg/L)***	***WLAh (µg/L)***	***LTAh (µg/L)***	***Daily Avg. (µg/L)***	***Daily Max. (µg/L)***
Ethylbenzene	7143	178575	166075	244130	516492
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0015	0.038	0.035	0.051	0.108
Heptachlor Epoxide	0.00075	0.019	0.017	0.026	0.054
Hexachlorobenzene	0.0045	0.113	0.105	0.154	0.325
Hexachlorobutadiene	274	6850	6371	9365	19812
Hexachlorocyclohexane (*alpha*)	0.093	2.33	2.16	3.18	6.72
Hexachlorocyclohexane (*beta*)	0.33	8.25	7.67	11.3	23.9
Hexachlorocyclohexane (*gamma*) (Lindane)	6.2	155	144	212	448
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	11.51	288	268	393	832
Hexachlorophene	2.90	72.5	67.4	99.1	210
Lead	3.83	255	237	349	739
Mercury	0.0250	0.625	0.581	0.854	1.81
Methoxychlor	1.61	40.3	37.4	55.0	116
Methyl Ethyl Ketone	992000	24800000	23064000	33904080	71729040
Nickel	1140	28500	26505	38962	82431
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1853	46325	43082	63331	133986
N-Nitrosodiethylamine	2.1	52.5	48.8	71.8	152
N-Nitroso-di-*n*-Butylamine	4.2	105	97.7	144	304
Pentachlorobenzene	1.0	25.0	23.3	34.2	72.3
Pentachlorophenol	9.1	228	212	311	658
Polychlorinated Biphenyls (PCBs)	6.4E-04	0.016	0.015	0.022	0.046
Pyridine	947	23675	22018	32366	68475
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.71	17.8	16.5	24.3	51.3
1,1,2,2-Tetrachloroethane	40	1000	930	1367	2892
Tetrachloroethylene	525	13125	12206	17943	37961
Thallium	0.23	5.75	5.35	7.86	16.6
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.0053	0.133	0.123	0.181	0.383
2,4,5-TP (Silvex)	21	525	488	718	1518
1,1,1-Trichloroethane	956663	23916575	22242415	32696350	69173910
1,1,2-Trichloroethane	295	7375	6859	10082	21331
Trichloroethylene	82	2050	1907	2803	5929
2,4,5-Trichlorophenol	2435	60875	56614	83222	176069
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	24	600	558	820	1735

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

Aquatic Life	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	1.43	1.73
Aluminum	N/A	N/A
Arsenic	164	199
Cadmium	43.9	53.3
Carbaryl	673	817
Chlordane	0.031	0.038
Chlorpyrifos	0.012	0.015
Chromium (+3)	N/A	N/A
Chromium (+6)	389	473
Copper	16.9	20.5
Copper (oyster waters)	N/A	N/A
Cyanide (free)	6.15	7.46
4,4'-DDT	0.0078	0.0095
Demeton	0.785	0.953
Diazinon	0.899	1.09
Dicofol	N/A	N/A
Dieldrin	0.016	0.019
Diuron	N/A	N/A
Endosulfan (*alpha*)	0.037	0.045
Endosulfan (*beta*)	0.037	0.045
Endosulfan sulfate	0.037	0.045
Endrin	0.016	0.019
Guthion	0.078	0.095
Heptachlor	0.031	0.038
Hexachlorocyclohexane (*gamma*) (Lindane)	0.176	0.213
Lead	111	135
Malathion	0.078	0.095
Mercury	2.30	2.80
Methoxychlor	0.235	0.286
Mirex	0.0078	0.0095
Nickel	103	125
Nonylphenol	7.68	9.33
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	16.6	20.1
Phenanthrene	8.45	10.3
Polychlorinated Biphenyls (PCBs)	0.235	0.286
Selenium	619	752
Silver	5.23	6.35
Toxaphene	0.0016	0.0019
Tributyltin (TBT)	0.058	0.071
2,4,5 Trichlorophenol	94.2	114
Zinc	179	217

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	90.9	110
Aldrin	0.024	0.029
Anthracene	N/A	N/A
Antimony	25623	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	12273	14903
Benzidine	0.048	0.058
Benzo(*a*)anthracene	78.5	95.3
Benzo(*a*)pyrene	7.90	9.59
Bis(chloromethyl)ether	10.5	12.8
Bis(2-chloroethyl) ether	241	292
Bis(2-ethylhexyl) phthalate	981	1191
Bromodichloromethane (Dichlorobromomethane)	7704	9354
Bromoform	52035	63186
Cadmium	N/A	N/A
Carbon Tetrachloride	730	886
Chlordane	0.194	0.235
Chlorobenzene	124430	151094
Chlorodibromomethane (Dibromochloromethane)	5718	6943
Chloroform	170891	207510
Chromium (+6)	12010	14584
Chrysene	7823	9500
Cresols (Methylphenols)	222519	270202
Cyanide (free)	N/A	N/A
4,4'-DDD	0.141	0.171
4,4'-DDE	0.096	0.116
4,4'-DDT	0.096	0.116
2,4'-D	N/A	N/A
Danitol	11316	13741
1,2-Dibromoethane	101	123
m-Dichlorobenzene (1,3-Dichlorobenzene)	34571	41979
o-Dichlorobenzene (1,2-Dichlorobenzene)	103736	125965
p-Dichlorobenzene (1,4-Dichlorobenzene)	N/A	N/A
3,3'-Dichlorobenzidine	10.5	12.8
1,2-Dichloroethane	13230	16065
1,1-Dichloroethylene	572172	694781
Dichloromethane (Methylene Chloride)	531645	645569
1,2-Dichloropropane	5407	6565
1,3-Dichloropropene (1,3-Dichloropropylene)	5048	6130
Dicofol	7.18	8.72
Dieldrin	0.024	0.029
2,4-Dimethylphenol	13661	16588
Di-*n*-Butyl Phthalate	72012	87443
Dioxins/Furans (TCDD Equivalents)	1.91E-06	2.32E-06
Endrin	4.78	5.81
Ethylbenzene	170891	207510
Fluoride	N/A	N/A
Heptachlor	0.036	0.044
Heptachlor Epoxide	0.018	0.022

Human Health	***70%***	***85%***
Parameter	***(µg/L)***	***(µg/L)***
Hexachlorobenzene	0.108	0.131
Hexachlorobutadiene	6555	7960
Hexachlorocyclohexane (*alpha*)	2.22	2.70
Hexachlorocyclohexane (*beta*)	7.90	9.59
Hexachlorocyclohexane (*gamma*) (Lindane)	148	180
Hexachlorocyclopentadiene	N/A	N/A
Hexachloroethane	275	334
Hexachlorophene	69.4	84.2
Lead	244	297
Mercury	0.598	0.726
Methoxychlor	38.5	46.8
Methyl Ethyl Ketone	23732856	28818468
Nickel	27274	33118
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	44332	53831
N-Nitrosodiethylamine	50.2	61.0
N-Nitroso-di-*n*-Butylamine	100	122
Pentachlorobenzene	23.9	29.1
Pentachlorophenol	218	264
Polychlorinated Biphenyls (PCBs)	0.015	0.019
Pyridine	22656	27511
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	17.0	20.6
1,1,2,2-Tetrachloroethane	957	1162
Tetrachloroethylene	12560	15252
Thallium	5.50	6.68
Toluene	N/A	N/A
Toxaphene	0.127	0.154
2,4,5-TP (Silvex)	502	610
1,1,1-Trichloroethane	22887445	27791897
1,1,2-Trichloroethane	7058	8570
Trichloroethylene	1962	2382
2,4,5-Trichlorophenol	58256	70739
TTHM (Sum of Total Trihalomethanes)	N/A	N/A
Vinyl Chloride	574	697

Appendix C
pH Screening
Outfall 010

Calculation of pH of a mixture in seawater. Based on the CO2SYS program (Lewis and Wallace, 1998) http://cdiac.esd.ornl.gov/oceans/co2rprt.html		
INPUT		
1. MIXING ZONE BOUNDARY CHARACTERISTICS		
Dilution factor at mixing zone boundary [1]	12.500	12.500
Depth at plume trapping level (m) [2]	2.000	2.000
2. BACKGROUND RECEIVING WATER CHARACTERISTICS		
Temperature (°C) [3]	25.00	30.00
pH (SU) [4]	7.60	7.60
Salinity (psu) [5]	30.00	30.00
Total alkalinity (meq/L) [6]	12.00	12.00
3. EFFLUENT CHARACTERISTICS		
Temperature (°C) [7]	30.00	30.00
pH (SU) [8]	6.00	9.00
Salinity (psu) [9]	1.00	5.00
Total alkalinity (meq/L) [10]	0.40	4.00
OUTPUT		
CONDITIONS AT THE MIXING ZONE BOUNDARY		
Temperature (deg C):	25.40	30.00
Salinity (psu)	27.68	28.00
Density (kg/m^3)	1017.71	1016.50
Alkalinity (mmol/kg-SW):	29.04	11.18
Total Inorganic Carbon (mmol/kg-SW):	27.17	10.72
pH at Mixing Zone Boundary:	7.59	7.76

1 From critical conditions memo. Effluent % at edge of mixing zone = 8.0%.
2 Default value. Various depths tested.
3 Assumed. Various temperatures tested.
4 From 2010 *IP*.
5 Assumed. Various salinities tested. PSU refers to practical salinity units using the Practical Salinity Scale (PSS) and is approximately equivalent to parts per thousand (ppt).
6 Hardness from 2010 *IP*. To convert from units of mg $CaCO_3$/L to meq/L, divide by 50.044 mg/meq.
7 Assumed. Various temperatures tested.
8 Proposed permit limits. Sequentially modified until predicted pH met segment criteria (6.5 to 9.0).
9 Minimum salinity assumed because discharge is freshwater. However, values up to 5 ppt tested.
10 For high pH scenario, calculated and tested a range of values. For low pH scenarios, used default of 20 mg/L $CaCO_3$ = 0.40 meq/L

Appendix D
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), calculated/assessed water quality-based effluent limitations (Water Quality-Based), and effluent limitations in the existing permit (Existing Permit). Effluent limitations appearing in **bold** are included in the draft permit. Values in square brackets [] were used to calculate mass limits but have not been included in the draft permit.

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
001	Flow	2.6 MGD		3.3 MGD		2.6 MGD		3.3 MGD		**2.6 MGD**		**3.3 MGD**	
	Temperature	—		—		95°F		105°F		**95°F**		**105°F**	
	BOD$_5$	**408**	**—**	**1,032**	**—**	Technology-based limits are acceptable.				216.8	—	459.6	—
	TSS	786	—	2,570	—	—	—	—	—	**782.6**	**—**	**2,554.5**	**—**
	TOC	651	—	1,193	—	—	—	—	—	**651**	**—**	**1,193**	**—**
	Total Residual Chlorine	—	—	—	—	—	—	—	0.1	**—**	**—**	**—**	**0.1**
	Aluminum, Total	—	—	—	—	**18.1**	**—**	**38.3**	**—**	9.05	—	19.14	—
	Copper, Total [1]	—	—	—	—	**0.206**	**0.0095**	**0.436**	**0.0201**	0.291	0.0134	0.614	0.0283
	Nonylphenol [1]	—	—	—	—	**0.047**	**0.00219**	**0.100**	**0.00463**	—	—	—	—
	Zinc, Total	—	—	—	—	**3.08**	**—**	**6.50**	**—**	1.954	—	4.134	—
	Acenaphthene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Acenaphthylene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Acrylonitrile	1.27	—	3.14	—	**0.133**	**0.0061**	**0.282**	**0.0130**	0.215	0.001	0.456	0.021
	Anthracene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Benzene	0.772	—	1.81	—	18.0	—	38.1	—	**0.749**	**—**	**1.760**	**—**
	Benzo(*a*)anthracene	0.257	—	0.636	—	0.115	0.0053	0.245	0.0113	**0.019**	**0.00086**	**0.039**	**0.00182**
	3,4-Benzofluoranthene	0.271	—	0.650	—	—	—	—	—	**0.263**	**—**	**0.630**	**—**
	Benzo(*k*)fluoranthene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Benzo(*a*)pyrene	0.271	—	0.650	—	**0.011**	**0.00053**	**0.024**	**0.00113**	0.019	0.00086	0.039	0.00182
	Bis(2-ethylhexyl) phthalate	1.28	—	3.49	—	1.44	—	**3.05**	[0.141]	**1.248**	**—**	3.389	—
	Carbon Tetrachloride	1.92	—	5.14	—	**1.07**	**0.049**	**2.27**	**0.105**	1.65	0.076	3.48	0.160
	Chlorobenzene	1.92	—	5.14	—	183	—	387	—	**1.865**	**—**	**4.99**	**—**
	Chloroethane	1.49	—	3.99	—	—	—	—	—	**1.445**	**—**	**3.875**	**—**

[1] A three-year compliance period has been included in the draft permit.

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
001	Chloroform	1.50	—	4.40	—	251	—	531	—	**1.458**	**—**	**4.269**	**—**
	Chrysene	0.257	—	0.636	—	11.4	—	24.3	—	**0.250**	**—**	**0.617**	**—**
	Di-*n*-butyl Phthalate	0.271	—	0.582	—	105	—	224	—	**0.263**	**—**	**0.565**	**—**
	1,2-Dichlorobenzene	2.65	—	10.7	—	152	—	322	—	**2.574**	**—**	**10.429**	**—**
	1,3-Dichlorobenzene	1.92	—	5.14	—	50.8	—	107	—	**1.865**	**—**	**4.99**	**—**
	1,4-Dichlorobenzene	1.92	—	5.14	—	—	—	—	—	**1.865**	**—**	**4.99**	**—**
	1,1-Dichloroethane	0.298	—	0.799	—	—	—	—	—	**0.289**	**—**	**0.775**	**—**
	1,2-Dichloroethane	2.43	—	7.77	—	19.4	—	41.1	—	**2.364**	**—**	**7.540**	**—**
	1,1-Dichloroethylene	0.298	—	0.813	—	841	—	1,780	—	**0.289**	**—**	**0.788**	**—**
	1,2-*trans*-Dichloroethylene	0.338	—	0.894	—	—	—	—	—	**0.328**	**—**	**0.867**	**—**
	1,2-Dichloropropane	2.65	—	10.7	—	7.96	—	16.8	—	**2.574**	**—**	**10.429**	**—**
	1,3-Dichloropropylene	2.65	—	10.7	—	7.42	—	15.7	—	**2.574**	**—**	**10.429**	**—**
	Diethyl Phthalate	0.623	—	1.53	—	—	—	—	—	**0.604**	**—**	**1.484**	**—**
	2,4-Dimethylphenol	0.257	—	0.636	—	20.0	—	42.5	—	**0.250**	**—**	**0.617**	**—**
	Dimethyl Phthalate	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	4,6-Dinitro-*o*-cresol	1.05	—	3.75	—	—	—	—	—	**1.025**	**—**	**3.638**	**—**
	2,4-Dinitrophenol	16.3	—	58.1	—	—	—	—	—	**15.854**	**—**	**56.362**	**—**
	Ethylbenzene	1.92	—	5.14	—	251	—	531	—	**1.865**	**—**	**4.99**	**—**
	Fluoranthene	0.298	—	0.731	—	—	—	—	—	**0.289**	**—**	**0.709**	**—**
	Fluorene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Hexachlorobenzene	2.65	—	10.7	—	**0.00015**	**7.3×10^{-6}**	**0.00033**	**15.4×10^{-6}**	0.00022	0.00001	0.00043	0.00002
	Hexachlorobutadiene	1.92	—	5.14	—	9.63	—	20.3	—	**1.865**	**—**	**4.99**	**—**
	Hexachloroethane	2.65	—	10.7	—	**0.405**	[0.018]	**0.857**	[0.039]	2.574	—	10.429	—
	Methyl Chloride	1.49	—	3.99	—	—	—	—	—	**1.445**	**—**	**3.875**	**—**
	Methylene Chloride	0.487	—	2.30	—	782	—	1,654	—	**0.473**	**—**	**2.233**	**—**
	Naphthalene	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Nitrobenzene	30.3	—	86.7	—	65.2	—	137	—	**26.23**	**1.209**	**55.49**	**2.557**
	2-Nitrophenol	0.880	—	3.13	—	—	—	—	—	**0.854**	**—**	**3.034**	**—**
	4-Nitrophenol	2.19	—	7.80	—	—	—	—	—	**2.128**	**—**	**7.566**	**—**
	Phenanthrene	0.257	—	0.636	—	**0.128**	**0.0059**	**0.271**	**0.0125**	0.16	0.0074	0.34	0.0157
	Phenol	0.257	—	0.636	—	—	—	—	—	**0.250**	**—**	**0.617**	**—**
	Pyrene	0.271	—	0.650	—	—	—	—	—	**0.263**	**—**	**0.630**	**—**
	Tetrachloroethylene	0.704	—	2.22	—	18.4	—	39.0	—	**0.683**	**—**	**2.154**	**—**
	Toluene	0.379	—	1.00	—	—	—	—	—	**0.368**	**—**	**0.972**	**—**

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
001	1,2,4-Trichlorobenzene	2.65	—	10.7	—	—	—	—	—	**2.574**	—	**10.429**	—
	1,1,1-Trichloroethane	0.298	—	0.799	—	33,667	—	71,227	—	**0.289**	—	**0.775**	—
	1,1,2-Trichloroethane	0.433	—	1.72	—	10.3	—	21.9	—	**0.420**	—	**1.668**	—
	Trichloroethylene	0.352	—	0.935	—	2.88	—	6.09	—	**0.342**	—	**0.906**	—
	Vinyl Chloride	1.31	—	2.33	—	**0.844**	[0.038]	**1.78**	[0.082]	1.274	—	2.259	—
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
101	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	—	—	—	—	—	—	—	—	—	30	—	45
	TSS	—	—	—	—	—	—	—	—	—	30	—	45
	Chlorine Residual	—	1.0, min	—	—	—	—	—	—	—	**1.0, min**	—	—
	E. Coli	—		—		126 cfu or MPN/100 mL		399 cfu or MPN/100 mL		**126 cfu or MPN/100 mL**		**399 cfu or MPN/100 mL**	
003	Flow	Report MGD		Report MGD		Report MGD		Report MGD		**Report MGD**		**Report MGD**	
	BOD_5	—	15.6	—	33.1	—	—	—	—	—	**15**	—	**30**
	TSS	—	153	—	216	—	—	—	—	—	**151**	—	**214**
	TOC	—	—	—	55	—	—	—	—	—	—	—	**55**
	Oil and Grease	—	—	—	15	—	—	—	—	—	—	—	**15**
	Total Residual Chlorine	—	—	—	—	—	—	—	0.1	—	—	—	**0.1**
	Aluminum, Total	—	—	—	—	—	**2.197**	—	**4.647**	—	0.835	—	1.766
	Copper, Total	—	—	—	—	—	0.061	—	0.130	—	**0.043**	—	**0.091**
	Nonylphenol [1]	—	—	—	—	—	–	—	**0.0328**	—	—	—	—
	Zinc, Total [1]	—	—	—	—	—	**0.361**	—	**0.763**	—	0.670	—	1.418
	Acenaphthene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Acenaphthylene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Acrylonitrile	—	—	—	**0.050**	—	—	—	—	—	—	—	0.232
	Anthracene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Benzene	—	—	—	**0.0147**	—	—	—	—	—	—	—	0.134
	Benzo(*a*)anthracene	—	—	—	**0.0051**	—	—	—	—	—	—	—	0.047
	3,4-Benzofluoranthene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.048
	Benzo(*k*)fluoranthene	—	—	—	**0.0051**	—	—	—	—	—	—	—	0.047
	Benzo(*a*)pyrene	—	—	—	**0.0052**	—	—	—	—	—	—	—	0.048
	Bis(2-ethylhexyl) phthalate	—	—	—	**0.0284**	—	—	—	—	—	—	—	0.258
	Carbon Tetrachloride	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380
	Chlorobenzene	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
003	Chloroethane	—	—	—	**0.050**	—	—	—	—	—	—	—	0.295
	Chloroform	—	—	—	**0.0570**	—	—	—	—	—	—	—	0.325
	Chrysene	—	—	—	**0.0051**	—	—	—	—	—	—	—	0.047
	Di-*n*-butyl Phthalate	—	—	—	**0.010**	—	—	—	—	—	—	—	0.043
	1,2-Dichlorobenzene	—	—	—	**0.0874**	—	—	—	—	—	—	—	0.794
	1,3-Dichlorobenzene	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380
	1,4-Dichlorobenzene	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380
	1,1-Dichloroethane	—	—	—	**0.010**	—	—	—	—	—	—	—	0.059
	1,2-Dichloroethane	—	—	—	**0.0632**	—	—	—	—	—	—	—	0.574
	1,1-Dichloroethylene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.060
	1,2-*trans*-Dichloroethylene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.066
	1,2-Dichloropropane	—	—	—	**0.0874**	—	—	—	—	—	—	—	0.794
	1,3-Dichloropropylene	—	—	—	**0.0874**	—	—	—	—	—	—	—	0.794
	Diethyl Phthalate	—	—	—	**0.0124**	—	—	—	—	—	—	—	0.113
	2,4-Dimethylphenol	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Dimethyl Phthalate	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	4,6-Dinitro-*o*-cresol	—	—	—	**0.050**	—	—	—	—	—	—	—	0.277
	2,4-Dinitrophenol	—	—	—	**0.4728**	—	—	—	—	—	—	—	4.291
	Ethylbenzene	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380
	Fluoranthene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.054
	Fluorene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Hexachlorobenzene	—	—	—	**0.0874**	—	—	—	—	—	—	—	0.794
	Hexachlorobutadiene	—	—	—	**0.0418**	—	—	—	—	—	—	—	0.380
	Hexachloroethane	—	—	—	**0.0874**	—	—	—	—	—	—	—	0.794
	Methyl Chloride	—	—	—	**0.050**	—	—	—	—	—	—	—	0.295
	Methylene Chloride	—	—	—	**0.020**	—	—	—	—	—	—	—	0.170
	Naphthalene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Nitrobenzene	—	—	—	**0.7055**	—	—	—	—	—	—	—	6.402
	2-Nitrophenol	—	—	—	**0.0254**	—	—	—	—	—	—	—	0.231
	4-Nitrophenol	—	—	—	**0.0634**	—	—	—	—	—	—	—	0.576
	Phenanthrene	—	—	—	**0.010**	—	—	—	0.036	—	—	—	0.047
	Phenol	—	—	—	**0.010**	—	—	—	—	—	—	—	0.047
	Pyrene	—	—	—	**0.010**	—	—	—	—	—	—	—	0.048
	Tetrachloroethylene	—	—	—	**0.0180**	—	—	—	—	—	—	—	0.164

Outfall	Pollutant	Technology-Based				Water Quality-Based				Existing Permit			
		Daily Avg		Daily Max		Daily Avg		Daily Max		Daily Avg		Daily Max	
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
003	Toluene	**—**	**—**	**—**	**0.010**	—	—	—	—	—	—	—	0.074
	1,2,4-Trichlorobenzene	**—**	**—**	**—**	**0.0874**	—	—	—	—	—	—	—	0.794
	1,1,1-Trichloroethane	**—**	**—**	**—**	**0.010**	—	—	—	—	—	—	—	0.059
	1,1,2-Trichloroethane	**—**	**—**	**—**	**0.0139**	—	—	—	—	—	—	—	0.127
	Trichloroethylene	**—**	**—**	**—**	**0.010**	—	—	—	—	—	—	—	0.069
	Vinyl Chloride	**—**	**—**	**—**	**0.0189**	—	—	—	—	—	—	—	0.172
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
004	Flow	1.50 MGD		2.6 MGD		1.50 MGD		2.6 MGD		**1.50 MGD**		**2.6 MGD**	
	BOD_5	**231**	—	**567**	—	Technology-based limits are acceptable.				125.1	**Report**	265.2	**Report**
	TSS	**459**	—	**1,504**	—	—	—	—	—	464	**Report**	1,648	**Report**
	TOC	375	—	688	—	—	—	—	—	**375**	**Report**	**688**	**Report**
	Oil and Grease	125	10	187	15	—	—	—	—	**71**	**10**	**106**	**15**
	Dissolved Oxygen	—	—	—	—	**—**	**3.0, min**	**—**	**—**	—	—	—	—
	Total Residual Chlorine	—	—	—	—	—	—	—	0.1	**—**	**—**	**—**	**0.1**
	Temperature	—		—		**N/A**		**Report °F**		—		—	
	Copper, Total [1]	—	—	—	—	**0.128**	**0.0104**	**0.271**	**0.0220**	0.29	0.0232	0.61	0.0491
	Cyanide, Free [1]	—	—	—	—	**0.061**	**0.0050**	**0.131**	**0.0106**	—	—	—	—
	Acenaphthene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Acenaphthylene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Acrylonitrile	0.504	—	1.27	—	**0.073**	**0.0072**	**0.154**	**0.0154**	0.277	0.022	0.585	0.0467
	Anthracene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Benzene	**0.194**	**—**	**0.715**	**—**	9.88	—	20.9	—	0.456	—	1.676	—
	Benzo(*a*)anthracene	0.115	—	0.310	—	0.063	—	0.133	—	**0.023**	**—**	**0.049**	**—**
	3,4-Benzofluoranthene	**0.120**	**—**	**0.320**	**—**	—	—	—	—	0.283	—	0.752	—
	Benzo(*k*)fluoranthene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Benzo(*a*)pyrene	0.120	—	0.320	—	**0.0063**	[0.00063]	**0.0134**	[0.00134]	0.023	—	0.049	—
	Bis(2-ethylhexyl) phthalate	**0.541**	**—**	**1.46**	**—**	0.790	—	1.66	—	1.269	—	3.439	—
	Carbon Tetrachloride	**0.094**	**—**	**0.199**	**—**	0.588	—	1.24	—	0.221	—	0.468	—
	Chlorobenzene	**0.078**	**—**	**0.147**	**—**	100	—	212	—	0.185	—	0.345	—
	Chloroethane	**0.546**	**—**	**1.40**	**—**	—	—	—	—	1.282	—	3.303	—
	Chloroform	**0.110**	**—**	**0.241**	**—**	137	—	291	—	0.259	—	0.569	—
	2-Chlorophenol	**0.162**	**—**	**0.515**	**—**	—	—	—	—	0.382	—	1.208	—
	Chrysene	**0.115**	**—**	**0.310**	**—**	6.30	—	13.3	—	0.231	—	0.489	—
	Di-*n*-butyl Phthalate	**0.141**	**—**	**0.299**	**—**	58.0	—	122	—	0.333	—	0.703	—

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
004	1,2-Dichlorobenzene	**0.404**	**—**	**0.856**	**—**	83.5	—	176	—	0.949	—	2.009	—
	1,3-Dichlorobenzene	**0.162**	**—**	**0.231**	**—**	27.8	—	58.9	—	0.382	—	0.542	—
	1,4-Dichlorobenzene	**0.078**	**—**	**0.147**	**—**	—	—	—	—	0.185	—	0.345	—
	1,1-Dichloroethane	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	1,2-Dichloroethane	**0.357**	**—**	**1.10**	**—**	10.6	—	22.5	—	0.838	—	2.600	—
	1,1-Dichloroethylene	**0.084**	**—**	**0.131**	**—**	461	—	975	—	0.167	—	0.353	—
	1,2-*trans*-Dichloroethylene	**0.110**	**—**	**0.283**	**—**	—	—	—	—	0.259	—	0.665	—
	2,4-Dichlorophenol	**0.205**	**—**	**0.588**	**—**	—	—	—	—	0.480	—	1.380	—
	1,2-Dichloropropane	**0.804**	**—**	**1.20**	**—**	4.35	—	9.22	—	1.885	—	2.834	—
	1,3-Dichloropropylene	**0.152**	**—**	**0.231**	**—**	4.06	—	8.60	—	0.357	—	0.542	—
	Diethyl Phthalate	**0.425**	**—**	**1.06**	**—**	—	—	—	—	0.998	—	2.502	—
	2,4-Dimethylphenol	**0.094**	**—**	**0.189**	**—**	11.0	—	23.2	—	0.221	—	0.443	—
	Dimethyl Phthalate	**0.099**	**—**	**0.247**	**—**	—	—	—	—	0.234	—	0.579	—
	4,6-Dinitro-*o*-cresol	**0.410**	**—**	**1.45**	**—**	—	—	—	—	0.961	—	3.414	—
	2,4-Dinitrophenol	**0.373**	**—**	**0.646**	**—**	—	—	—	—	0.875	—	1.516	—
	2,4-Dinitrotoluene	**0.594**	**—**	**1.49**	**—**	—	—	—	—	1.392	—	3.512	—
	2,6-Dinitrotoluene	**1.34**	**—**	**3.36**	**—**	—	—	—	—	3.143	—	7.900	—
	Ethylbenzene	**0.168**	**—**	**0.567**	**—**	137	—	291	—	0.394	—	1.331	—
	Fluoranthene	**0.131**	**—**	**0.357**	**—**	—	—	—	—	0.308	—	0.838	—
	Fluorene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Hexachlorobenzene	0.078	—	0.147	—	**8.6×10^{-5}**	**8.6×10^{-6}**	**18.4×10^{-5}**	**18.3×10^{-6}**	0.00038	0.00003	0.00075	0.00006
	Hexachlorobutadiene	0.105	—	0.257	—	5.27	—	11.1	—	**0.103**	**—**	**0.217**	**—**
	Hexachloroethane	**0.110**	**—**	**0.283**	**—**	0.222	—	0.469	—	0.259	—	0.665	—
	Methyl Chloride	**0.452**	**—**	**0.998**	**—**	—	—	—	—	1.059	—	2.341	—
	Methylene Chloride	**0.210**	**—**	**0.467**	**—**	428	—	906	—	0.493	—	1.096	—
	Naphthalene	**0.115**	**—**	**0.310**	**—**	—	—	—	—	0.271	—	0.727	—
	Nitrobenzene	**0.141**	**—**	**0.357**	**—**	35.7	—	75.5	—	0.333	—	0.838	—
	2-Nitrophenol	**0.215**	**—**	**0.362**	**—**	—	—	—	—	0.505	—	0.850	—
	4-Nitrophenol	**0.378**	**—**	**0.651**	**—**	—	—	—	—	0.887	—	1.528	—
	Phenanthrene	0.115	—	0.310	—	**0.079**	**0.0064**	**0.169**	**0.0137**	0.12	0.0094	0.25	0.0198
	Phenol	**0.078**	**—**	**0.136**	**—**	—	—	—	—	0.185	—	0.320	—
	Pyrene	**0.131**	**—**	**0.352**	**—**	—	—	—	—	0.308	—	0.825	—
	Tetrachloroethylene	**0.115**	**—**	**0.294**	**—**	10.1	—	21.4	—	0.271	—	0.690	—
	Toluene	**0.136**	**—**	**0.420**	**—**	—	—	—	—	0.320	—	0.986	—

Outfall	Pollutant	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
004	1,2,4-Trichlorobenzene	**0.357**	**—**	**0.736**	**—**	—	—	—	—	0.838	—	1.725	—
	1,1,1-Trichloroethane	**0.110**	**—**	**0.283**	**—**	18,441	—	39,016	—	0.259	—	0.665	—
	1,1,2-Trichloroethane	**0.110**	**—**	**0.283**	**—**	5.69	—	12.0	—	0.259	—	0.665	—
	Trichloroethylene	**0.110**	**—**	**0.283**	**—**	1.57	—	3.34	—	0.259	—	0.665	—
	Vinyl Chloride	0.546	—	1.40	—	**0.462**	[0.046]	**0.978**	[0.097]	1.282	—	3.303	—
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
	pH range excursions												
	> 60 minutes	None				—				**None**			
	monthly total (minutes)	7 hours, 26 minutes				—				**7 hours, 26 minutes**			
104	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	TSS	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	Chlorine Residual	—	1.0, min	—	—	—	—	—	—	**—**	**1.0, min**	**—**	**—**
	E. Coli	—		—		126 cfu or MPN/100 mL		399 cfu or MPN/100 mL		**126 cfu or MPN/100 mL**		**399 cfu or MPN/100 mL**	
005	Flow	Report MGD		Report MGD		Report MGD		Report MGD		**Report MGD**		**Report MGD**	
	TOC	—	—	—	55	—	—	—	—	**—**	**Report**	**—**	**55**
	Oil and Grease	—	—	—	15	—	—	—	—	**—**	**Report**	**—**	**15**
	Cyanide, Free [1]	—	—	—	—	**—**	**0.0050**	**—**	**0.0106**	—	—	—	—
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
105	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	—	—	—	80	—	—	—	—	**—**	**—**	**—**	**80**
	TSS	—	—	—	149	—	—	—	—	**—**	**—**	**—**	**149**
	TOC	—	—	—	55	—	—	—	—	**—**	**—**	**—**	**55**
	Oil and Grease	—	—	—	15	—	—	—	—	**—**	**—**	**—**	**15**
	Acenaphthene	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	Acenaphthylene	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	Acrylonitrile	—	—	—	0.232	—	—	—	—	**—**	**—**	**—**	**0.232**
	Anthracene	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	Benzene	—	—	—	0.134	—	—	—	—	**—**	**—**	**—**	**0.134**
	Benzo(*a*)anthracene	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	3,4-Benzofluoranthene	—	—	—	0.048	—	—	—	—	**—**	**—**	**—**	**0.048**
	Benzo(*k*)fluoranthene	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	Benzo(*a*)pyrene	—	—	—	0.048	—	—	—	—	**—**	**—**	**—**	**0.048**

Outfall	Pollutant	Technology-Based				Water Quality-Based				Existing Permit			
		Daily Avg		Daily Max		Daily Avg		Daily Max		Daily Avg		Daily Max	
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
105	Bis(2-ethylhexyl) phthalate	—	—	—	0.258	—	—	—	—	—	—	—	**0.258**
	Carbon Tetrachloride	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	Chlorobenzene	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	Chloroethane	—	—	—	0.295	—	—	—	—	—	—	—	**0.295**
	Chloroform	—	—	—	0.325	—	—	—	—	—	—	—	**0.325**
	Chrysene	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**
	Di-*n*-butyl Phthalate	—	—	—	0.043	—	—	—	—	—	—	—	**0.043**
	1,2-Dichlorobenzene	—	—	—	0.794	—	—	—	—	—	—	—	**0.794**
	1,3-Dichlorobenzene	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	1,4-Dichlorobenzene	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	1,1-Dichloroethane	—	—	—	0.059	—	—	—	—	—	—	—	**0.059**
	1,2-Dichloroethane	—	—	—	0.574	—	—	—	—	—	—	—	**0.574**
	1,1-Dichloroethylene	—	—	—	0.060	—	—	—	—	—	—	—	**0.060**
	1,2-*trans*-Dichloroethylene	—	—	—	0.066	—	—	—	—	—	—	—	**0.066**
	1,2-Dichloropropane	—	—	—	0.794	—	—	—	—	—	—	—	**0.794**
	1,3-Dichloropropylene	—	—	—	0.794	—	—	—	—	—	—	—	**0.794**
	Diethyl Phthalate	—	—	—	0.113	—	—	—	—	—	—	—	**0.113**
	2,4-Dimethylphenol	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**
	Dimethyl Phthalate	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**
	4,6-Dinitro-*o*-cresol	—	—	—	0.277	—	—	—	—	—	—	—	**0.277**
	2,4-Dinitrophenol	—	—	—	4.291	—	—	—	—	—	—	—	**4.291**
	Ethylbenzene	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	Fluoranthene	—	—	—	0.054	—	—	—	—	—	—	—	**0.054**
	Fluorene	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**
	Hexachlorobenzene	—	—	—	0.794	—	—	—	—	—	—	—	**0.794**
	Hexachlorobutadiene	—	—	—	0.380	—	—	—	—	—	—	—	**0.380**
	Hexachloroethane	—	—	—	0.794	—	—	—	—	—	—	—	**0.794**
	Methyl Chloride	—	—	—	0.295	—	—	—	—	—	—	—	**0.295**
	Methylene Chloride	—	—	—	0.170	—	—	—	—	—	—	—	**0.170**
	Naphthalene	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**
	Nitrobenzene	—	—	—	6.402	—	—	—	—	—	—	—	**6.402**
	2-Nitrophenol	—	—	—	0.231	—	—	—	—	—	—	—	**0.231**
	4-Nitrophenol	—	—	—	0.576	—	—	—	—	—	—	—	**0.576**
	Phenanthrene	—	—	—	0.047	—	—	—	—	—	—	—	**0.047**

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
105	Phenol	—	—	—	0.047	—	—	—	—	**—**	**—**	**—**	**0.047**
	Pyrene	—	—	—	0.048	—	—	—	—	**—**	**—**	**—**	**0.048**
	Tetrachloroethylene	—	—	—	0.164	—	—	—	—	**—**	**—**	**—**	**0.164**
	Toluene	—	—	—	0.074	—	—	—	—	**—**	**—**	**—**	**0.074**
	1,2,4-Trichlorobenzene	—	—	—	0.794	—	—	—	—	**—**	**—**	**—**	**0.794**
	1,1,1-Trichloroethane	—	—	—	0.059	—	—	—	—	**—**	**—**	**—**	**0.059**
	1,1,2-Trichloroethane	—	—	—	0.127	—	—	—	—	**—**	**—**	**—**	**0.127**
	Trichloroethylene	—	—	—	0.069	—	—	—	—	**—**	**—**	**—**	**0.069**
	Vinyl Chloride	—	—	—	0.172	—	—	—	—	**—**	**—**	**—**	**0.172**
006	Flow	Report MGD		Report MGD		Report MGD		Report MGD		**Report MGD**		**Report MGD**	
	TOC	—	—	—	55	—	—	—	—	**—**	**Report**	**—**	**55**
	Oil and Grease	—	—	—	15	—	—	—	—	**—**	**Report**	**—**	**15**
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
007	Flow	**1.22 MGD**		**1.6 MGD**		1.22 MGD		1.6 MGD		1.0 MGD		1.2 MGD	
	BOD_5	231	**Report**	589	**Report**	**185**	—	**370**	—	83.4	Report	176.8	Report
	TSS	**406**	**Report**	**1,321**	**Report**	—	—	—	—	285.6	Report	916	Report
	TOC	**447**	**Report**	**906**	**Report**	—	—	—	—	367	Report	743	Report
	Total Residual Chlorine	—	—	—	—	**—**	**—**	**—**	**0.1**	—	—	—	0.1
	Ammonia Nitrogen	—	—	—	—	**25**	**—**	**53**	**—**	25	—	53	—
	Dissolved Oxygen	—	—	—	—	**—**	**4.0, min**	**—**	**—**	—	4.0, min	—	—
	Temperature	—		—		**95°F**		**100°F**		—		—	
	Copper, Total	—	—	—	—	**0.109**	**0.0108**	**0.233**	**0.0229**	0.23	0.0274	0.48	0.058
	Cyanide, Free	—	—	—	—	**—**	**Report**	**—**	**Report**	—	—	—	—
	Zinc, Total	—	—	—	—	**1.49**	**0.147**	**3.17**	**0.311**	1.56	0.215	3.30	0.455
	Acenaphthene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Acenaphthylene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Acrylonitrile	0.628	—	1.58	—	**0.073**	[0.0072]	**0.156**	[0.0154]	0.24	0.0282	0.50	0.0597
	Anthracene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Benzene	**0.242**	**—**	**0.889**	**—**	9.97	—	21.1	—	0.173	—	0.636	—
	Benzo(*a*)anthracene	0.143	—	0.386	—	**0.063**	[0.0062]	**0.135**	[0.0133]	0.02	0.0024	0.04	0.0052
	3,4-Benzofluoranthene	**0.150**	**—**	**0.399**	**—**	—	—	—	—	0.107	—	0.285	—
	Benzo(*k*)fluoranthene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Benzo(*a*)pyrene	0.150	—	0.399	—	**0.0064**	[0.00063]	**0.0135**	[0.00133]	0.02	0.0024	0.04	0.0052
	Bis(2-ethylhexyl) phthalate	**0.673**	**—**	1.82	—	0.797	—	**1.69**	[0.166]	0.481	—	1.304	—

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
007	Carbon Tetrachloride	**0.117**	**—**	**0.248**	**—**	0.593	—	1.25	—	0.084	—	0.178	—
	Chlorobenzene	**0.098**	**—**	**0.183**	**—**	101	—	214	—	0.070	—	0.131	—
	Chloroethane	**0.680**	**—**	**1.75**	**—**	—	—	—	—	0.486	—	1.252	—
	Chloroform	**0.527**	**—**	**1.44**	**—**	138	—	293	—	0.413	—	1.137	—
	2-Chlorophenol	**0.202**	**—**	**0.641**	**—**	—	—	—	—	0.145	—	0.458	—
	Chrysene	**0.143**	**—**	**0.386**	**—**	6.36	—	13.4	—	0.103	—	0.276	—
	Di-*n*-butyl Phthalate	**0.176**	**—**	**0.372**	**—**	58.5	—	123	—	0.126	—	0.266	—
	1,2-Dichlorobenzene	**0.503**	**—**	**1.06**	**—**	84.3	—	178	—	0.360	—	0.762	—
	1,3-Dichlorobenzene	**0.202**	**—**	**0.287**	**—**	28.0	—	59.4	—	0.145	—	0.206	—
	1,4-Dichlorobenzene	**0.098**	**—**	**0.183**	**—**	—	—	—	—	0.070	—	0.131	—
	1,1-Dichloroethane	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	1,2-Dichloroethane	**0.444**	**—**	**1.38**	**—**	10.7	—	22.7	—	0.318	—	0.986	—
	1,1-Dichloroethylene	**0.104**	**—**	**0.163**	**—**	465	—	984	—	0.075	—	0.117	—
	1,2-*trans*-Dichloroethylene	**0.137**	**—**	**0.353**	**—**	—	—	—	—	0.098	—	0.252	—
	2,4-Dichlorophenol	**0.255**	**—**	**0.732**	**—**	—	—	—	—	0.182	—	0.523	—
	1,2-Dichloropropane	**1.00**	**—**	**1.50**	**—**	4.39	—	9.29	—	0.715	—	1.075	—
	1,3-Dichloropropylene	**0.189**	**—**	**0.287**	**—**	4.10	—	8.68	—	0.136	—	0.206	—
	Diethyl Phthalate	**0.529**	**—**	**1.32**	**—**	—	—	—	—	0.379	—	0.949	—
	2,4-Dimethylphenol	**0.117**	**—**	**0.235**	**—**	11.1	—	23.4	—	0.084	—	0.168	—
	Dimethyl Phthalate	**0.124**	**—**	**0.307**	**—**	—	—	—	—	0.089	—	0.220	—
	4,6-Dinitro-*o*-cresol	**0.510**	**—**	**1.81**	**—**	—	—	—	—	0.365	—	1.294	—
	2,4-Dinitrophenol	**0.464**	**—**	**0.804**	**—**	—	—	—	—	0.332	—	0.575	—
	2,4-Dinitrotoluene	**0.739**	**—**	**1.86**	**—**	—	—	—	—	0.528	—	1.332	—
	2,6-Dinitrotoluene	**1.66**	**—**	**4.19**	**—**	—	—	—	—	1.192	—	2.996	—
	Ethylbenzene	**0.209**	**—**	**0.706**	**—**	138	—	293	—	0.150	—	0.505	—
	Fluoranthene	**0.163**	**—**	**0.444**	**—**	—	—	—	—	0.117	—	0.318	—
	Fluorene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Hexachlorobenzene	0.098	—	0.183	—	**8.8×10^{-5}**	[8.6×10^{-6}]	**18.5×10^{-5}**	[18.2×10^{-6}]	0.00025	0.00003	0.00058	0.00007
	Hexachlorobutadiene	**0.130**	**—**	**0.320**	**—**	5.32	—	11.2	—	0.093	—	0.229	—
	Hexachloroethane	**0.137**	**—**	**0.353**	**—**	0.223	—	0.473	—	0.098	—	0.252	—
	Methyl Chloride	**0.562**	**—**	**1.24**	**—**	—	—	—	—	0.402	—	0.888	—
	Methylene Chloride	**0.261**	**—**	**0.582**	**—**	432	—	914	—	0.187	—	0.416	—
	Naphthalene	**0.143**	**—**	**0.386**	**—**	—	—	—	—	0.103	—	0.276	—
	Nitrobenzene	**0.176**	**—**	**0.444**	**—**	36.0	—	76.2	—	0.126	—	0.318	—

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
007	2-Nitrophenol	**0.268**	**—**	**0.451**	**—**	—	—	—	—	0.192	—	0.322	—
	4-Nitrophenol	**0.471**	**—**	**0.811**	**—**	—	—	—	—	0.336	—	0.579	—
	Phenanthrene	0.143	—	0.386	—	**0.068**	[0.0067]	**0.144**	[0.0142]	0.08	0.010	0.18	0.021
	Phenol	**0.098**	**—**	**0.170**	**—**	—	—	—	—	0.070	—	0.122	—
	Pyrene	**0.163**	**—**	**0.438**	**—**	—	—	—	—	0.117	—	0.313	—
	Tetrachloroethylene	**0.143**	**—**	**0.366**	**—**	10.2	—	21.6	—	0.103	—	0.262	—
	Toluene	**0.170**	**—**	**0.523**	**—**	—	—	—	—	0.122	—	0.374	—
	1,2,4-Trichlorobenzene	**0.444**	**—**	**0.915**	**—**	—	—	—	—	0.318	—	0.654	—
	1,1,1-Trichloroethane	**0.137**	**—**	**0.353**	**—**	18,605	—	39,362	—	0.098	—	0.252	—
	1,1,2-Trichloroethane	**0.137**	**—**	**0.353**	**—**	5.74	—	12.1	—	0.098	—	0.252	—
	Trichloroethylene	**0.137**	**—**	**0.353**	**—**	1.59	—	3.36	—	0.098	—	0.252	—
	Vinyl Chloride	0.680	—	1.75	—	**0.466**	[0.045]	**0.987**	[0.097]	0.486	—	1.252	—
	pH	**Between 6.0 and 9.0 SU**				Between 6.0 and 9.0 SU				—			
207	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	TSS	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	Chlorine Residual	—	1.0, min	—	—	—	—	—	—	**—**	**1.0, min**	**—**	**—**
	E. Coli	—		—		126 cfu or MPN/100 mL		399 cfu or MPN/100 mL		**126 cfu or MPN/100 mL**		**399 cfu or MPN/100 mL**	
307	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	TSS	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	Chlorine Residual	—	1.0, min	—	—	—	—	—	—	**—**	**1.0, min**	**—**	**—**
	E. Coli	—		—		126 cfu or MPN/100 mL		399 cfu or MPN/100 mL		**126 cfu or MPN/100 mL**		**399 cfu or MPN/100 mL**	
407	Flow	Report MGD		Report MGD		—		—		**Report MGD**		**Report MGD**	
	BOD_5	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	TSS	**—**	**—**	**—**	**—**	—	—	—	—	—	30	—	45
	Chlorine Residual	—	1.0, min	—	—	—	—	—	—	**—**	**1.0, min**	**—**	**—**
	E. Coli	—		—		126 cfu or MPN/100 mL		399 cfu or MPN/100 mL		**126 cfu or MPN/100 mL**		**399 cfu or MPN/100 mL**	
008	Flow	**Report MGD**		**Report MGD**		Report MGD		Report MGD		—		—	
	TOC	—	—	—	75	—	—	—	—	**—**	**—**	**—**	**75**
	Oil and Grease	—	—	—	15	—	—	—	—	**—**	**—**	**—**	**15**

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		lbs/day	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*
008	Aluminum, Total [1]	—	—	—	—	**—**	**—**	**—**	**1.766**	**—**	**—**	**—**	**—**
	Cyanide, Free [1]	—	—	—	—	**—**	**—**	**—**	**0.0055**	**—**	**—**	**—**	**—**
	Zinc, Total	—	—	—	—	**—**	**—**	**—**	**Report**	**—**	**—**	**—**	**—**
	pH	Between 6.0 and 9.0 SU				Between 6.0 and 9.0 SU				**Between 6.0 and 9.0 SU**			
009	Flow	**Report MGD**		**Report MGD**		Report MGD		Report MGD		—		—	
	TOC	**—**	**—**	**—**	**75**	—	—	—	—	—	—	—	—
	Oil and Grease	**—**	**—**	**—**	**15**	—	—	—	—	—	—	—	—
	pH	**Between 6.0 and 9.0 SU**				Between 6.0 and 9.0 SU				—			
010	Flow	**0.86 MGD**		**1.10 MGD**		0.86 MGD		1.10 MGD		—		—	
	Temperature	—		—		**N/A**		**Report °F**		—		—	
	TSS	**—**	**30**	**—**	**100**	—	—	—	—	—	—	—	—
	Oil and Grease	**—**	**15**	**—**	**20**	—	—	—	—	—	—	—	—
	Free Available Chlorine	**—**	**0.2**	**—**	**0.5**	—	—	—	—	—	—	—	—
	pH	**Between 6.0 and 9.0 SU**				Between 6.0 and 9.0 SU				—			

Appendix E
Calculations of Single Grab Limits

The column labeled "Single Grab Method" in the tables below refers to an explanation of how the single grab limit was calculated for each pollutant. The column "Existing Single Grab" shows the single grab limit in the existing permit. The single grab limit included in the draft permit is shown in bold type.

Outfall 001 –

Pollutant	*Draft Permit Limits*				*Calculated Single Grab*	*Single Grab Method*	*Existing Single Grab*	*MAL*
	Daily Avg		*Daily Max*					
	lbs/day	*mg/L*	*lbs/day*	*mg/L*	*mg/L*		*mg/L*	*mg/L*
BOD_5	408	—	1,032	[47.6]	**95**	**B**	65	—
TSS	782.6	—	2,554.5	[118]	**236**	**B**	130	—
TOC	651	—	1,193	[55.0]	**110**	**B**	112	—
Total Residual Chlorine	—	—	—	0.1	0.1	**D**	**0.1**	—
Aluminum, Total	18.1	—	38.3	[1.765]	**3.53**	**B**	1.56	0.0025
Copper, Total								
Interim Limits	0.291	0.0134	0.614	0.0283	**0.056**	**B**	0.040	0.002
Final Limits	0.260	0.0095	0.436	0.0201	**0.040**	**B**	—	0.002
Nonylphenol	0.047	0.00219	0.100	0.00463	0.00463	D/**E**	—	**0.333**
Zinc, Total	3.08	—	6.50	[0.30]	**0.60**	**B**	0.670	0.005
Acenaphthene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Acenaphthylene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Acrylonitrile	0.133	0.0061	0.282	0.0130	0.026	B/**E**	0.050	**0.050**
Anthracene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Benzene	0.749	—	1.760	—	**0.125**	**C**	0.122	0.010
Benzo(*a*)anthracene	0.019	0.0086	0.039	0.00182	0.0036	B/**E**	0.005	**0.005**
3,4-Benzofluoranthene	0.263	—	0.630	—	**0.045**	**C**	0.044	0.010
Benzo(*k*)fluoranthene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.005
Benzo(*a*)pyrene	0.011	0.00053	0.024	0.00113	0.0022	B/**E**	0.005	**0.005**
Bis(2-ethylhexyl) phthalate	1.248	—	3.05	[0.141]	**0.282**	**B**	0.234	0.010
Carbon Tetrachloride	1.07	0.049	2.27	0.105	**0.21**	**B**	0.345	0.002
Chlorobenzene	1.865	—	4.99	—	**0.356**	**C**	0.345	0.010
Chloroethane	1.445	—	3.875	—	**0.276**	**C**	0.268	0.050
Choloroform	1.458	—	4.269	—	**0.304**	**C**	0.295	0.010
Chrysene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.005
Di-*n*-butyl phthalate	0.263	—	0.565	—	**0.040**	**C**	0.039	0.010
1,2-Dichlorobenzene	2.574	—	10.429	—	**0.743**	**C**	0.721	0.010
1,3-Dichlorobenzene	1.865	—	4.99	—	**0.356**	**C**	0.345	0.010
1,4-Dichlorobenzene	1.865	—	4.99	—	**0.356**	**C**	0.345	0.010
1,1-Dichloroethane	0.289	—	0.775	—	**0.055**	**C**	0.054	0.010
1,2-Dichloroethane	2.364	—	7.540	—	**0.537**	**C**	0.521	0.010
1,1-Dichloroethylene	0.289	—	0.788	—	**0.056**	**C**	0.054	0.010
1,2-*trans*-Dichloroethylene	0.328	—	0.867	—	**0.061**	**C**	0.060	0.010
1,2-Dichloropropane	2.574	—	10.429	—	**0.743**	**C**	0.721	0.010
1,3-Dichloropropene	2.574	—	10.429	—	**0.743**	**C**	0.721	0.010
Diethyl phthalate	0.604	—	1.484	—	**0.105**	**C**	0.103	0.010
2,4-Dimethylphenol	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Dimethyl phthalate	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010

Outfall 001 –

Pollutant	Draft Permit Limits				Calculated Single Grab	Single Grab Method	Existing Single Grab	MAL
	Daily Avg		Daily Max					
	lbs/day	mg/L	lbs/day	mg/L	mg/L		mg/L	mg/L
4,6-Dinitro-*o*-cresol	1.025	—	3.638	—	**0.259**	**C**	0.252	0.050
2,4-Dinitrophenol	15.854	—	56.362	—	**4.0**	**C**	3.897	0.050
Ethylbenzene	1.865	—	4.99	—	**0.356**	**C**	0.345	0.010
Fluoranthene	0.289	—	0.709	—	**0.050**	**C**	0.049	0.010
Fluorene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Hexachlorobenzene	1.5×10^{-4}	7.3×10^{-6}	3.3×10^{-4}	15.4×10^{-6}	0.0000308	B/**E**	0.005	**0.005**
Hexachlorobutadiene	1.865	—	4.99	—	**0.356**	**C**	0.345	0.010
Hexachloroethane	0.405	[0.018]	0.857	[0.039]	**0.078**	**B**	0.721	0.020
Methyl Chloride	1.445	—	3.875	—	**0.276**	**C**	0.268	0.050
Methylene Chloride	0.473	—	2.233	—	**0.159**	**C**	0.154	0.020
Naphthalene	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Nitrobenzene	26.23	1.209	55.49	2.557	**6.0**	**C**	2.557	0.010
2-Nitrophenol	0.854	—	3.034	—	**0.216**	**C**	0.210	0.020
4-Nitrophenol	2.128	—	7.566	—	**0.539**	**C**	0.523	0.050
Phenanthrene	0.128	0.0059	0.271	0.0125	**0.025**	**B**	0.032	0.010
Phenol	0.250	—	0.617	—	**0.044**	**C**	0.043	0.010
Pyrene	0.263	—	0.630	—	**0.045**	**C**	0.044	0.010
Tetrachloroethylene	0.683	—	2.154	—	**0.153**	**C**	0.149	0.010
Toluene	0.368	—	0.972	—	**0.069**	**C**	0.067	0.010
1,2,4-Trichlorobenzene	2.574	—	10.429	—	**0.743**	**C**	0.721	0.010
1,1,1-Trichloroethane	0.289	—	0.775	—	**0.055**	**C**	0.054	0.010
1,1,2-Trichloroethane	0.420	—	1.668	—	**0.119**	**C**	0.115	0.010
Trichloroethylene	0.342	—	0.906	—	**0.064**	**C**	0.063	0.010
Vinyl Chloride	0.844	[0.038]	1.78	[0.082]	**0.164**	**B**	0.156	0.010

Outfall 001 –

Note	Single grab limit =		
A	$\frac{\text{Daily Avg (lbs/day)}}{2.6\ \text{MGD} \times 8.345} \times 3$	=	Daily Avg (mg/L) × 3
B	$\frac{\text{Daily Max (lbs/day)}}{2.6\ \text{MGD} \times 8.345} \times 2$	=	Daily Max (mg/L) × 2
C	$\frac{\text{Daily Max (lbs/day)}}{1.624\ \text{MGD} \times 8.345} \times \frac{1.624\ \text{MGD}}{2.6\ \text{MGD}} \times 1.5$	=	Daily Max (mg/L) × $\frac{1.624\ \text{MGD}}{2.6\ \text{MGD}}$ × 1.5
D	$\frac{\text{Daily Max (lbs/day)}}{2.6\ \text{MGD} \times 8.345}$	=	Daily Max (mg/L)
E	MAL		

Outfall 003

All sample types are grab, so all single grab limits have been set equal to the daily maximum limits.

Outfall 004 –

Pollutant	***Draft Permit Limits***				***Calculated Single Grab***	***Single Grab Method***	***Existing Single Grab***	***MAL***
	Daily Avg		***Daily Max***					
	lbs/day	***mg/L***	***lbs/day***	***mg/L***	***mg/L***		***mg/L***	***mg/L***
BOD_5	231	—	567	[45.3]	**90**	**B**	80	—
TSS	459	—	1,504	[120]	**240**	**B**	142	—
TOC	375	—	688	[55.0]	**110**	**B**	112	—
Oil and Grease	71	10	106	15	**15**	**D**	25	—
Total Residual Chlorine	—	—	—	0.1	0.1	**D**	**0.1**	—
Copper, Total								
Interim Limits	0.29	0.0232	0.61	0.0491	**0.10**	**B**	0.047	0.002
Final Limits	0.128	0.0104	0.271	0.0220	**0.04**	**B**	—	0.002
Cyanide, Free	0.061	0.0050	0.131	0.0106	**0.0106**	**D**	—	0.005
Acenaphthene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
Acenaphthylene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
Acrylonitrile	0.073	0.0072	0.154	0.0154	0.03	B/**E**	0.050	**0.050**
Anthracene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
Benzene	0.194	—	0.715	—	**0.085**	**C**	0.133	0.010
Benzo(*a*)anthracene	0.023	—	0.049	—	**0.008**	**B**	0.058	0.005
3,4-Benzofluoranthene	0.120	—	0.320	—	**0.038**	**C**	0.060	0.010
Benzo(*k*)fluoranthene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.005
Benzo(*a*)pyrene	0.0063	[0.00063]	0.0134	[0.00134]	0.0026	B/**E**	0.060	**0.005**
Bis(2-ethylhexyl) phthalate	0.541	—	1.46	—	**0.175**	**C**	0.273	0.010
Carbon Tetrachloride	0.094	—	0.199	—	**0.023**	**C**	0.037	0.002
Chlorobenzene	0.078	—	0.147	—	**0.017**	**C**	0.027	0.010
Chloroethane	0.546	—	1.40	—	**0.168**	**C**	0.263	0.050
Choloroform	0.110	—	0.241	—	**0.029**	**C**	0.045	0.010
2-Chlorophenol	0.162	—	0.515	—	**0.061**	**C**	0.096	0.010
Chrysene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.005
Di-*n*-butyl phthalate	0.141	—	0.299	—	**0.035**	**C**	0.056	0.010
1,2-Dichlorobenzene	0.404	—	0.856	—	**0.102**	**C**	0.160	0.010
1,3-Dichlorobenzene	0.162	—	0.231	—	**0.027**	**C**	0.043	0.010
1,4-Dichlorobenzene	0.078	—	0.147	—	**0.017**	**C**	0.027	0.010
1,1-Dichloroethane	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
1,2-Dichloroethane	0.357	—	1.10	—	**0.132**	**C**	0.207	0.010
1,1-Dichloroethylene	0.084	—	0.131	—	**0.015**	**C**	0.025	0.010
1,2-*trans*-Dichloroethylene	0.110	—	0.283	—	**0.034**	**C**	0.053	0.010
2,4-Dichlorophenol	0.205	—	0.588	—	**0.070**	**C**	0.110	0.010
1,2-Dichloropropane	0.804	—	1.20	—	**0.144**	**C**	0.225	0.010
1,3-Dichloropropene	0.152	—	0.231	—	**0.027**	**C**	0.043	0.010
Diethyl phthalate	0.425	—	1.06	—	**0.127**	**C**	0.199	0.010
2,4-Dimethylphenol	0.094	—	0.189	—	**0.022**	**C**	0.035	0.010
Dimethyl phthalate	0.099	—	0.247	—	**0.029**	**C**	0.046	0.010
4,6-Dinitro-*o*-cresol	0.410	—	1.45	—	**0.174**	**C**	0.271	0.050
2,4-Dinitrophenol	0.373	—	0.646	—	**0.077**	**C**	0.121	0.050
2,4-Dinitrotoluene	0.594	—	1.49	—	**0.179**	**C**	0.279	0.010
2,6-Dinitrotoluene	1.34	—	3.36	—	**0.403**	**C**	0.628	0.010
Ethylbenzene	0.168	—	0.567	—	**0.068**	**C**	0.106	0.010
Fluoranthene	0.131	—	0.357	—	**0.042**	**C**	0.067	0.010

Outfall 004 –

Pollutant	***Draft Permit Limits***				***Calculated Single Grab***	***Single Grab Method***	***Existing Single Grab***	***MAL***
	Daily Avg		***Daily Max***					
	lbs/day	***mg/L***	***lbs/day***	***mg/L***	***mg/L***		***mg/L***	***mg/L***
Fluorene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
Hexachlorobenzene	8.6×10^{-5}	8.6×10^{-6}	18.4×10^{-5}	18.3×10^{-6}	0.00004	B/**E**	0.005	**0.005**
Hexachlorobutadiene	0.103	—	0.217	—	**0.030**	**C**	0.048	0.010
Hexachloroethane	0.110	—	0.283	—	**0.034**	**C**	0.053	0.020
Methyl Chloride	0.452	—	0.998	—	**0.119**	**C**	0.186	0.050
Methylene Chloride	0.210	—	0.467	—	**0.056**	**C**	0.087	0.020
Naphthalene	0.115	—	0.310	—	**0.037**	**C**	0.058	0.010
Nitrobenzene	0.141	—	0.357	—	**0.042**	**C**	0.067	0.010
2-Nitrophenol	0.215	—	0.362	—	**0.043**	**C**	0.068	0.020
4-Nitrophenol	0.378	—	0.651	—	**0.078**	**C**	0.122	0.050
Phenanthrene	0.079	0.0064	0.169	0.0137	**0.030**	**B**	0.058	0.010
Phenol	0.078	—	0.136	—	**0.016**	**C**	0.025	0.010
Pyrene	0.131	—	0.352	—	**0.042**	**C**	0.066	0.010
Tetrachloroethylene	0.115	—	0.294	—	**0.035**	**C**	0.055	0.010
Toluene	0.136	—	0.420	—	**0.050**	**C**	0.078	0.010
1,2,4-Trichlorobenzene	0.357	—	0.736	—	**0.088**	**C**	0.137	0.010
1,1,1-Trichloroethane	0.110	—	0.283	—	**0.034**	**C**	0.053	0.010
1,1,2-Trichloroethane	0.110	—	0.283	—	**0.034**	**C**	0.053	0.010
Trichloroethylene	0.110	—	0.283	—	**0.034**	**C**	0.053	0.010
Vinyl Chloride	0.462	[0.046]	0.978	[0.097]	**0.20**	**B**	0.263	0.010

Outfall 004 –

Note	**Single grab limit =**
A	$\frac{\text{Daily Avg (lbs/day)}}{1.5 \text{ MGD} \times 8.345} \times 3 \quad = \quad \text{Daily Avg (mg/L)} \times 3$
B	$\frac{\text{Daily Max (lbs/day)}}{1.5 \text{ MGD} \times 8.345} \times 2 \quad = \quad \text{Daily Max (mg/L)} \times 2$
C	$\frac{\text{Daily Max (lbs/day)}}{0.63 \text{ MGD} \times 8.345} \times \frac{0.63 \text{ MGD}}{1.5 \text{ MGD}} \times 1.5 \quad = \quad \text{Daily Max (mg/L)} \times \frac{0.63 \text{ MGD}}{1.5 \text{ MGD}} \times 1.5$
D	$\frac{\text{Daily Max (lbs/day)}}{1.5 \text{ MGD} \times 8.345} \quad = \quad \text{Daily Max (mg/L)}$
E	MAL

Outfall 007 –

Pollutant	***Draft Permit Limits***				***Calculated Single Grab***	***Single Grab Method***	***Existing Single Grab***	***MAL***
	Daily Avg		***Daily Max***					
	lbs/day	***mg/L***	***lbs/day***	***mg/L***	***mg/L***		***mg/L***	***mg/L***
BOD_5	185	—	370	[36.3]	**73**	**B**	—	—
TSS	406	—	1,321	[130]	**260**	**B**	—	—
TOC	447	—	906	[89]	**178**	**B**	—	—
Total Residual Chlorine	—	—	—	0.1	**0.1**	**D**	—	—
Ammonia Nitrogen	25	—	53	[5.2]	**10**	**B**	—	—
Copper, Total	0.109	0.0108	0.233	0.0229	**0.045**	**B**	—	0.002
Acenaphthene	0.143	—	0.386	—	**0.056**	**C**	—	0.010
Acenaphthylene	0.143	—	0.386	—	**0.056**	**C**	—	0.010
Acrylonitrile	0.073	[0.0072]	0.156	[0.0154]	0.030	B/**E**	—	**0.050**
Anthracene	0.143	—	0.386	—	**0.056**	**C**	—	0.010
Benzene	0.242	—	0.889	—	**0.131**	**C**	—	0.010
Benzo(*a*)anthracene	0.063	[0.0062]	0.135	[0.0133]	**0.026**	**B**	—	0.005
3,4-Benzofluoranthene	0.150	—	0.399	—	**0.058**	**C**	—	0.010
Benzo(*k*)fluoranthene	0.143	—	0.386	—	**0.056**	**C**	—	0.005
Benzo(*a*)pyrene	0.0064	[0.00063]	0.0135	[0.00133]	0.0026	B/**E**	—	**0.005**
Bis(2-ethylhexyl) phthalate	0.673	—	1.69	[0.166]	**0.33**	**B**	—	0.010
Carbon Tetrachloride	0.117	—	0.248	—	**0.036**	**C**	—	0.002
Chlorobenzene	0.098	—	0.183	—	**0.027**	**C**	—	0.010
Chloroethane	0.680	—	1.75	—	**0.258**	**C**	—	0.050
Choloroform	0.527	—	1.44	—	**0.212**	**F**	—	0.010
2-Chlorophenol	0.202	—	0.641	—	**0.094**	**C**	—	0.010
Chrysene	0.143	—	0.386	—	**0.056**	**C**	—	0.005
Di-*n*-butyl phthalate	0.176	—	0.372	—	**0.054**	**C**	—	0.010
1,2-Dichlorobenzene	0.503	—	1.06	—	**0.157**	**C**	—	0.010
1,3-Dichlorobenzene	0.202	—	0.287	—	**0.042**	**C**	—	0.010
1,4-Dichlorobenzene	0.098	—	0.183	—	**0.027**	**C**	—	0.010
1,1-Dichloroethane	0.143	—	0.386	—	**0.056**	**C**	—	0.010
1,2-Dichloroethane	0.444	—	1.38	—	**0.203**	**C**	—	0.010
1,1-Dichloroethylene	0.104	—	0.163	—	**0.024**	**C**	—	0.010
1,2-*trans*-Dichloroethylene	0.137	—	0.353	—	**0.052**	**C**	—	0.010
2,4-Dichlorophenol	0.255	—	0.732	—	**0.108**	**C**	—	0.010
1,2-Dichloropropane	1.00	—	1.50	—	**0.221**	**C**	—	0.010
1,3-Dichloropropene	0.189	—	0.287	—	**0.042**	**C**	—	0.010
Diethyl phthalate	0.529	—	1.32	—	**0.195**	**C**	—	0.010
2,4-Dimethylphenol	0.117	—	0.235	—	**0.034**	**C**	—	0.010
Dimethyl phthalate	0.124	—	0.307	—	**0.045**	**C**	—	0.010
4,6-Dinitro-*o*-cresol	0.510	—	1.81	—	**0.267**	**C**	—	0.050
2,4-Dinitrophenol	0.464	—	0.804	—	**0.118**	**C**	—	0.050
2,4-Dinitrotoluene	0.739	—	1.86	—	**0.274**	**C**	—	0.010
2,6-Dinitrotoluene	1.66	—	4.19	—	**0.617**	**C**	—	0.010
Ethylbenzene	0.209	—	0.706	—	**0.104**	**C**	—	0.010
Fluoranthene	0.163	—	0.444	—	**0.065**	**C**	—	0.010
Fluorene	0.143	—	0.386	—	**0.056**	**C**	—	0.010
Hexachlorobenzene	8.8×10^{-5}	[8.6×10^{-6}]	18.5×10^{-5}	[18.2×10^{-6}]	0.000016	B/**E**	—	**0.005**

Outfall 007 –

Pollutant	*Draft Permit Limits*				*Calculated Single Grab*	*Single Grab Method*	*Existing Single Grab*	*MAL*
	Daily Avg		*Daily Max*					
	lbs/day	*mg/L*	*lbs/day*	*mg/L*	*mg/L*		*mg/L*	*mg/L*
Hexachlorobutadiene	0.130	—	0.320	—	**0.047**	**C**	—	0.010
Hexachloroethane	0.137	—	0.353	—	**0.052**	**C**	—	0.020
Methyl Chloride	0.562	—	1.24	—	**0.183**	**C**	—	0.050
Methylene Chloride	0.261	—	0.582	—	**0.085**	**C**	—	0.020
Naphthalene	0.143	—	0.386	—	**0.056**	**C**	—	0.010
Nitrobenzene	0.176	—	0.444	—	**0.065**	**C**	—	0.010
2-Nitrophenol	0.268	—	0.451	—	**0.066**	**C**	—	0.020
4-Nitrophenol	0.471	—	0.811	—	**0.119**	**C**	—	0.050
Phenanthrene	0.068	[0.0067]	0.144	[0.0142]	**0.028**	**B**	—	0.010
Phenol	0.098	—	0.170	—	**0.025**	**C**	—	0.010
Pyrene	0.163	—	0.438	—	**0.064**	**C**	—	0.010
Tetrachloroethylene	0.143	—	0.366	—	**0.054**	**C**	—	0.010
Toluene	0.170	—	0.523	—	**0.077**	**C**	—	0.010
1,2,4-Trichlorobenzene	0.444	—	0.915	—	**0.135**	**C**	—	0.010
1,1,1-Trichloroethane	0.137	—	0.353	—	**0.052**	**C**	—	0.010
1,1,2-Trichloroethane	0.137	—	0.353	—	**0.052**	**C**	—	0.010
Trichloroethylene	0.137	—	0.353	—	**0.052**	**C**	—	0.010
Vinyl Chloride	0.466	[0.045]	0.987	[0.097]	**0.20**	**B**	—	0.010

Outfall 007 –

Note	**Single grab limit =**
A	$\frac{\text{Daily Avg (lbs/day)}}{1.22\text{ MGD} \times 8.345} \times 3$ = Daily Avg (mg/L) × 3
B	$\frac{\text{Daily Max (lbs/day)}}{1.22\text{ MGD} \times 8.345} \times 2$ = Daily Max (mg/L) × 2
C	$\frac{\text{Daily Max (lbs/day)}}{0.784\text{ MGD} \times 8.345} \times \frac{0.784\text{ MGD}}{1.22\text{ MGD}} \times 1.5$ = Daily Max (mg/L) × $\frac{0.784\text{ MGD}}{1.22\text{ MGD}}$ × 1.5
D	$\frac{\text{Daily Max (lbs/day)}}{1.22\text{ MGD} \times 8.345}$ = Daily Max (mg/L)
E	MAL
F	$\frac{\text{Daily Max (lbs/day)}}{1.206\text{ MGD} \times 8.345} \times \frac{1.206\text{ MGD}}{1.22\text{ MGD}} \times 1.5$ = Daily Max (mg/L) × $\frac{1.206\text{ MGD}}{1.22\text{ MGD}}$ × 1.5

TPDES PERMIT NO. WQ0004013000
*[For TCEQ office use only -
EPA I.D. No. TX0119792]*

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

This major amendment replaces TPDES Permit No. WQ0004013000, issued on October 31, 2014.

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

Equistar Chemicals, LP and
LyondellBasell Acetyls, LLC

whose mailing address is

P.O. Drawer D
Deer Park, Texas 77536

is authorized to treat and discharge wastes from Equistar Chemicals La Porte Complex, a facility that manufactures ethylene, propylene, polyethylene, acetyls (acetic acid and vinyl acetate monomer), and poly-*alpha*-olefins (SIC 2869 and 2821)

located at 1515 Miller Cut-Off Road, north of the City of La Porte, in Harris County, Texas 77571

via Outfalls 001, 003, 004, 005, 006, 007, 008, and 009 to an unnamed ditch, thence to an unnamed ditch (tidal), thence to San Jacinto Bay; and via Outfall 010 directly to San Jacinto Bay in Segment No. 2427 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

1. During the period beginning upon permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 2.60 MGD. The daily maximum flow shall not exceed 3.3 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	2.60 MGD		3.3 MGD		N/A	4/day	Instantaneous
Temperature [1]	95°F		105°F		105°F	3/day	In-Situ
Biochemical Oxygen Demand (5-day)	408	N/A	1,032	N/A	95	2/week	Composite
Total Suspended Solids	782.6	N/A	2,554.5	N/A	236	2/week	Composite
Total Organic Carbon	651	N/A	1,193	N/A	110	2/week	Composite
Total Residual Chlorine	N/A	N/A	N/A	0.1	0.1	1/week	Grab
Aluminum, Total	18.1	N/A	38.3	N/A	3.53	1/week	Composite
Copper, Total [2]	0.291	0.0134	0.614	0.0283	0.056	1/week	Composite
Copper, Total [3]	0.206	0.0095	0.436	0.0201	0.040	1/week	Composite
Nonylphenol [2]	Report	Report	Report	Report	N/A	1/week	Grab
Nonylphenol [3]	0.047	0.00219	0.100	0.00463	0.333	1/week	Grab
Zinc, Total	3.08	N/A	6.50	N/A	0.60	1/month	Composite
Hexachlorobenzene	0.00015	0.0000073	0.00033	0.0000154	0.005	1/quarter	Composite
Acenaphthene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Acenaphthylene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Acrylonitrile	0.133	0.0061	0.282	0.0130	0.050	1/year	Composite
Anthracene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Benzene	0.749	N/A	1.760	N/A	0.125	1/year	Composite
Benzo(*a*)anthracene	0.019	0.00086	0.039	0.00182	0.005	1/year	Composite
Benzo(*a*)pyrene	0.011	0.00053	0.024	0.00113	0.005	1/year	Composite
3,4-Benzofluoranthene	0.263	N/A	0.630	N/A	0.045	1/year	Composite

[1] See Other Requirement No. 7.
[2] Effective beginning upon the date of permit issuance and lasting for three years from the date of permit issuance. See Other Requirement No. 21.
[3] Effective beginning upon three years after the date of permit issuance and lasting through date of permit expiration.

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
Benzo(*k*)fluoranthene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Bis(2-ethylhexyl) phthalate	1.248	N/A	3.05	N/A	0.282	1/year	Composite
Carbon Tetrachloride	1.07	0.049	2.27	0.105	0.21	1/year	Composite
Chlorobenzene	1.865	N/A	4.99	N/A	0.356	1/year	Composite
Chloroethane	1.445	N/A	3.875	N/A	0.276	1/year	Composite
Chloroform	1.458	N/A	4.269	N/A	0.304	1/year	Composite
Chrysene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Di-*n*-butyl Phthalate	0.263	N/A	0.565	N/A	0.040	1/year	Composite
1,2-Dichlorobenzene	2.574	N/A	10.429	N/A	0.743	1/year	Composite
1,3-Dichlorobenzene	1.865	N/A	4.99	N/A	0.356	1/year	Composite
1,4-Dichlorobenzene	1.865	N/A	4.99	N/A	0.356	1/year	Composite
1,1-Dichloroethane	0.289	N/A	0.775	N/A	0.055	1/year	Composite
1,2-Dichloroethane	2.364	N/A	7.540	N/A	0.537	1/year	Composite
1,1-Dichloroethylene	0.289	N/A	0.788	N/A	0.056	1/year	Composite
1,2-*trans*-Dichloroethylene	0.328	N/A	0.867	N/A	0.061	1/year	Composite
1,2-Dichloropropane	2.574	N/A	10.429	N/A	0.743	1/year	Composite
1,3-Dichloropropylene	2.574	N/A	10.429	N/A	0.743	1/year	Composite
Diethyl Phthalate	0.604	N/A	1.484	N/A	0.105	1/year	Composite
2,4-Dimethylphenol	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Dimethyl Phthalate	0.250	N/A	0.617	N/A	0.044	1/year	Composite
4,6-Dinitro-*o*-cresol	1.025	N/A	3.638	N/A	0.259	1/year	Composite
2,4-Dinitrophenol	15.854	N/A	56.362	N/A	4.0	1/year	Composite
Ethylbenzene	1.865	N/A	4.99	N/A	0.356	1/year	Composite
Fluoranthene	0.289	N/A	0.709	N/A	0.050	1/year	Composite
Fluorene	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Hexachlorobutadiene	1.865	N/A	4.99	N/A	0.356	1/year	Composite
Hexachloroethane	0.405	N/A	0.857	N/A	0.078	1/year	Composite
Methyl Chloride	1.445	N/A	3.875	N/A	0.276	1/year	Composite
Methylene Chloride	0.473	N/A	2.233	N/A	0.159	1/year	Composite
Naphthalene	0.250	N/A	0.617	N/A	0.044	1/year	Composite

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
Nitrobenzene	26.23	1.209	55.49	2.557	6.0	1/year	Composite
2-Nitrophenol	0.854	N/A	3.034	N/A	0.216	1/year	Composite
4-Nitrophenol	2.128	N/A	7.566	N/A	0.539	1/year	Composite
Phenanthrene	0.128	0.0059	0.271	0.0125	0.025	1/year	Composite
Phenol	0.250	N/A	0.617	N/A	0.044	1/year	Composite
Pyrene	0.263	N/A	0.630	N/A	0.045	1/year	Composite
Tetrachloroethylene	0.683	N/A	2.154	N/A	0.153	1/year	Composite
Toluene	0.368	N/A	0.972	N/A	0.069	1/year	Composite
1,2,4-Trichlorobenzene	2.574	N/A	10.429	N/A	0.743	1/year	Composite
1,1,1-Trichloroethane	0.289	N/A	0.775	N/A	0.055	1/year	Composite
1,1,2-Trichloroethane	0.420	N/A	1.668	N/A	0.119	1/year	Composite
Trichloroethylene	0.342	N/A	0.906	N/A	0.064	1/year	Composite
Vinyl Chloride	0.844	N/A	1.78	N/A	0.164	1/year	Composite

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

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

4. Effluent monitoring samples must be taken at the following location: At Outfall 001, at the point the effluent leaves the Parshall Flume and drains south to the unnamed ditch.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

   Volume: Continuous and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	2/month	Estimate
Chlorine Residual	1.0, minimum	N/A	1.0, minimum	2/month	Grab
E. coli	126 [1]	399 [1]	399 [1]	1/week	Grab

2. All domestic sewage must be given complete treatment (both primary and secondary) and chlorinated sufficiently to maintain at least a 1.0 mg/L chlorine residual after at least 20 minutes contact time prior to mixing with any other waters. The permittee shall provide a readily available sampling point for discharges from the sewage treatment facility. An equivalent method of disinfection may be substituted only with prior approval of the executive director.

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

4. Effluent monitoring samples must be taken at the following location: At internal Outfall 101, at the discharge from the AB sewage treatment plant (STP) on the west side of Miller Cut-off Road prior to entering the effluent ditch.

[1] Units are colony forming units (CFU) or most probable number (MPN) per 100 milliliters (mL).

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge process wastewater, utility wastewater, previously monitored effluent (domestic wastewater monitored at internal Outfall 101), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/day [1]	Estimate
Biochemical Oxygen Demand (5-day)	15	30	30	1/day [1, 2, 3]	Grab
Total Suspended Solids	151	214	214	1/day [1, 2, 3]	Grab
Total Organic Carbon	N/A	55	55	1/day [1, 2]	Grab
Oil and Grease	N/A	15	15	1/day [1, 2]	Grab
Total Residual Chlorine	N/A	0.1	0.1	1/week [1]	Grab
Aluminum, Total	2.197	4.647	4.647	1/quarter [3]	Grab
Copper, Total	0.043	0.091	0.091	1/quarter [3]	Grab
Nonylphenol [4]	N/A	Report	N/A	1/quarter [3]	Grab
Nonylphenol [5]	N/A	0.0328	0.0328	1/quarter [3]	Grab
Zinc, Total [4]	0.670	1.418	1.418	1/quarter [3]	Grab
Zinc, Total [5]	0.361	0.763	0.763	1/quarter [3]	Grab
Acenaphthene	N/A	0.010	0.010	1/year [3]	Grab
Acenaphthylene	N/A	0.010	0.010	1/year [3]	Grab
Acrylonitrile	N/A	0.050	0.050	1/year [3]	Grab
Anthracene	N/A	0.010	0.010	1/year [3]	Grab
Benzene	N/A	0.0147	0.0147	1/year [3]	Grab
Benzo(*a*)anthracene	N/A	0.0051	0.0051	1/year [3]	Grab
3,4-Benzofluoranthene	N/A	0.010	0.010	1/year [3]	Grab
Benzo(*k*)fluoranthene	N/A	0.0051	0.0051	1/year [3]	Grab
Benzo(*a*)pyrene	N/A	0.0052	0.0052	1/year [3]	Grab

[1] When discharging.
[2] The first sample must be taken within the first hour after discharge begins and daily for the duration of discharge event.
[3] Applicable only when process wastewater is present in the discharge.
[4] Monitoring and reporting requirement is effective beginning upon the date of permit issuance and lasting for three years. See Other Requirement No. 21.
[5] Limits are effective beginning three years after the date of permit issuance and lasting through the date of permit expiration.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Bis(2-ethylhexyl) phthalate	N/A	0.0284	0.0284	1/year[3]	Grab
Carbon Tetrachloride	N/A	0.0418	0.0418	1/year[3]	Grab
Chlorobenzene	N/A	0.0418	0.0418	1/year[3]	Grab
Chloroethane	N/A	0.050	0.050	1/year[3]	Grab
Chloroform	N/A	0.0570	0.0570	1/year[3]	Grab
Chrysene	N/A	0.0051	0.0051	1/year[3]	Grab
Di-*n*-butyl Phthalate	N/A	0.010	0.010	1/year[3]	Grab
1,2-Dichlorobenzene	N/A	0.0874	0.0874	1/year[3]	Grab
1,3-Dichlorobenzene	N/A	0.0418	0.0418	1/year[3]	Grab
1,4-Dichlorobenzene	N/A	0.0418	0.0418	1/year[3]	Grab
1,1-Dichloroethane	N/A	0.010	0.010	1/year[3]	Grab
1,2-Dichloroethane	N/A	0.0632	0.0632	1/year[3]	Grab
1,1-Dichloroethylene	N/A	0.010	0.010	1/year[3]	Grab
1,2-*trans*-Dichloroethylene	N/A	0.010	0.010	1/year[3]	Grab
1,2-Dichloropropane	N/A	0.0874	0.0874	1/year[3]	Grab
1,3-Dichloropropylene	N/A	0.0874	0.0874	1/year[3]	Grab
Diethyl Phthalate	N/A	0.0124	0.0124	1/year[3]	Grab
2,4-Dimethylphenol	N/A	0.010	0.010	1/year[3]	Grab
Dimethyl Phthalate	N/A	0.010	0.010	1/year[3]	Grab
4,6-Dinitro-*o*-cresol	N/A	0.050	0.050	1/year[3]	Grab
2,4-Dinitrophenol	N/A	0.4728	0.4728	1/year[3]	Grab
Ethylbenzene	N/A	0.0418	0.0418	1/year[3]	Grab
Fluoranthene	N/A	0.010	0.010	1/year[3]	Grab
Fluorene	N/A	0.010	0.010	1/year[3]	Grab
Hexachlorobenzene	N/A	0.0874	0.0874	1/year[3]	Grab
Hexachlorobutadiene	N/A	0.0418	0.0418	1/year[3]	Grab
Hexachloroethane	N/A	0.0874	0.0874	1/year[3]	Grab
Methyl Chloride	N/A	0.050	0.050	1/year[3]	Grab
Methylene Chloride	N/A	0.020	0.020	1/year[3]	Grab
Naphthalene	N/A	0.010	0.010	1/year[3]	Grab
Nitrobenzene	N/A	0.7055	0.7055	1/year[3]	Grab

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
2-Nitrophenol	N/A	0.0254	0.0254	1/year [3]	Grab
4-Nitrophenol	N/A	0.0634	0.0634	1/year [3]	Grab
Phenanthrene	N/A	0.010	0.010	1/year [3]	Grab
Phenol	N/A	0.010	0.010	1/year [3]	Grab
Pyrene	N/A	0.010	0.010	1/year [3]	Grab
Tetrachloroethylene	N/A	0.0180	0.0180	1/year [3]	Grab
Toluene	N/A	0.010	0.010	1/year [3]	Grab
1,2,4-Trichlorobenzene	N/A	0.0874	0.0874	1/year [3]	Grab
1,1,1-Trichloroethane	N/A	0.010	0.010	1/year [3]	Grab
1,1,2-Trichloroethane	N/A	0.0139	0.0139	1/year [3]	Grab
Trichloroethylene	N/A	0.010	0.010	1/year [3]	Grab
Vinyl Chloride	N/A	0.0189	0.0189	1/year [3]	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day [1] 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 003, on the south side of the property, just after the stormwater skim pond.

1. During the period beginning upon the date of permit issuance and lasting through the date of expiration, the permittee is authorized to discharge process wastewater, utility wastewater [2, 3], previously monitored effluent (treated domestic wastewater monitored at internal Outfall 104), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, laboratory wastewater, commissioning wastewaters, and stormwater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.50 MGD. The daily maximum flow shall not exceed 2.6 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	1.50 MGD		2.6 MGD		N/A	Continuous	Record
Biochemical Oxygen Demand (5-day)	231	Report	567	Report	90	2/week	Composite
Total Suspended Solids	459	Report	1,504	Report	240	2/week	Composite
Total Organic Carbon	375	Report	688	Report	110	2/week	Composite
Oil and Grease	71	10	106	15	15	2/week	Grab
Dissolved Oxygen	N/A	3.0, min	N/A	N/A	3.0, min	1/week	Grab
Total Residual Chlorine	N/A	N/A	N/A	0.1	0.1	1/week	Grab
Temperature [4]	N/A		Report °F		N/A	1/week	In-situ
Copper, Total [5]	0.29	0.0232	0.61	0.0491	0.10	1/week	Composite
Copper, Total [6]	0.128	0.0104	0.271	0.0220	0.04	1/week	Composite
Cyanide, Free [5, 7]	Report	Report	Report	Report	N/A	1/week	Grab
Cyanide, Free [6, 7]	0.061	0.0050	0.131	0.0106	0.0106	1/week	Grab
Hexachlorobenzene	0.000086	0.0000086	0.000184	0.0000183	0.005	1/quarter	Composite
Acenaphthene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Acenaphthylene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Acrylonitrile	0.073	0.0072	0.154	0.0154	0.050	1/year	Composite

1 See Other Requirement No. 14.
2 Utility wastewater consists primarily of cooling tower blowdown and boiler blowdown.
3 The total combined volume of cooling tower blowdown discharged from Outfalls 004 and 010 must not exceed a daily average flow of 0.86 MGD and a daily maximum flow of 1.1 MGD.
4 Monitoring and reporting requirement expires one month prior to the date of permit expiration.
5 Effective beginning upon the date of permit issuance and lasting for three years or until the date of initiation of the final phase, whichever occurs first. See Other Requirement No. 21.
6 Effective beginning upon three years after the date of permit issuance and lasting through the date of permit expiration.
7 See Other Requirement No. 18.

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
Anthracene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Benzene	0.194	N/A	0.715	N/A	0.085	1/year	Composite
Benzo(*a*)anthracene	0.023	N/A	0.049	N/A	0.008	1/year	Composite
Benzo(*a*)pyrene	0.0063	N/A	0.0134	N/A	0.005	1/year	Composite
3,4-Benzofluoranthene	0.120	N/A	0.320	N/A	0.038	1/year	Composite
Benzo(*k*)fluoranthene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Bis(2-ethylhexyl) phthalate	0.541	N/A	1.46	N/A	0.175	1/year	Composite
Carbon Tetrachloride	0.094	N/A	0.199	N/A	0.023	1/year	Composite
Chlorobenzene	0.078	N/A	0.147	N/A	0.017	1/year	Composite
Chloroethane	0.546	N/A	1.40	N/A	0.168	1/year	Composite
Chloroform	0.110	N/A	0.241	N/A	0.029	1/year	Composite
2-Chlorophenol	0.162	N/A	0.515	N/A	0.061	1/year	Composite
Chrysene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Di-*n*-butyl Phthalate	0.141	N/A	0.299	N/A	0.035	1/year	Composite
1,2-Dichlorobenzene	0.404	N/A	0.856	N/A	0.102	1/year	Composite
1,3-Dichlorobenzene	0.162	N/A	0.231	N/A	0.027	1/year	Composite
1,4-Dichlorobenzene	0.078	N/A	0.147	N/A	0.017	1/year	Composite
1,1-Dichloroethane	0.115	N/A	0.310	N/A	0.037	1/year	Composite
1,2-Dichloroethane	0.357	N/A	1.10	N/A	0.132	1/year	Composite
1,1-Dichloroethylene	0.084	N/A	0.131	N/A	0.015	1/year	Composite
1,2-*trans*-Dichloroethylene	0.110	N/A	0.283	N/A	0.034	1/year	Composite
2,4-Dichlorophenol	0.205	N/A	0.588	N/A	0.070	1/year	Composite
1,2-Dichloropropane	0.804	N/A	1.20	N/A	0.144	1/year	Composite
1,3-Dichloropropylene	0.152	N/A	0.231	N/A	0.027	1/year	Composite
Diethyl Phthalate	0.425	N/A	1.06	N/A	0.127	1/year	Composite
2,4-Dimethylphenol	0.094	N/A	0.189	N/A	0.022	1/year	Composite
Dimethyl Phthalate	0.099	N/A	0.247	N/A	0.029	1/year	Composite
4,6-Dinitro-*o*-cresol	0.410	N/A	1.45	N/A	0.174	1/year	Composite
2,4-Dinitrophenol	0.373	N/A	0.646	N/A	0.077	1/year	Composite
2,4-Dinitrotoluene	0.594	N/A	1.49	N/A	0.179	1/year	Composite
2,6-Dinitrotoluene	1.34	N/A	3.36	N/A	0.403	1/year	Composite

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
Ethylbenzene	0.168	N/A	0.567	N/A	0.068	1/year	Composite
Fluoranthene	0.131	N/A	0.357	N/A	0.042	1/year	Composite
Fluorene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Hexachlorobutadiene	0.103	N/A	0.217	N/A	0.030	1/year	Composite
Hexachloroethane	0.110	N/A	0.283	N/A	0.034	1/year	Composite
Methyl Chloride	0.452	N/A	0.998	N/A	0.119	1/year	Composite
Methylene Chloride	0.210	N/A	0.467	N/A	0.056	1/year	Composite
Naphthalene	0.115	N/A	0.310	N/A	0.037	1/year	Composite
Nitrobenzene	0.141	N/A	0.357	N/A	0.042	1/year	Composite
2-Nitrophenol	0.215	N/A	0.362	N/A	0.043	1/year	Composite
4-Nitrophenol	0.378	N/A	0.651	N/A	0.078	1/year	Composite
Phenanthrene	0.079	0.0064	0.169	0.0137	0.030	1/year	Composite
Phenol	0.078	N/A	0.136	N/A	0.016	1/year	Composite
Pyrene	0.131	N/A	0.352	N/A	0.042	1/year	Composite
Tetrachloroethylene	0.115	N/A	0.294	N/A	0.035	1/year	Composite
Toluene	0.136	N/A	0.420	N/A	0.050	1/year	Composite
1,2,4-Trichlorobenzene	0.357	N/A	0.736	N/A	0.088	1/year	Composite
1,1,1-Trichloroethane	0.110	N/A	0.283	N/A	0.034	1/year	Composite
1,1,2-Trichloroethane	0.110	N/A	0.283	N/A	0.034	1/year	Composite
Trichloroethylene	0.110	N/A	0.283	N/A	0.034	1/year	Composite
Vinyl Chloride	0.462	N/A	0.978	N/A	0.20	1/year	Composite

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored continuously and recorded. See Other Requirement No. 5.

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 004, located northwest of the cooling tower, prior to discharge into the unnamed ditch.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

Volume: Continuous and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	2/month	Estimate
Chlorine Residual	1.0, minimum	N/A	1.0, minimum	2/month	Grab
E. coli	126[1]	399[1]	399[1]	1/week	Grab

2. All domestic sewage must be given complete treatment (both primary and secondary) and chlorinated sufficiently to maintain at least a 1.0 mg/L chlorine residual after at least 20 minutes contact time prior to mixing with any other waters. The permittee shall provide a readily available sampling point for discharges from the sewage treatment facility. An equivalent method of disinfection may be substituted only with prior approval of the executive director.

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

4. Effluent monitoring samples must be taken at the following location: At internal Outfall 104, at the discharge from the QE-1 STP adjacent to the ethylene cooling tower prior to entering the effluent ditch.

[1] Units are CFU or MPN/100 mL.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge stormwater, previously monitored effluent [untreated post first-flush process area stormwater, potable water, demineralized water, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) via internal Outfall 105], utility wastewater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, groundwater infiltration (continuous flow), raw water, wastewaters from the Decene Terminal, and commissioning wastewaters subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/week	Estimate
Total Organic Carbon	Report	55	55	1/week	Grab
Oil and Grease	Report	15	15	1/week	Grab
Cyanide, Free [1, 2]	Report	Report	N/A	1/week	Grab
Cyanide, Free [3, 2]	0.0050	0.0106	0.0106	1/week	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/week 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 005, located northwest of the cooling tower, prior to discharging into the unnamed ditch.

[1] Effective beginning upon the date of permit issuance and lasting for three years. See Other Requirement No. 21.
[2] See Other Requirement No. 18.
[3] Effective beginning upon three years after the date of permit issuance and lasting through date of permit expiration.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge untreated post first-flush process area stormwater, utility wastewater, construction stormwater, and previously monitored effluent (treated domestic wastewater via internal Outfall 104) subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	2/week[1]	Estimate
Biochemical Oxygen Demand (5-day)	N/A	80	80	2/week[1]	Grab
Total Suspended Solids	N/A	149	149	2/week[1]	Grab
Total Organic Carbon	N/A	55	55	2/week[1]	Grab
Oil and Grease	N/A	15	15	2/week[1]	Grab
Acenaphthene	N/A	0.047	0.047	1/year[1]	Grab
Acenaphthylene	N/A	0.047	0.047	1/year[1]	Grab
Acrylonitrile	N/A	0.232	0.232	1/year[1]	Grab
Anthracene	N/A	0.047	0.047	1/year[1]	Grab
Benzene	N/A	0.134	0.134	1/year[1]	Grab
Benzo(*a*)anthracene	N/A	0.047	0.047	1/year[1]	Grab
3,4-Benzofluoranthene	N/A	0.048	0.048	1/year[1]	Grab
Benzo(*k*)fluoranthene	N/A	0.047	0.047	1/year[1]	Grab
Benzo(*a*)pyrene	N/A	0.048	0.048	1/year[1]	Grab
Bis(2-ethylhexyl) phthalate	N/A	0.258	0.258	1/year[1]	Grab
Carbon Tetrachloride	N/A	0.380	0.380	1/year[1]	Grab
Chlorobenzene	N/A	0.380	0.380	1/year[1]	Grab
Chloroethane	N/A	0.295	0.295	1/year[1]	Grab
Chloroform	N/A	0.325	0.325	1/year[1]	Grab
Chrysene	N/A	0.047	0.047	1/year[1]	Grab
Di-*n*-butyl Phthalate	N/A	0.043	0.043	1/year[1]	Grab
1,2-Dichlorobenzene	N/A	0.794	0.794	1/year[1]	Grab
1,3-Dichlorobenzene	N/A	0.380	0.380	1/year[1]	Grab
1,4-Dichlorobenzene	N/A	0.380	0.380	1/year[1]	Grab
1,1-Dichloroethane	N/A	0.059	0.059	1/year[1]	Grab
1,2-Dichloroethane	N/A	0.574	0.574	1/year[1]	Grab
1,1-Dichloroethylene	N/A	0.060	0.060	1/year[1]	Grab
1,2-*trans*-Dichloroethylene	N/A	0.066	0.066	1/year[1]	Grab

[1] When discharging.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
1,2-Dichloropropane	N/A	0.794	0.794	1/year[1]	Grab
1,3-Dichloropropylene	N/A	0.794	0.794	1/year[1]	Grab
Diethyl Phthalate	N/A	0.113	0.113	1/year[1]	Grab
2,4-Dimethylphenol	N/A	0.047	0.047	1/year[1]	Grab
Dimethyl Phthalate	N/A	0.047	0.047	1/year[1]	Grab
4,6-Dinitro-*o*-cresol	N/A	0.277	0.277	1/year[1]	Grab
2,4-Dinitrophenol	N/A	4.291	4.291	1/year[1]	Grab
Ethylbenzene	N/A	0.380	0.380	1/year[1]	Grab
Fluoranthene	N/A	0.054	0.054	1/year[1]	Grab
Fluorene	N/A	0.047	0.047	1/year[1]	Grab
Hexachlorobenzene	N/A	0.794	0.794	1/year[1]	Grab
Hexachlorobutadiene	N/A	0.380	0.380	1/year[1]	Grab
Hexachloroethane	N/A	0.794	0.794	1/year[1]	Grab
Methyl Chloride	N/A	0.295	0.295	1/year[1]	Grab
Methylene Chloride	N/A	0.170	0.170	1/year[1]	Grab
Naphthalene	N/A	0.047	0.047	1/year[1]	Grab
Nitrobenzene	N/A	6.402	6.402	1/year[1]	Grab
2-Nitrophenol	N/A	0.231	0.231	1/year[1]	Grab
4-Nitrophenol	N/A	0.576	0.576	1/year[1]	Grab
Phenanthrene	N/A	0.047	0.047	1/year[1]	Grab
Phenol	N/A	0.047	0.047	1/year[1]	Grab
Pyrene	N/A	0.048	0.048	1/year[1]	Grab
Tetrachloroethylene	N/A	0.164	0.164	1/year[1]	Grab
Toluene	N/A	0.074	0.074	1/year[1]	Grab
1,2,4-Trichlorobenzene	N/A	0.794	0.794	1/year[1]	Grab
1,1,1-Trichloroethane	N/A	0.059	0.059	1/year[1]	Grab
1,1,2-Trichloroethane	N/A	0.127	0.127	1/year[1]	Grab
Trichloroethylene	N/A	0.069	0.069	1/year[1]	Grab
Vinyl Chloride	N/A	0.172	0.172	1/year[1]	Grab

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

3. Effluent monitoring samples must be taken at the following location: At Outfall 105, located at the diversion sump pump discharge outlet, where the overflow of the process wastewater sewer is routed to Outfall 005, prior to mixing with other wastewaters.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, and commissioning wastewaters subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/day[1]	Estimate
Total Organic Carbon	Report	55	55	1/day[1]	Grab
Oil and Grease	Report	15	15	1/day[1]	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day[1] 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 006, located west of the flare stack area.

[1] When discharge occurs, a sample must be taken within the first hour after the discharge begins and daily thereafter for the duration of each discharge event.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated process wastewater, utility wastewaters, previously monitored effluent (treated domestic wastewater from internal Outfalls 207, 307, and 407), hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, water decanted from bio-solids, commissioning wastewaters, and stormwater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 1.22 MGD. The daily maximum flow shall not exceed 1.6 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	1.22 MGD		1.6 MGD		N/A	1/shift	Instantaneous
Carbonaceous Biochemical Oxygen Demand (5-day)	185	Report	370	Report	73	2/week	Composite
Total Suspended Solids	406	Report	1,321	Report	260	2/week	Composite
Total Organic Carbon	447	Report	906	Report	178	2/week	Composite
Total Residual Chlorine	N/A	N/A	N/A	0.1	0.1	1/week	Grab
Ammonia Nitrogen	25	N/A	53	N/A	10	1/week	Composite
Dissolved Oxygen	N/A	4.0, min	N/A	N/A	4.0, min	1/week	Grab
Temperature [1]	95°F		100°F		100°F	1/week	In-Situ
Copper, Total [2]	0.278	0.0274	0.590	0.058	0.058	1/week	Composite
Copper, Total [3]	0.109	0.0108	0.233	0.0229	0.045	1/week	Composite
Cyanide, Free [4, 5]	N/A	Report	N/A	Report	N/A	2/month	Grab
Hexachlorobenzene	0.000088	N/A	0.000185	N/A	0.005	1/quarter	Composite
Acrylonitrile	0.073	N/A	0.156	N/A	0.050	1/year	Composite
Acenaphthene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Acenaphthylene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Anthracene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Benzene	0.242	N/A	0.889	N/A	0.131	1/year	Composite
Benzo(*a*)anthracene	0.063	N/A	0.135	N/A	0.026	1/year	Composite

1 See Other Requirement No. 7.
2 Effective beginning upon the date of permit issuance and lasting for three years. See Other Requirement No. 21.
3 Effective beginning upon three years from the date of permit issuance and lasting until permit expiration.
4 See Other Requirement No. 18.
5 Effective beginning upon the date of permit issuance and lasting until permit expiration.

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
Benzo(*a*)pyrene	0.0064	N/A	0.0135	N/A	0.005	1/year	Composite
Bis(2-ethylhexyl) phthalate	0.673	N/A	1.69	N/A	0.33	1/year	Composite
3,4-Benzofluoranthene	0.150	N/A	0.399	N/A	0.058	1/year	Composite
Benzo(*k*)fluoranthene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Carbon Tetrachloride	0.117	N/A	0.248	N/A	0.036	1/year	Composite
Chlorobenzene	0.098	N/A	0.183	N/A	0.027	1/year	Composite
Chloroethane	0.680	N/A	1.75	N/A	0.258	1/year	Composite
Chloroform	0.527	N/A	1.44	N/A	0.212	1/year	Composite
2-Chlorophenol	0.202	N/A	0.641	N/A	0.094	1/year	Composite
Chrysene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Di-*n*-butyl Phthalate	0.176	N/A	0.372	N/A	0.054	1/year	Composite
1,2-Dichlorobenzene	0.503	N/A	1.06	N/A	0.157	1/year	Composite
1,3-Dichlorobenzene	0.202	N/A	0.287	N/A	0.042	1/year	Composite
1,4-Dichlorobenzene	0.098	N/A	0.183	N/A	0.027	1/year	Composite
1,1-Dichloroethane	0.143	N/A	0.386	N/A	0.056	1/year	Composite
1,2-Dichloroethane	0.444	N/A	1.38	N/A	0.203	1/year	Composite
1,1-Dichloroethylene	0.104	N/A	0.163	N/A	0.024	1/year	Composite
1,2-*trans*-Dichloroethylene	0.137	N/A	0.353	N/A	0.052	1/year	Composite
2,4-Dichlorophenol	0.255	N/A	0.732	N/A	0.108	1/year	Composite
1,2-Dichloropropane	1.00	N/A	1.50	N/A	0.221	1/year	Composite
1,3-Dichloropropylene	0.189	N/A	0.287	N/A	0.042	1/year	Composite
Diethyl Phthalate	0.529	N/A	1.32	N/A	0.195	1/year	Composite
2,4-Dimethylphenol	0.117	N/A	0.235	N/A	0.034	1/year	Composite
Dimethyl Phthalate	0.124	N/A	0.307	N/A	0.045	1/year	Composite
4,6-Dinitro-*o*-cresol	0.510	N/A	1.81	N/A	0.267	1/year	Composite
2,4-Dinitrophenol	0.464	N/A	0.804	N/A	0.118	1/year	Composite
2,4-Dinitrotoluene	0.739	N/A	1.86	N/A	0.274	1/year	Composite
2,6-Dinitrotoluene	1.66	N/A	4.19	N/A	0.617	1/year	Composite
Ethylbenzene	0.209	N/A	0.706	N/A	0.104	1/year	Composite
Fluoranthene	0.163	N/A	0.444	N/A	0.065	1/year	Composite
Fluorene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Hexachlorobutadiene	0.130	N/A	0.320	N/A	0.047	1/year	Composite

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
Hexachloroethane	0.137	N/A	0.353	N/A	0.052	1/year	Composite
Methyl Chloride	0.562	N/A	1.24	N/A	0.183	1/year	Composite
Methylene Chloride	0.261	N/A	0.582	N/A	0.085	1/year	Composite
Naphthalene	0.143	N/A	0.386	N/A	0.056	1/year	Composite
Nitrobenzene	0.176	N/A	0.444	N/A	0.065	1/year	Composite
2-Nitrophenol	0.268	N/A	0.451	N/A	0.066	1/year	Composite
4-Nitrophenol	0.471	N/A	0.811	N/A	0.119	1/year	Composite
Phenanthrene	0.068	N/A	0.144	N/A	0.028	1/year	Composite
Phenol	0.098	N/A	0.170	N/A	0.025	1/year	Composite
Pyrene	0.163	N/A	0.438	N/A	0.064	1/year	Composite
Tetrachloroethylene	0.143	N/A	0.366	N/A	0.054	1/year	Composite
Toluene	0.170	N/A	0.523	N/A	0.077	1/year	Composite
1,2,4-Trichlorobenzene	0.444	N/A	0.915	N/A	0.135	1/year	Composite
1,1,1-Trichloroethane	0.137	N/A	0.353	N/A	0.052	1/year	Composite
1,1,2-Trichloroethane	0.137	N/A	0.353	N/A	0.052	1/year	Composite
Trichloroethylene	0.137	N/A	0.353	N/A	0.052	1/year	Composite
Vinyl Chloride	0.466	N/A	0.987	N/A	0.20	1/year	Composite

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

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

4. Effluent monitoring samples must be taken at the following location: at Outfall 007, after the final treatment unit.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

Volume: continuous and variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/month	Estimate
Chlorine Residual	1.0, minimum	N/A	1.0, minimum	1/month	Grab
E. coli	126 [1]	399 [1]	399 [1]	1/week	Grab

2. All domestic sewage must be given complete treatment (both primary and secondary) and chlorinated sufficiently to maintain at least a 1.0 mg/L chlorine residual after at least 20 minutes contact time prior to mixing with any other waters. The permittee shall provide a readily available sampling point for discharges from the sewage treatment facilities. An equivalent method of disinfection may be substituted only with prior approval of the executive director.

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 locations:

- Outfall 207, at the discharge from the STP at the acetic acid process plant prior to entering the effluent ditch.
- Outfall 307, at the discharge from the STP at the administration building prior to entering the effluent ditch.
- Outfall 407, at the discharge from the STP at the Stores Warehouse prior to entering the effluent ditch.

[1] Units are CFU or MPN/100 mL.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge water decanted from bio-solids[1] and stormwater from the land-farm area subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/week[2]	Estimate
Total Organic Carbon	N/A	75	75	1/week[2]	Grab[3]
Oil and Grease	N/A	15	15	1/week[2]	Grab[3]
Aluminum, Total[4]	N/A	Report	N/A	1/month[2]	Grab[3]
Aluminum, Total[5]	N/A	1.766	1.766	1/month[2]	Grab[3]
Cyanide, Free[4, 6]	N/A	Report	N/A	1/month[2]	Grab[3]
Cyanide, Free[5, 6]	N/A	0.0055	0.0055	1/month[2]	Grab[3]
Zinc, Total	N/A	Report	N/A	1/month[2]	Grab[3]

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/week[2] by grab[3] 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 008, located in the northeast corner of the land-farm area or in the southeast corner of the land-farm area.

[1] See Other Requirement No. 9.
[2] When discharge occurs, a sample must be taken within the first hour after the discharge begins and at the specified measurement frequency thereafter for the duration of each discharge event.
[3] See Other Requirement No. 6.
[4] Effective beginning upon the date of permit issuance and lasting for three years. See Other Requirement No. 21.
[5] Effective beginning three years after the date of permit issuance and lasting through the date of permit expiration.
[6] See Other Requirement No. 18.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge stormwater, hydrostatic test water, fire system test water, service water, potable water, construction stormwater, demineralized water, steam condensate, *de minimis* spill clean-up water, raw water, air conditioner condensate, and commissioning wastewaters subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/day[1]	Estimate
Total Organic Carbon	N/A	75	75	1/day[1]	Grab
Oil and Grease	N/A	15	15	1/day[1]	Grab

2. The pH must not be less than 6.0 standard units nor greater than 9.0 standard units and must be monitored 1/day[1] 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 009, east of the Acetyls Cooling Tower, prior to discharge into the unnamed ditch.

[1] When discharge occurs, a sample must be taken within the first hour after the discharge begins and daily thereafter for the duration of each discharge event.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge cooling tower blowdown subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 0.86 MGD. The daily maximum flow shall not exceed 1.1 MGD.[1]

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	0.86 MGD	1.1 MGD	N/A	1/day	TBD[2]
Temperature[3]	N/A	Report °F	N/A	1/week	In-situ
Total Suspended Solids	30	100	100	1/week	Grab
Oil and Grease	15	20	20	1/week	Grab
Free Available Chlorine	0.2	0.5	0.5	1/week	Grab

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

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

4. Effluent monitoring samples must be taken at the following location: At Outfall 010, east of the Flare Piperack prior to discharge into San Jacinto Bay.

[1] The total combined volume of cooling tower blowdown discharged from Outfalls 004 and 010 must not exceed a daily average flow of 0.86 MGD and a daily maximum flow of 1.1 MGD.

[2] To be determined. The flow measurement method will be determined when the outfall is constructed.

[3] Monitoring and reporting requirement expires one month prior to the date of permit expiration.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD × Concentration, mg/L × 8.34).

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 149) 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. 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 has determined that the action is consistent with the applicable CMP goals and policies.

2. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 12 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 12 and the Enforcement Division (MC 224):

Metals and Cyanide	**MAL[1] (mg/L)**
Aluminum (Total)	0.0025
Copper (Total)	0.002
Cyanide (Available or Free)[2]	0.005
Zinc (Total)	0.005

Nonconventional Compounds	**MAL (mg/L)**
Nonylphenol	0.333

Acid Compounds	**MAL (mg/L)**
2-Chlorophenol	0.010
2,4-Dichlorophenol	0.010
2,4-Dimethylphenol	0.010
4,6-Dinitro-*o*-Cresol	0.050
2,4-Dinitrophenol	0.050
2-Nitrophenol	0.020
4-Nitrophenol	0.050
Phenol	0.010

Base/Neutral Compounds	**MAL (mg/L)**
Acenaphthene	0.010
Acenaphthylene	0.010
Anthracene	0.010
Benzo(*a*)anthracene	0.005
Benzo(*a*)pyrene	0.005
3,4-Benzofluoranthene (Benzo(*b*)fluoranthene)	0.010
Benzo(*k*)fluoranthene	0.005
Bis(2-chloroisopropyl) ether	0.010
Bis(2-ethylhexyl) phthalate	0.010
Chrysene	0.005
Di-*n*-Butyl Phthalate	0.010
1,2-Dichlorobenzene	0.010
1,3-Dichlorobenzene	0.010
1,4-Dichlorobenzene	0.010
Diethyl Phthalate	0.010

[1] Minimum analytical level.
[2] See Other Requirement No. 18.

Base/Neutral Compounds	MAL (mg/L)
Dimethyl Phthalate	0.010
2,4-Dinitrotoluene	0.010
2,6-Dinitrotoluene	0.010
Fluoranthene	0.010
Fluorene	0.010
Hexachlorobenzene	0.005
Hexachlorobutadiene	0.010
Hexachloroethane	0.020
Naphthalene	0.010
Nitrobenzene	0.010
Phenanthrene	0.010
Pyrene	0.010
1,2,4-Trichlorobenzene	0.010

Volatile Compounds[3]	MAL (mg/L)
Acrylonitrile	0.050
Benzene	0.010
Carbon Tetrachloride	0.002
Chlorobenzene	0.010
Chloroethane	0.050
Chloroform	0.010
1,1-Dichloroethane	0.010
1,2-Dichloroethane	0.010
1,1-Dichloroethylene	0.010
1,2-*trans*-Dichloroethylene	0.010
1,2-Dichloropropane	0.010
1,3-Dichloropropylene	0.010
Ethylbenzene	0.010
Methyl Chloride	0.050
Methylene Chloride	0.020
Tetrachloroethylene	0.010
Toluene	0.010
1,1,1-Trichloroethane	0.010
1,1,2-Trichloroethane	0.010
Trichloroethylene	0.010
Vinyl Chloride	0.010

Test methods used must be sensitive enough to demonstrate compliance with the permit effluent limitations. If an effluent limit for a pollutant is less than the minimum analytical level (MAL), then the test method for that pollutant must be sensitive enough to demonstrate compliance at the MAL. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the MAL for the pollutants specified above.

When an analysis of an effluent sample for a pollutant listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero shall be used for that measurement when making calculations for the self-reporting form.

[3] See Other Requirement No. 11.

This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

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

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

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

3. MIXING ZONE DEFINITIONS

There is no acute aquatic life mixing zone established for discharges made via Outfalls 001, 004, 005, 006, 007, 008, and 009 to an intermittent stream. Acute toxic criteria apply at the point of discharge for each outfall.

The chronic aquatic life mixing zone for Outfall 010 is defined as a volume within a radius of 200 feet from the point of discharge. Chronic toxic criteria apply at the edge of the chronic aquatic life mixing zone.

The zone of initial dilution (ZID) for Outfall 003 is defined as 60 feet downstream and 20 feet upstream from the point of discharge. Acute toxic criteria apply at the edge of the ZID.

4. There shall be no discharge of treated process wastewater or treated domestic wastewater via Outfall 006.

5. pH EXCURSIONS AT OUTFALL 004

The permittee shall maintain the pH within the range specified on pages 2l and 20 of this permit for discharges from Outfall 004. Excursions from the range are permitted. An excursion is an unintentional and temporary incident in which the pH value of the wastewater exceeds the range set forth on pages 2l and 20. A pH excursion is not a violation, and a non-compliance report is not required for pH excursions provided:

A. The excursion does not exceed the range of 5-11 standard pH units;

B. The individual excursion does not exceed 60 minutes; and

C. The sum of all excursions does not exceed 7 hours and 26 minutes in any calendar month.

6. If discharge at Outfall 008 occurs simultaneously via both the northeast and southeast location during any calendar month, the permittee shall obtain grab samples from each location and use the appropriate analysis procedure below.

A. Flow: The daily average flow must be calculated as the sum of the daily average flows from the northeast and the southeast location. The daily maximum flow must be calculated as the sum of the daily maximum flows from the northeast and the southeast location.

B. Total Organic Carbon, Total Aluminum, and Total Zinc: Grab samples obtained from each location may be analyzed in either of the following ways:

(1) Individually – Each sample may be analyzed individually. The daily average must be the flow-weighted average of the results for all samples, and the daily maximum must

be the maximum of the results for all samples; or

(2) Combined – All samples may be physically combined into a single flow-weighted sample for analysis and reporting.

C. Oil and Grease and Free Cyanide: Grab samples must be analyzed individually. The daily average must be the flow-weighted average of the results for all samples, and the daily maximum must be the maximum of the results for all samples.

D. pH: Grab samples must be analyzed individually. The minimum and maximum of the results for all samples must be used for reporting purposes.

7. The permittee submitted a thermal plume characterization study plan to the TCEQ for approval and implementation in accordance with the agreement reached by the TCEQ and the EPA in their letters dated April 29, 2014 and May 12, 2014, respectively. The permittee is hereby placed on notice that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility.

8. SLUDGE REQUIREMENTS

This requirement is applicable to the treatment and disposal of domestic wastewater at Outfalls 001, 003, 004, and 007.

On-site disposal of sewage sludge is not authorized. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

A. volume (dry-weight basis) of sludge disposed;
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 shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

9. BIO-SOLIDS REQUIREMENTS

The term *bio-solids* as used in this permit refers to solid waste as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment plant, water supply treatment plant or air pollution control facility, and other discarded material, including solid, liquid, or semisolid material), generated by the permittee during the management and treatment of wastewater from its industrial processes and does not include sewage sludge from the treatment of domestic wastewater.

10. MONITORING AND REPORTING

Monitoring results must be provided at the intervals specified in the permit.

A. For pollutants that are monitored annually, effluent reports must be submitted by January 20th for monitoring conducted during the previous 12-month period (*i.e.*, January through December).

B. For pollutants that are monitored four times per year, effluent reports must be submitted by April 20th, July 20th, October 20th, and January 20th for monitoring conducted during the previous 3-month period (*i.e.*, January through March, April through June, July through September, and October through December, respectively).

11. COMPOSITE SAMPLING FOR VOLATILE ORGANIC COMPOUNDS

For the composite sampling of volatile compounds using EPA Methods 601, 602, 603, 624, 1624, or any other 40 CFR 136 method approved after the effective date of the permit, the permittee shall manually collect four aliquots (grab samples) in clean zero-head-space containers at regular intervals during the actual hours of discharge during the 24-hour sampling period using sample collection, preservation, and handling techniques specified in the test method. These aliquots must be combined in the laboratory to represent the composite sample of the discharge. One of the following alternative methods shall be used to composite these aliquots.

A. Each aliquot is poured into a syringe. The plunger is added, and the volume in the syringe is adjusted to 1¼ mL. Each aliquot (1¼ mL) is injected into the purging chamber of the purge and trap system. After four injections (total of 5 mL), the chamber is purged. Alternatively, equal volume (1¼ mL) of the individual grab samples are added to the purge device to a total volume of 5 mL, and the sample is then analyzed. Only one analysis or run is required since the aliquots are combined prior to analysis.

B. Chill the four aliquots to ≤6°C. These aliquots must be of equal volume. Carefully pour the contents of each of the four aliquots into a 250-500 mL flask which is chilled in a wet ice bath. Stir the mixture gently with a clean glass rod while in the ice bath. Carefully fill two or more clean 40-mL zero-head-space vials from the flask and dispose of the remainder of the mixture. Analyze one of the aliquots to determine the concentration of the composite sample. The remaining aliquot(s) are replicate composite samples that can be analyzed if desired or necessary.

C. Alternative sample compositing methods may be used following written approval by the TCEQ.

The individual samples resulting from the application of these compositing methods shall be analyzed following the procedures specified for the selected test method. The resulting analysis shall be reported as the daily composite concentration.

As an option to the above compositing methods, the permittee may manually collect four aliquots (grab samples) in clean zero-head-space containers at regular intervals during the actual hours of discharge during the 24-hour sampling period using sample collection, preservation, and handling techniques specified in the test method. A separate analysis shall be conducted for each discrete grab sample following the approved test methods.

The determination of daily composite concentration shall be the arithmetic average (weighted by flow) of all grab samples collected during the 24-hour sampling period. (See Other Requirement No. 2 for Volatile Organic Compounds limited in the permit)

12. POND DESCRIPTIONS

The following table describes the ponds recognized through this permit:

Pond Designation	Associated Outfall	Surface Area (acres)	Capacity (gallons)	Liner Type
#1 – Stormwater	007	1.1	2,520,190	Synthetic
#2 – Off-Spec	007	0.627	1,182,170	Synthetic
#3 – North Aeration	007	0.485	1,274,000	In-situ Clay
#4 – South Aeration	007	0.17	230,140	In-situ Clay
#5 – Settling	007	0.165	210,800	In-situ Clay
#6 – Equalization	007	0.374	781,740	Synthetic
#7 – Landfarm	008	6	5,000,000	Clay

Pond Designation	Associated Outfall	Surface Area (acres)	Capacity (gallons)	Liner Type
#8 – Skim Pond #1	001	0.47	750,000	Clay
#9 – Skim Pond #3	003	0.4	800,000	Concrete
#10 – C4 Sump	006	0.21	207,000	Concrete

13. POND LANGUAGE

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

A. N/A.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

b. Pond liner damage must be repaired at the recommendation of a Texas-licensed professional engineer or Texas-licensed professional geoscientist. If the damage is significant or could result in an unauthorized discharge, then the repair must be documented and certified by a Texas-licensed professional engineer. Within 60 days after a repair is completed, the liner certification must be provided to the TCEQ Water Quality Assessment Team (MC-150), Compliance Monitoring Section (MC-224), and regional office. A copy of the liner certification must be maintained at the facility or in a reasonably accessible location and made available to the executive director upon request.

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

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

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

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

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

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

14. STARTUP NOTIFICATIONS

Reporting requirements pursuant to 30 TAC Sections 319.1-319.11 and any additional effluent reporting requirements contained in the permit for Outfalls 009 and 010 are suspended from the effective date of the permit until startup of or discharge from new processes, whichever comes first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 12 Office and the Applications Review and Processing Team (MC-148) of the Water Quality Division at least forty-five (45) days prior to process startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

15. COOLING WATER INTAKE STRUCTURE REQUIREMENTS

The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and the Region 12 Office of any change in the method by which the facility obtains water for cooling purposes. This notification must be submitted 30 days prior to any such change and must include a description of the planned changes. The TCEQ may, upon review of the notification, reopen the permit to include additional terms and conditions as necessary.

16. The permittee shall not augment effluent treatment through deliberate addition of water to the treatment system, as such activity is prohibited by 40 CFR § 122.45(f)(1)(iii) and 30 TAC § 305.125(1).

17. STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

The permittee shall either (1) develop a Stormwater Pollution Prevention Plan (SWP3) and follow the other conditions of this permit to authorize stormwater discharges from each construction activity performed by the permittee that results in a land disturbance of one or more acres, or (2) apply under TPDES general permit TXR150000 for authorization to discharge stormwater from construction activities. If the permittee opts to discharge stormwater from construction activities via this permit, only discharges of stormwater runoff from the construction activities located at the Equistar Chemicals La Porte Complex, and where the permittee is the construction site operator, are authorized under this TPDES permit. Discharges of stormwater associated with construction activities, include but are not limited to, concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas. Discharges of wastewater or wastewater commingled with stormwater from a concrete batch plant are not authorized under this permit. See Attachment B for the requirements of the SWP3.

18. Any analytical method for free cyanide or available cyanide that is approved in 40 CFR Part 136 may be used.

19. Prior to installation of any new domestic wastewater treatment facility, the permittee shall submit design plans and specification for the facility to the TCEQ Enforcement Division (MC 224) and Wastewater Permitting Section (MC 148). The permittee must include a certification that the treatment facility design will meet the effluent limitations required on pages 2c, 2j, and 2r of this permit.

20. Wastewater discharged via Outfalls 009 and 010 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 Outfalls 009 and 010 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.

Outfall 009: Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of one sampling event. Multiple sampling events must each be at least one week apart.

Outfall 010: 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 discharges via Outfalls 009 or 010.

Outfall 009: Sampling and analysis must be conducted for a minimum of one sampling event. Multiple sampling events must each be at least one week apart.

Outfall 010: 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 Outfalls 009 and 010 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.

21. SCHEDULE OF COMPLIANCE FOR WATER QUALITY BASED EFFLUENT LIMITS

A. The draft permit includes new and more stringent water quality-based effluent limits as follows:

Outfall	Pollutant(s)
001	Total copper, nonylphenol
003	Nonylphenol, total zinc
004	Total copper, free cyanide
005	Free cyanide
007	Total copper
008	Total aluminum, free cyanide

The permittee shall comply with the following schedule of activities for the attainment of the water quality-based final effluent limitations listed above:

(1) Determine exceedance cause(s);
(2) Develop control options;
(3) Evaluate and select control mechanisms;
(4) Implement corrective action; and
(5) Attain final effluent limitations no later than three years from the date of permit issuance.

B. The permittee shall submit quarterly progress reports to the TCEQ Region 12 Office and to the Enforcement Division (MC-224) in accordance with the following schedule. The requirement to submit quarterly progress reports expires three years from the date of permit issuance.

PROGRESS REPORT DATE
January 1
April 1
July 1
October 1

C. The quarterly progress reports must include a discussion of the interim requirements that have been completed at the time of the report and must address the progress towards attaining the water quality-based final effluent limitations for the pollutants listed above no later than three years from the date of permit issuance.

D. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

22. The permittee is hereby notified that this permit may be reviewed by the Texas Commission on Environmental Quality after the development of any new requirements concerning plastics in order to determine if the limitations and conditions contained herein are consistent with any new requirements. As a result of this review, the permit may be amended, pursuant to 30 TAC §305.62, to include additional requirements as necessary to protect human health and the environment

23. Whole effluent toxicity testing requirements are located in Attachment C.

Attachment A

Table 1

Outfall No.:	☐C ☐G	**Effluent Concentration (mg/L)**				
Pollutant		**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**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						
Temperature (°F)						
Total Alkalinity (mg/L as $CaCO_3$)						
pH (Standard Units; min/max)						

Pollutant	**Effluent Concentration (μg/L)** [1]					**MAL**[2] **(μg/L)**
	Samp. 1	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	
Total Aluminum						2.5
Total Antimony						5
Total Arsenic						0.5
Total Barium						3
Total Beryllium						0.5
Total Cadmium						1
Total Chromium						3
Trivalent Chromium						N/A
Hexavalent Chromium						3
Total Copper						2
Free Cyanide						2/6 [3]
Total Lead						0.5
Total Mercury						0.005
Total Nickel						2
Total Selenium						5
Total Silver						0.5
Total Thallium						0.5
Total Zinc						5.0

1 Indicate units if different from μg/L.
2 Minimum Analytical Level.
3 An MAL of 2 μg/L is necessary for Outfall 009; an MAL of 6 μg/L is adequate for Outfall 010.

Attachment A

Table 2

Outfall No.:	☐C ☐G	**Effluent Concentration (µg/L)** [1]					**MAL**[1] **(µg/L)**
Pollutant		**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	
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
m-Dichlorobenzene							10
o-Dichlorobenzene							10
p-Dichlorobenzene							10
3,3'-Dichlorobenzidine							5
1,2-Dichloroethane							10
1,1-Dichloroethylene							10
Dichloromethane							20
1,2-Dichloropropane							10
2,4-Dimethylphenol							10
Di-*n*-Butyl Phthalate							10
Ethylbenzene							10
Fluoride							500
Hexachlorobenzene							5
Hexachlorobutadiene							10
Hexachlorocyclopentadiene							10
Hexachloroethane							20
Methyl Ethyl Ketone							50
Nitrobenzene							10
N-Nitrosodiethylamine							20
N-Nitroso-di-*n*-Butylamine							20
Nonylphenol							333
Pentachlorobenzene							20
Pentachlorophenol							5
Phenanthrene							10
Polychlorinated Biphenyls (PCBs) [4]							0.2
Pyridine							20

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.

Attachment A

Table 2

Outfall No.:	☐C ☐G	**Effluent Concentration (µg/L)** [1]					**MAL**[1] **(µg/L)**
Pollutant		**Samp. 1**	**Samp. 2**	**Samp. 3**	**Samp. 4**	**Average**	
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

Table 3

Outfall No.:	☐C ☐G	**Believed Present**	**Believed Absent**	**Effluent Concentration (mg/L)**		**No. of Samples**
Pollutant				**Average**	**Maximum**	
Bromide						
Color (PCU)[5]						
Nitrate-Nitrite (as N)						
Sulfide (as S)						
Sulfite (as SO_3)						
Surfactants						
Total Boron						
Total Cobalt						
Total Iron						
Total Magnesium						
Total Molybdenum						
Total Manganese						
Total Tin						
Total Titanium						

5 Platinum-Cobalt Units.

Attachment B

REQUIREMENTS FOR CONSTRUCTION STORMWATER

A. Construction Stormwater Discharges.

The permittee shall develop and implement a stormwater pollution prevention plan (SWP3). The SWP3 must be maintained on site and made readily available for review by the TCEQ upon request. The SWP3 must include, at a minimum, the following items:

1. A site or project description, which includes the following information:
   (a) a description of the nature of the construction activity;
   (b) a list of potential pollutants and their sources;
   (c) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site;
   (d) the total number of acres of the entire property and the total number of acres where construction activities will occur, including off-site material storage areas, overburden and dirt stockpile areas, and borrow areas;
   (e) data describing the soil or the quality of any discharge from the site;
   (f) a map showing the general location of the site (*e.g.*, a portion of a city or county map);
   (g) a detailed site map (or maps) indicating the following:
      i. drainage patterns and approximate slopes anticipated after major grading activities;
      ii. areas where soil disturbance will occur;
      iii. locations of all controls and buffers, either planned or in place;
      iv. locations where temporary or permanent stabilization practices are expected to be used;
      v. locations of construction support activities, including those located off-site and including material, waste, borrow, fill, or equipment storage areas;
      vi. surface waters (including wetlands) either at, adjacent, or in close proximity to the site;
      vii. locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system; and
      viii. vehicle wash areas.
   (h) the location and description of support activities such as the concrete plant, gravel-washing facilities, and other activities providing support to the construction site;
   (i) the name of receiving waters at or near the site(s) that may be disturbed or that may receive discharges from disturbed areas of the project(s);
2. A description of the Best Management Practices (BMPs) that will be used to minimize pollution in runoff.

   The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:
   (a) General Requirements
      i. Erosion and sediment controls must be designed to retain sediment on site to the extent practicable with consideration for local topography, soil type, and rainfall.

ii. Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

iii. Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

(b) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the construction site(s), including a schedule of when the practices will be implemented. Site plans must ensure that existing vegetation at the construction site is preserved where it is possible.

i. Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

ii. The following records must be maintained and either attached to or referenced in the SWP3:

(A) the dates when major grading activities occur;

(B) the dates when construction activities temporarily or permanently cease on a portion of the site; and

(C) the dates when stabilization measures are initiated.

iii. Erosion control and stabilization measures must be initiated immediately in portions of the site where construction activities have temporarily ceased. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased. Except as provided in paragraphs (A) through (D) below, these measures must be completed no more than 14 calendar days after the construction activities in that portion of the site(s) have temporarily or permanently ceased:

(A) Where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased due to frozen conditions, non-vegetative controls must be implemented until initiation of vegetative stabilization measures is practicable.

(B) In arid areas, semi-arid areas, or drought-stricken areas where the immediate initiation of vegetative stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, other types of erosion control and stabilization measures must be initiated at the site as soon as practicable. Where vegetative controls are infeasible due to arid conditions, and within 14 calendar days of a temporary or permanent cessation of construction activity in any portion of the site, the permittee shall immediately install non-vegetative erosion controls in areas of the construction site where construction activity is complete or has ceased. If non-vegetative controls are infeasible, the permittee shall install temporary sediment controls as required in Paragraph 2.(c) below.

(C) In areas where non-vegetative controls are infeasible, the permittee may alternatively utilize temporary perimeter controls. The permittee must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The permittee must continue to inspect the BMPs for unstabilized sites.

(c) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls.

i. Sites With Drainage Areas of Ten or More Acres

(A) Sedimentation Basin(s)

(1) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten or more acres disturbed at one time. A sedimentation basin may be temporary or permanent and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. Capacity calculations shall be included in the SWP3.

(2) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site(s).

(3) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site(s). In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a series of smaller sediment basins.

(B) Perimeter Controls: At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

ii. Controls for Sites With Drainage Areas Less than Ten Acres:

(A) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(B) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

3. Description of Permanent Stormwater Controls

A description of any stormwater control measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3.

4. Other Required Controls and BMPs

(a) Permittees shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 shall include a description of controls utilized to accomplish this requirement.

(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

(c) The SWP3 must include a description of potential pollutant sources in discharges of stormwater from all areas of the construction site where construction activity, including construction support activities, will be located, and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) Permittees shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (*i.e.*, runoff conveyance) to provide a nonerosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

(e) Permittees shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site.

(f) For demolition of any structure with at least 10,000 square feet of floor space that was built or renovated before January 1, 1980, and the receiving waterbody is impaired for polychlorinated biphenyls (PCBs):

i. Implement controls to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures to precipitation and to stormwater; and

ii. Ensure that disposal of such materials is performed in compliance with applicable state, federal, and local laws.

5. Maintenance Requirements

(a) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, as soon as the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

(b) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the permittee shall replace or modify the control as soon as practicable after making the discovery.

(c) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

(d) If sediment escapes the site, accumulations must be removed at a frequency that minimizes off-site impacts, and prior to the next rain event, if feasible.

6. Inspections of Controls

(a) Personnel provided by the permittee must inspect disturbed areas (cleared, graded, or excavated) of the construction site that do not meet the requirements of final stabilization in this general permit, all locations where stabilization measures have been implemented, areas of construction support activity covered under this permit, stormwater controls (including pollution prevention controls) for evidence of, or the potential for, the discharge of pollutants, areas where stormwater typically flows within the construction site, and points of discharge from the construction site.

i. Personnel conducting these inspections must be knowledgeable of this permit, the construction activities at the site, and the SWP3 for the site.

ii. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC §305.128.

(b) Requirements for Inspections

i. Inspect all stormwater controls (including sediment and erosion control measures identified in the SWP3) to ensure that they are installed properly, appear to be operational, and minimizing pollutants in discharges, as intended.

ii. Identify locations on the construction site(s) where new or modified stormwater controls are necessary.

iii. Check for signs of visible erosion and sedimentation that can be attributed to the points of discharge where discharges leave the construction site(s) or discharge into any surface water in the state flowing within or adjacent to the construction site(s).

iv. Identify any incidents of noncompliance observed during the inspection.

v. Inspect locations where vehicles enter or exit the site(s) for evidence of off-site sediment tracking.

vi. If an inspection is performed when discharges from the construction site(s) are occurring: identify all discharge points at the site, observe and document the visual quality of the discharge (*i.e.*, color, odor, floating, settled, or suspended solids, foam, oil sheen, and other such indicators of pollutants in stormwater).

vii. Complete any necessary maintenance needed, based on the results of the inspection and in accordance with the requirements listed in Section 5 above.

(c) Inspection frequencies:

i. Inspections of construction sites must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inch or greater, unless as otherwise provided below in paragraphs ii-v below.

ii. Inspection frequencies must be conducted at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized.

iii. Inspection frequencies for construction sites, where runoff is unlikely due to the occurrence of frozen conditions at the site, must be conducted at least once every month until thawing conditions begin to occur. The SWP3 must also contain a record of the approximate beginning and ending dates of when frozen conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inch or greater.

iv. In arid, semi-arid, or drought-stricken areas, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inch or greater. The SWP3 must also contain a record of the total rainfall measured, as well as the approximate beginning and ending dates of when drought conditions occurred at the site, which resulted in inspections being conducted monthly, while those conditions persisted, instead of at the interval of once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inch or greater.

v. As an alternative to the inspection schedule in paragraph i above, the SWP3 may be developed to require that these inspections will occur at least once every seven calendar days. If this alternative schedule is developed, then the inspection must occur regardless of whether or not there has been a rainfall event since the previous inspection.

vi. The inspection procedures described in paragraphs i-v above can be performed at the frequencies and under the applicable conditions indicated for each schedule option, provided that the SWP3 reflects the current schedule and that any changes to the schedule are made in accordance with the following provisions: the inspection frequency schedule can only be changed a maximum of one time each month; the schedule change must be implemented at the beginning of a calendar month; and the reason for the schedule change documented in the SWP3 (*e.g.*, end of "dry" season and beginning of "wet" season).

(d) In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

(e) Inspection Reports

i. A report summarizing the scope of any inspection must be completed within 24 hours following the inspection. The report must also include the date(s) of the inspection and major observations relating to the implementation of the SWP3. Major observations in the report must include: the locations of where erosion and discharges of sediment or other pollutants from the site have occurred; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

ii. Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be retained as part of the SWP3 and signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

iii. The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.

(f) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

B. Erosion and Sediment Control Requirements

The permittee shall achieve, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1. *Erosion and sediment controls*. The permittee shall design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

(a) Control stormwater volume and velocity within the site to minimize soil erosion in order to minimize pollutant discharges;

(b) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge point(s);

(c) Minimize the amount of soil exposed during construction activity;

(d) Minimize the disturbance of steep slopes;

(e) Minimize sediment discharges from the site(s). The design, installation, and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

(f) If earth disturbance activities are located in close proximity to a surface water in the state, provide and maintain appropriate natural buffers if feasible and as necessary, around surface water in the state, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas and maximize stormwater infiltration to reduce pollutant discharges, unless infeasible;

(g) Preserve native topsoil at the site, unless the intended function of a specific area of the site dictates that the topsoil be disturbed or removed, or it is infeasible; and

(h) Minimize soil compaction. In areas of the construction site where final vegetative stabilization will occur or where infiltration practices will be installed, either:

i. restrict vehicle and equipment use to avoid soil compaction; or

ii. prior to seeding or planting areas of exposed soil that have been compacted, use techniques that condition the soils to support vegetative growth, if necessary and feasible;

Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

(i) TCEQ does not consider stormwater control features (*e.g.*, stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface water" for the purposes of triggering the buffer requirement in paragraph (f) above. Additionally, areas that the permittee does not own or that are otherwise outside the permittees' operational control may be considered areas of undisturbed natural buffer for purposes of compliance with this requirement.

2. *Soil stabilization*. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site(s), or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Temporary stabilization must be completed no more than 14 calendar days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative nonvegetative stabilization measures must be employed as soon as practicable.

3. *Dewatering*. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.

4. *Pollution prevention measures*. Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

(a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

(b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;

(c) Minimize the exposure of waste materials by closing waste container lids at the end of the work day. For waste containers that do not have lids, where the container itself is not sufficiently secure enough to prevent the discharge of pollutants absent a cover and could leak, the permittee must provide either a cover (*e.g.*, a tarp, plastic sheeting, temporary roof) to minimize exposure of wastes to precipitation, or a similarly effective means designed to minimize the discharge of pollutants (*e.g.*, secondary containment);and

(d) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.

5. *Prohibited discharges*. The following discharges are prohibited:

(a) Wastewater from wash out of concrete, unless managed by an appropriate control;

(b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

(d) Soaps or solvents used in vehicle and equipment washing; and (e) Toxic or hazardous substances from a spill or other release.

6. *Surface outlets*. When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

C. Discharges of Stormwater from Concrete Batch Plants

Where the permittee conducts a construction project that requires an on-site concrete batch plant, the permittee shall develop and implement a SWP3. The SWP3 must be maintained onsite and made readily available for review by the TCEQ upon request. The SWP3 may be a separate document for the concrete batch plant or may be combined with the SWP3 developed for construction activities described above in Section A. The SWP3 must at a minimum include the following items:

1. Description of Potential Pollutant Sources – The SWP3 must provide a description of potential sources (activities and materials) that can cause, have a reasonable potential to cause, or may contribute to a violation of water quality standards or have been found to cause or contribute to the loss of a designated use of surface water in the state in stormwater discharges associated with the concrete batch plant. The SWP3 must describe the implementation of practices that will be used to minimize to the extent practicable the discharge of pollutants in stormwater discharges associated with industrial activity and non-stormwater discharges, including the protection of water quality, and must ensure the implementation of these practices. The following information must be included, at a minimum, in support of developing this description:

(a) Drainage – The site map must include the following information:

i. the location of all outfalls for stormwater discharges associated with concrete batch plants that are authorized under this permit;

ii. a depiction of the drainage area and the direction of flow to the outfall(s);

iii. structural controls (*e.g.*, ponds, vegetated buffers, constructed stormwater pollution controls) used within the drainage area(s);

iv. the locations of the following areas associated with concrete batch plants that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

v. the locations of the following: any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

(b) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to affect the quality of stormwater discharges associated with concrete batch plants that are authorized under this general permit.

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(c) Inventory of Potential Pollutants – A list identifying the pollutants that are likely to be present in the stormwater discharges from each area of the facility that generates stormwater discharges, including the potential for containing significant amounts of each pollutant, including sediments (*e.g.*, toxicity of the chemical, and the quantity of chemicals used, produced, or discharged)

(d) Spills and Leaks – A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with concrete batch plants authorized under this general permit must be developed, maintained, and updated as needed.

(e) Sampling Data – A summary of existing stormwater discharge sampling data must be maintained, if available.

2. Measures and Controls – The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" from paragraph 1 above and a schedule for implementation of the measures and controls. This must include, at a minimum:

(a) Good Housekeeping - Good housekeeping measures must be developed and implemented in the area(s) associated with the concrete batch plant.

i. The permittee shall prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. The SWP3 must indicate the frequency of these practices, which must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement, fly ash, kiln dust, or aggregate is being handled or otherwise processed in the area.

ii. The permittee shall prevent the exposure of fine granular solids, such as cement, fly ash, or kiln dust ,to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers, buildings, or other structure to prevent exposure to precipitation or runoff.

(b) Inventory Measures – A preventive maintenance program must include routine inspection and maintenance of stormwater management controls (including oil/water separators, catch basins, drip pans, berms, dikes, and other similar controls), as well as inspecting and testing facility equipment and systems to discover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and measures to ensure appropriate maintenance and performance of facility equipment and systems.

(c) Spill Prevention and Response Procedures – Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

(d) Inspections – The permittee shall identify qualified facility personnel (*i.e.*, a person or persons with knowledge of this permit, the concrete batch plant, and the SWP3 related to the concrete batch plant for the site) to inspect designated equipment and

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areas of the facility specified in the SWP3. Personnel conducting these inspections are not required to have signatory authority for inspection reports under 30 TAC §305.128. Inspections of facilities in operation must be performed once every seven days. Inspections of facilities that are not in operation must be performed at a minimum of once per month. The current inspection frequency being implemented at the facility must be recorded in the SWP3. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection/containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

(e) Employee Training – An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.

(f) Record Keeping and Internal Reporting Procedures – A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

(g) Sediment and Erosion Control – The SWP3 must identify areas that have a high potential for soil erosion and identify structural or vegetative control measures or BMPs to reduce or limit erosion.

(h) Management of Runoff – The SWP3 must contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reuse of runoff.

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CHRONIC BIOMONITORING REQUIREMENTS: MARINE

The provisions of this section apply individually and separately to Outfall 001, Outfall 004, and Outfall 007 for whole effluent toxicity (WET) testing. No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

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 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions, is 88% for Outfall 001. The critical dilution is 81% for Outfall 004. The critical dilution is 77% for Outfall 007.

   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 survival and growth tests, the statistical analyses used to determine the IC25 in survival or growth shall be as described in the methods 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) Most point estimates are derived from a mathematical model that assumes a continuous dose-response relationship. For any test result that demonstrates a non-continuous (threshold) response, or a non-monotonic dose-response

relationship, the IC25 should be determined based on the method guidance manual referenced in Item 2.

4) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic dose-response relationship may be submitted, prior to the due date, for technical review of test validity and acceptability. The method guidance manual referenced in Item 2 will be used as the basis, along with best professional judgment, for making a determination of test validity and acceptability.

c. Dilution Water

1) Dilution water used in the toxicity tests must be the receiving water collected at a point upstream of the confluence with the perennial waters, 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 the outfall being sampled. 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 being sampled 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. <u>Reporting</u>

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 T4P3E, enter a “1” if the IC25 for survival is less than the critical dilution; otherwise, enter a “0.”

2) For the mysid shrimp, Parameter T6P3E, report the IC25 for survival.

3) For the mysid shrimp, Parameter T5P3E, enter a “1” if the IC25 for growth is less than the critical dilution; otherwise, enter a “0.”

4) For the mysid shrimp, Parameter T7P3E, report the IC25 for growth.

5) For the inland silverside, Parameter T4P6J, enter a “1” if the IC25 for survival is less than the critical dilution; otherwise, enter a “0.”

6) For the inland silverside, Parameter T6P6J, report the IC25 for survival.

7) For the inland silverside, Parameter T5P6J, enter a "1" if the IC25 for growth is less than the critical dilution; otherwise, enter a "0."

8) For the inland silverside, Parameter T7P6J, report the IC25 for growth.

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

4. <u>Persistent Toxicity</u>

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.

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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. A copy of the TRE final report shall also be submitted to the U.S. EPA Region 6 office.

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.

Attachment C

TABLE 1 (SHEET 1 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

		Date Time	Date Time
Dates and Times Composites Collected	No. 1	FROM: ________________	TO: ____________________
	No. 2	FROM: ________________	TO: ____________________
	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%												
32%												
25%												
56%												
75%												
100%												

* 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%	32%	25%	56%	75%	100%
A						
B						
C						
D						
E						

Attachment C

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%	32%	25%	56%	75%	100%
F						
G						
H						
Mean Dry Weight (mg)						
CV%*						
PMSD						

1. Is the IC25 for growth less than the critical dilution? _______ YES _______ NO

2. Is the IC25 for survival less than the critical dilution? _______ YES _______ NO

3. Enter percent effluent corresponding to each IC25 below:

   IC25 survival = __________%

   IC25 growth = __________%

Attachment C

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE MINNOW LARVAL SURVIVAL AND GROWTH TEST

		Date Time		Date Time
Dates and Times Composites Collected	No. 1	FROM: ____________________	TO: ______________________	
	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%									
32%									
25%									
56%									
75%									
100%									

* Coefficient of Variation = standard deviation x 100/mean

Attachment C

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%							
32%							
25%							
56%							
75%							
100%							
PMSD							

1. Is the IC25 for growth less than the critical dilution? _______ YES _______ NO

2. Is the IC25 for survival less than the critical dilution? _______ YES _______ NO

3. Enter percent effluent corresponding to each IC25 below:

   IC25 survival = __________%

   IC25 growth = __________%

Attachment C

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: MARINE

The provisions of this section apply individually and separately to Outfall 001, Outfall 003, Outfall 004, and Outfall 007 for whole effluent toxicity (WET) testing. No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall.

1. Scope, Frequency, and Methodology

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

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

1) Acute 24-hour static toxicity test using the mysid shrimp (*Americamysis bahia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

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

A valid test result must be submitted for each reporting period. The permittee must report, then repeat, an invalid test during the same reporting period. The repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in Part 2.b., the control and dilution water shall consist of standard, synthetic, reconstituted seawater.

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

e. As the dilution series specified in the Chronic Biomonitoring Requirements for Outfalls 001, 004, and 007 includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this Section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in item a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency defined in item b.

Attachment C

2. <u>Required Toxicity Testing Conditions</u>

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

b. Dilution Water - In accordance with item 1.c., the control and dilution water shall normally consist of standard, synthetic, moderately hard, reconstituted water. If the permittee utilizes the results of a chronic test to satisfy the requirements in item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a as the control and dilution water.

c. Samples and Composites

1) The permittee shall collect one composite sample from outfall being sampled.

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

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

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

3. <u>Reporting</u>

All reports, tables, plans, summaries, and related correspondence required of 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.

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

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

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

Attachment C

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

1) For the mysid shrimp, Parameter TIE3E, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

2) For the inland silverside, Parameter TIE6B, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

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

4. Persistent Mortality

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

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

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

5. Toxicity Reduction Evaluation

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

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

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

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

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

4) Project Organization - The TRE action plan should describe the project staff, 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 TRE activities reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

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

Attachment C

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

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

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

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

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

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

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

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

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

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

Attachment C

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

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

For Outfall 007, the permittee has developed and demonstrated the effectiveness of a new Ion Adjustment Protocol (IAP) for they mysid shrimp which is described in the report dated May 30, 2019. The permittee may continue to use this IAP for future testing of Outfall 007.

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

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

Attachment C

TABLE 2 (SHEET 1 OF 2)

MYSID SHRIMP SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

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

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = ______% effluent

Attachment C

TABLE 2 (SHEET 2 OF 2)

INLAND SILVERSIDE SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

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

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = ______% effluent

TPDES PERMIT RENEWAL APPLICATION AND MAJOR MODIFICATION

lyondellbasell

PREPARED FOR:

LYONDELLBASELL – LA PORTE COMPLEX

EQUISTAR CHEMICALS, LP
1515 MILLER CUT OFF ROAD
LA PORTE, TEXAS 77571

LYONDELLBASELL ACETYLS, LLC
1350 MILLER CUT OFF ROAD
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PREPARED :
APRIL 2, 2018
VERSION 1.0

LyondellBasell La Porte Complex
TPDES Permit No. WQ0004013000 Application 2018

Application Contents

Attachments

Reference Key

AR1.0	Administrative Report 1.0
AR1.1	Administrative Report 1.1
SPIF	Supplemental Permit Information Form
TR	Technical Report
W5	Worksheet 5

Notes

[1] Outfall sampling has been completed and analytical results will be submitted as soon as available.

RECEIVED

APR 03 2018

WATER QUALITY DIVISION
Applications Team

LyondellBasell La Porte Complex
TPDES Permit No. WQ0004013000 Application 2018

Application Contents

Attachments

		Cross-reference to Application Item
SPIF-1	USGS Map	SPIF-8
SPIF-2	Structures Older Than 50 Years	SPIF-9
A-1	Copy of Application Fee Payment	AR1.0-1
A-2	Core Data Forms (2)	AR1.0-2.c
A-3	Delegation of Authority	AR1.0-11
A-4	USGS Map	AR1.0-9.b
A-5	Adjacent Landowner Map and List	AR1.1
A-5-1	Landowner Map	AR1.1-1.a
A-5-2	Landowner List	AR1.1-1.c
A-5-3	Landowner Mailing Labels (on CD)	AR1.1-1.b
A-6	Outfall Photos	AR1.1-2
A-7	HCPID Application Cover Letter	AR1.0-9.h
T-1	Facility Description	TR-1.b, 2.a, 6
	Table 1. Raw Materials, Intermediates, and Products	TR-1.c
	Table 2. Wastewater Sources and Additions by Outfall	TR-4, 13
	Table 3. Wastewater Sources and Flows by Outfall	TR-4
	Figure 1. Polymers Wastewater Flow Diagram	TR -2.b
	Figure 2. Olefins Wastewater Flow Diagram	TR -2.b
	Figure 3. Acetyls Wastewater Flow Diagram	TR -2.b
T-2	Facility Map	TR-1.d
T-3	Amendment Requests	TR-13
T-4	Domestic Sewage Sludge Management Plan	W5-1, 2.c
T-5	Treatment Chemicals and SDSs	TR-5.c

Reference Key

AR1.0	Administrative Report 1.0
AR1.1	Administrative Report 1.1
SPIF	Supplemental Permit Information Form
TR	Technical Report
W5	Worksheet 5

Notes

[1] Outfall sampling has been completed and analytical results will be submitted as soon as available.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

INDUSTRIAL ADMINISTRATIVE REPORT

Complete and submit this checklist with the application.

APPLICANT: Equistar Chemicals, LP and LyondellBasell Acetyls, LLC

PERMIT NUMBER: WQ0004013000

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

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

For Commission Use Only:
Segment Number: ________ County: ________________ Expiration Date: ________________
Proposed/Current Permit Number: __________________ Region: ______________________

INDUSTRIAL ADMINISTRATIVE REPORT 1.0

The following information **is required** for **all** applications—renewals, new, and amendments.

1. TYPE OF APPLICATION AND FEES (Instructions, Page 21)

Permit No.: WQ0004013000

EPA ID No.: TX0119792

☐ New TPDES permit	☐ New TLAP permit
☒ Major Amendment with Renewal	☐ Major Amendment without Renewal
☐ Renewal of existing permit	☐ Stormwater only discharge
☐ Minor Amendment to permit	☐ Minor modification to permit

If applying for an **amendment** or modification of a permit, please describe the request in detail.

(1) Modification of Outfall 004 discharge point: relocation of Outfall 004 (Option 1), new Outfall 010 (Option 2); (2) For Outfall 007, increase the daily average and daily maximum flow limits to 1.22 million gallons per day (MGD) and 1.60 MGD, respectively, with corresponding increases in applicable concentration and mass limits for the outfall parameters; (3) For Outfall 007, change the biochemical oxygen demand (BOD) daily average mass limit, daily maximum limit, and single grab limit to carbonaceous biochemical oxygen demand (CBOD); (4) Increase the daily average and daily maximum mass limits and single grab concentration limits for Outfalls 001, 004, and 007 for BOD. Remove the dissolved oxygen limit for Outfall 007; (5) Add wastewater sources to Outfalls 001, 003, 004, and 007; (6) Add Outfall 009; (7) Remove internal Outfalls 201 and 107; (8) Remove BOD and TSS limits from Outfalls 101, 104, 207, 307, and 407; (9) Correct error in TSS daily average limit for Outfall 004; and (10) Modify due dates for discharge monitoring reports (DMRs). For additional detail, see Attachment T-3 Amendment Requests.

Please indicate by a check mark the amount submitted for the application fee:

EPA Classification	New	Major Amendment (With or Without Renewal)	Renewal Only	Minor Amendment/ Minor Modification
Minor facility not subject to EPA categorical effluent guidelines (*40 CFR Parts 400-471*)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (*40 CFR Parts 400-471*)	☐ $1,250	☐ $1,250	☐ $1,215	☐ $150
Major facility	N/A *	☒ $2,050	☐ $2,015	☐ $450

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

Payment Information:

Mailed Check or Money Order Number: 6900441568/9070009291

Check or Money Order Amount: $2,050.00

Named Printed on Check or Money Order: Equistar Chemicals, LP

EPAY Voucher Number:

Copy of Voucher Enclosed? ☐ Yes

Attachment: A-1 Copy of Application Fee Payment

2. APPLICANT INFORMATION (Instructions, Pages 21-22)

a. Facility Owner

(Owner of the facility must apply for the permit.)

What is the Legal Name of the entity (applicant) applying for this permit?

Equistar Chemicals, LP

(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN: **CN600124705**

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

First/Last Name: Christopher M. Cain

Title: Site Manager Credential:

b. Co-applicant Information

What is the Legal Name of the co-applicant applying for this permit?

LyondellBasell Acetyls, LLC

(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch:

CN: 603674862

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

First/Last Name: Christopher M. Cain

Title: Site Manager Credential:

Provide a brief description of the need for a co-permittee:

LyondellBasell Acetyls is a company under the same corporate umbrella as Equistar Chemicals, and operates the Acetyls Unit within the LyondellBasell La Porte Complex. It is managed by the same Site Manager and much of the same support staff. Information is provided for clarity only.

c. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0.

Attachment: A-2 Core Date Forms (Equistar Chemical, LP; LyondellBasell Acetyls, LLC)

3. APPLICATION CONTACT INFORMATION (Instructions, Page 22)

If the TCEQ needs additional information regarding this application, who should be contacted?

a. First/Last Name: Chris Freed Credential:
Organization Name: Equistar Chemicals, LP Title: Principal Environmental Engineer
Mailing Address: P.O. Drawer D
City: Deer Park State: Texas ZIP Code: 77536
Phone No.: 713-209-1405 Ext.: Fax No.: 713-209-1440
E-mail Address: christopher.freed@lyb.com
Check one or both: ☒ Administrative Contact ☒ Technical Contact

b. First/Last Name: Dianna Kocurek Credential:
Organization Name: Tischler/Kocurek Title: Partner
Mailing Address: 107 South Mays Street
City: Round Rock State: Texas ZIP Code: 78664
Phone No.: 512-244-9058 Ext.: Fax No.: 512-388-3409
E-mail Address: dianna@tkee.com
Check one or both: ☐ Administrative Contact ☒ Technical Contact

Attachment: N/A

4. PERMIT CONTACT INFORMATION (Instructions, Page 22)

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

a. First/Last Name: Christopher M. Cain Credential:
Organization Name: Equistar Chemicals, LP Title: Site Manager
Mailing Address: P.O. Drawer D
City: Deer Park State: Texas ZIP Code: 77536
Phone No.: 713-336-5475 Ext.: Fax No.: 713-209-1440
E-mail Address: christopher.cain@lyb.com

b. First/Last Name: Michael D. VanDerSnick Credential:
Organization Name: Equistar Chemicals, LP Title: Sr. VP Manufacturing, Americas
Mailing Address: P.O. Box 2583
City: Houston State: Texas ZIP Code: 77252
Phone No.: 713-309-3809 Ext.: Fax No.: 713-309-2362
E-mail Address: Michael.VanDerSnick@lyondellbasell.com

Attachment: N/A

5. BILLING CONTACT INFORMATION(Instructions, Page 22)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits **in effect on September 1 of each year**. *The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).*

First/Last Name: Chris Freed   Credential:

Organization Name: Equistar Chemicals, LP   Title: Principal Environmental Engineer

Mailing Address: P.O. Drawer D

City: Deer Park   State: Texas   ZIP Code: 77536

Phone No.: 713-209-1405   Ext.:   Fax No.: 713-209-1440

E-mail Address: christopher.freed@lyb.com

6. DMR/MER CONTACT INFORMATION (Instructions, Pages 22-23)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (EPA 3320-1) or Monthly Effluent Reports.

First/Last Name: Keith Zucha   Credential:

Organization Name: Equistar Chemicals, LP   Title: Principal Environmental Engineer

Mailing Address: P.O. Drawer D

City: Deer Park   State: Texas   ZIP Code: 77536

Phone No.: 713-336-5226   Ext.:   Fax No.: 713-209-1440

E-mail Address: c.zucha@lyb.com

You can submit DMR data on the TCEQ website at https://www.tceq.texas.gov/field/netdmr/netdmr.html. Establish an electronic reporting account with the permit number.

7. NOTICE INFORMATION (Instructions, Pages 23-24)

a. Individual Publishing the Notices

First/Last Name: Chris Freed   Credential:

Organization Name: Equistar Chemicals, LP   Title: Principal Environmental Engineer

Mailing Address: P.O. Drawer D

City: Deer Park   State: Texas   ZIP Code: 77536

Phone No.: 713-209-1405   Ext.:   Fax No.: 713-209-1440

E-mail Address: christopher.freed@lyb.com

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address: christopher.freed@lyb.com

☐ Fax No.:

☐ Regular Mail:

Mailing Address:

City: State: ZIP Code:

Phone No.: Ext.: Fax:

c. Contact in the Notice

First/Last Name: Chris Freed Credential:

Organization Name: Equistar Chemicals, LP Title: Principal Environmental Engineer

Phone No.: 713-209-1405 Ext.: E-mail: 713-209-1440

d. Public Place Information

If the facility or outfall is located in more than one county, a public viewing place for each county must be provided.

Public building name: La Porte Branch Library

Location within the building: Public Notice Shelves

Physical Address of Building: 600 S. Broadway

City: La Porte County: Harris

Contact Name: Myra Wilson

Phone No.: 281-471-4022 Ext.:

e. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, and renewal applications**. It is not required for minor amendment or minor modification applications.

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

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

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

   ☒ Yes ☐ No

   If **no**, publication of an alternative language notice is not required; **skip to** Item 8 (REGULATED ENTITY AND PERMITTED SITE INFORMATION.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

☐ Yes ☒ No

3. Do the students at these schools attend a bilingual education program at another location?

☒ Yes ☐ No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

☐ Yes ☒ No

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

8. REGULATED ENTITY AND PERMITTED SITE INFORMATION (Instructions Pages 24-26)

If the site of your business is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=regent.RNSearch to determine the RN or to see if the larger site may already be registered as a regulated site:

If the site is found, provide the assigned Regulated Entity Number and provide the information for the site to be authorized through this application below. The site information for this authorization may vary from the larger site information.

TCEQ issued Regulated Entity Number (RN): **RN** 100210319

a. State/TPDES Permit No.: WQ0004013000 Expiration Date: 10/01/18

EPA Identification No. (TPDES Permits only): TX 0119792

b. Name of project or site (the name known by the community where located): LyondellBasell La Porte Complex

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

☒ Yes ☐ No

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

e. Owner of treatment facility: Equistar Chemicals, LP

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

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

First/Last Name: Equistar Chemicals, LP

Mailing Address: P.O. Drawer D

City: Deer Park State: Texas ZIP Code: 77536

Phone No.: 713-336-5475 E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. In some cases, a lease may not suffice - see instructions.

Attachment: N/A

g. Owner of effluent disposal site:

First/Last Name: N/A

Mailing Address:

City: State: ZIP Code:

Phone No.: E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years.

Attachment:

h. Owner of sewage sludge disposal site:

First/Last Name: N/A

Mailing Address:

City: State: ZIP Code:

Phone No.: E-mail Address:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years.

Attachment:

(This information is required only if authorization is sought in the permit for sludge disposal on property owned or controlled by the applicant.)

9. DISCHARGE/ DISPOSAL INFORMATION (Instructions, Pages 26-28)

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

☐ Yes ☒ No

b. Provide an **original** full size USGS Topographic Map with all required information. Indicate by a check mark that the following information is provided.

☒ Applicant's property boundary
☐ Effluent disposal site boundaries
☒ Treatment facility boundaries
☐ New and future construction
☒ Labeled point(s) of discharge and highlighted discharge route(s)
☒ One-mile radius and three-miles downstream information
☐ Sewage sludge disposal site
☒ All ponds

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

☐ Yes ☐ No

If **no, or a new permit application**, please give an accurate description:

N/A

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

☒ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

e. City nearest the outfall(s): La Porte

f. County in which the outfalls(s) is/are located: Harris

g. Outfall Latitude: Multiple outfalls. See Technical Report, pg. 6. Longitude: Multiple outfalls. See Technical Report, pg. 6.

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

☐ Yes ☒ **No**

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: N/A

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

N/A

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

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

k. City nearest the disposal site: N/A

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

☐ Yes ☐ No

If **no, or a new permit application**, please give an accurate description:

N/A

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

☒ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

e. City nearest the outfall(s): La Porte

f. County in which the outfalls(s) is/are located: Harris

g. Outfall Latitude: Multiple outfalls. See Technical Report, pg. 6. Longitude: Multiple outfalls. See Technical Report, pg. 6.

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

☒ Yes ☐ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☒ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: A-7 HCPID Application Cover Letter

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

N/A

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

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

k. City nearest the disposal site: N/A

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

m. Disposal Site Latitude: N/A Longitude:

n. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

N/A

o. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained:

N/A

10. MISCELLANEOUS INFORMATION (Instructions, Pages 28-29)

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

☐ Yes ☒ No

List each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application:

b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

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

Account number: Amount past due:

c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If **yes**, please provide the following information:

Enforcement order number: Amount past due:

11. SIGNATURE PAGE (Instructions, Page29)

Permit Number: WQ0004013000

Applicant: Equistar Chemicals, LP

Certification:

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

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

Signatory name (typed or printed): Christopher M. Cain

Signatory title: Site Manager

Signature: [signature] Date: 4/2/2018
(Use blue ink)

Subscribed and Sworn to before me by the said Christopher M. Cain

on this 2ND day of APRIL, 20 18.

My commission expires on the 6th day of June, 20 18.

[signature: Lori E. Gardner]
Notary Public

[SEAL]

Harris
County, Texas

LORI E. GARDNER
NOTARY PUBLIC-STATE OF TEXAS
COMM. EXP 06-06-2018
NOTARY ID 125717474

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

11. SIGNATURE PAGE (Instructions, Page29)

Permit Number: WQ0004013000

Applicant: LyondellBasell Acetyls, LLC

Certification:

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

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

Signatory name (typed or printed): Christopher M. Cain

Signatory title: Site Manager

Signature: [signature] Date: 4/2/2018

(Use blue ink)

Subscribed and Sworn to before me by the said ____________

on this 2ND day of APRIL, 20 18.

My commission expires on the 6th day of June, 20 18.

Lori E. Gardner

Notary Public

[SEAL]

Harris

County, Texas

LORI E. GARDNER
NOTARY PUBLIC-STATE OF TEXAS
COMM EXP 06-06-2018
NOTARY ID 125717474

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

INDUSTRIAL ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

1. AFFECTED LANDOWNER INFORMATION (Instructions, Pages 30-32)

a. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable.

- ☒ The applicant's property boundaries
- ☒ The facility site boundaries within the applicant's property boundaries
- ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☒ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☒ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☐ The property boundaries of all landowners surrounding the applicant's property boundaries where the effluent disposal site is located
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

b. Indicate by a check mark in which format the landowners list is submitted:

☒ Readable/Writeable CD ☐ Four sets of labels

c. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowners map has been provided.

d. Provide the source of the landowners' names and mailing addresses: Harris County Appraisal District

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

☐ Yes ☒ No

f. If **yes**, provide the location and foreseeable impacts and effects this application has on the land(s):

2. ORIGINAL PHOTOGRAPHS (Instructions, Page 32)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

☐ At least one original photograph of the new or expanded treatment unit location

☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☐ At least one photograph of the existing/proposed effluent disposal site

☒ A plot plan or map showing the location and direction of each photograph

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

FOR AGENCIES REVIEWING INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

TCEQ USE ONLY:

Application type: ____Renewal _____Major Amendment _____Minor Amendment ______New

County: ________________________ Segment Number: ______________

Admin Complete Date: ________________

Agency Receiving SPIF:

______ Texas Historical Commission ______ U.S. Fish and Wildlife

______ Texas Parks and Wildlife Department ______ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 33)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee: Equistar Chemicals, LP; LyondellBasell Acetyls, LLC

2. Permit No. WQ00 04013000 EPA ID No. TX 0119792

3. Address of the project (location description that includes street/highway, city/vicinity, and county):
   1515 Miller Cut-Off Road, La Porte, Harris County, Texas 77571

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

   First/Last Name: Chris Freed Credential:

   Organization Name: Equistar Chemicals, LP Title: Principal Environmental Engineer

   Mailing Address: P.O. Drawer D

   City: Deer Park State: Texas ZIP Code: 77536

   Phone: 713-209-1405 Fax: 713-209-1440 E-mail Address: christopher.freed@lyb.com

5. List the county in which the facility is located: Harris

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

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

Discharge is to an unnamed ditch, thence to an unnamed ditch, thence to San Jacinto Bay in Segment No. 2427 of the Bays and Estuaries.

8. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

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

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

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

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

N/A

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

Wastewater treatment and outfalls are at an existing chemical plant.

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

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

New construction in 2017: new polymers unit. New construction in 2013: 2 new olefins furnaces and associated equipment.

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

Chemicals manufacturing since 1959. Some structures from 1959 and early 1960s still exist. No information on the architect/builder could be located.

TECHNICAL REPORT 1.0
INDUSTRIAL

This application form is for an industrial wastewater discharge authorization only. Your facility may need additional authorizations from the TCEQ Waste Permitting Division or the TCEQ Air Permitting Division.

The following information is required for **all TPDES** and **TLAP** renewal, new, and amendment applications.

1. FACILITY/SITE INFORMATION (Instructions, Pages 35-36)

a. Describe the type of activity and general nature of your business.

The LyondellBasell La Porte Complex consists of three operating units: (1) Olefins; (2) Polymers; and (3) Acetyls. The facility produces ethylene, propylene, low-density polyethylene, linear low-density polyethylene, acetic acid, and vinyl acetate monomer. A second company is co-located within the facility, INEOS, that operates a polyalphaolefins unit that makes synthetic oil. The SIC codes applicable to the facility are 2821 and 2869. The NAICS codes applicable to the facility are 325211 and 325199.

b. Describe the wastewater-generating processes.

See Attachment T-1 Facility Description.

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

Materials List

Raw Materials	Intermediate Products	Final Products
See Attachment T-1 Facility Description, Table 1 Raw Materials, Intermediates, and Products.		

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

- Production areas, maintenance areas, materials-handling areas, and waste-disposal areas
- The location of each unit of the wastewater treatment plant including the location of wastewater collection sumps, impoundments, and outfalls (also include locations of sampling points if significantly different from outfall locations)

Attachment: T-2 Facility Map

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

☐ Yes ☒ No

If **yes**, provide background discussion below.

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

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain:

Federal Emergency Management Agency

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are in use or planned to be used to prevent flooding of the treatment facility/disposal area.

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

☒ Yes ☐ No

If **no**, proceed to Item 2.

h. If **yes** to the above question, has the applicant applied for a U.S. Army Corps of Engineers 404 Dredge and Fill permit?

☐ Yes ☒ No

If **yes**, provide the permit number: The facility will apply for a Dredge and Fill Permit and obtain proper authorization prior to construction of Outfall 010.

If **no**, provide the approximate date you anticipate submitting your application to the Corps:

2. TREATMENT SYSTEM (Instructions, Page 36)

a. List any physical, chemical, or biological treatment process that you use for the treatment of wastewater at your facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

See Attachment T-1 Facility Description.

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

Attachment: T-1 Facility Description: Figure 1 Polymers Wastewater Flow Diagram, Figure 2 Olefins Wastewater Flow Diagram, Figure 3 Acetyls Wastewater Flow Diagram

3. IMPOUNDMENTS (Instructions, Pages 36-39)

Do you use or plan to use any wastewater lagoons, ponds, or impoundments?

☒ Yes ☐ No

If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a-3.h** for **new or proposed** impoundments. If **no**, proceed to Item 4.

Please note: Surface impoundments may also require additional authorizations from the TCEQ Waste Permit Division.

a. Provide the following information in the table provided:

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

Associated Outfall Number: If a discharge occurs from the impoundments, designate the outfall associated with the impoundment.

Liner Type: If the impoundments are lined to comply with specifications outlined for 1) a compacted clay liner (C), 2) an in-situ clay liner (I), or 3) a synthetic/plastic/rubber liner (S), indicate the liner type with the appropriate letter designation **(see instructions for further detail on liner specifications)**. If not, provide a reference to the attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Dimensions: Provide the dimensions, freeboard, surface area, and storage capacity of the impoundments. For impoundments with irregular shapes, submit surface area (instead of length and width), the average depth, and the maximum depth below natural ground level.

Impoundment Information

Parameter	Pond #1 Stormwater	Pond #2 Off-Spec	Pond #3 North Aeration	Pond #4 South Aeration
Use Designation: (T) (D) (C) or (E)	C	C	T	T
Associated Outfall Number	007	007	007	007
Liner Type (C) (I) or (S)	S	S	I	I
Alt. Liner Attachment Reference	-	-	-	-
Length (ft)	271	181	181	88
Width (ft)	177	151	117	85
Depth from Water Surface (ft)	2-12	2-12	9	9
Avg Depth from Nat. Ground Level (ft)	11	11	8	8
Max Depth from Nat. Ground Level (ft)	11	11	8	8
Freeboard (ft)	2	2	2	2
Surface Area (acres)	1.1	0.627	0.485	0.17
Storage Capacity (gallons)	2,520,190	1,182,170	1,274,000	230,140
Compliance with *40 CFR Chapter 257, Subpart D* is required.	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

Impoundment Information

Parameter	Pond #5 Settling	Pond #6 Equalization	Pond #7 Landfarm	Pond #8 Skim Pond#1
Use Designation: (T) (D) (C) or (E)	T	T	T	T
Associated Outfall Number	007	007	008	001
Liner Type (C) (I) or (S)	I	S	C	C
Alt. Liner Attachment Reference	-	-	-	-
Length (ft)	88	181	680	195
Width (ft)	82	90	400	110
Depth from Water Surface (ft)	3	7	4	8
Avg Depth from Nat. Ground Level (ft)	2	6	2	10
Max Depth from Nat. Ground Level (ft)	2	6	2	10
Freeboard (ft)	2	2	2	2
Surface Area (acres)	0.165	0.374	6	0.47
Storage Capacity (gallons)	210,800	781,740	5,000,000	750,000
Compliance with *40 CFR Chapter 257, Subpart D* is required.	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

Impoundment Information

Parameter	Pond #9 Skim Pond #3	Pond #10 C4 Sump	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	C	C		
Associated Outfall Number	003	006		
Liner Type (C) (I) or (S)	Concrete	Concrete		
Alt. Liner Attachment Reference	-	-		
Length (ft)	300	154		
Width (ft)	200	60		
Depth from Water Surface (ft)	8	3		
Avg Depth from Nat. Ground Level (ft)	15	12		
Max Depth from Nat. Ground Level (ft)	15	12		
Freeboard (ft)	2	2		
Surface Area (acres)	0.4	0.21		
Storage Capacity (gallons)	800,000	207,000		
Compliance with *40 CFR Chapter 257, Subpart D* is required.	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No

Impoundment Information

Parameter	Pond #	Pond #	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)				
Associated Outfall Number				
Liner Type (C) (I) or (S)				
Alt. Liner Attachment Reference				
Length (ft)				
Width (ft)				
Depth from Water Surface (ft)				
Avg Depth from Nat. Ground Level (ft)				
Max Depth from Nat. Ground Level (ft)				
Freeboard (ft)				
Surface Area (acres)				
Storage Capacity (gallons)				
Compliance with *40 CFR Chapter 257, Subpart D* is required.	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

The following information (b - h) is required only for **new or proposed** impoundments.

b. Indicate if any of the following data was provided with the application:

☐ Compacted clay liner data

☐ Synthetic/plastic/rubber liner data

☐ In-situ clay liner data

Attachment: Not Applicable

c. Are there any leak detection systems or groundwater monitoring wells in place or planned?

☐ Yes ☐ No

If **yes**, attach information on the leak detection system for each pond and groundwater monitoring well data.

Attachment: Not Applicable

d. Is the bottom of the pond above the seasonal high water table in the shallowest waste-bearing zone?

☐ Yes ☐ No

If **no**, attach additional information describing the depth of the seasonal high water table in the shallowest waste-bearing zone in relation to the depth of the bottom of the new or proposed impoundment and how this may or may not impact groundwater.

Attachment: Not Applicable

e. Attach a USGS quadrangle map or a color copy of original quality and scale which accurately locates and identifies water supply wells and monitor wells within ½ mile radius of the impoundments

Attachment: Not Applicable

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

Attachment: Not Applicable

g. For TLAP permit applications: Are new or proposed impoundment(s) and the land application disposal area are located in the same general area?

☐ Yes ☐ No

If **yes**, provide information for this item in Worksheet 3.0 (Item 5).

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

Attachment: Not Applicable

4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, Pages 39-40)

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

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

Outfall Latitude and Longitude

Outfall Number	Latitude-degrees	Latitude-minutes	Latitude-seconds	Longitude-degrees	Longitude-minutes	Longitude-seconds
001	29.711844	-	-	-95.069825	-	-
101	29.713287	-	-	-95.070275	-	-
201 (to be discontinued)	29.711117	-	-	-95.064889	-	-
003	29.710788	-	-	-95.069989	-	-
004	29.711748	-	-	-95.062431	-	-
104	29.710751	-	-	-95.062124	-	-
005	29.711729	-	-	-95.062629	-	-
105	29.710433	-	-	-95.062767	-	-
006	29.712227	-	-	-95.058930	-	-
007	29.714110	-	-	-95.064348	-	-
107 (to be discontinued)	29.713005	-	-	-95.064950	-	-
207	29.710633	-	-	-95.064875	-	-
307	29.714803	-	-	-95.065352	-	-
407	29.713942	-	-	-95.062809	-	-
008	29.716576	NE location	-	-95.063026	NE location	-
	29.715667	SE location	-	-95.063008	SE location	-
009 (proposed)	29.713244	-	-	-95.065083	-	-
010 (proposed)	29.711889 (estimate)	-	-	-95.056389 (estimate)	-	-

Outfall Location Description

Outfall Number	Location Description
001	Parshall flume south of Skim Pond #1
101	At discharge of Sanitary Package 101 north of Skim Pond #1
201 (to be discontinued)	This outfall has been discontinued (formerly discharge of Sanitary Package 201 near Q-1 Control Room).
003	Overflow of weir east of Skim Pond #3

Outfall Number	Location Description
004	Parshall flume at southeast corner of Acetic Road and Railroad Avenue
104	At discharge of Sanitary Package 104 near QE-1 Control Room
005	Weir at southeast corner of Acetic Road and Railroad Avenue
105	Northeast corner of Demin Drive and Railroad Avenue
006	Weir at northwest corner of Acetic Road and Sulfur Street
007	Parshall flume west of South Aeration Basin
107 (to be discontinued)	This outfall has been discontinued (formerly discharge of Sanitary Package 107 at Vinyl Acetate Monomer Unit).
207	At discharge of Sanitary Package 207 near INEOS Control Room
307	At discharge of Sanitary Package 307 near Acetyls Administration Building
407	At discharge of Sanitary Package 407 near Chemical Loading Dock
008	Northeast and southeast corners of Landfarm Area
009 (proposed)	East of Acetyls Cooling Tower
010 (proposed)	East of Flare Piperack in San Jacinto Bay

Description of Sampling Points (if different from Outfall location)

Outfall Number	Description of Sampling Point
001 – 009	Same as location description above.
010 (proposed)	To be determined following installation of outfall pipeline

Outfall Flow Information – Permitted and Proposed

Outfall Number	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)
001 (Interim Phase)	1.97	3.3	1.97	3.3
001 (Final Phase)	2.6	3.3	2.6	3.3
101	Continuous and variable	Continuous and variable	Continuous and variable	Continuous and variable
201	Continuous and variable	Continuous and variable	Outfall to be removed from permit	Outfall to be removed from permit
003	Intermittent and variable	Intermittent and variable	Intermittent and variable	Intermittent and variable
004	1.5	2.6	1.5	2.6
104	Continuous and variable	Continuous and variable	Continuous and variable	Continuous and variable
005	Intermittent and variable	Intermittent and variable	Intermittent and variable	Intermittent and variable

Outfall Number	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)
105	Intermittent and variable	Intermittent and variable	Intermittent and variable	Intermittent and variable
006	Intermittent and variable	Intermittent and variable	Intermittent and variable	Intermittent and variable
007	1.0	1.2	1.22	1.6
107	Continuous and variable	Continuous and variable	Outfall to be removed from permit	Outfall to be removed from permit
207	Continuous and variable	Continuous and variable	Continuous and variable	Continuous and variable
307	Continuous and variable	Continuous and variable	Continuous and variable	Continuous and variable
407	Continuous and variable	Continuous and variable	Continuous and variable	Continuous and variable
008	Intermittent and variable	Intermittent and variable	Intermittent and variable	Intermittent and variable
009 (proposed	Not applicable	Not applicable	Intermittent and variable	Intermittent and variable
010 (proposed)	Not applicable	Not applicable	0.86	1.10

Outfall Discharge – Method and Measurement

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	No	Yes	Parshall flume / flow meter
101	No	Yes	Estimate
201 (to be discontinued)	No	Yes	Estimate
003	No	Yes	Weir / gauge
004	No	Yes	Flow meter
104	No	Yes	Estimate
005	No	Yes	Weir / gauge
105	No	Yes	Weir / gauge
006	No	Yes	Weir / gauge
007	No	Yes	Parshall flume / flow meter
107 (to be discontinued)	No	Yes	Estimate
207	No	Yes	Estimate
307	No	Yes	Estimate
407	No	Yes	Estimate
008	No	Yes	Estimate
009 (proposed)	No	Yes	Estimate

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
010 (proposed)	Yes	No	To be determined when outfall is constructed

Outfall Discharge – Flow Characteristics

Outfall Number	Intermittent Discharge? Y/N	Seasonal Discharge? Y/N	Continuous Discharge? Y/N	Discharge Duration (hours/ day)	Discharge Duration (days/ month)	Discharge Duration (months/ year)
001	No	No	Yes	24	31	12
101	No	No	Yes	24	31	12
201 (to be discontinued)	Outfall to be removed from permit.					
003	Yes	No	No	Intermittent and variable	Intermittent and variable	Intermittent and variable
004	No	No	Yes	24	31	12
104	No	No	Yes	24	31	12
005	No	No	Yes	24	31	12
105	Yes	No	No	Intermittent and variable	Intermittent and variable	Intermittent and variable
006	Yes	No	No	Intermittent and variable	Intermittent and variable	Intermittent and variable
007	No	No	Yes	24	31	12
107 (to be discontinued)	Outfall to be removed from permit.					
207	No	No	Yes	24	31	12
307	No	No	Yes	24	31	12
407	No	No	Yes	24	31	12
008	Yes	No	No	Intermittent and variable	Intermittent and variable	Intermittent and variable
009 (proposed)	Yes	No	No	Intermittent and variable	Intermittent and variable	Intermittent and variable
010 (proposed)	No	No	Yes	24	31	12

Wastestream Contributions

Outfall No.: **001**

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Process wastewater	1.624	62.5%
Utility wastewater	0.965	37.1%
Sanitary wastewater (internal Outfall 101)	0.010	0.4%
For additional detail, see Attachment T-1 Facility Description, Table 2 Wastewater Sources and Additions by Outfall and Table 3 Wastewater Sources and Flows by Outfall.		

Outfall No.: **101**

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Treated sanitary wastewater	0.010	100%

Outfall No.: **003**

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Same as Outfall 001	Intermittent and variable	100%
For additional detail, see Attachment T-1 Facility Description, Table 2 Wastewater Sources and Additions by Outfall and Table 3 Wastewater Sources and Flows by Outfall.		

Additional Outfall wastestream contributions included as **Attachment:** See pages 10A-10D.

Wastestream Contributions

Outfall No.: 004

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Process wastewater	0.63	42.0%
Utility wastewater	0.86	57.3%
Sanitary wastewater (internal Outfall 104)	0.010	0.7%
For additional detail, see Attachment T-1 Facility Description, Table 2 Wastewater Sources and Additions by Outfall and Table 3 Wastewater Sources and Flows by Outfall.		

Outfall No.: 104

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Treated sanitary wastewater	0.010	100%

Outfall No.: 005

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water, wastewaters from Outfall 105, utility wastewater, groundwater infiltration, de minimis spill clean-up water, Decene Terminal wastewaters, other miscellaneous wastewaters	Intermittent and variable	100%
For additional detail, see Attachment T-1 Facility Description, Table 3 Wastewater Sources and Flows by Outfall.		

Additional Outfall wastestream contributions included as **Attachment:** See pages 10B-10D.

Wastestream Contributions

Outfall No.: 105

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water, utility wastewater, treated sanitary wastewater (via Outfall 104)	Intermittent and variable	100%
For additional detail, see Attachment T-1 Facility Description, Table 2 Wastewater Sources and Additions by Outfall and Table 3 Wastewater Sources and Flows by Outfall.		

Outfall No.: 006

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water, utility wastewater, de minimis spill clean-up wastewaters	Intermittent and variable	100%
For additional detail, see Attachment T-1 Facility Description, Table 2 Wastewater Sources and Additions by Outfall and Table 3 Wastewater Sources and Flows by Outfall.		

Outfall No.: 007

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Process wastewater	0.643	64%
Utility wastewater	0.346	35%
Sanitary wastewater	0.011	1%
For additional detail, see Attachment T-1 Facility Description, Table 3 Wastewater Sources and Flows by Outfall.		

Additional Outfall wastestream contributions included as **Attachment:** See pages 10C-10D.

Wastestream Contributions

Outfall No.: 207, 307, and 407

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Treated sanitary wastewater	0.0036 (each outfall)	100%

Outfall No.: 008

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water, decanted water from biosolids from landfarm area	Intermittent and variable	100%

Outfall No.: 009 (proposed)

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Storm water, utility wastewaters	Intermittent and variable	100%
For additional detail, see Attachment T-1 Facility Description, Table 3 Wastewater Sources and Flows by Outfall.		

Additional Outfall wastestream contributions included as **Attachment:** See page 10D.

Wastestream Contributions

Outfall No.: **010 (proposed)**

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Cooling tower blowdown	0.86	100%

Outfall No.: **N/A**

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Outfall No.: **N/A**

Contributing Wastestreams	Volume (MGD)	% of Total Flow

Additional Outfall wastestream contributions included as **Attachment:** N/A.

5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES (Instructions, Pages 40-41)

a. Does your facility use any cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s)?

☒ Yes ☐ No

b. Does your facility discharge once-through cooling water to the outfall(s)?

☐ Yes ☒ No

c. If **yes** to either Item a **or** b, attach the appropriate SDS with the following information for each chemical additive.

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

Please provide a summary attachment of this information in addition to the submittal of the SDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

Attachment: T-5 Treatment Chemicals and SDSs

d. Cooling Towers and Boilers

Cooling Towers and Boilers

Type of Unit	Number of Units	Dly Avg Blowdown (gallons/day)	Dly Max Blowdown (gallons/day)
Polymers Cooling Towers	3	See Attachment T-1 Facility Description, Table 3. Wastewater Sources and Flows by Outfall.	
Polymers Boilers	2		
Olefins Cooling Tower	1		
Olefins Boilers	2		
Acetyls Cooling Towers	2		
Acetyls Boilers	0		

6. STORMWATER MANAGEMENT (Instructions, Page 41)

Are there any existing or proposed outfalls which discharge stormwater runoff commingled with other wastestreams?

☒ Yes ☐ No

If **no**, proceed to Item 7. See Attachment T-1 Facility Description.

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff in areas where runoff is generated.

7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND SEPTAGE MANAGEMENT AND DISPOSAL (Instructions, Pages 41-42)

a. Please check the appropriate method(s) of domestic sewage and domestic sewage sludge treatment/disposal and complete Worksheet 5.0 or Item 7.b if directed to do so.

- ☐ Facility is connected to a wastewater treatment plant permitted to receive domestic sewage, or the domestic sewage is transported off-site to a permitted facility for treatment, disposal, or both. COMPLETE ITEM 7.b BELOW.
- ☐ Domestic sewage is disposed of by an on-site septic tank and drainfield system. COMPLETE ITEM 7.b BELOW.
- ☐ Both domestic and industrial treatment sludge ARE commingled prior to use or disposal.
- ☒ Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. COMPLETE WORKSHEET 5.0 OF THIS APPLICATION.
- ☐ Facility is a POTW. COMPLETE WORKSHEET 5.0 OF THIS APPLICATION.
- ☐ Domestic sewage is not generated on-site.
- ☐ Other (e.g., portable toilets): Please provide a detailed description:

b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.

8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS (Instructions, Page 42)

Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

If **yes**, provide a brief summary of the requirements and a status update.

9. TOXICITY TESTING (Instructions, Pages 42-43)

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

☒ Yes ☐ No

If **yes**, identify the tests and describe their purposes below. Please attach a copy of all tests performed that have not been previously sent to the TCEQ or the EPA.

Attachment: All test results have been submitted pursuant to the TPDES reporting requirements.

10. OFF-SITE/THIRD PARTY WASTES (Instructions, Page 43)

Do you receive wastes from off-site sources for any or all of the following: treatment in your facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

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

If **yes**, provide responses to Items a, b, and c below.

a. Attach the following information to the application:

- List of wastes received
- Characterization of wastes received
- Volumes of each waste received
- Information on compatibility with on-site wastes
- Identified sources of wastes received
- Name and addresses of generators
- Description of the relationship of waste source(s) with your facility's activities

Attachment:

b. Is wastewater from a TCEQ, NPDES, or TPDES permitted facility commingled with your wastewater after your final treatment and prior to discharge via your final outfall/point of disposal?

☐ Yes ☐ No

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

Attachment:

c. Is your facility a Publicly Owned Treatment Works (POTW) that accepts process wastewater from any Significant Industrial User (SIU) and has or is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☐ No

If **yes**, complete **Worksheet 6.0** of this application.

11. RADIOACTIVE MATERIALS (Instructions, Page 44)

a. Are radioactive materials mined, used, stored, or processed at this facility?

☒ Yes ☐ No

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

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material	Concentration (pCi/L)
Radioactive materials are present in equipment and testing devices, which do not contact wastewater. Sources are maintenance testing devices (Cadmium 109), level transmitters (Cesium 137), gas chromatographs (Nickel 63), process level gauges (Cesium 137 and Americium Beryllium).	Not Applicable

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

☒ Yes ☐ No

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

Radioactive Materials Present in the Discharge

Radioactive Material	Concentration (pCi/L)
NORM can be present in equipment used to manages gases such as natural gas, ethylene, and propylene. Radium 226 and Radium 228 can be present in the NORM equipment. This equipment may be washed to remove materials such as scale and rust, or for maintenance to be performed off-site. These washwaters are managed in the wastewater systems of Outfalls 001 and 004.	<10 pCi/L (estimate)

12. COOLING WATER INTAKE STRUCTURES (Instructions, Pages 44-46)

a. The facility uses or proposes to use a cooling water intake structure to obtain water for cooling purposes?

☒ Yes ☐ No

If **yes**, complete this item (12. Cooling Water Intake Structures); otherwise, stop here.

b. Cooling Water Supplier

1. Complete the following table with information regarding the Cooling Water Intake Structure(s) owner(s), operator(s), and location

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

CWIS ID	S1013463A (Trinity River)	S1013463B (Lake Houston)		
Owner	-	-		
Operator	Coastal Water Authority	Coastal Water Authority		
Latitude	29.962	29.916		
Longitude	-94.81	-95.142		
The LyondellBasell La Porte Complex obtains its water supply from the Coastal Water Authority both directly and indirectly through Battleground Water Supply. The facility also obtains water from onsite wells. The above information was obtained in part from from the TCEQ's Public Water Supply (PWS) database.				

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

   ☒ Yes ☐ No

   If **yes**, provide the Public Water Supplier Registration No. for the entity providing cooling water in the space provided, and stop here.

   - PWS Registration Number: TX1013463

3. Cooling water is obtained from an Independent Supplier

   ☐ Yes ☐ No

   If **no**, proceed to section c; otherwise, if **yes** provide the following:

   - Independent Supplier's TPDES permit number:

     If the Independent Supplier holds a TPDES Industrial Wastewater Permit, provide the permit number in the space provided. Otherwise enter N/A and continue.

   - Independent Supplier's CWIS AIF (in MGD):

     Enter the Independent Supplier's CWIS actual intake flow (AIF) in million gallons per day in the space provided, and continue.

   - The facility uses or proposes to use less than 25% of the Independent Supplier's CWIS AIF for cooling purposes?

     ☐ Yes ☐ No

     If **yes**, stop here. If **no**, proceed to section c.

c. 316(b) General Criteria

Compete all questions in this section unless otherwise directed.

1. The CWIS(s) have or will have a design intake flow of 2 MGD or greater

   ☐ Yes ☐ No

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

   ☐ Yes ☐ No

3. The facility withdraws or proposes to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*

   ☐ Yes ☐ No

   If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2* in the space provided. If additional space is needed for the explanation, include the information as an attachment to the application and provide the attachment number in the space instead.

   Explanation:

If **yes** to all three questions in section c above, proceed to section d. If **no** to any of the questions in section c above the facility does not meet the minimum criteria to be subject to the full requirements of 316(b). Complete Worksheet 11.0, items 1(a), 1(b)(i-iii) and (vi), 2(b)(i), and 3(a) to allow for a determination based upon best professional judgement (BPJ).

d. Phase I vs Phase II Facilities

1. Existing facility (Phase II)

   ☐ Yes ☐ No

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

2. New Facility – (Phase I)

   ☐ Yes ☐ No

   If **yes**, continue.

3. Compliance track selection (For Phase I only; must choose one of the following)

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

   If selected, include information required under *40 CFR §§ 125.86(b)(2)-(4)* as an attachment and complete Worksheet 11.0, items 2 and 3, and Worksheet 11.2.

   ☐ Track I - AIF greater than 10 MGD

   If selected, include information required under *40 CFR § 125.86(b)* as an attachment and complete Worksheet 11.0, items 2 and 3, and Worksheet 11.2.

   ☐ Track II

   If selected, include information required under *40 CFR § 125.86(c)* as an attachment and complete Worksheet 11.0, items 2 and 3, and Worksheet 11.2.

   Attachment:

Note: Items 12, 13, and 14 are required only for **existing permitted** facilities.

13. MAJOR AMENDMENT REQUESTS (Instructions, Page 46)

Are you requesting a major amendment of an existing permit?

☒ Yes ☐ No

If **yes**, list each specific request and provide discussion on the scope of any requested permit changes. If necessary, provide supplemental information or additional data that will support the request.

1. Modification of Outfall 004 discharge point: relocation of Outfall 004 (Option 1), new Outfall 010 (Option 2)
2. For Outfall 007, increase the daily average and daily maximum flow limits to 1.22 million gallons per day (MGD) and 1.60 MGD, respectively, with corresponding increases in applicable concentration and mass limits for the outfall parameters.
3. For Outfall 007, change the biochemical oxygen demand (BOD) daily average mass limit, daily maximum limit, and single grab limit to carbonaceous biochemical oxygen demand (CBOD).
4. Increase the daily average and daily maximum mass limits and single grab concentration limits for Outfalls 001, 004, and 007 for BOD. Remove the dissolved oxygen limit for Outfall 007.
5. Add wastewater sources to Outfalls 001, 003, 004, and 007.
6. Add Outfall 009.
7. Remove internal Outfalls 201 and 107.
8. Remove BOD and TSS limits from Outfalls 101, 104, 207, 307, and 407.
9. Correct error in TSS daily average limit for Outfall 004.
10. Modify due dates for discharge monitoring reports (DMRs).

For additional detail, see Attachment T-3 Amendment Requests.

14. MINOR MODIFICATION REQUESTS (Instructions, Page 47)

Are you requesting any minor modifications to the permit? Note: see the instructions for an exclusive list of changes considered as minor modifications.

☐ Yes ☒ No

If **yes**, list and discuss the requested changes.

N/A

15. MINOR AMENDMENT REQUESTS (Instructions, Page 47)

Are you requesting any minor amendments to the permit?

☐ Yes ☒ No

If **yes**, list and discuss the requested changes.

N/A

WORKSHEET 1.0
EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet is required for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent guidelines.

1. CATEGORICAL INDUSTRIES (Instructions, Pages 50-51)

Is your facility subject to any of the 40 CFR effluent guidelines outlined on page 52 of the instructions?

☒ Yes ☐ No

If **yes**, provide the appropriate information in the table below.

If **no**, this worksheet is not required.

40 CFR Effluent Guidelines

Industry	40 CFR Part
Organic Chemicals, Plastics, and Synthetic Fibers	414

2. PRODUCTION/PROCESS DATA (Instructions, Page 51)

a. Production Data

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

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
Not Applicable			

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

Provide each appropriate subpart and the percent of total production. Also provide the appropriate data for metal-bearing wastestreams as required in *40 CFR Part 414*, Appendices A and B.

Percentages of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metal	Appendix A and B – Process
The are multiple outfalls that are subject to OCPSF effluent guidelines at 40 CFR 414, with different production percentages by outfall. See Attachment T-1 Facility Description, Table 3 Wastewater Sources and Flows by Outfall for production percentages by outfall.			

c. Refineries (*40 CFR Part 419*):

Provide the applicable subcategory and a brief justification.

Not applicable

3. PROCESS/NON-PROCESS WASTEWATER FLOWS (Instructions, Page 51)

Provide a breakdown of process wastewater flow(s) and non-process wastewater flow(s) as directed.

See Attachment T-1 Facility Description, Table 3 Wastewater Sources and Flows by Outfall.

4. NEW SOURCE DETERMINATION (Instructions, Page 51)

Provide a list of wastewater-generating processes subject to effluent guidelines and the appropriate information.

Wastewater-generating Processes Subject to Effluent Guidelines

Process	EPA Guideline: Part	EPA Guideline: Subpart	Date Process/ Construction Commenced
Poly(alpha) Olefins	414	D	1986: A Reactor 1990: B Reactor
Acetic Acid	414	F	1979
Vinyl Acetate Monomer	414	F	1969: A and B Reactors 1969: A Purification 1978: B Purification 1992: C Reactor
Low Density Polyethylene	414	D	1959
High Density Polyethylene	414	D	1960s
Linear Low Density Polyethylene	414	D	1980s, 1996
Ethylene	414	F	1991, 2014

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

    1. periodically inspected by the TCEQ; or
    2. located in another state and is accredited or inspected by that state; or
    3. performing work for another company with a unit located in the same site; or
    4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Table 1 for Outfall No.: 001

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	<2.4	<2.4	<2.4	<2.4
CBOD (5-day)	<2.4	<2.4	<2.4	3.97	1.89
Chemical oxygen demand	18.8	12.3	36	32.6	24.9
Total organic carbon	11.2	11.3	12	13.9	12.1
Dissolved oxygen	8.3	9.2	8.7	5.5	7.9 (*)
Ammonia nitrogen	0.198	<0.2	0.171	0.131	0.15
Total suspended solids	7	27	19.6	7.2	15.2
Nitrate nitrogen	0.612	0.593	0.682	0.738	0.656
Total organic nitrogen	<1	0.587	<1	1.02	0.65
Total phosphorus	0.498	0.693	0.828	0.99	0.75
Oil and grease	2.4	1.5	1.8	1.4	1.8 (*)
Total residual chlorine	<0.01	<0.01	0.03	0.01	0.01 (*)
Total dissolved solids	682	550	532	854	654
Sulfate	99.9	92.6	77.5	65.4	83.8
Chloride	231	144	175	280	208
Fluoride	0.418	0.338	0.272	0.258	0.322
Total alkalinity (mg/L as CaCO3)	170	120	69.3	101	115
Temperature (°F)	60	76	72	63	68 (*)
pH (standard units)	7.45	8.1	7.4	7.8	7.7 (*)
* Grab samples					

Table 2 for Outfall No.: 001

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	166	776	466	144	388	2.5
Antimony, total	1.47	0.661	0.558	0.437	0.782	5
Arsenic, total	2.11	2.6	2.72	3.04	2.62	0.5
Barium, total	157	103	115	143	130	3
Beryllium, total	<0.087	<0.087	<0.087	<0.087	<0.087	0.5
Cadmium, total	0.106	<0.088	0.125	0.101	0.094	1
Chromium, total	0.995	2.61	1.83	1.83	1.82	3
Chromium, hexavalent	<3	<3	<3	<3	<3	3
Chromium, trivalent	<1.55	2.61	1.83	1.83	1.76	N/A
Copper, total	5.97	5.12	5.53	6.59	5.80	2
Cyanide, available	2.18	3.37	4.66	5.92	see below	2/10
Cyanide, avail. (additional samples)	1.96	1.58	0.536	0.649	see below	
Cyanide, avail. (additional samples)	0.594	1.22	1.87	-	2.23(*) (11 samples)	
Lead, total	0.5	1.41	1.02	0.571	0.875	0.5
Mercury, total	0.00237	0.00456	0.00718	0.00286	0.00424 (*)	0.005/0.0005
Nickel, total	3.32	3.68	3.93	3.94	3.72	2
Selenium, total	<0.807	0.882	1.05	<0.807	0.684	5

Silver, total	<0.09	<0.09	<0.09	<0.09	<0.09	0.5
Thallium, total	<0.12	<0.12	<0.12	<0.12	<0.12	0.5
Zinc, total	21.6	49.2	34.1	35.9	35.2	5.0
* Grab samples						

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 001

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	<50	<50	<50	<50	50
Anthracene	<0.192	<0.188	<0.179	<0.192	<0.188	10
Benzene	<5	<5	<5	<5	<5	10
Benzidine	<20.2	<19.8	<18.9	<20.2	<19.8	50
Benzo(a)anthracene	<0.192	<0.188	<0.179	<0.192	<0.188	5
Benzo(a)pyrene	<0.192	<0.188	<0.179	<0.192	<0.188	5
Bis(2-chloroethyl)ether	<0.192	<0.188	<0.179	<0.192	<0.188	10
Bis(2-ethylhexyl)phthalate	<2.02	<1.98	2.3	<2.02	1.33	10
Bromodichloromethane [Dichlorobromomethane]	10.6	9.87	9.92	11.3	10.4	10
Bromoform	<5	<5	<5	<5	<5	10
Carbon tetrachloride	<0.92	<0.92	<0.92	<0.92	<0.92	2
Chlorobenzene	<0.82	<0.82	0.985	0.919	0.681	10
Chlorodibromomethane [Dibromochloromethane]	2.41	1.34	1.06	1.52	1.58	10
Chloroform	41.1	80.9	74	76.4	68.1	10
Chrysene	0.128	<0.188	0.104	<0.192	0.106	5
m-Cresol [3-Methylphenol]	<1.01	<0.99	<0.943	<1.01	<0.988	10
o-Cresol [2-Methylphenol]	<1.01	<0.99	<0.943	<1.01	<0.988	10
p-Cresol [4-Methylphenol]	<1.01	<0.99	<0.943	<1.01	<0.988	10
1,2-Dibromoethane	<5	<5	<5	<5	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<1.01	<0.99	<0.943	<1.01	<0.988	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<1.01	<0.99	<0.943	<1.01	<0.988	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<1.01	<0.99	<0.943	<1.01	<0.988	10
3,3'-Dichlorobenzidine	<1.01	<0.99	<0.943	<1.01	<0.988	5
1,2-Dichloroethane	<5	<5	<5	<5	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5	<5	<5	<5	10

Dichloromethane [Methylene chloride]	<10	<10	<10	<10	<10	20
1,2-Dichloropropane	<5	<5	<5	<5	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	<5	<5	<5	<5	10
2,4-Dimethylphenol	<1.01	<0.99	<0.943	<1.01	<0.988	10

Pollutant	**Samp. 1 (µg/L)***	**Samp. 2 (µg/L)***	**Samp. 3 (µg/L)***	**Samp. 4 (µg/L)***	**Avg. (µg/L)***	**MAL (µg/L)***
Di-n-Butyl phthalate	<1.01	<0.99	<0.943	<1.01	<0.988	10
Ethylbenzene	<5	<5	<5	<5	<5	10
Fluoride	418	338	272	258	322	500
Hexachlorobenzene	<0.192	<0.188	<0.179	<0.192	<0.188	5
Hexachlorobutadiene	<0.192	<0.188	<0.179	<0.192	<0.188	10
Hexachlorocyclopentadiene	<1.01	<0.99	<0.943	<1.01	<0.988	10
Hexachloroethane	<1.01	<0.99	<0.943	<1.01	<0.988	20
Methyl ethyl ketone	<10	<10	<10	<10	<10	50
Nitrobenzene	<2.02	<1.98	<1.89	<2.02	<1.98	10
N-Nitrosodiethylamine	<1.01	<0.99	<0.943	<1.01	<0.988	20
N-Nitroso-di-n-butylamine	<1.5	<1.47	<1.47	<1.44	<1.47	20
Nonylphenol	<1.08	8.89	29.7	<1.09	see below	333
Nonylphenol (additional samples)	6.42	<1.27	<1.12	<1.09	see below	
Nonylphenol (additional samples)	4.01	-	-	-	5.76(***) (9 samples)	
Pentachlorobenzene	<1.01	<0.99	<0.943	<1.01	<0.988	20
Pentachlorophenol	<5.05	<4.95	<4.72	<5.05	<4.93	5
Phenanthrene	<0.192	<0.188	<0.179	<0.192	<0.188	10
Polychlorinated biphenyls (PCBs) (**)	<0.01	<0.00943	<0.0099	<1.01	<0.988	0.2
Pyridine	<1.01	<0.99	<0.943	<1.01	<0.988	20
1,2,4,5-Tetrachlorobenzene	<1.01	<0.99	<0.943	<1.01	<0.988	20
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	<5	<5	<5	<5	10
Toluene	<5	<5	<5	<5	<5	10
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	10
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	10
Trichloroethene [Trichloroethylene]	<5	<5	<5	<5	<5	10
2,4,5-Trichlorophenol	<1.01	<0.99	<0.943	<1.01	<0.988	50
TTHM (Total trihalomethanes)	54.1	92.1	85	89.2	80.1	10
Vinyl chloride	<5	<5	<5	<5	<5	10
*** Grab samples						

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls. Tributyltin

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds

☐ Painting of ships, boats and marine structures

☐ Ship and boat building and repairing

☐ Ship and boat cleaning, salvage, wrecking and scaling

☐ Operation and maintenance of marine cargo handling facilities and marinas

☐ Facilities engaged in wood preserving

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☒ Yes ☐ No

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

Table 4 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	Average	MAL
Tributyltin (µg/L)						0.010
Enterococci (cfu or MPN/100 mL)						N/A
E. coli (cfu or MPN/100 mL)	Bacterial monitoring is performed on the internal outfalls for treated domestic wastewater.					N/A

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 001

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide	X		-	0.224	1	400
Color (PCU)	X		-	15	1	—
Nitrate-Nitrite (as N)	X		-	0.612	1	—
Sulfide (as S)		X	-	<0.01 (**)	1	—
Sulfite (as SO3)		X	<0.64	<0.64 (**)	4	—
Surfactants		X	-	<0.1	1	—
Boron, total	X		-	0.145	1	20
Cobalt, total	X		-	0.000232	1	0.3
Iron, total	X		-	0.257	1	7
Magnesium, total	X		-	6.41	1	20
Manganese, total	X		-	0.0408	1	0.5
Molybdenum, total	X		-	0.0843	1	1
Tin, total		X	-	<0.005	1	5
Titanium, total	X		-	0.00501	1	30
** Grab samples						

* Indicate units if different from µg/L.

Date: 11-1-18

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the "N/A" box below. If GC/MS testing is required, indicate with an 'x' in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 001: Volatile Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	<50	<50	4	50
Acrylonitrile	<50	<50	4	50
Benzene	<5	<5	4	10
Bromoform	<5	<5	4	10
Carbon tetrachloride	<0.92	<0.92	4	2
Chlorobenzene	0.681	0.985	4	10
Chlorodibromomethane	1.58	2.41	4	10
Chloroethane	<10	<10	4	50
2-Chloroethylvinyl ether	<10	<10	4	10
Chloroform	68.1	80.9	4	10
Dichlorobromomethane [Bromodichloromethane]	10.4	11.3	4	10
1,1-Dichloroethane	<5	<5	4	10
1,2-Dichloroethane	<5	<5	4	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5	<5	4	10
1,2-Dichloropropane	<5	<5	4	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5	<5	4	10
Ethylbenzene	<5	<5	4	10
Methyl bromide [Bromomethane]	<10	<10	4	50
Methyl chloride [Chloromethane]	<10	<10	4	50
Methylene chloride [Dichloromethane]	<10	<10	4	20
1,1,2,2-Tetrachloroethane	<5	<5	4	10
Tetrachloroethylene [Tetrachloroethene]	<5	<5	4	10
Toluene	2.23	<5	4	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<5	<5	4	10
1,1,1-Trichloroethane	<5	<5	4	10
1,1,2-Trichloroethane	<5	<5	4	10
Trichloroethylene [Trichloroethene]	<5	<5	4	10
Vinyl chloride	<5	<5	4	10

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Table 9 for Outfall No.: 001 : Acid Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	<0.988	<1.01	4	10
2,4-Dichlorophenol	<0.188	<0.192	4	10
2,4-Dimethylphenol	<0.988	<1.01	4	10
4,6-Dinitro-o-cresol	<4.94	<5.05	4	50
2,4-Dinitrophenol	<9.88	<10.1	4	50
2-Nitrophenol	<0.988	<1.01	4	20
4-Nitrophenol	<4.94	<5.05	4	50
p-Chloro-m-cresol	<0.988	<1.01	4	10
Pentachlorophenol	<4.94	<5.05	4	5
Phenol	<0.988	<1.01	4	10
2,4,6-Trichlorophenol	<0.988	<1.01	4	10

Table 10 for Outfall No.: 001 : Base/Neutral Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	<0.188	<0.192	4	10
Acenaphthylene	<0.188	<0.192	4	10
Anthracene	<0.188	<0.192	4	10
Benzidine	<19.8	<20.2	4	50
Benzo(a)anthracene	<0.188	<0.192	4	5
Benzo(a)pyrene	<0.188	<0.192	4	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	0.123	<0.192	4	10
Benzo(ghi)perylene	0.113	<0.192	4	20
Benzo(k)fluoranthene	<0.188	<0.192	4	5
Bis(2-chloroethoxy)methane	<0.988	<1.01	4	10
Bis(2-chloroethyl)ether	<0.188	<0.192	4	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	<0.188	<0.192	4	10
Bis(2-ethylhexyl)phthalate	1.33	2.3	4	10
4-Bromophenyl phenyl ether	<0.988	<1.01	4	10
Butylbenzyl phthalate	<0.988	<1.01	4	10
2-Chloronaphthalene	<0.188	<0.192	4	10
4-Chlorophenyl phenyl ether	<0.988	<1.01	4	10
Chrysene	0.106	<0.192	4	5
Dibenzo(a,h)anthracene	0.122	<0.192	4	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.988	<1.01	4	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.988	<1.01	4	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.988	<1.01	4	10
3,3'-Dichlorobenzidine	<0.988	<1.01	4	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	0.332	<1.01	4	10
Dimethyl phthalate	<0.988	<1.01	4	10
Di-n-butyl phthalate	<0.988	<1.01	4	10
2,4-Dinitrotoluene	<0.988	<1.01	4	10
2,6-Dinitrotoluene	<0.988	<1.01	4	10
Di-n-octyl phthalate	<0.988	<1.01	4	10
1,2-Diphenylhydrazine (as Azobenzene)	<0.988	<1.01	4	20
Fluoranthene	<0.188	<0.192	4	10
Fluorene	<0.188	<0.192	4	10
Hexachlorobenzene	<0.188	<0.192	4	5
Hexachlorobutadiene	<0.188	<0.192	4	10
Hexachlorocyclopentadiene	<0.988	<1.01	4	10
Hexachloroethane	<0.988	<1.01	4	20
Indeno(1,2,3-cd)pyrene	0.108	<0.192	4	5
Isophorone	<0.988	<1.01	4	10
Naphthalene	<0.188	<0.192	4	10
Nitrobenzene	<1.98	<2.02	4	10
N-Nitrosodimethylamine	<0.988	<1.01	4	50
N-Nitrosodi-n-propylamine	<0.188	<0.192	4	20
N-Nitrosodiphenylamine	<0.988	<1.01	4	20
Phenanthrene	<0.188	<0.192	4	10
Pyrene	<0.188	<0.192	4	10
1,2,4-Trichlorobenzene	<0.988	<1.01	4	10

Table 11 for Outfall No.: 001 : Pesticides

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.0013	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.0013	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.0013	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.0013	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.0013	1	0.05
Chlordane	-	<0.013	1	0.2
4,4'-DDT	-	<0.0013	1	0.02
4,4'-DDE	-	<0.0013	1	0.1
4,4'-DDD	-	<0.0013	1	0.1
Dieldrin	-	<0.0013	1	0.02
Endosulfan I (alpha)	-	<0.0013	1	0.01
Endosulfan II (beta)	-	<0.0013	1	0.02
Endosulfan sulfate	-	<0.0013	1	0.1

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.0013	1	0.02
Endrin aldehyde	-	0.00036	1	0.1
Heptachlor	-	<0.0013	1	0.01
Heptachlor epoxide	-	<0.0013	1	0.01
PCB 1242	<0.0097	<0.01	4	0.2
PCB 1254	<0.0097	<0.01	4	0.2
PCB 1221	<0.0097	<0.01	4	0.2
PCB 1232	<0.0097	<0.01	4	0.2
PCB 1248	<0.0097	<0.01	4	0.2
PCB 1260	<0.0097	<0.01	4	0.2
PCB 1016	<0.0097	<0.01	4	0.2
Toxaphene	-	<0.1	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐ 2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐ 2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐ 2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐ hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

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TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 001
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	-	<50	1	SW 8315
Vanadium, total	7440-62-2	-	2.57	1	EPA 200.8
Vinyl acetate	108-05-4	-	<10	1	EPA 624

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

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Table 1 for Outfall No.: 003

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	-	-	-	<2.4
CBOD (5-day)	-	-	-	-	-
Chemical oxygen demand	30.4	-	-	-	30.4
Total organic carbon	5.23	-	-	-	5.23
Dissolved oxygen	6.4	-	-	-	6.4
Ammonia nitrogen	0.106	-	-	-	0.106
Total suspended solids	380	-	-	-	380
Nitrate nitrogen	0.307	-	-	-	-
Total organic nitrogen	<1	-	-	-	<1
Total phosphorus	0.505	-	-	-	0.505
Oil and grease	1.9	-	-	-	1.9
Total residual chlorine	0.01	-	-	-	0.01
Total dissolved solids	269	-	-	-	269
Sulfate	66.5	-	-	-	66.5
Chloride	39	-	-	-	39
Fluoride	0.215	-	-	-	0.215
Total alkalinity (mg/L as CaCO3)	29.9	-	-	-	29.9
Temperature (°F)	72	-	-	-	72
pH (standard units)	8.5	-	-	-	8.5

Table 2 for Outfall No.: 003

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	5900	-	-	-	5900	2.5
Antimony, total	0.826	-	-	-	0.826	5
Arsenic, total	4.72	-	-	-	4.72	0.5
Barium, total	129	-	-	-	129	3
Beryllium, total	0.754	-	-	-	0.754	0.5
Cadmium, total	0.767	-	-	-	0.767	1
Chromium, total	19.2	-	-	-	19.2	3
Chromium, hexavalent	<3	-	-	-	<3	3
Chromium, trivalent	19.2	-	-	-	19.2	N/A
Copper, total	16.5	-	-	-	16.5	2
Cyanide, available	<2	-	-	-	<2	2/10
Lead, total	15.2	-	-	-	15.2	0.5
Mercury, total	0.0211	-	-	-	0.0211	0.005/0.0005
Nickel, total	7.84	-	-	-	7.84	2
Selenium, total	1.71	-	-	-	1.71	5
Silver, total	0.156	-	-	-	0.156	0.5
Thallium, total	<0.12	-	-	-	<0.12	0.5
Zinc, total	291	-	-	-	291	5.0

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 003

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	-	-	-	<50	50
Anthracene	<0.183	-	-	-	<0.183	10
Benzene	<5	-	-	-	<5	10
Benzidine	<19.2	-	-	-	<19.2	50
Benzo(a)anthracene	<0.183	-	-	-	<0.183	5
Benzo(a)pyrene	<0.183	-	-	-	<0.183	5
Bis(2-chloroethyl)ether	<0.183	-	-	-	<0.183	10
Bis(2-ethylhexyl)phthalate	<1.92	-	-	-	<1.92	10
Bromodichloromethane [Dichlorobromomethane]	2.25	-	-	-	2.25	10
Bromoform	<5	-	-	-	<5	10
Carbon tetrachloride	<0.92	-	-	-	<0.92	2
Chlorobenzene	<5	-	-	-	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	-	-	-	<5	10
Chloroform	19.9	-	-	-	19.9	10
Chrysene	<0.183	-	-	-	<0.183	5
m-Cresol [3-Methylphenol]	<0.962	-	-	-	<0.962	10
o-Cresol [2-Methylphenol]	<0.962	-	-	-	<0.962	10
p-Cresol [4-Methylphenol]	<0.962	-	-	-	<0.962	10
1,2-Dibromoethane	<5	-	-	-	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
3,3'-Dichlorobenzidine	<0.962	-	-	-	<0.962	5
1,2-Dichloroethane	<5	-	-	-	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	-	-	-	<5	10
Dichloromethane [Methylene chloride]	2.36	-	-	-	2.36	20
1,2-Dichloropropane	<5	-	-	-	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	-	-	-	<5	10
2,4-Dimethylphenol	<0.962	-	-	-	<0.962	10

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Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Di-n-Butyl phthalate	<0.962	-	-	-	<0.962	10
Ethylbenzene	<5	-	-	-	<5	10
Fluoride	215	-	-	-	215	500
Hexachlorobenzene	<0.183	-	-	-	<0.183	5
Hexachlorobutadiene	<0.183	-	-	-	<0.183	10
Hexachlorocyclopentadiene	<0.962	-	-	-	<0.962	10
Hexachloroethane	<0.962	-	-	-	<0.962	20
Methyl ethyl ketone	<10	-	-	-	<10	50
Nitrobenzene	<1.92	-	-	-	<1.92	10
N-Nitrosodiethylamine	<0.962	-	-	-	<0.962	20
N-Nitroso-di-n-butylamine	<1.49	-	-	-	<1.49	20
Nonylphenol	27.7	4.3	-	-	16.0	333
Pentachlorobenzene	<0.962	-	-	-	<0.962	20
Pentachlorophenol	<4.81	-	-	-	<4.81	5
Phenanthrene	<0.183	-	-	-	<0.183	10
Polychlorinated biphenyls (PCBs) (**)	0.177	-	-	-	0.177	0.2
Pyridine	<0.962	-	-	-	<0.962	20
1,2,4,5-Tetrachlorobenzene	<0.962	-	-	-	<0.962	20
1,1,2,2-Tetrachloroethane	<5	-	-	-	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	-	-	-	<5	10
Toluene	<5	-	-	-	<5	10
1,1,1-Trichloroethane	<5	-	-	-	<5	10
1,1,2-Trichloroethane	<5	-	-	-	<5	10
Trichloroethene [Trichloroethylene]	<5	-	-	-	<5	10
2,4,5-Trichlorophenol	<0.962	-	-	-	<0.962	50
TTHM (Total trihalomethanes)	22.2	-	-	-	22.2	10
Vinyl chloride	<5	-	-	-	<5	10

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a “<”.

TABLE 4 (Instructions, Page 55)

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds

☐ Painting of ships, boats and marine structures

☐ Ship and boat building and repairing

☐ Ship and boat cleaning, salvage, wrecking and scaling

☐ Operation and maintenance of marine cargo handling facilities and marinas

☐ Facilities engaged in wood preserving

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☒ Yes ☐ No

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

Table 4 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	Average	MAL
Tributyltin (µg/L)						0.010
Enterococci (cfu or MPN/100 mL)						N/A
E. coli (cfu or MPN/100 mL)	Bacterial monitoring is performed on the internal outfalls for treated domestic wastewater.					N/A

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 003
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide		X	-	<0.4	1	400
Color (PCU)	X		-	15	1	—
Nitrate-Nitrite (as N)	X		-	0.307	1	—
Sulfide (as S)	X		-	0.0379	1	—
Sulfite (as SO3)		X	-	<0.64	1	—
Surfactants		X	-	<0.1	1	—
Boron, total	X		-	0.0562	1	20
Cobalt, total	X		-	0.00272	1	0.3
Iron, total	X		-	5.15	1	7
Magnesium, total	X		-	4.58	1	20
Manganese, total	X		-	0.217	1	0.5
Molybdenum, total	X		-	0.0142	1	1
Tin, total		X	-	<0.005	1	5
Titanium, total	X		-	0.0371	1	30

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the "N/A" box below. If GC/MS testing is required, indicate with an 'x' in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 003: Volatile Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	-	<50	1	50
Acrylonitrile	-	<50	1	50
Benzene	-	<5	1	10
Bromoform	-	<5	1	10
Carbon tetrachloride	-	<0.92	1	2
Chlorobenzene	-	<5	1	10
Chlorodibromomethane	-	<5	1	10
Chloroethane	-	<10	1	50
2-Chloroethylvinyl ether	-	<10	1	10
Chloroform	-	19.9	1	10
Dichlorobromomethane [Bromodichloromethane]	-	2.25	1	10
1,1-Dichloroethane	-	<5	1	10
1,2-Dichloroethane	-	<5	1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	-	<5	1	10
1,2-Dichloropropane	-	<5	1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	-	<5	1	10
Ethylbenzene	-	<5	1	10
Methyl bromide [Bromomethane]	-	<10	1	50
Methyl chloride [Chloromethane]	-	<10	1	50
Methylene chloride [Dichloromethane]	-	2.36	1	20
1,1,2,2-Tetrachloroethane	-	<5	1	10
Tetrachloroethylene [Tetrachloroethene]	-	<5	1	10
Toluene	-	<5	1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	-	<5	1	10
1,1,1-Trichloroethane	-	<5	1	10
1,1,2-Trichloroethane	-	<5	1	10
Trichloroethylene [Trichloroethene]	-	<5	1	10
Vinyl chloride	-	<5	1	10

Table 9 for Outfall No.: 003 : Acid Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	-	<0.962	1	10
2,4-Dichlorophenol	-	<0.183	1	10
2,4-Dimethylphenol	-	<0.962	1	10
4,6-Dinitro-o-cresol	-	<4.81	1	50
2,4-Dinitrophenol	-	<9.62	1	50
2-Nitrophenol	-	<0.962	1	20
4-Nitrophenol	-	<4.81	1	50
p-Chloro-m-cresol	-	<0.962	1	10
Pentachlorophenol	-	<4.81	1	5
Phenol	-	<0.962	1	10
2,4,6-Trichlorophenol	-	<0.962	1	10

Table 10 for Outfall No.: 003 : Base/Neutral Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	-	<0.183	1	10
Acenaphthylene	-	<0.183	1	10
Anthracene	-	<0.183	1	10
Benzidine	-	<19.2	1	50
Benzo(a)anthracene	-	<0.183	1	5
Benzo(a)pyrene	-	<0.183	1	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	-	<0.183	1	10
Benzo(ghi)perylene	-	<0.183	1	20
Benzo(k)fluoranthene	-	<0.183	1	5
Bis(2-chloroethoxy)methane	-	<0.962	1	10
Bis(2-chloroethyl)ether	-	<0.183	1	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	-	<0.183	1	10
Bis(2-ethylhexyl)phthalate	-	<1.92	1	10
4-Bromophenyl phenyl ether	-	<0.962	1	10
Butylbenzyl phthalate	-	<0.962	1	10
2-Chloronaphthalene	-	<0.183	1	10
4-Chlorophenyl phenyl ether	-	<0.962	1	10
Chrysene	-	<0.183	1	5
Dibenzo(a,h)anthracene	-	<0.183	1	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	-	<0.962	1	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	-	<0.962	1	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	-	<0.962	1	10
3,3'-Dichlorobenzidine	-	<0.962	1	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	-	<0.962	1	10
Dimethyl phthalate	-	<0.962	1	10
Di-n-butyl phthalate	-	<0.962	1	10
2,4-Dinitrotoluene	-	<0.962	1	10
2,6-Dinitrotoluene	-	<0.962	1	10
Di-n-octyl phthalate	-	<0.962	1	10
1,2-Diphenylhydrazine (as Azobenzene)	-	<0.962	1	20
Fluoranthene	-	<0.183	1	10
Fluorene	-	<0.183	1	10
Hexachlorobenzene	-	<0.183	1	5
Hexachlorobutadiene	-	<0.183	1	10
Hexachlorocyclopentadiene	-	<0.962	1	10
Hexachloroethane	-	<0.962	1	20
Indeno(1,2,3-cd)pyrene	-	<0.183	1	5
Isophorone	-	<0.962	1	10
Naphthalene	-	<0.183	1	10
Nitrobenzene	-	<1.92	1	10
N-Nitrosodimethylamine	-	<0.962	1	50
N-Nitrosodi-n-propylamine	-	<0.183	1	20
N-Nitrosodiphenylamine	-	<0.962	1	20
Phenanthrene	-	<0.183	1	10
Pyrene	-	0.0922	1	10
1,2,4-Trichlorobenzene	-	<0.962	1	10

Table 11 for Outfall No.: 003 : Pesticides

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00125	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00125	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00125	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	0.00102	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00125	1	0.05
Chlordane	-	<0.0125	1	0.2
4,4'-DDT	-	<0.00125	1	0.02
4,4'-DDE	-	<0.00125	1	0.1
4,4'-DDD	-	<0.00125	1	0.1
Dieldrin	-	<0.00125	1	0.02
Endosulfan I (alpha)	-	<0.00125	1	0.01
Endosulfan II (beta)	-	<0.00125	1	0.02
Endosulfan sulfate	-	<0.00125	1	0.1

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Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00125	1	0.02
Endrin aldehyde	-	<0.00125	1	0.1
Heptachlor	-	<0.00125	1	0.01
Heptachlor epoxide	-	<0.00125	1	0.01
PCB 1242	-	<0.00962	1	0.2
PCB 1254	-	<0.00962	1	0.2
PCB 1221	-	<0.00962	1	0.2
PCB 1232	-	<0.00962	1	0.2
PCB 1248	-	<0.00962	1	0.2
PCB 1260	-	0.177	1	0.2
PCB 1016	-	<0.00962	1	0.2
Toxaphene	-	<0.0962	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐ 2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐ 2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐ 2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐ hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

Date: 11-1-18

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 003
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	-	8.96	1	SW 8315
Vanadium, total	7440-62-2	-	22.3	1	EPA 200.8
Vinyl acetate	108-05-4	-	<10	1	EPA 624

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Table 1 for Outfall No.: 004

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	<2.4	<2.4	<2.4	<2.4
CBOD (5-day)	<2.4	<2.4	<2.4	2.48	1.52
Chemical oxygen demand	64.1	60.1	68.2	68.5	65.2
Total organic carbon	28.9	32	28.3	27.1	29.1
Dissolved oxygen (grab)	8.7	7.8	9.1	7.2	8.2 (*)
Ammonia nitrogen	0.279	0.234	0.254	0.0907	0.214
Total suspended solids	18.8	8.2	3.8	2.4	8.3
Nitrate nitrogen	8.58	6.85	13.3	6.76	8.87
Total organic nitrogen	2.44	1.71	2.49	1.3	1.98
Total phosphorus	0.748	0.861	0.884	1.3	0.948
Oil and grease (grab)	2.5	1.5	2.2	1.8	2.0 (*)
Total residual chlorine (grab)	<0.01	<0.01	0.02	<0.01	0.01 (*)
Total dissolved solids	1770	3030	2910	2910	2655
Sulfate	1090	1730	1820	1800	1610
Chloride	270	328	223	266	272
Fluoride	0.436	<1.2	<0.601	<0.301	0.372
Total alkalinity (mg/L as CaCO3)	93.6	125	44.9	118	95.3
Temperature (°F) (grab)	81	85	80	76	80 (*)
pH (standard units) (grab)	7.6	7.6	7.5	7.7	7.6 (*)
* Grab samples					

Table 2 for Outfall No.: 004

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	17.4	28.4	36.7	14	24.1	2.5
Antimony, total	1.22	1.67	1.13	1.22	1.31	5
Arsenic, total	4.82	5.31	6.98	7.13	6.06	0.5
Barium, total	166	185	189	189	182	3
Beryllium, total	<0.087	<0.087	<0.087	<0.087	<0.087	0.5
Cadmium, total	<0.088	0.107	<0.088	<0.088	0.060	1
Chromium, total	2.43	3.2	3.56	2.67	2.96	3
Chromium, hexavalent	<3	4.55	<3	<3	2.26	3
Chromium, trivalent	2.43	<1.55	3.56	2.67	2.36	N/A
Copper, total	8.49	9.1	9.5	7.88	8.74	2
Cyanide, available	7.88	7.47	6.23	8.36	see below	2/10
Cyanide, avail. (additional samples)	3.21	2.41	1.17	2.64	see below	
Cyanide, avail. (additional samples)	2.35	1.73	4.75	-	4.38 (*) (11 samples)	
Lead, total	<0.157	<0.157	<0.157	<0.157	<0.157	0.5
Mercury, total	0.00412	0.00584	0.00514	0.00483	0.00498 (*)	0.005/0.0005
Nickel, total	9.62	8.36	10.6	8.88	9.36	2
Selenium, total	1.46	<0.807	1.41	1.43	1.18	5

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Silver, total	<0.09	<0.09	<0.09	<0.09	<0.09	0.5
Thallium, total	<0.12	<0.12	<0.12	<0.12	<0.12	0.5
Zinc, total	11.2	13.7	12.3	8.45	11.4	5.0
* Grab samples						

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 004
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	<50	<50	<50	<50	50
Anthracene	<0.184	<0.181	<0.179	<0.181	<0.181	10
Benzene	<5	<5	<5	<5	<5	10
Benzidine	<19.4	<19	<18.8	<19	<19	50
Benzo(a)anthracene	<0.184	<0.181	<0.179	<0.181	<0.181	5
Benzo(a)pyrene	<0.184	<0.181	<0.179	<0.181	<0.181	5
Bis(2-chloroethyl)ether	<0.184	<0.181	<0.179	<0.181	<0.181	10
Bis(2-ethylhexyl)phthalate	<1.94	<1.9	<1.89	<1.9	<1.91	10
Bromodichloromethane [Dichlorobromomethane]	0.916	1.78	0.784	0.943	1.10	10
Bromoform	<5	<5	<5	<5	<5	10
Carbon tetrachloride	<0.92	<0.92	<0.92	<0.92	<0.92	2
Chlorobenzene	<5	<5	<5	<5	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	<5	<5	<5	<5	10
Chloroform	12.5	15.4	16.1	15.4	14.8	10
Chrysene	<0.184	<0.181	<0.179	<0.181	<0.181	5
m-Cresol [3-Methylphenol]	<0.971	<0.952	<0.943	<0.952	<0.954	10
o-Cresol [2-Methylphenol]	<0.971	<0.952	<0.943	<0.952	<0.954	10
p-Cresol [4-Methylphenol]	<0.971	<0.952	<0.943	<0.952	<0.954	10
1,2-Dibromoethane	<5	<5	<5	<5	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.971	<0.952	<0.943	<0.952	<0.954	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.971	<0.952	<0.943	<0.952	<0.954	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.971	<0.952	<0.943	<0.952	<0.954	10
3,3'-Dichlorobenzidine	<0.971	<0.952	<0.943	<0.952	<0.954	5
1,2-Dichloroethane	<5	<5	<5	<5	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5	<5	<5	<5	10

Dichloromethane [Methylene chloride]	3.67	<10	<10	<10	4.67	20
1,2-Dichloropropane	<5	<5	<5	<5	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	<5	<5	<5	<5	10
2,4-Dimethylphenol	<0.971	<0.952	<0.943	<0.952	<0.954	10

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Di-n-Butyl phthalate	<0.971	<0.952	<0.943	<0.952	<0.954	10
Ethylbenzene	<5	<5	<5	<5	<5	10
Fluoride	436	<1200	<601	<301	372	500
Hexachlorobenzene	<0.184	<0.181	<0.179	<0.181	<0.181	5
Hexachlorobutadiene	<0.184	<0.181	<0.179	<0.181	<0.181	10
Hexachlorocyclopentadiene	<0.971	<0.952	<0.943	<0.952	<0.954	10
Hexachloroethane	<0.971	<0.952	<0.943	<0.952	<0.954	20
Methyl ethyl ketone	<10	<10	<10	<10	<10	50
Nitrobenzene	<1.94	<1.9	<1.89	<1.9	<1.91	10
N-Nitrosodiethylamine	<0.971	<0.952	<0.943	<0.952	<0.954	20
N-Nitroso-di-n-butylamine	<1.5	<1.49	<1.5	<1.46	<1.48	20
Nonylphenol	<4.84	<4.91	<4.79	<4.84	<4.84 (***)	333
Pentachlorobenzene	<0.971	<0.952	<0.943	<0.952	<0.954	20
Pentachlorophenol	<4.85	<4.76	<4.72	<4.76	<4.77	5
Phenanthrene	<0.184	<0.181	<0.179	<0.181	<0.181	10
Polychlorinated biphenyls (PCBs) (**)	<0.00971	<0.00952	<0.00952	<0.00952	<0.00957	0.2
Pyridine	<0.971	<0.952	<0.943	<0.952	<0.954	20
1,2,4,5-Tetrachlorobenzene	<0.971	<0.952	<0.943	<0.952	<0.954	20
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	<5	<5	<5	<5	10
Toluene	1.68	<5	<5	<5	<5	10
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	10
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	10
Trichloroethene [Trichloroethylene]	<5	<5	<5	<5	<5	10
2,4,5-Trichlorophenol	<0.971	<0.952	<0.943	<0.952	<9.54	50
TTHM (Total trihalomethanes)	13.4	17.2	16.9	16.3	16.0	10
Vinyl chloride	<5	<5	<5	<5	<5	10
*** Grab samples						

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

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

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☒ Yes ☐ No

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

Table 4 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	Average	MAL
Tributyltin (µg/L)						0.010
Enterococci (cfu or MPN/100 mL)						N/A
E. coli (cfu or MPN/100 mL)	Bacterial monitoring is performed on the internal outfalls for treated domestic wastewater.					N/A

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 004
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide	X		-	0.201	1	400
Color (PCU)	X		-	15	1	—
Nitrate-Nitrite (as N)	X		-	8.58	1	—
Sulfide (as S)		X	-	<0.01 (**)	1	—
Sulfite (as SO3)		X	<0.64	<0.64 (**)	4	—
Surfactants	X		-	0.067	1	—
Boron, total	X		-	0.231	1	20
Cobalt, total	X		-	0.000426	1	0.3
Iron, total	X		-	0.0718	1	7
Magnesium, total	X		-	13.8	1	20
Manganese, total	X		-	0.01	1	0.5
Molybdenum, total	X		-	0.0572	1	1
Tin, total	X		-	0.00163	1	5
Titanium, total	X		-	0.00321	1	30
** Grab samples						

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the "N/A" box below. If GC/MS testing is required, indicate with an 'x' in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 004: Volatile Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	<50	<50	4	50
Acrylonitrile	<50	<50	4	50
Benzene	<5	<5	4	10
Bromoform	<5	<5	4	10
Carbon tetrachloride	<0.92	<0.92	4	2
Chlorobenzene	<5	<5	4	10
Chlorodibromomethane	<5	<5	4	10
Chloroethane	<10	<10	4	50
2-Chloroethylvinyl ether	<10	<10	4	10
Chloroform	14.8	16.1	4	10
Dichlorobromomethane [Bromodichloromethane]	1.10	1.78	4	10
1,1-Dichloroethane	<5	<5	4	10
1,2-Dichloroethane	<5	<5	4	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5	<5	4	10
1,2-Dichloropropane	<5	<5	4	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5	<5	4	10
Ethylbenzene	<5	<5	4	10
Methyl bromide [Bromomethane]	<10	<10	4	50
Methyl chloride [Chloromethane]	<10	<10	4	50
Methylene chloride [Dichloromethane]	4.67	<10	4	20
1,1,2,2-Tetrachloroethane	<5	<5	4	10
Tetrachloroethylene [Tetrachloroethene]	<5	<5	4	10
Toluene	2.30	<5	4	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<5	<5	4	10
1,1,1-Trichloroethane	<5	<5	4	10
1,1,2-Trichloroethane	<5	<5	4	10
Trichloroethylene [Trichloroethene]	<5	<5	4	10
Vinyl chloride	<5	<5	4	10

Table 9 for Outfall No.: 004 : Acid Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	<0.954	<0.971	4	10
2,4-Dichlorophenol	<0.181	<0.184	4	10
2,4-Dimethylphenol	<0.954	<0.971	4	10
4,6-Dinitro-o-cresol	<4.77	<4.85	4	50
2,4-Dinitrophenol	<9.54	<9.71	4	50
2-Nitrophenol	<0.954	<0.971	4	20
4-Nitrophenol	<4.77	<4.85	4	50
p-Chloro-m-cresol	<0.954	<0.971	4	10
Pentachlorophenol	<4.77	<4.85	4	5
Phenol	<0.954	<0.971	4	10
2,4,6-Trichlorophenol	<0.954	<0.971	4	10

Table 10 for Outfall No.: 004 : Base/Neutral Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	<0.181	<0.184	4	10
Acenaphthylene	0.083	<1.84	4	10
Anthracene	<0.181	<0.184	4	10
Benzidine	<19	<19.4	4	50
Benzo(a)anthracene	<0.181	<0.184	4	5
Benzo(a)pyrene	<0.181	<0.184	4	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.181	<0.184	4	10
Benzo(ghi)perylene	<0.181	<0.184	4	20
Benzo(k)fluoranthene	<0.181	<0.184	4	5
Bis(2-chloroethoxy)methane	<0.954	<0.971	4	10
Bis(2-chloroethyl)ether	<0.181	<0.184	4	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	<0.181	<0.184	4	10
Bis(2-ethylhexyl)phthalate	<1.91	<1.94	4	10
4-Bromophenyl phenyl ether	<0.954	<0.971	4	10
Butylbenzyl phthalate	<0.954	<0.971	4	10
2-Chloronaphthalene	<0.181	<0.184	4	10
4-Chlorophenyl phenyl ether	<0.954	<0.971	4	10
Chrysene	<0.181	<0.184	4	5
Dibenzo(a,h)anthracene	<0.181	<0.184	4	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.954	<0.971	4	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.954	<0.971	4	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.954	<0.971	4	10
3,3'-Dichlorobenzidine	<0.954	<0.971	4	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	0.323	<0.971	4	10
Dimethyl phthalate	<0.954	<0.971	4	10
Di-n-butyl phthalate	<0.954	<0.971	4	10
2,4-Dinitrotoluene	<0.954	<0.971	4	10
2,6-Dinitrotoluene	<0.954	<0.971	4	10
Di-n-octyl phthalate	<0.954	<0.971	4	10
1,2-Diphenylhydrazine (as Azobenzene)	<0.954	<0.971	4	20
Fluoranthene	<0.181	<0.184	4	10
Fluorene	<0.181	<0.184	4	10
Hexachlorobenzene	<0.181	<0.184	4	5
Hexachlorobutadiene	<0.181	<0.184	4	10
Hexachlorocyclopentadiene	<0.954	<0.971	4	10
Hexachloroethane	<0.954	<0.971	4	20
Indeno(1,2,3-cd)pyrene	<0.181	<0.184	4	5
Isophorone	<0.954	<0.971	4	10
Naphthalene	<0.181	<0.184	4	10
Nitrobenzene	<1.91	<1.94	4	10
N-Nitrosodimethylamine	<0.954	<0.971	4	50
N-Nitrosodi-n-propylamine	<0.181	<0.184	4	20
N-Nitrosodiphenylamine	<0.954	<0.971	4	20
Phenanthrene	<0.181	<0.184	4	10
Pyrene	<0.181	<0.184	4	10
1,2,4-Trichlorobenzene	<0.954	<0.971	4	10

Table 11 for Outfall No.: 004 : Pesticides

Samples are (check one): ☒ Composites ☐ Grabs

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00126	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00126	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.00126	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
Chlordane	-	<0.0126	1	0.2
4,4'-DDT	-	<0.00126	1	0.02
4,4'-DDE	-	<0.00126	1	0.1
4,4'-DDD	-	0.00304	1	0.1
Dieldrin	-	<0.00126	1	0.02
Endosulfan I (alpha)	-	<0.00126	1	0.01
Endosulfan II (beta)	-	<0.00126	1	0.02
Endosulfan sulfate	-	<0.00126	1	0.1

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Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00126	1	0.02
Endrin aldehyde	-	<0.00126	1	0.1
Heptachlor	-	<0.00126	1	0.01
Heptachlor epoxide	-	<0.00126	1	0.01
PCB 1242	<0.00957	<0.00971	4	0.2
PCB 1254	<0.00957	<0.00971	4	0.2
PCB 1221	<0.00957	<0.00971	4	0.2
PCB 1232	<0.00957	<0.00971	4	0.2
PCB 1248	<0.00957	<0.00971	4	0.2
PCB 1260	<0.00957	<0.00971	4	0.2
PCB 1016	<0.00957	<0.00971	4	0.2
Toxaphene	-	<0.0971	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐	2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐	2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐	2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐	0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐	2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐	hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

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TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 004
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	-	20.4	1	SW 8315
Aniline	62-53-3	-	<0.971	1	EPA 625
Carbon disulfide	75-15-0	-	<10	1	EPA 624
Cyclohexane	110-82-7	-	<5	1	EPA 624
Dicyclopentadiene	77-73-6	-	<10	1	EPA 625
Dimethylformamide	68-12-2	-	<9.66	1	EPA 625
Dinitrobenzene	25154-54-5	-	<0.971	1	EPA 625
Formaldehyde	50-00-0	-	<50	1	SW 8315
Isoprene	78-79-5	-	<1	1	EPA 624
Methanol	67.56-1	-	<5	1	SW 8015
Methyl mercaptan	74-93-1	-	-	0	Lab could not analyze
Nitrotoluene	1321-12-6	-	<5	1	EPA 625
Styrene	100-42-5	-	<5	1	EPA 624
Vanadium, total	7440-62-2	-	4.85	1	EPA 200.8
Vinyl acetate	108-05-4	-	<10	1	EPA 624
Xylenes, total	1330-20-7	-	<5	1	EPA 624

TPDES WQ0004013000, Worksheet 2, Outfall 005

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Table 1 for Outfall No.: 005
Samples are (check one): ☐ Composites ☒ Grabs

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	-	-	-	<2.4
CBOD (5-day)	-	-	-	-	-
Chemical oxygen demand	5.4	-	-	-	
Total organic carbon	3.41	-	-	-	3.41
Dissolved oxygen	9.92	-	-	-	9.92
Ammonia nitrogen	0.261	-	-	-	0.261
Total suspended solids	5.2	-	-	-	5.2
Nitrate nitrogen	0.201	-	-	-	0.201
Total organic nitrogen	<1	-	-	-	<1
Total phosphorus	0.106	-	-	-	0.106
Oil and grease	1.2	-	-	-	1.2
Total residual chlorine	<0.01	-	-	-	<0.01
Total dissolved solids	369	-	-	-	369
Sulfate	128	-	-	-	128
Chloride	38.1	-	-	-	38.1
Fluoride	0.492	-	-	-	0.492
Total alkalinity (mg/L as CaCO3)	107	-	-	-	107
Temperature (°F)	72	-	-	-	72
pH (standard units)	8.6	-	-	-	8.6

Table 2 for Outfall No.: 005
Samples are (check one): ☐ Composites ☒ Grabs

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	94.8	-	-	-	94.8	2.5
Antimony, total	1.1	-	-	-	1.1	5
Arsenic, total	0.959	-	-	-	0.959	0.5
Barium, total	55.6	-	-	-	55.6	3
Beryllium, total	<0.087	-	-	-	<0.087	0.5
Cadmium, total	<0.088	-	-	-	<0.088	1
Chromium, total	0.641	-	-	-	0.641	3
Chromium, hexavalent	<3	-	-	-	<3	3
Chromium, trivalent	<1.55	-	-	-	<1.55	N/A
Copper, total	1.3	-	-	-	1.3	2
Cyanide, available	4.89	-	-	-	4.89	2/10
Lead, total	0.204	-	-	-	0.204	0.5
Mercury, total	0.000726	-	-	-	0.000726	0.005/0.0005
Nickel, total	1.75	-	-	-	1.75	2
Selenium, total	<0.807	-	-	-	<0.807	5
Silver, total	<0.09	-	-	-	<0.09	0.5
Thallium, total	<0.12	-	-	-	<0.12	0.5
Zinc, total	16.6	-	-	-	16.6	5.0

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 005

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	-	-	-	<50	50
Anthracene	<0.181	-	-	-	<0.181	10
Benzene	<5	-	-	-	<5	10
Benzidine	<19	-	-	-	<19	50
Benzo(a)anthracene	<0.181	-	-	-	<0.181	5
Benzo(a)pyrene	<0.181	-	-	-	<0.181	5
Bis(2-chloroethyl)ether	<0.181	-	-	-	<0.181	10
Bis(2-ethylhexyl)phthalate	<1.9	-	-	-	<1.9	10
Bromodichloromethane [Dichlorobromomethane]	<5	-	-	-	<5	10
Bromoform	<5	-	-	-	<5	10
Carbon tetrachloride	<0.92	-	-	-	<0.92	2
Chlorobenzene	<5	-	-	-	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	-	-	-	<5	10
Chloroform	<5	-	-	-	<5	10
Chrysene	<0.181	-	-	-	<0.181	5
m-Cresol [3-Methylphenol]	<0.952	-	-	-	<0.952	10
o-Cresol [2-Methylphenol]	<0.952	-	-	-	<0.952	10
p-Cresol [4-Methylphenol]	<0.952	-	-	-	<0.952	10
1,2-Dibromoethane	<5	-	-	-	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.952	-	-	-	<0.952	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.952	-	-	-	<0.952	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.952	-	-	-	<0.952	10
3,3'-Dichlorobenzidine	<0.952	-	-	-	<0.952	5
1,2-Dichloroethane	<5	-	-	-	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	-	-	-	<5	10
Dichloromethane [Methylene chloride]	<10	-	-	-	<10	20
1,2-Dichloropropane	<5	-	-	-	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	-	-	-	<5	10
2,4-Dimethylphenol	<0.952	-	-	-	<0.952	10

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Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Di-n-Butyl phthalate	<0.952	-	-	-	<0.952	10
Ethylbenzene	<5	-	-	-	<5	10
Fluoride	492	-	-	-	492	500
Hexachlorobenzene	<0.181	-	-	-	<0.181	5
Hexachlorobutadiene	<0.181	-	-	-	<0.181	10
Hexachlorocyclopentadiene	<0.952	-	-	-	<0.952	10
Hexachloroethane	<0.952	-	-	-	<0.952	20
Methyl ethyl ketone	<10	-	-	-	<10	50
Nitrobenzene	<1.9	-	-	-	<1.9	10
N-Nitrosodiethylamine	<0.952	-	-	-	<0.952	20
N-Nitroso-di-n-butylamine	<1.47	-	-	-	<1.47	20
Nonylphenol	<4.81	-	-	-	<4.81	333
Pentachlorobenzene	<0.952	-	-	-	<0.952	20
Pentachlorophenol	<4.76	-	-	-	<4.76	5
Phenanthrene	<0.181	-	-	-	<0.181	10
Polychlorinated biphenyls (PCBs) (**)	<0.00971	-	-	-	<0.00971	0.2
Pyridine	<0.952	-	-	-	<0.952	20
1,2,4,5-Tetrachlorobenzene	<0.952	-	-	-	<0.952	20
1,1,2,2-Tetrachloroethane	<5	-	-	-	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	-	-	-	<5	10
Toluene	<5	-	-	-	<5	10
1,1,1-Trichloroethane	<5	-	-	-	<5	10
1,1,2-Trichloroethane	<5	-	-	-	<5	10
Trichloroethene [Trichloroethylene]	<5	-	-	-	<5	10
2,4,5-Trichlorophenol	<0.952	-	-	-	<0.952	50
TTHM (Total trihalomethanes)	<5	-	-	-	<5	10
Vinyl chloride	<5	-	-	-	<5	10

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds

☐ Painting of ships, boats and marine structures

☐ Ship and boat building and repairing

☐ Ship and boat cleaning, salvage, wrecking and scaling

☐ Operation and maintenance of marine cargo handling facilities and marinas

☐ Facilities engaged in wood preserving

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

Table 4 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

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

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 005
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide	X		-	0.11	1	400
Color (PCU)	X		-	5	1	—
Nitrate-Nitrite (as N)	X		-	0.201	1	—
Sulfide (as S)		X	-	<0.01	1	—
Sulfite (as SO3)		X	-	<0.64	1	—
Surfactants		X	-	<0.1	1	—
Boron, total	X		-	0.435	1	20
Cobalt, total	X		-	0.000148	1	0.3
Iron, total	X		-	0.147	1	7
Magnesium, total	X		-	6.62	1	20
Manganese, total	X		-	0.0522	1	0.5
Molybdenum, total	X		-	0.00636	1	1
Tin, total	X		-	0.00509	1	5
Titanium, total	X		-	0.00319	1	30

* Indicate units if different from µg/L.

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TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the “N/A” box below. If GC/MS testing is required, indicate with an ‘x’ in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 005: Volatile Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	-	<50	1	50
Acrylonitrile	-	<50	1	50
Benzene	-	<5	1	10
Bromoform	-	<5	1	10
Carbon tetrachloride	-	<0.92	1	2
Chlorobenzene	-	<5	1	10
Chlorodibromomethane	-	<5	1	10
Chloroethane	-	<10	1	50
2-Chloroethylvinyl ether	-	<10	1	10
Chloroform	-	<5	1	10
Dichlorobromomethane [Bromodichloromethane]	-	<5	1	10
1,1-Dichloroethane	-	<5	1	10
1,2-Dichloroethane	-	<5	1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	-	<5	1	10
1,2-Dichloropropane	-	<5	1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	-	<5	1	10
Ethylbenzene	-	<5	1	10
Methyl bromide [Bromomethane]	-	<10	1	50
Methyl chloride [Chloromethane]	-	<10	1	50
Methylene chloride [Dichloromethane]	-	<10	1	20
1,1,2,2-Tetrachloroethane	-	<5	1	10
Tetrachloroethylene [Tetrachloroethene]	-	<5	1	10
Toluene	-	<5	1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	-	<5	1	10
1,1,1-Trichloroethane	-	<5	1	10
1,1,2-Trichloroethane	-	<5	1	10
Trichloroethylene [Trichloroethene]	-	<5	1	10
Vinyl chloride	-	<5	1	10

Table 9 for Outfall No.: 005 : Acid Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	-	<0.952	1	10
2,4-Dichlorophenol	-	<0.181	1	10
2,4-Dimethylphenol	-	<0.952	1	10
4,6-Dinitro-o-cresol	-	<4.76	1	50
2,4-Dinitrophenol	-	<9.52	1	50
2-Nitrophenol	-	<0.952	1	20
4-Nitrophenol	-	<4.76	1	50
p-Chloro-m-cresol	-	<0.952	1	10
Pentachlorophenol	-	<4.76	1	5
Phenol	-	<0.952	1	10
2,4,6-Trichlorophenol	-	<0.952	1	10

Table 10 for Outfall No.: 005 : Base/Neutral Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	-	<0.181	1	10
Acenaphthylene	-	<0.181	1	10
Anthracene	-	<0.181	1	10
Benzidine	-	<19	1	50
Benzo(a)anthracene	-	<0.181	1	5
Benzo(a)pyrene	-	<0.181	1	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	-	<0.181	1	10
Benzo(ghi)perylene	-	<0.181	1	20
Benzo(k)fluoranthene	-	<0.181	1	5
Bis(2-chloroethoxy)methane	-	<0.952	1	10
Bis(2-chloroethyl)ether	-	<0.181	1	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	-	<0.181	1	10
Bis(2-ethylhexyl)phthalate	-	<1.9	1	10
4-Bromophenyl phenyl ether	-	<0.952	1	10
Butylbenzyl phthalate	-	<0.952	1	10
2-Chloronaphthalene	-	<0.181	1	10
4-Chlorophenyl phenyl ether	-	<0.952	1	10
Chrysene	-	<0.181	1	5
Dibenzo(a,h)anthracene	-	<0.181	1	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	-	<0.952	1	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	-	<0.952	1	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	-	<0.952	1	10
3,3'-Dichlorobenzidine	-	<0.952	1	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	-	0.146	1	10
Dimethyl phthalate	-	<0.952	1	10
Di-n-butyl phthalate	-	<0.952	1	10
2,4-Dinitrotoluene	-	<0.952	1	10
2,6-Dinitrotoluene	-	<0.952	1	10
Di-n-octyl phthalate	-	<0.952	1	10
1,2-Diphenylhydrazine (as Azobenzene)	-	<0.952	1	20
Fluoranthene	-	<0.181	1	10
Fluorene	-	<0.181	1	10
Hexachlorobenzene	-	<0.181	1	5
Hexachlorobutadiene	-	<0.181	1	10
Hexachlorocyclopentadiene	-	<0.952	1	10
Hexachloroethane	-	<0.952	1	20
Indeno(1,2,3-cd)pyrene	-	<0.181	1	5
Isophorone	-	<0.952	1	10
Naphthalene	-	<0.181	1	10
Nitrobenzene	-	<1.9	1	10
N-Nitrosodimethylamine	-	<0.952	1	50
N-Nitrosodi-n-propylamine	-	<0.181	1	20
N-Nitrosodiphenylamine	-	<0.952	1	20
Phenanthrene	-	<0.181	1	10
Pyrene	-	<0.181	1	10
1,2,4-Trichlorobenzene	-	<0.952	1	10

Table 11 for Outfall No.: 005: Pesticides

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00126	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00126	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.00126	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
Chlordane	-	<0.0126	1	0.2
4,4'-DDT	-	<0.00126	1	0.02
4,4'-DDE	-	<0.00126	1	0.1
4,4'-DDD	-	<0.00126	1	0.1
Dieldrin	-	<0.00126	1	0.02
Endosulfan I (alpha)	-	<0.00126	1	0.01
Endosulfan II (beta)	-	<0.00126	1	0.02
Endosulfan sulfate	-	<0.00126	1	0.1

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Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00126	1	0.02
Endrin aldehyde	-	<0.00126	1	0.1
Heptachlor	-	<0.00126	1	0.01
Heptachlor epoxide	-	<0.00126	1	0.01
PCB 1242	-	<0.00971	1	0.2
PCB 1254	-	<0.00971	1	0.2
PCB 1221	-	<0.00971	1	0.2
PCB 1232	-	<0.00971	1	0.2
PCB 1248	-	<0.00971	1	0.2
PCB 1260	-	<0.00971	1	0.2
PCB 1016	-	<0.00971	1	0.2
Toxaphene	-	<0.0971	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐	2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐	2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐	2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐	0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐	2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐	hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 005
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Vanadium, total	7440-62-2	-	1.43	1	EPA 200.8

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Table 1 for Outfall No.: 006

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	-	-	-	<2.4
CBOD (5-day)	-	-	-	-	-
Chemical oxygen demand	4.78	-	-	-	4.78
Total organic carbon	5.84	-	-	-	5.84
Dissolved oxygen	9.94	-	-	-	9.94
Ammonia nitrogen	<0.2	-	-	-	<0.2
Total suspended solids	9.4	-	-	-	9.4
Nitrate nitrogen	0.258	-	-	-	0.258
Total organic nitrogen	<1	-	-	-	<1
Total phosphorus	0.0624	-	-	-	0.624
Oil and grease	1.3	-	-	-	1.3
Total residual chlorine	0.01	-	-	-	0.01
Total dissolved solids	198	-	-	-	198
Sulfate	21.7	-	-	-	21.7
Chloride	25.4	-	-	-	25.4
Fluoride	0.29	-	-	-	0.29
Total alkalinity (mg/L as CaCO3)	91.7	-	-	-	91.7
Temperature (°F)	76	-	-	-	76
pH (standard units)	8.7	-	-	-	8.7

Table 2 for Outfall No.: 006

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	315	-	-	-	315	2.5
Antimony, total	1.44	-	-	-	1.44	5
Arsenic, total	0.949	-	-	-	0.949	0.5
Barium, total	55	-	-	-	55	3
Beryllium, total	<0.087	-	-	-	<0.087	0.5
Cadmium, total	<0.088	-	-	-	<0.088	1
Chromium, total	0.547	-	-	-	0.547	3
Chromium, hexavalent	<3	-	-	-	<3	3
Chromium, trivalent	<1.55	-	-	-	<1.55	N/A
Copper, total	1.54	-	-	-	1.54	2
Cyanide, available	1.9	-	-	-	1.9	2/10
Lead, total	0.318	-	-	-	0.318	0.5
Mercury, total	0.000463	-	-	-	0.000463	0.005/0.0005
Nickel, total	1.23	-	-	-	1.23	2
Selenium, total	0.953	-	-	-	0.953	5
Silver, total	<0.09	-	-	-	<0.09	0.5
Thallium, total	<0.12	-	-	-	<0.12	0.5
Zinc, total	25.1	-	-	-	25.1	5.0

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 006

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	-	-	-	<50	50
Anthracene	<0.183	-	-	-	<0.183	10
Benzene	<5	-	-	-	<5	10
Benzidine	<19.2	-	-	-	<19.2	50
Benzo(a)anthracene	<0.183	-	-	-	<0.183	5
Benzo(a)pyrene	<0.183	-	-	-	<0.183	5
Bis(2-chloroethyl)ether	<0.183	-	-	-	<0.183	10
Bis(2-ethylhexyl)phthalate	<1.92	-	-	-	<1.92	10
Bromodichloromethane [Dichlorobromomethane]	3	-	-	-	3	10
Bromoform	<5	-	-	-	<5	10
Carbon tetrachloride	<0.92	-	-	-	<0.92	2
Chlorobenzene	<5	-	-	-	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	-	-	-	<5	10
Chloroform	18.2	-	-	-	18.2	10
Chrysene	<0.183	-	-	-	<0.183	5
m-Cresol [3-Methylphenol]	<0.962	-	-	-	<0.962	10
o-Cresol [2-Methylphenol]	<0.962	-	-	-	<0.962	10
p-Cresol [4-Methylphenol]	<0.962	-	-	-	<0.962	10
1,2-Dibromoethane	<5	-	-	-	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.962	-	-	-	<0.962	10
3,3'-Dichlorobenzidine	<0.962	-	-	-	<0.962	5
1,2-Dichloroethane	<5	-	-	-	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	-	-	-	<5	10
Dichloromethane [Methylene chloride]	<10	-	-	-	<10	20
1,2-Dichloropropane	<5	-	-	-	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	-	-	-	<5	10
2,4-Dimethylphenol	<0.962	-	-	-	<0.962	10

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Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Di-n-Butyl phthalate	<0.962	-	-	-	<0.962	10
Ethylbenzene	<5	-	-	-	<5	10
Fluoride	290	-	-	-	290	500
Hexachlorobenzene	<0.183	-	-	-	<0.183	5
Hexachlorobutadiene	<0.183	-	-	-	<0.183	10
Hexachlorocyclopentadiene	<0.962	-	-	-	<0.962	10
Hexachloroethane	<0.962	-	-	-	<0.962	20
Methyl ethyl ketone	<10	-	-	-	<10	50
Nitrobenzene	<1.92	-	-	-	<1.92	10
N-Nitrosodiethylamine	<0.962	-	-	-	<0.962	20
N-Nitroso-di-n-butylamine	<1.49	-	-	-	<1.49	20
Nonylphenol	<4.9	-	-	-	<4.9	333
Pentachlorobenzene	<0.962	-	-	-	<0.962	20
Pentachlorophenol	<4.81	-	-	-	<4.81	5
Phenanthrene	<0.183	-	-	-	<0.183	10
Polychlorinated biphenyls (PCBs) (**)	<0.00962	-	-	-	<0.00962	0.2
Pyridine	<0.962	-	-	-	<0.962	20
1,2,4,5-Tetrachlorobenzene	<0.962	-	-	-	<0.962	20
1,1,2,2-Tetrachloroethane	<5	-	-	-	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	-	-	-	<5	10
Toluene	<5	-	-	-	<5	10
1,1,1-Trichloroethane	<5	-	-	-	<5	10
1,1,2-Trichloroethane	<5	-	-	-	<5	10
Trichloroethene [Trichloroethylene]	<5	-	-	-	<5	10
2,4,5-Trichlorophenol	<0.962	-	-	-	<0.962	50
TTHM (Total trihalomethanes)	21.2	-	-	-	21.2	10
Vinyl chloride	<5	-	-	-	<5	10

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55)

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds

☐ Painting of ships, boats and marine structures

☐ Ship and boat building and repairing

☐ Ship and boat cleaning, salvage, wrecking and scaling

☐ Operation and maintenance of marine cargo handling facilities and marinas

☐ Facilities engaged in wood preserving

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

Table 4 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

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

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 006
Samples are (check one): ☐ Composites ☒ Grabs

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide		X	-	<0.4	1	400
Color (PCU)	X		-	20	1	—
Nitrate-Nitrite (as N)	X		-	0.385	1	—
Sulfide (as S)		X	-	<0.01	1	—
Sulfite (as SO3)		X	-	<0.64	1	—
Surfactants		X	-	<0.1	1	—
Boron, total	X		-	0.0343	1	20
Cobalt, total	X		-	0.000146	1	0.3
Iron, total	X		-	0.289	1	7
Magnesium, total	X		-	4.12	1	20
Manganese, total	X		-	0.0294	1	0.5
Molybdenum, total	X		-	0.00293	1	1
Tin, total	X		-	0.00186	1	5
Titanium, total	X		-	0.00773	1	30

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the “N/A” box below. If GC/MS testing is required, indicate with an ‘x’ in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 006: Volatile Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	-	<50	1	50
Acrylonitrile	-	<50	1	50
Benzene	-	<5	1	10
Bromoform	-	<5	1	10
Carbon tetrachloride	-	<0.92	1	2
Chlorobenzene	-	<5	1	10
Chlorodibromomethane	-	<5	1	10
Chloroethane	-	<10	1	50
2-Chloroethylvinyl ether	-	<10	1	10
Chloroform	-	18.2	1	10
Dichlorobromomethane [Bromodichloromethane]	-	3	1	10
1,1-Dichloroethane	-	<5	1	10
1,2-Dichloroethane	-	<5	1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	-	<5	1	10
1,2-Dichloropropane	-	<5	1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	-	<5	1	10
Ethylbenzene	-	<5	1	10
Methyl bromide [Bromomethane]	-	<10	1	50
Methyl chloride [Chloromethane]	-	<10	1	50
Methylene chloride [Dichloromethane]	-	<10	1	20
1,1,2,2-Tetrachloroethane	-	<5	1	10
Tetrachloroethylene [Tetrachloroethene]	-	<5	1	10
Toluene	-	<5	1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	-	<5	1	10
1,1,1-Trichloroethane	-	<5	1	10
1,1,2-Trichloroethane	-	<5	1	10
Trichloroethylene [Trichloroethene]	-	<5	1	10
Vinyl chloride	-	<5	1	10

Table 9 for Outfall No.: 006 : Acid Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	-	<0.962	1	10
2,4-Dichlorophenol	-	<0.183	1	10
2,4-Dimethylphenol	-	<0.962	1	10
4,6-Dinitro-o-cresol	-	<4.81	1	50
2,4-Dinitrophenol	-	<9.62	1	50
2-Nitrophenol	-	<0.962	1	20
4-Nitrophenol	-	<4.81	1	50
p-Chloro-m-cresol	-	<0.962	1	10
Pentachlorophenol	-	<4.81	1	5
Phenol	-	<0.962	1	10
2,4,6-Trichlorophenol	-	<0.962	1	10

Table 10 for Outfall No.: 006 : Base/Neutral Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	-	<0.183	1	10
Acenaphthylene	-	<0.183	1	10
Anthracene	-	<0.183	1	10
Benzidine	-	<19.2	1	50
Benzo(a)anthracene	-	<0.183	1	5
Benzo(a)pyrene	-	<0.183	1	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	-	<0.183	1	10
Benzo(ghi)perylene	-	<0.183	1	20
Benzo(k)fluoranthene	-	<0.183	1	5
Bis(2-chloroethoxy)methane	-	<0.962	1	10
Bis(2-chloroethyl)ether	-	<0.183	1	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	-	<0.183	1	10
Bis(2-ethylhexyl)phthalate	-	<1.92	1	10
4-Bromophenyl phenyl ether	-	<0.962	1	10
Butylbenzyl phthalate	-	<0.962	1	10
2-Chloronaphthalene	-	<0.183	1	10
4-Chlorophenyl phenyl ether	-	<0.962	1	10
Chrysene	-	<0.183	1	5
Dibenzo(a,h)anthracene	-	<0.183	1	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	-	<0.962	1	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	-	<0.962	1	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	-	<0.962	1	10
3,3'-Dichlorobenzidine	-	<0.962	1	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	-	0.158	1	10
Dimethyl phthalate	-	<0.962	1	10
Di-n-butyl phthalate	-	<0.962	1	10
2,4-Dinitrotoluene	-	<0.962	1	10
2,6-Dinitrotoluene	-	<0.962	1	10
Di-n-octyl phthalate	-	<0.962	1	10
1,2-Diphenylhydrazine (as Azobenzene)	-	<0.962	1	20
Fluoranthene	-	<0.183	1	10
Fluorene	-	<0.183	1	10
Hexachlorobenzene	-	<0.183	1	5
Hexachlorobutadiene	-	<0.183	1	10
Hexachlorocyclopentadiene	-	<0.962	1	10
Hexachloroethane	-	<0.962	1	20
Indeno(1,2,3-cd)pyrene	-	<0.183	1	5
Isophorone	-	<0.962	1	10
Naphthalene	-	<0.183	1	10
Nitrobenzene	-	<1.92	1	10
N-Nitrosodimethylamine	-	<0.962	1	50
N-Nitrosodi-n-propylamine	-	<0.183	1	20
N-Nitrosodiphenylamine	-	<0.962	1	20
Phenanthrene	-	<0.183	1	10
Pyrene	-	<0.183	1	10
1,2,4-Trichlorobenzene	-	<0.962	1	10

Table 11 for Outfall No.: 006 : Pesticides

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00125	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00125	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00125	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.00125	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00125	1	0.05
Chlordane	-	<0.0125	1	0.2
4,4'-DDT	-	<0.00125	1	0.02
4,4'-DDE	-	<0.00125	1	0.1
4,4'-DDD	-	<0.00125	1	0.1
Dieldrin	-	<0.00125	1	0.02
Endosulfan I (alpha)	-	<0.00125	1	0.01
Endosulfan II (beta)	-	<0.00125	1	0.02
Endosulfan sulfate	-	<0.00125	1	0.1

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00125	1	0.02
Endrin aldehyde	-	<0.00125	1	0.1
Heptachlor	-	<0.00125	1	0.01
Heptachlor epoxide	-	<0.00125	1	0.01
PCB 1242	-	<0.00962	1	0.2
PCB 1254	-	<0.00962	1	0.2
PCB 1221	-	<0.00962	1	0.2
PCB 1232	-	<0.00962	1	0.2
PCB 1248	-	<0.00962	1	0.2
PCB 1260	-	<0.00962	1	0.2
PCB 1016	-	<0.00962	1	0.2
Toxaphene	-	<0.0962	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐	2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐	2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐	2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐	0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐	2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐	hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 006
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Vanadium, total	7440-62-2	-	3.51	1	EPA 200.8

TPDES WQ0004013000, Worksheet 2, Outfall 007

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

1. periodically inspected by the TCEQ; or
2. located in another state and is accredited or inspected by that state; or
3. performing work for another company with a unit located in the same site; or
4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Table 1 for Outfall No.: 007

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	<2.4	3.16	<2.4	2.65	2.05
CBOD (5-day)	<2.4	3.9	<2.4	4.56	2.72
Chemical oxygen demand	16.3	22.3	42.9	49.7	32.8
Total organic carbon	13.1	14.8	19.5	21.3	17.2
Dissolved oxygen	8.6	7.6	9.9	4.8	7.7 (*)
Ammonia nitrogen	1.63	<0.2	1.4	<0.2	0.81
Total suspended solids	3.2	<6.67	6	5.2	4.4
Nitrate nitrogen	0.434	0.372	1.73	0.788	0.831
Total organic nitrogen	1.31	1.24	1.49	1.83	1.47
Total phosphorus	1.67	0.906	1.37	1.58	1.38
Oil and grease	1.9	1.5	1.7	1.5	1.6 (*)
Total residual chlorine	0.01	0.06	0.02	0.03	0.03 (*)
Total dissolved solids	762	642	690	798	723
Sulfate	283	237	192	173	221
Chloride	103	149	147	158	139
Fluoride	0.79	0.604	0.923	0.877	0.799
Total alkalinity (mg/L as $CaCO_3$)	152	137	88	168	136
Temperature (°F)	74	81	73	68	74 (*)
pH (standard units)	7.6	7.7	7.3	7.7	7.6 (*)
* Grab samples					

Table 2 for Outfall No.: 007

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	114	121	234	142	153	2.5
Antimony, total	0.964	0.745	0.706	0.573	0.747	5
Arsenic, total	1.38	2.14	3.17	3.89	2.64	0.5
Barium, total	121	130	152	150	138	3
Beryllium, total	<0.087	<0.087	<0.087	<0.087	<0.087	0.5
Cadmium, total	0.107	<0.088	<0.088	<0.088	0.060	1
Chromium, total	1.29	0.875	1.47	1.49	1.28	3
Chromium, hexavalent	<3	<3	<3	<3	<3	3
Chromium, trivalent	<1.55	<1.55	<1.55	<1.55	<1.55	N/A
Copper, total	4.32	6.56	14.9	11.8	9.40	2
Cyanide, available	0.767	3.29	5.94	6.97	4.24 (*)	2/10
Lead, total	0.18	<0.157	0.219	0.164	0.160	0.5
Mercury, total	0.00884	0.00529	0.00548	0.00834	0.00699 (*)	0.005/0.0005
Nickel, total	3.78	6.99	7.42	6.63	6.20	2
Selenium, total	<5	<5	1.24	1.1	1.84	5
Silver, total	<0.09	0.166	<0.09	<0.09	0.075	0.5
Thallium, total	<0.12	<0.12	<0.12	<0.12	<0.12	0.5

Zinc, total	49.4	36.9	32.4	23.2	35.5	5.0
* Grab samples						

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 007
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	<50	<50	<50	<50	50
Anthracene	<0.209	<0.179	<0.179	<0.179	<0.186	10
Benzene	<5	<5	<5	<5	<5	10
Benzidine	<22	<18.9	<18.9	<18.9	<19.7	50
Benzo(a)anthracene	<0.209	<0.179	<0.179	<0.179	<0.186	5
Benzo(a)pyrene	<0.209	<0.179	<0.179	<0.179	<0.186	5
Bis(2-chloroethyl)ether	<0.209	<0.179	<0.179	<0.179	<0.186	10
Bis(2-ethylhexyl)phthalate	<2.2	<1.89	<1.89	<1.89	<1.97	10
Bromodichloromethane [Dichlorobromomethane]	<5	<5	<5	1.81	2.33	10
Bromoform	<5	<5	<5	<5	<5	10
Carbon tetrachloride	<0.92	<0.92	<0.92	<0.92	<0.92	2
Chlorobenzene	<5	<5	<5	<5	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	<5	<5	<5	<5	10
Chloroform	3.36	18.1	15.1	18.4	13.7	10
Chrysene	<0.209	<0.179	<0.179	<0.179	<0.186	5
m-Cresol [3-Methylphenol]	<1.1	<0.943	<0.943	<0.943	<0.982	10
o-Cresol [2-Methylphenol]	<1.1	<0.943	<0.943	<0.943	<0.982	10
p-Cresol [4-Methylphenol]	<1.1	<0.943	<0.943	<0.943	<0.982	10
1,2-Dibromoethane	<5	<5	<5	<5	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<1.1	<0.943	<0.943	<0.943	<0.943	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<1.1	<0.943	<0.943	<0.943	<0.943	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<1.1	<0.943	<0.943	<0.943	<0.943	10
3,3'-Dichlorobenzidine	<1.1	<0.943	<0.943	<0.943	<0.943	5
1,2-Dichloroethane	<5	<5	<5	<5	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	<5	<5	<5	<5	10
Dichloromethane [Methylene chloride]	<10	<10	<10	<10	<10	20
1,2-Dichloropropane	<5	<5	<5	<5	<5	10

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	<5	<5	<5	<5	10
2,4-Dimethylphenol	<1.1	<0.943	<0.943	<0.943	<0.982	10
Di-n-Butyl phthalate	<1.1	<0.943	<0.943	<0.943	<0.982	10
Ethylbenzene	<5	<5	<5	<5	<5	10
Fluoride	790	604	923	877	798	500
Hexachlorobenzene	<0.209	<0.179	<0.179	<0.179	<0.186	5
Hexachlorobutadiene	<0.209	<0.179	<0.179	<0.179	<0.179	10
Hexachlorocyclopentadiene	<1.1	<0.943	<0.943	<0.943	<0.982	10
Hexachloroethane	<1.1	<0.943	<0.943	<0.943	<0.982	20
Methyl ethyl ketone	<10	<10	<10	<10	<10	50
Nitrobenzene	<2.2	<1.89	<1.89	<1.89	<1.97	10
N-Nitrosodiethylamine	<1.1	<0.943	<0.943	<0.943	<0.974	20
N-Nitroso-di-n-butylamine	<1.74	<1.5	<1.52	<1.46	<1.46	20
Nonylphenol	<4.77	<4.8	<4.77	<4.91	<4.81 (***)	333
Pentachlorobenzene	<1.1	<0.943	<0.943	<0.943	<0.982	20
Pentachlorophenol	<5.49	<4.72	<4.72	<4.72	<4.91	5
Phenanthrene	<0.209	<0.179	<0.179	<0.179	<0.187	10
Polychlorinated biphenyls (PCBs) (**)	<0.00971	<0.00943	<0.00943	<0.00943	<0.00952	0.2
Pyridine	<1.1	<0.943	<0.943	<0.943	<0.982	20
1,2,4,5-Tetrachlorobenzene	<1.1	<0.943	<0.943	<0.943	<0.982	20
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	<5	<5	<5	<5	10
Toluene	<5	<5	<5	1.54	2.26	10
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	10
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	10
Trichloroethene [Trichloroethylene]	<5	<5	<5	<5	<5	10
2,4,5-Trichlorophenol	<1.1	<0.943	<0.943	<0.943	<0.982	50
TTHM (Total trihalomethanes)	3.36	18.1	15.1	20.2	14.2	10
Vinyl chloride	<5	<5	<5	<5	<5	10
*** Grab samples						

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55)

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

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

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☒ Yes ☐ No

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

Table 4 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	Average	MAL
Tributyltin (µg/L)						0.010
Enterococci (cfu or MPN/100 mL)						N/A
E. coli (cfu or MPN/100 mL)	Bacterial monitoring is performed on the internal outfalls for treated domestic wastewater.					N/A

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 007

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide		X	-	<0.4	1	400
Color (PCU)	X		-	10	1	—
Nitrate-Nitrite (as N)	X		-	0.434	1	—
Sulfide (as S)		X	-	<0.01 (**)	1	—
Sulfite (as SO3)		X	<0.64	<0.64 (**)	4	—
Surfactants		X	-	<0.01	1	—
Boron, total	X		-	0.359	1	20
Cobalt, total	X		-	0.000235	1	0.3
Iron, total	X		-	0.288	1	7
Magnesium, total	X		-	5.48	1	20
Manganese, total	X		-	0.0169	1	0.5
Molybdenum, total	X		-	0.0117	1	1
Tin, total		X	-	<0.005	1	5
Titanium, total	X		-	0.00342	1	30
** Grab samples						

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the "N/A" box below. If GC/MS testing is required, indicate with an 'x' in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 007: Volatile Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	<50	<50	4	50
Acrylonitrile	<50	<50	4	50
Benzene	<5	<5	4	10
Bromoform	<5	<5	4	10
Carbon tetrachloride	<0.92	<0.92	4	2
Chlorobenzene	<5	<5	4	10
Chlorodibromomethane	<5	<5	4	10
Chloroethane	<10	<10	4	50
2-Chloroethylvinyl ether	<10	<10	4	10
Chloroform	13.7	18.4	4	10
Dichlorobromomethane [Bromodichloromethane]	2.33	<5	4	10
1,1-Dichloroethane	<5	<5	4	10
1,2-Dichloroethane	<5	<5	4	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<5	<5	4	10
1,2-Dichloropropane	<5	<5	4	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<5	<5	4	10
Ethylbenzene	<5	<5	4	10
Methyl bromide [Bromomethane]	<10	<10	4	50
Methyl chloride [Chloromethane]	<10	<10	4	50
Methylene chloride [Dichloromethane]	<10	<10	4	20
1,1,2,2-Tetrachloroethane	<5	<5	4	10
Tetrachloroethylene [Tetrachloroethene]	<5	<5	4	10
Toluene	<5	<5	4	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<5	<5	4	10
1,1,1-Trichloroethane	<5	<5	4	10
1,1,2-Trichloroethane	<5	<5	4	10
Trichloroethylene [Trichloroethene]	<5	<5	4	10
Vinyl chloride	<5	<5	4	10

Table 9 for Outfall No.: 007 : Acid Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	<0.982	<1.1	4	10
2,4-Dichlorophenol	<0.186	<0.209	4	10
2,4-Dimethylphenol	<0.982	<1.1	4	10
4,6-Dinitro-o-cresol	<4.91	<5.49	4	50
2,4-Dinitrophenol	<9.82	<11	4	50
2-Nitrophenol	<0.982	<1.1	4	20
4-Nitrophenol	<4.91	<5.49	4	50
p-Chloro-m-cresol	<0.982	<1.1	4	10
Pentachlorophenol	<4.91	<5.49	4	5
Phenol	<0.982	<1.1	4	10
2,4,6-Trichlorophenol	<0.982	<1.1	4	10

Table 10 for Outfall No.: 007 : Base/Neutral Compounds

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	<0.186	<0.209	4	10
Acenaphthylene	<0.186	<0.209	4	10
Anthracene	<0.186	<0.209	4	10
Benzidine	<19.7	<22	4	50
Benzo(a)anthracene	<0.186	<0.209	4	5
Benzo(a)pyrene	<0.186	<0.209	4	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.186	<0.209	4	10
Benzo(ghi)perylene	<0.186	<0.209	4	20
Benzo(k)fluoranthene	<0.186	<0.209	4	5
Bis(2-chloroethoxy)methane	<0.982	<1.1	4	10
Bis(2-chloroethyl)ether	<0.186	<0.209	4	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	<0.186	<0.209	4	10
Bis(2-ethylhexyl)phthalate	<1.97	<2.2	4	10
4-Bromophenyl phenyl ether	<0.982	<1.1	4	10
Butylbenzyl phthalate	<0.982	<1.1	4	10
2-Chloronaphthalene	<0.186	<0.209	4	10
4-Chlorophenyl phenyl ether	<0.982	<1.1	4	10
Chrysene	<0.186	<0.209	4	5
Dibenzo(a,h)anthracene	<0.186	<0.209	4	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.982	<1.1	4	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.982	<1.1	4	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.982	<1.1	4	10
3,3'-Dichlorobenzidine	<0.982	<1.1	4	5

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Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	0.338	<0.943	4	10
Dimethyl phthalate	<0.982	<1.1	4	10
Di-n-butyl phthalate	<0.982	<1.1	4	10
2,4-Dinitrotoluene	<0.982	<1.1	4	10
2,6-Dinitrotoluene	<0.982	<1.1	4	10
Di-n-octyl phthalate	<0.982	<1.1	4	10
1,2-Diphenylhydrazine (as Azobenzene)	<0.982	<1.1	4	20
Fluoranthene	<0.186	<0.209	4	10
Fluorene	<0.186	<0.209	4	10
Hexachlorobenzene	<0.186	<0.209	4	5
Hexachlorobutadiene	<0.186	<0.209	4	10
Hexachlorocyclopentadiene	<0.982	<1.1	4	10
Hexachloroethane	<0.982	<1.1	4	20
Indeno(1,2,3-cd)pyrene	<0.186	<0.209	4	5
Isophorone	<0.982	<1.1	4	10
Naphthalene	<0.186	<0.209	4	10
Nitrobenzene	<1.96	<2.2	4	10
N-Nitrosodimethylamine	<0.982	<1.1	4	50
N-Nitrosodi-n-propylamine	<0.186	<0.209	4	20
N-Nitrosodiphenylamine	<0.982	<1.1	4	20
Phenanthrene	<0.186	<0.209	4	10
Pyrene	<0.186	<0.209	4	10
1,2,4-Trichlorobenzene	<0.982	<1.1	4	10

Table 11 for Outfall No.: 007: Pesticides

Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00126	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00126	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.00126	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00126	1	0.05
Chlordane	-	<0.0126	1	0.2
4,4'-DDT	-	<0.00126	1	0.02
4,4'-DDE	-	<0.00126	1	0.1
4,4'-DDD	-	0.00093	1	0.1
Dieldrin	-	<0.00126	1	0.02
Endosulfan I (alpha)	-	<0.00126	1	0.01
Endosulfan II (beta)	-	<0.00126	1	0.02
Endosulfan sulfate	-	<0.00126	1	0.1

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00126	1	0.02
Endrin aldehyde	-	<0.00126	1	0.1
Heptachlor	-	<0.00126	1	0.01
Heptachlor epoxide	-	<0.00126	1	0.01
PCB 1242	<0.00952	<0.00971	4	0.2
PCB 1254	<0.00952	<0.00971	4	0.2
PCB 1221	<0.00952	<0.00971	4	0.2
PCB 1232	<0.00952	<0.00971	4	0.2
PCB 1248	<0.00952	<0.00971	4	0.2
PCB 1260	<0.00952	<0.00971	4	0.2
PCB 1016	<0.00952	<0.00971	4	0.2
Toxaphene	-	<0.0971	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐ 2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐ 2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐ 2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐ hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 007
Samples are (check one): ☒ **Composites** ☐ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	-	8.68	1	SW 8315
Crotonaldehyde	123-73-9	-	<10	1	SW 8015
Methanol	67.56-1	-	<5	1	SW 8015
Vanadium, total	7440-62-2	-	7.87	1	EPA 200.8
Vinyl acetate	108-05-4	-	<10	1	EPA 624
Zirconium	7440-67-7	-	7.42	1	EPA 200.7

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 is **required** for applications submitted for a TPDES permit.

Worksheet 2.0 is **not required** for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater runoff.

1. LABORATORY ACCREDITATION (Instructions, Page 52)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:

   1. periodically inspected by the TCEQ; or
   2. located in another state and is accredited or inspected by that state; or
   3. performing work for another company with a unit located in the same site; or
   4. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of designated representatives who may sign the certification.

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

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 52-54)

Please read the general testing requirements in the instructions for important information about sampling, test methods, MALs, and averaging sample results.

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 54-66)

Table 1 and Table 2 (Instructions, Page 54)

Completion of Tables 1 and 2 is required for all external outfalls for new, renewal, and amendment applications.

Date: 11-1-18

Table 1 for Outfall No.: 008

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	Average (mg/L)
BOD (5-day)	17.2	-	-	-	17.2
CBOD (5-day)	-	-	-	-	-
Chemical oxygen demand	65.1	-	-	-	65.1
Total organic carbon	23.1	-	-	-	23.1
Dissolved oxygen	7.2	-	-	-	7.2
Ammonia nitrogen	14.1	-	-	-	14.1
Total suspended solids	80	-	-	-	80
Nitrate nitrogen	0.183	-	-	-	0.183
Total organic nitrogen	0.9	-	-	-	0.9
Total phosphorus	1.41	-	-	-	1.41
Oil and grease	1.5	-	-	-	1.5
Total residual chlorine	0.04	-	-	-	0.04
Total dissolved solids	1090	-	-	-	1090
Sulfate	45.7	-	-	-	45.7
Chloride	59.2	-	-	-	59.2
Fluoride	0.493	-	-	-	0.493
Total alkalinity (mg/L as CaCO3)	616	-	-	-	616
Temperature (°F)	70	-	-	-	70
pH (standard units)	8	-	-	-	8

Table 2 for Outfall No.: 008

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Average (µg/L)	MAL (µg/L)
Aluminum, total	4250	-	-	-	4250	2.5
Antimony, total	0.545	-	-	-	0.545	5
Arsenic, total	2.78	-	-	-	2.78	0.5
Barium, total	96.5	-	-	-	96.5	3
Beryllium, total	<0.087	-	-	-	<0.087	0.5
Cadmium, total	<0.088	-	-	-	<0.088	1
Chromium, total	6.03	-	-	-	6.03	3
Chromium, hexavalent	<3	-	-	-	<3	3
Chromium, trivalent	6.03	-	-	-	6.03	N/A
Copper, total	2.97	-	-	-	2.97	2
Cyanide, available	2.44	-	-	-	2.44	2/10
Lead, total	0.862	-	-	-	0.862	0.5
Mercury, total	0.00203	-	-	-	0.00203	0.005/0.0005
Nickel, total	9.21	-	-	-	9.21	2
Selenium, total	<5	-	-	-	<5	5
Silver, total	0.138	-	-	-	0.138	0.5
Thallium, total	<0.12	-	-	-	<0.12	0.5
Zinc, total	54.7	-	-	-	54.7	5.0

TABLE 3 (Instructions, Page 54).

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

Partial completion of Table 3 is required for all external outfalls with non-process wastewater discharges.

For discharges of stormwater runoff commingled with other wastestreams, complete Table 3 as instructed

Table 3 for Outfall No.: 008

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	-	-	-	<50	50
Anthracene	<0.179	-	-	-	<0.179	10
Benzene	<5	-	-	-	<5	10
Benzidine	<18.9	-	-	-	<18.9	50
Benzo(a)anthracene	<0.179	-	-	-	<0.179	5
Benzo(a)pyrene	<0.179	-	-	-	<0.179	5
Bis(2-chloroethyl)ether	<0.179	-	-	-	<0.179	10
Bis(2-ethylhexyl)phthalate	<1.89	-	-	-	<1.89	10
Bromodichloromethane [Dichlorobromomethane]	<5	-	-	-	<5	10
Bromoform	<5	-	-	-	<5	10
Carbon tetrachloride	<0.92	-	-	-	<0.92	2
Chlorobenzene	<5	-	-	-	<5	10
Chlorodibromomethane [Dibromochloromethane]	<5	-	-	-	<5	10
Chloroform	<5	-	-	-	<5	10
Chrysene	<0.179	-	-	-	<0.179	5
m-Cresol [3-Methylphenol]	<0.943	-	-	-	<0.943	10
o-Cresol [2-Methylphenol]	<0.943	-	-	-	<0.943	10
p-Cresol [4-Methylphenol]	<0.943	-	-	-	<0.943	10
1,2-Dibromoethane	<5	-	-	-	<5	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.943	-	-	-	<0.943	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.943	-	-	-	<0.943	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.943	-	-	-	<0.943	10
3,3'-Dichlorobenzidine	<0.943	-	-	-	<0.943	5
1,2-Dichloroethane	<5	-	-	-	<5	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<5	-	-	-	<5	10
Dichloromethane [Methylene chloride]	<10	-	-	-	<10	20
1,2-Dichloropropane	<5	-	-	-	<5	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<5	-	-	-	<5	10
2,4-Dimethylphenol	<0.943	-	-	-	<0.943	10

Date: 11-1-18

Pollutant	Samp. 1 (µg/L)*	Samp. 2 (µg/L)*	Samp. 3 (µg/L)*	Samp. 4 (µg/L)*	Avg. (µg/L)*	MAL (µg/L)*
Di-n-Butyl phthalate	<0.943	-	-	-	<0.943	10
Ethylbenzene	<5	-	-	-	<5	10
Fluoride	493	-	-	-	493	500
Hexachlorobenzene	<0.179	-	-	-	<0.179	5
Hexachlorobutadiene	<0.179	-	-	-	<0.179	10
Hexachlorocyclopentadiene	<0.943	-	-	-	<0.943	10
Hexachloroethane	<0.943	-	-	-	<0.943	20
Methyl ethyl ketone	<10	-	-	-	<10	50
Nitrobenzene	<1.89	-	-	-	<1.89	10
N-Nitrosodiethylamine	<0.943	-	-	-	<0.943	20
N-Nitroso-di-n-butylamine	<1.44	-	-	-	<1.44	20
Nonylphenol	<4.77	-	-	-	<4.77	333
Pentachlorobenzene	<0.943	-	-	-	<0.943	20
Pentachlorophenol	<4.72	-	-	-	<4.72	5
Phenanthrene	<0.179	-	-	-	<0.179	10
Polychlorinated biphenyls (PCBs) (**)	<0.00952	-	-	-	<0.00952	0.2
Pyridine	<0.943	-	-	-	<0.943	20
1,2,4,5-Tetrachlorobenzene	<0.943	-	-	-	<0.943	20
1,1,2,2-Tetrachloroethane	<5	-	-	-	<5	10
Tetrachloroethene [Tetrachloroethylene]	<5	-	-	-	<5	10
Toluene	<5	-	-	-	<5	10
1,1,1-Trichloroethane	<5	-	-	-	<5	10
1,1,2-Trichloroethane	<5	-	-	-	<5	10
Trichloroethene [Trichloroethylene]	<5	-	-	-	<5	10
2,4,5-Trichlorophenol	<0.943	-	-	-	<0.943	50
TTHM (Total trihalomethanes)	<5	-	-	-	<5	10
Vinyl chloride	<5	-	-	-	<5	10

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Page 55)

Partial completion of Table 4 (only those pollutants which are required by the conditions specified below) **is required** for each external outfall.

Completion of Table 4 **is not required** for internal outfalls.

a. *Tributyltin*

Is your facility an industrial/commercial facility which directly disposes of wastewater from the types of operations listed below or a domestic facility which receives wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, indicate all of the following criteria which apply and provide the appropriate testing results in the table below.

☐ Manufacturers and formulators of tributyltin or related compounds

☐ Painting of ships, boats and marine structures

☐ Ship and boat building and repairing

☐ Ship and boat cleaning, salvage, wrecking and scaling

☐ Operation and maintenance of marine cargo handling facilities and marinas

☐ Facilities engaged in wood preserving

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. *Enterococci*

Does or will your facility discharge **directly** into **saltwater** receiving waters **and**:

Enterococci bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

c. *E. coli*

Does or will your facility discharge **directly** into **freshwater** receiving waters **and**:

E. coli bacteria are expected to be present in the discharge based on facility processes?

☐ Yes ☒ No

Domestic wastewater is or will be discharged?

☐ Yes ☒ No

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

Table 4 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

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

TABLE 5 (Instructions, Page 56)

Completion of Table 5 **is required** for all external outfalls which discharge process wastewater or other wastewaters which may contain pesticides or herbicides from a facility which manufactures or formulates pesticides or herbicides. Completion of Table 5 **is not required** for internal outfalls.

Does your facility manufacture or formulate pesticides or herbicides?

☐ Yes ☒ No

If **yes**, provide the appropriate testing results in Table 5.

Table 5 for Outfall No.: N/A
Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	Average (µg/L)*	MAL (µg/L)*
Aldrin						0.01
Carbaryl						5
Chlordane						0.2
Chlorpyrifos						0.05
4,4'-DDD						0.1
4,4'-DDE						0.1
4,4'-DDT						0.02
2,4-D						0.7
Danitol [Fenpropathrin]						—
Demeton						0.20
Diazinon						0.5/0.1
Dicofol [Kelthane]						1
Dieldrin						0.02
Diuron						0.090
Endosulfan I (*alpha*)						0.01
Endosulfan II (*beta*)						0.02
Endosulfan sulfate						0.1
Endrin						0.02
Guthion [Azinphos methyl]						0.1
Heptachlor						0.01
Heptachlor epoxide						0.01
Hexachlorocyclohexane (*alpha*)						0.05
Hexachlorocyclohexane (*beta*)						0.05
Hexachlorocyclohexane (*gamma*) [Lindane]						0.05
Hexachlorophene						10
Malathion						0.1
Methoxychlor						2.0
Mirex						0.02
Parathion (ethyl)						0.1
Toxaphene						0.3
2,4,5-TP [Silvex]						0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 56)

Completion of Table 6 is required for all external outfalls but is not required for internal outfalls.

Table 6 for Outfall No.: 008
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutants	Believed Present	Believed Absent	Average Concentration (mg/L)	Maximum Concentration (mg/L)	No. of Samples	MAL (µg/L)*
Bromide	X		-	0.155	1	400
Color (PCU)	X		-	20	1	—
Nitrate-Nitrite (as N)	X		-	0.183	1	—
Sulfide (as S)		X	-	<0.01	1	—
Sulfite (as SO3)		X	-	<0.64	1	—
Surfactants	X		-	0.075	1	—
Boron, total	X		-	0.377	1	20
Cobalt, total	X		-	0.00108	1	0.3
Iron, total	X		-	1.05	1	7
Magnesium, total	X		-	23.1	1	20
Manganese, total	X		-	0.382	1	0.5
Molybdenum, total	X		-	0.00991	1	1
Tin, total		X	-	<0.005	1	5
Titanium, total	X		-	0.00562	1	30

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 56)

Indicate any of the industrial categories applicable to your facility; otherwise, check the “N/A” box below. If GC/MS testing is required, indicate with an ‘x’ in the box provided that the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

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

*Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Pages 56-57)

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

Completion of Tables 8, 9, 10, and 11 **is not required** for internal outfalls.

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

Table 8 for Outfall No.: 008: Volatile Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acrolein	-	<50	1	50
Acrylonitrile	-	<50	1	50
Benzene	-	<5	1	10
Bromoform	-	<5	1	10
Carbon tetrachloride	-	<0.92	1	2
Chlorobenzene	-	<5	1	10
Chlorodibromomethane	-	<5	1	10
Chloroethane	-	<10	1	50
2-Chloroethylvinyl ether	-	<10	1	10
Chloroform	-	<5	1	10
Dichlorobromomethane [Bromodichloromethane]	-	<5	1	10
1,1-Dichloroethane	-	<5	1	10
1,2-Dichloroethane	-	<5	1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	-	<5	1	10
1,2-Dichloropropane	-	<5	1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	-	<5	1	10
Ethylbenzene	-	<5	1	10
Methyl bromide [Bromomethane]	-	<10	1	50
Methyl chloride [Chloromethane]	-	<10	1	50
Methylene chloride [Dichloromethane]	-	<10	1	20
1,1,2,2-Tetrachloroethane	-	<5	1	10
Tetrachloroethylene [Tetrachloroethene]	-	<5	1	10
Toluene	-	<5	1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	-	<5	1	10
1,1,1-Trichloroethane	-	<5	1	10
1,1,2-Trichloroethane	-	<5	1	10
Trichloroethylene [Trichloroethene]	-	<5	1	10
Vinyl chloride	-	<5	1	10

Table 9 for Outfall No.: 008 : Acid Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
2-Chlorophenol	-	<0.943	1	10
2,4-Dichlorophenol	-	<0.179	1	10
2,4-Dimethylphenol	-	<0.943	1	10
4,6-Dinitro-o-cresol	-	<4.72	1	50
2,4-Dinitrophenol	-	<0.943	1	50
2-Nitrophenol	-	<0.943	1	20
4-Nitrophenol	-	<4.72	1	50
p-Chloro-m-cresol	-	<0.943	1	10
Pentachlorophenol	-	<4.72	1	5
Phenol	-	<0.943	1	10
2,4,6-Trichlorophenol	-	<0.943	1	10

Table 10 for Outfall No.: 008 : Base/Neutral Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Acenaphthene	-	<0.179	1	10
Acenaphthylene	-	<0.179	1	10
Anthracene	-	<0.179	1	10
Benzidine	-	<18.9	1	50
Benzo(a)anthracene	-	<0.179	1	5
Benzo(a)pyrene	-	<0.179	1	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	-	<0.179	1	10
Benzo(ghi)perylene	-	<0.179	1	20
Benzo(k)fluoranthene	-	<0.179	1	5
Bis(2-chloroethoxy)methane	-	<0.943	1	10
Bis(2-chloroethyl)ether	-	<0.179	1	10
Bis(2-chloroisopropyl)ether (as 2,2'Oxybis(1-chloropropane)	-	<0.179	1	10
Bis(2-ethylhexyl)phthalate	-	<1.89	1	10
4-Bromophenyl phenyl ether	-	<0.943	1	10
Butylbenzyl phthalate	-	<0.943	1	10
2-Chloronaphthalene	-	<0.179	1	10
4-Chlorophenyl phenyl ether	-	<0.943	1	10
Chrysene	-	<0.179	1	5
Dibenzo(a,h)anthracene	-	<0.179	1	5
1,2-Dichlorobenzene [o-Dichlorobenzene]	-	<0.943	1	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	-	<0.943	1	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	-	<0.943	1	10
3,3'-Dichlorobenzidine	-	<0.943	1	5

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Diethyl phthalate	-	0.171	1	10
Dimethyl phthalate	-	<0.943	1	10
Di-n-butyl phthalate	-	<0.943	1	10
2,4-Dinitrotoluene	-	<0.943	1	10
2,6-Dinitrotoluene	-	<0.943	1	10
Di-n-octyl phthalate	-	<0.943	1	10
1,2-Diphenylhydrazine (as Azobenzene)	-	<0.943	1	20
Fluoranthene	-	<0.179	1	10
Fluorene	-	<0.179	1	10
Hexachlorobenzene	-	<0.179	1	5
Hexachlorobutadiene	-	<0.179	1	10
Hexachlorocyclopentadiene	-	<0.943	1	10
Hexachloroethane	-	<0.943	1	20
Indeno(1,2,3-cd)pyrene	-	<0.179	1	5
Isophorone	-	0.127	1	10
Naphthalene	-	<0.179	1	10
Nitrobenzene	-	<1.89	1	10
N-Nitrosodimethylamine	-	<0.943	1	50
N-Nitrosodi-n-propylamine	-	<0.179	1	20
N-Nitrosodiphenylamine	-	<0.943	1	20
Phenanthrene	-	<0.179	1	10
Pyrene	-	<0.179	1	10
1,2,4-Trichlorobenzene	-	<0.943	1	10

Table 11 for Outfall No.: 008 : Pesticides

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Aldrin	-	<0.00124	1	0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	-	<0.00124	1	0.05
beta-BHC [beta-Hexachlorocyclohexane]	-	<0.00124	1	0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	-	<0.00124	1	0.05
delta-BHC [delta-Hexachlorocyclohexane]	-	<0.00124	1	0.05
Chlordane	-	<0.0124	1	0.2
4,4'-DDT	-	<0.00124	1	0.02
4,4'-DDE	-	<0.00124	1	0.1
4,4'-DDD	-	<0.00124	1	0.1
Dieldrin	-	<0.00124	1	0.02
Endosulfan I (alpha)	-	<0.00124	1	0.01
Endosulfan II (beta)	-	<0.00124	1	0.02
Endosulfan sulfate	-	<0.00124	1	0.1

Pollutant	Average (µg/L)*	Maximum (µg/L)*	No. of Samples	MAL (µg/L)
Endrin	-	<0.00124	1	0.02
Endrin aldehyde	-	<0.00124	1	0.1
Heptachlor	-	<0.00124	1	0.01
Heptachlor epoxide	-	<0.00124	1	0.01
PCB 1242	-	<0.00952	1	0.2
PCB 1254	-	<0.00952	1	0.2
PCB 1221	-	<0.00952	1	0.2
PCB 1232	-	<0.00952	1	0.2
PCB 1248	-	<0.00952	1	0.2
PCB 1260	-	<0.00952	1	0.2
PCB 1016	-	<0.00952	1	0.2
Toxaphene	-	<0.0952	1	0.3

* Indicate units if different from µg/L

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete Table 12 as directed. Table 12 is not required for internal outfalls. (Instructions, Pages 57-58)

a. Are any of the following compounds manufactured or used in a process at the facility?

☐ Yes ☒ No

If **yes**, indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility.

☐ 2,4,5-trichlorophenoxy acetic acid	(2,4,5-T)	CASRN 93-76-5
☐ 2-(2,4,5-trichlorophenoxy) propanoic acid	(Silvex, 2,4,5-TP)	CASRN 93-72-1
☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate	(Erbon)	CASRN 136-25-4
☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate	(Ronnel)	CASRN 299-84-3
☐ 2,4,5-trichlorophenol	(TCP)	CASRN 95-95-4
☐ hexachlorophene	(HCP)	CASRN 70-30-4

Description:

Click here to enter text.

b. Do you know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in your effluent?

☐ Yes ☒ No

If yes, provide a brief description of the conditions for its presence.

Click here to enter text.

c. If you responded **yes** to either Item a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	0.5					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.05					50
2,3,4,7,8-PeCDF	0.5					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 as directed. Not required for internal outfalls. (Instructions, Pages 58-59)

a. Are there any pollutants listed in the instructions (page 60) believed present in the discharge?

☒ Yes ☐ No

b. Are there pollutants listed in Item 1.d. on page 1 of this technical report which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If you responded **yes** to **either** Item a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: 008
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	CASRN	Average (µg/L)	Maximum (µg/L)	No. of Samples	Analytical Method
Acetaldehyde	75-07-0	-	<8	1	SW 8315
Crotonaldehyde	123-73-9	-	<10	1	SW 8015
Vanadium, total	7440-62-2	-	15.3	1	EPA 200.8
Vinyl acetate	108-05-4	-	<10	1	EPA 624
Zirconium, total	7440-67-7	-	<15	1	EPA 200.7

WORKSHEET 4.0
RECEIVING WATERS

This worksheet **is required** for all renewal, amendment, and new TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 78)

Is there a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge?

☐ Yes ☒ No

If **yes**, identify owner of the drinking water supply, the distance and direction to the intake, and locate and identify the intake on the USGS map.

☐ Indicate with an 'x' in the box that the requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 78)

a. Width of the receiving water at the outfall? The immediate receiving water for Outfalls 001 to proposed 009 is an unnamed freshwater ditch that becomes tidally influenced near its confluence with Upper San Jacinto Bay. Proposed Outfall 010 would discharge directly into Upper San Jacinto Bay, whose width is ~4100 feet

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

☐ Yes ☒ No

If **yes**, indicate approximate distance and direction from outfall(s):

Not applicable

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

☐ Yes ☒ No

If **yes**, provide the distance and direction to the grasses:

Not applicable

3. CLASSIFIED SEGMENT (Instructions, Page 78)

Is the discharge directly into (or within 300 feet of) a classified segment?

☒ Outfalls 001-009 - Yes ☒ Outfall 010 (proposed) - No

If **yes, stop here**. It is not necessary to complete Items 4 and 5, and it is not necessary to complete Worksheet 4.1.

If **no**, complete Items 4 and 5.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 79)

Name of the immediate receiving waters: Unnamed ditch

a. Check the appropriate description of the receiving waters

- ☐ Lake or Pond
  - Surface area (acres):
  - Average depth of the entire water body (feet):
  - Average depth of water body within a 500-foot radius of the discharge point (feet):
- ☒ Man-made Channel or Ditch
- ☒ Stream or Creek
- ☐ Freshwater Swamp or Marsh
- ☐ Tidal Stream, Bayou, or Marsh
- ☐ Open Bay
- ☐ Other:

If you checked "man-made channel or ditch" or "stream or creek" above, provide responses to items b - e below:

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

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

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

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

- ☐ USGS flow records
- ☒ personal observation
- ☐ historical observation by adjacent landowner(s)
- ☐ others, specify:

c. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point:

The unnamed ditch flows into San Jacinto Bay in Segment No. 2427 of the Bays and Estuaries.

d. Do the receiving water characteristics change within three miles downstream of the discharge? (e.g., natural or man-made dams, ponds, reservoirs, etc.)

☒ Yes ☐ No

If yes, discuss how:

Upper San Jacinto Bay is approximately 500 feet downstream of Outfall 006.

e. Provide general observations of the water body during normal dry weather conditions:

Water was flowing quickly with mild turbidity. No sheen, foam, or floating solids were observed.

Date and time of observation: 02/05/18 12:45 PM

Was water body influenced by stormwater runoff during observations?

☐ Yes ☒ No

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 79)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by (check as appropriate):

☐ oil field activities
☐ urban runoff
☐ agricultural runoff
☐ septic tanks
☒ upstream discharges
☐ others, specify:

b. Uses of water body observed or evidence of such uses (check as appropriate):

☐ livestock watering
☐ contact recreation
☐ navigation
☐ non-contact recreation
☐ fishing
☐ picnic park activities
☐ domestic water supply
☐ industrial water supply
☐ others, specify:
☐ irrigation withdrawal

c. Check the description (only one) that best describes the aesthetics of the receiving water and the surrounding area:

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area: water clarity exceptional

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

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

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

WORKSHEET 5.0
SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

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

1. SEWAGE SLUDGE SOLIDS MANAGEMENT PLAN (Instructions, Page 82)

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

☒ Yes ☐ No

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

☐ Yes ☒ No

If yes to either Item a or b, attach a solids management plan.

Attachment:: T-4 Domestic Sewage Sludge Management Plan

2. SEWAGE SLUDGE MANAGEMENT AND DISPOSAL (Instructions, Page 83)

a. Please check the current sludge disposal method(s). More than one method can be checked.

☐ Permitted landfill

☐ Marketing and distribution by the permittee

☐ Registered land application site

☐ Composted by the permittee

☐ Surface disposal site (sludge monofill)

☒ Transported to another WWTP (written statement or contractual agreement required)

☐ Beneficial land application as authorized in the existing permit

b. Disposal site name: Gulf Coast Authority Washburn Tunnel Facility

TCEQ Permit/Registration Number: WQ0001740000

County where disposal site is located: Harris

c. Method of transportation (truck, train, pipe, other): Truck

Hauler Registration Number: Texas Outhouse (22739)

Sludge is transported as a:

☐ liquid

☐ semi-liquid

☒ semi-solid

☐ solid

Purpose of land application (check one): ☐ reclamation ☐ soil conditioning

Provide a written statement or copy of contractual agreements confirming that the wastewater treatment plant identified above will accept and be responsible for the sludge from the plant for the life of the permit (at least 5 years).

Attachment: T-4 Domestic Sewage Sludge Management Plan

d. If the existing permit contains authorization for sludge land application, composting, marketing and distribution of sludge, or sludge lagoons and authorization to renew the activity is being sought in the application, the appropriate sections of the Sewage Sludge Technical Report (form TCEQ-10056) must be provided.

3. PERMIT AUTHORIZATION FOR SEWAGE SLUDGE DISPOSAL (Instructions, Page 83)

Are you requesting new authorization to beneficially land apply sewage sludge at this site or a site under your direct control?

☐ Yes ☒ No

Are you requesting new authorization to market and distribute sewage sludge at this facility or a facility under your direct control?

☐ Yes ☒ No

Are you requesting new authorization to compost sewage sludge?

☐ Yes ☒ No

Are you requesting new authorization to surface dispose sewage sludge at this site or site under your direct control?

☐ Yes ☒ No

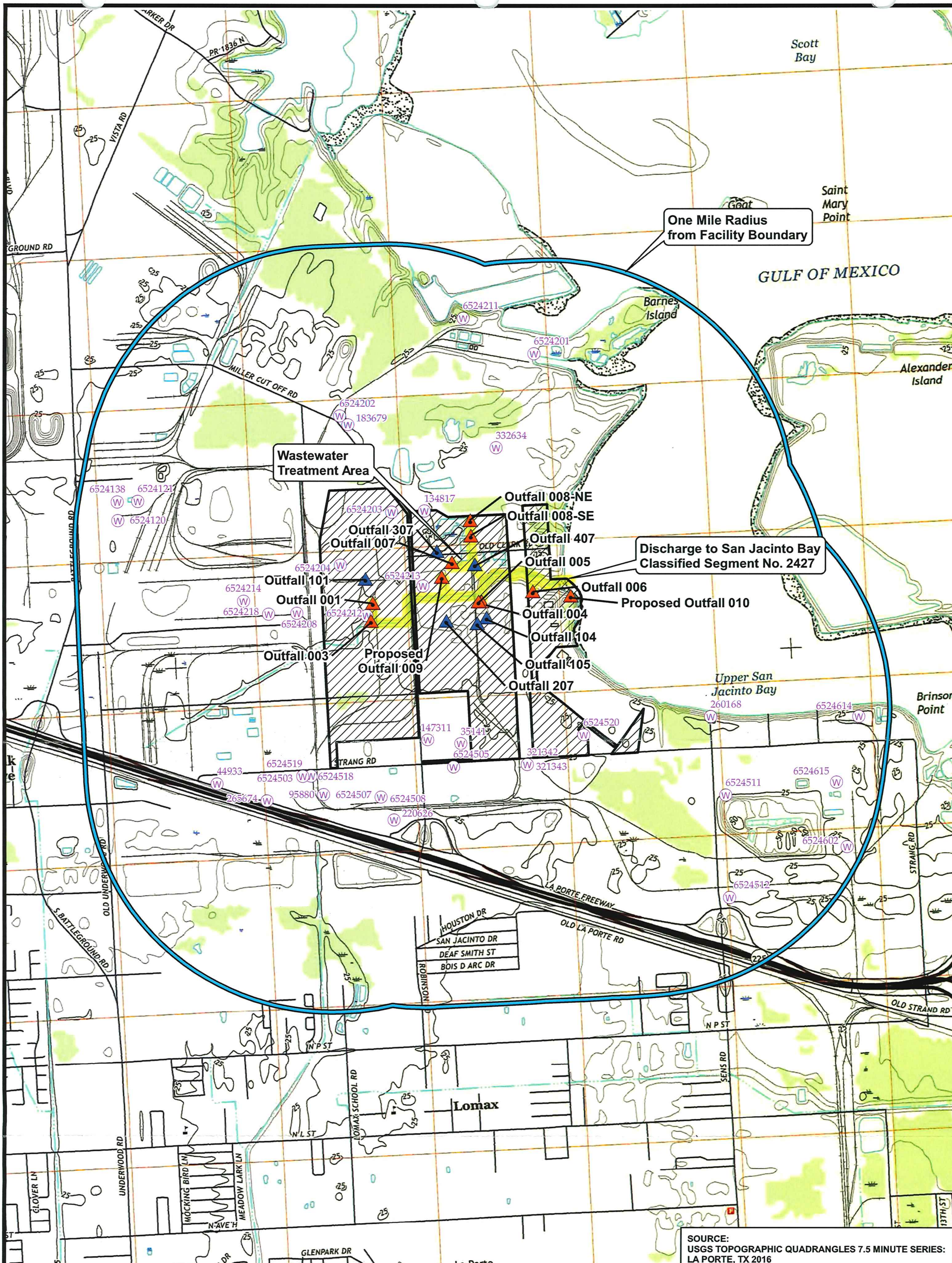
Are you requesting new authorization to incinerate sewage sludge at this site or site under your direct control?

☐ Yes ☒ No

If **yes** to **any** of the above items, provide the information required in the *Sewage Sludge Technical Report* (form TCEQ-10056).

Attachment:

New authorization for beneficial land application, incineration, and sludge lagoons in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions for an explanation whether a major amendment is required or if authorization for composting can be added through the renewal process.



Legend

- Equistar/LyondellBasell Property Boundary
- External Outfalls
- Internal Outfalls
- Discharge Route
- Water Wells
- One Mile Radius From Property Boundary

LYONDELLBASELL
LA PORTE COMPLEX

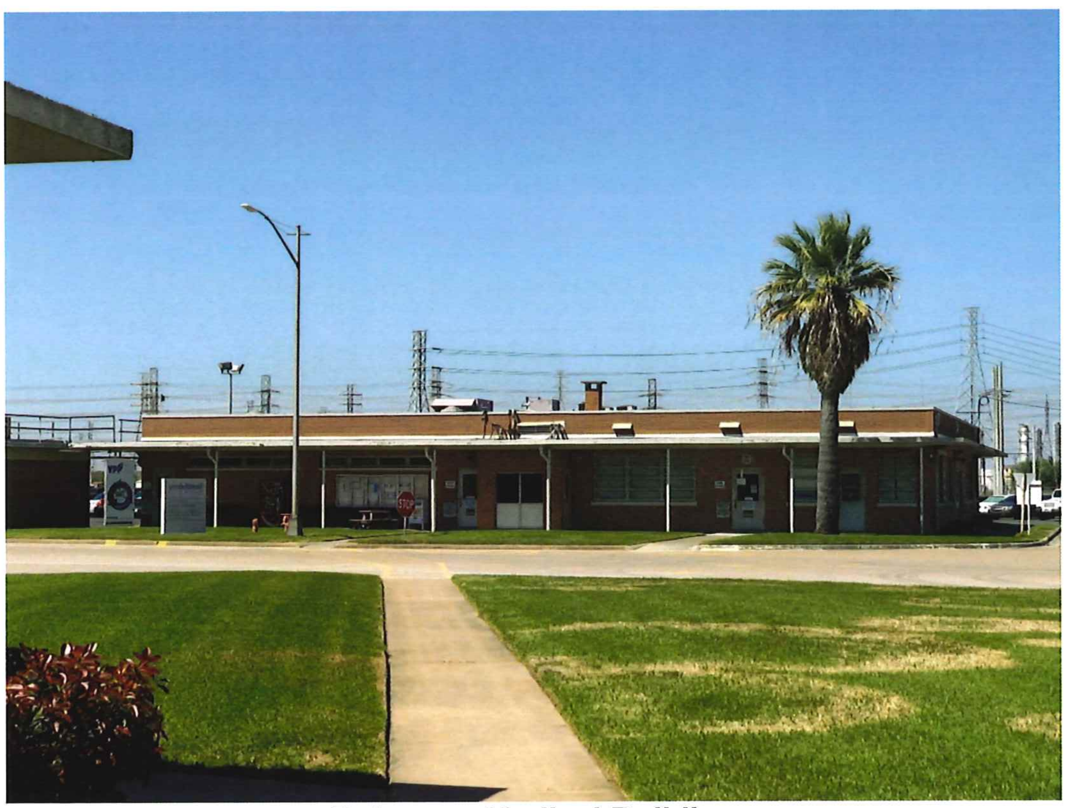
ATTACHMENT SPIF-1
USGS MAP

DRAWN BY:	L WILSON	SCALE:		PROJ. NO.	TPDES 2018
CHECKED BY:	D KOCUREK		AS NOTED	FILE NO.	USGS Map.mxd
APPROVED BY:	D KOCUREK	DATE PRINTED:			
DATE:	March 2018	3/21/2018			

J:\Prj\Equistar\La Porte\TPDES 2018\USGS Map.mxd
Printed By: lauri on 3/21/2018, 12:56 PM

Attachment SPIF-2
Structures Older Than 50 Years
LyondellBasell La Porte Complex

Polymers Administration Building
1958



Polymers Medical Building
1958

Attachment SPIF-2
Structures Older Than 50 Years
LyondellBasell La Porte Complex

Polymers Laboratory Building
1958

Polymers Maintenance Building
1958

ATTACHMENT A-1
Copy of Application Fee Payment

Display Document: Line Item 001

Additional Data | Withholding Tax Data

Vendor	32007	TX COMMISSION ON ENVIRONMENTAL	G/L Acc 20035
Company Code	LYO	PO BOX 13088	
Equistar Chemicals, LP		AUSTIN	Doc. no. 6900441568

Line Item 1 / Outgoing payment / 25

Amount 2,050.00 USD

Additional Data

Bus. Area			
		Disc. Amount	0.00 USD
		Days/percent	
Bline Date	03/21/2018		
Pmnt Block		Invoice Ref.	/ / 0
Pmt Method	T Pmt meth.supl.		
Clearing	03/21/2018 / 6900441568	Payment Amnt	2,050.00 USD
Assignment			
Text			Long text

Display Document: Line Item 001

Additional Data | Withholding Tax Data

Vendor	32007	TX COMMISSION ON ENVIRONMENTAL	G/L Acc 20035
Company Code	LYO	PO BOX 13088	
Equistar Chemicals, LP		AUSTIN	Doc. no. 9070009291

Line Item 1 / Invoice / 31

Amount 2,050.00 USD

Additional Data

Bus. Area			
Disc. base	2,050.00 USD	Disc. Amount	0.00 USD
Payt Terms	AN01	Days/percent	1 0.000 % 0 0.000 % 0
Bline Date	03/20/2018	Fixed	
Pmnt Block		Invoice Ref.	/ / 0
Payment cur.		Pmnt/c amnt	0.00
Pmt Method	Pmt meth.supl. IC		
Payment Ref.			
Clearing	03/21/2018 / 6900441568		
Assignment	031218V32007		
Text	TPDES PERMIT RENEWAL FEE FOR LYONDELLBASELL ACETYL		Long text

ATTACHMENT A-2

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600124705		RN 100210319

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates (mm/dd/yyyy)**

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

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

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

Equistar Chemicals, LP

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0010258111	17605504814	760550481	016452471

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☒ No

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:
1221 McKinney Street, Suite 300

City	State	ZIP	ZIP + 4
Houston	TX	77010	2036

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	Phyllis.Rodriquez@lyondellbasell.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*
(713) 336-5374		(713) 209-1440

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*
☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Equistar Chemicals La Porte Complex

23. Street Address of the Regulated Entity: *(No PO Boxes)*	1515 Miller Cut-Off Road							
	City	La Porte	State	TX	ZIP	77571	ZIP + 4	9816
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 1 mile north of Highway 225 on Miller Cut-Off Road		
26. Nearest City		State	Nearest ZIP Code
La Porte		TX	77571

27. Latitude (N) In Decimal:	29.710278		28. Longitude (W) In Decimal:	95.068056	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	42	37	95	4	5

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
2869	2821	325199	325211

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

Polymers and olefins manufacturing

34. Mailing Address:	P.O. Drawer D							
	City	Deer Park	State	TX	ZIP	77536	ZIP + 4	1900
35. E-Mail Address:	Phyllis.Rodriquez@lyondellbasell.com							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(713) 336-5374		(713) 209-1440

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004013000			

SECTION IV: Preparer Information

40. Name:	Christopher Freed	41. Title:	Principal Environmental Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(713) 209-1405		(713) 209-1440	Christopher.Freed@lyondellbasell.com

SECTION V: Authorized Signature

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

Company:	Equistar Chemicals, LP	Job Title:	Site Manager
Name *(In Print)* :	Christopher M. Cain	Phone:	(713) 336-5475
Signature:		Date:	4/2/2018

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 603674862		RN 100210319

SECTION II: Customer Information

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

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

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

LyondellBasell Acetyls, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0801196716	12711912332	271191233	039821301

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☒ No

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

1221 McKinney Street, Suite 300

City	State	ZIP	ZIP + 4
Houston	TX	77010	2036

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	Phyllis.Rodriquez@lyondellbasell.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(713) 336-5374		(713) 209-1440

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Equistar Chemicals La Porte Complex

23. Street Address of the Regulated Entity: *(No PO Boxes)*	1350 Miller Cut-Off Road							
	City	La Porte	State	TX	ZIP	77571	ZIP + 4	9816
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 1 mile north of Highway 225 on Miller Cut-Off Road

26. Nearest City	**State**	**Nearest ZIP Code**
La Porte	TX	77571

27. Latitude (N) In Decimal:		29.713333	**28. Longitude (W) In Decimal:**		95.065000
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	42	48	95	3	54

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
2869		325199	

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

Acetyls manufacturing

34. Mailing Address:	P.O. Drawer D							
	City	Deer Park	State	TX	ZIP	77536	ZIP + 4	1900
35. E-Mail Address:	Phyllis.Rodriquez@lyondellbasell.com							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(713) 336-5374		(713) 209-1440

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004013000			

SECTION IV: Preparer Information

40. Name:	Christopher Freed	**41. Title:**	Principal Environmental Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(713) 209-1405		(713) 209-1440	Christopher.Freed@lyondellbasell.com

SECTION V: Authorized Signature

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

Company:	LyondellBasell Acetyls, LLC	**Job Title:**	Site Manager
Name(In Print):	Christopher M. Cain	**Phone:**	(713) 336-5475
Signature:		**Date:**	04/02/18

ATTACHMENT A-3

lyondellbasell

DATE: February 3, 2017

FROM: Michael D. VanDerSnick – Sr. Vice President, Americas Manufacturing

TO: Site Managers of Equistar Chemicals, LP; Lyondell Chemical Company; LyondellBasell Acetyls LLC; and Houston Refining

SUBJECT: **Delegation of Signatory Authority for Permit Applications and Other Similar Documents**

Pursuant to certain portions of the Standing Resolutions Adopted by: Equistar Chemicals, LP (Equistar); Lyondell Chemical Company (Lyondell); LyondellBasell Acetyls LLC (Acetyls); and Houston Refining LP (Refining), I am authorizing all Site Managers to sign and deliver on behalf of the individual plants and on behalf of Equistar, Lyondell, Acetyls and Refining all permit applications and other similar documents in conformity with the laws and regulations of environmental control agencies of any local, state or federal government body. This authorization includes the following sites:

EQUISTAR CHEMICALS, LP	*Current Site Manager*
Bayport, TX	Tony Wood <Interim>
Channelview, TX	Todd Monette
Chocolate Bayou, TX (Polymers)	Joseph J. Hoinkis Gregory M. Gray
Clinton, IA	James Hillier
Corpus Christi, TX	Randal Tatum
Edison, NJ	David Schrutka
Fairport Harbor, OH	Antero Ortega-Velazco
Jackson, TN	Rebecca White
Lake Charles, LA	Daniel Pichette

EQUISTAR CHEMICALS, LP	*Current Site Manager*
LaPorte, TX	Christopher Cain
Equistar Pipelines	Christopher Cain
Mansfield, TX	Jim Meas
Matagorda, TX	Joseph J. Hoinkis
Morris, IL	Brian Angwin
Newark, NJ	Terry Mallory
Tuscola, IL	Shawn Cullen
Victoria, TX	Joseph J. Hoinkis Alicia Matus

LYONDELLBASELL ACETYLS, LLC	*Current Site Manager*
LaPorte, TX	Christopher Cain

LYONDELL CHEMICAL CO.	*Current Site Manager*
Bayport, TX	Tony Wood <Interim>
Channelview, TX	Todd Monette
Lake Charles	Daniel Pichette

HOUSTON REFINING LP	*Current Site Manager*
Houston, TX	Jerome Mauvigney

This authorization will apply to each manager's successor unless specifically revoked.

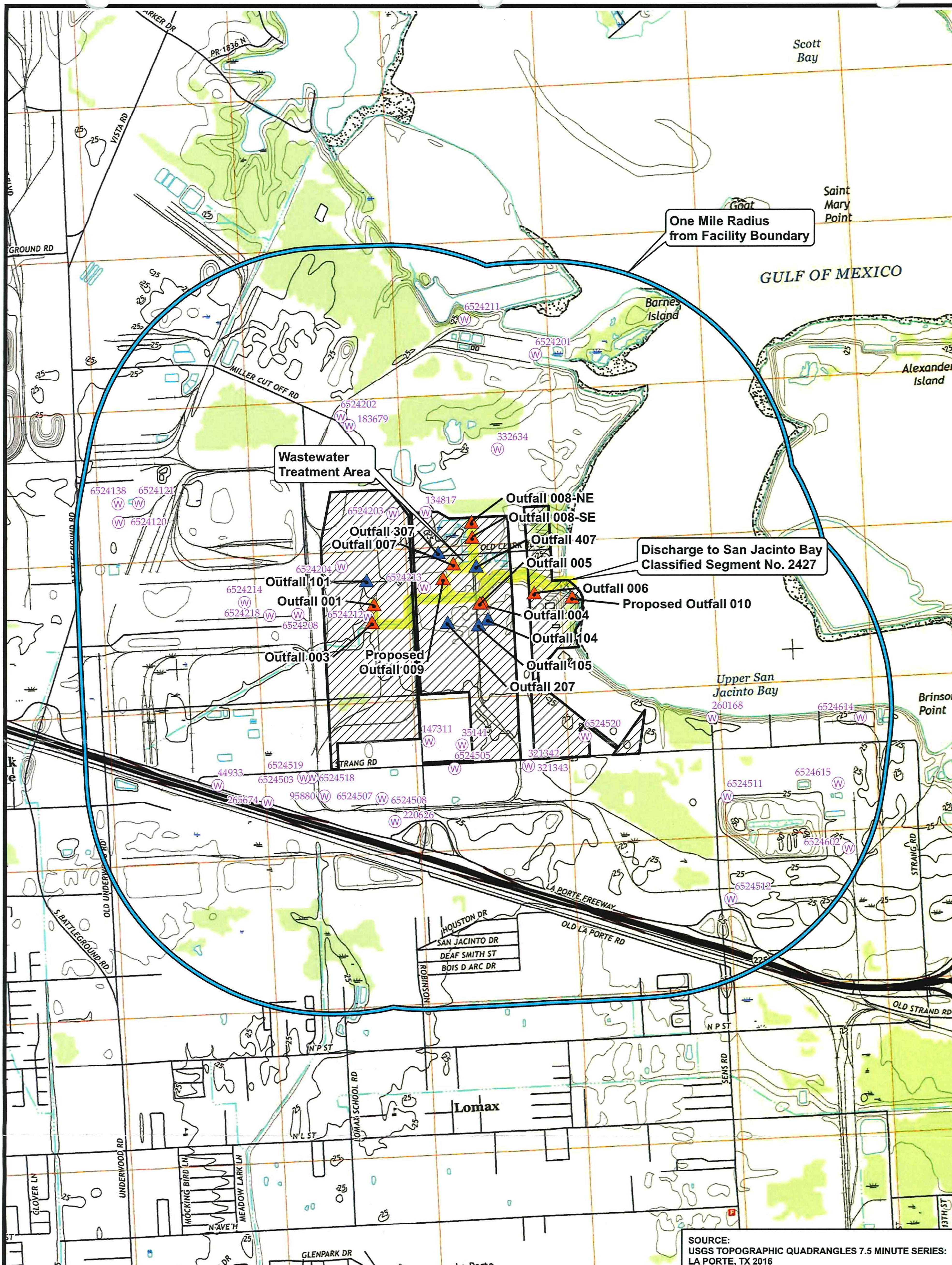
Each manager must assure that the information in these documents is accurate and truthful and in compliance with all applicable government regulations. If you have any questions, please seek assistance from the Legal Department.

If you have any questions, please feel free to contact me at 713-309-3809.

Michael VanDerSnick

Michael D. VanDerSnick

cc: Jeffrey Kaplan – Chief Legal Officer
Steven Cook – Lead Counsel, Global HSE



Legend

- Equistar/LyondellBasell Property Boundary
- External Outfalls
- Internal Outfalls
- Discharge Route
- Water Wells
- One Mile Radius From Property Boundary

0 1,000 2,000 FEET

1" = 2,000'

1:24,000

SOURCE:
USGS TOPOGRAPHIC QUADRANGLES 7.5 MINUTE SERIES:
LA PORTE, TX 2016

LYONDELLBASELL
LA PORTE COMPLEX

ATTACHMENT A-4
USGS MAP

DRAWN BY: L WILSON	SCALE:	PROJ. NO.	TPDES 2018
CHECKED BY: D KOCUREK	AS NOTED	FILE NO.	USGS Map.mxd
APPROVED BY: D KOCUREK	DATE PRINTED: 3/21/2018		
DATE: March 2018			

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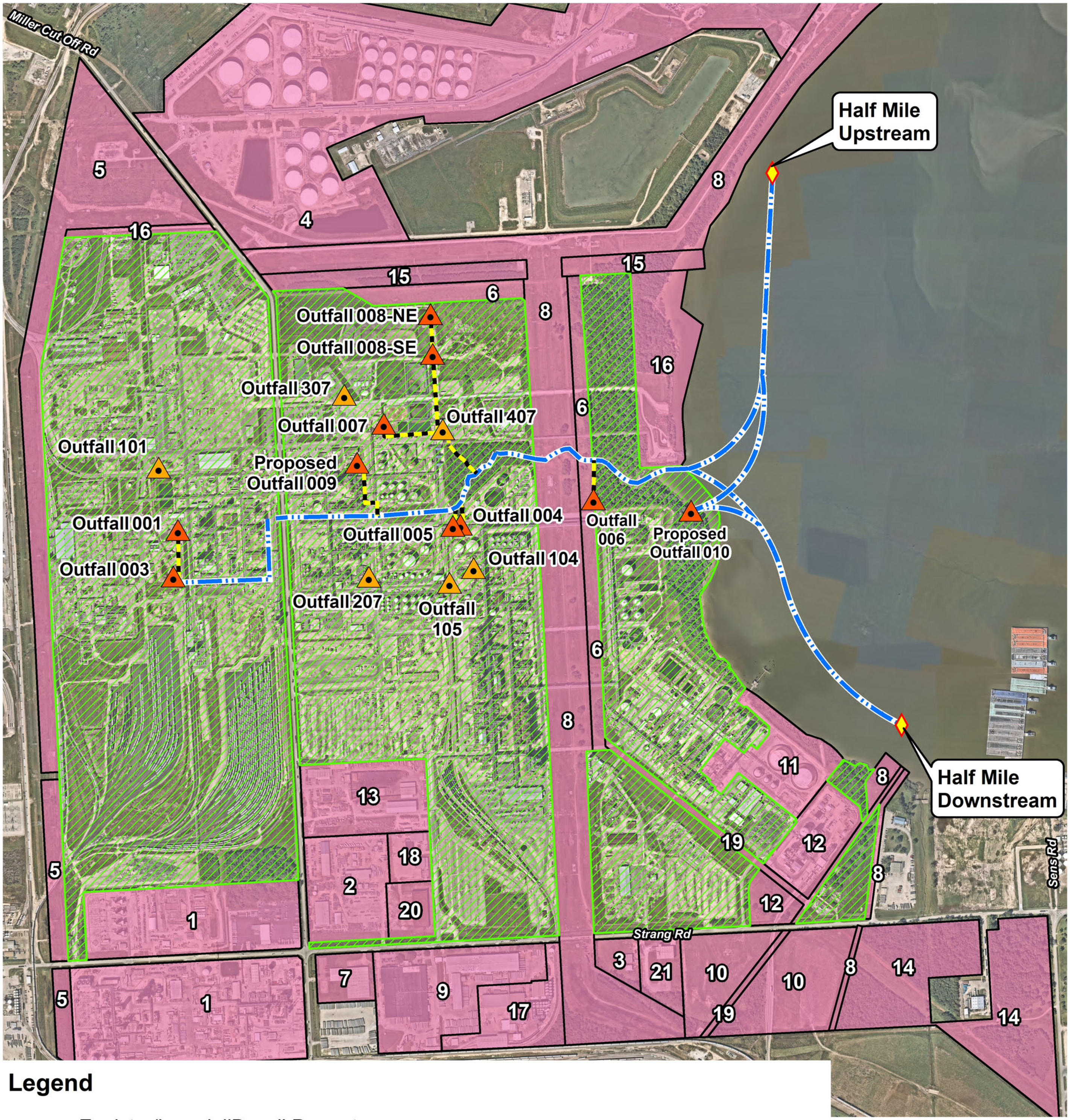
Printed By: lauri on 3/21/2018, 12:56 PM



Legend

- Equistar/LyondellBasell Property Boundary
- 1 Adjacent Landowners
- External Outfalls
- Internal Outfalls
- Surface Water
- In-Plant Collection System, Includes Underground Piping
- Stream Markers

Parcel Source:
Harris County Appraisal District, October 2020

N

0 600 1,200 FEET

1 " = 1,200 '
1:14,400

sitemap your mapping professional

LYONDELLBASELL **LA PORTE COMPLEX**	DRAWN BY: L WILSON
	APPROVED BY: D KOCUREK
	PROJECT NO: TPDES 2020
ADJACENT LANDOWNER MAP	FILE NO. Adjacent Landowner Map.mxd
	DATE: OCTOBER 2020

J:\Prj\LyondellBasell\La Porte\TPDES 2020\Adjacent Landowner Map.mxd
Printed By: lauri on 10/28/2020, 10:44 AM

ATTACHMENT A-5-2
Adjacent Landowner List
LyondellBasell La Porte Complex
TPDES WQ0004013000

MAP ID	CURRENT OWNER	ADDRESS	CITY	STATE	ZIP CODE
1	AIR PRODUCTS INCORPORATED	7201 HAMILTON BLVD	ALLENTOWN	PA	18195
2	AIRGAS USA LLC	110 W 7TH ST STE 1400	TULSA	OK	74119
3	BARNES RICHARD & BARBARA	2101 PAINTBRUSH AVE	LEAGUE CITY	TX	77573
4	BATTLEGROUND OIL SPECIALTY	PO BOX 4372	HOUSTON	TX	77210
5	CENTERPOINT ENERGY HOU ELE	PO BOX 1475	HOUSTON	TX	77251
6	COASTAL INDUSTRIAL WATER	1200 SMITH ST STE 2260	HOUSTON	TX	77002
7	DRAGO SUPPLY CO INC	2601 EVERGREEN DR	PORT ARTHUR	TX	77642
8	EXXON PIPELINE	PO BOX 53	HOUSTON	TX	77001
9	GREIF BROTHERS CORP, GREIF CONTAI	425 WINTER RD	DELAWARE	OH	43015
10	LA PORTE LOGISTICS LLC	109 N POST OAK LANE STE 600	HOUSTON	TX	77024
11	LA PORTE METHANOL CO LP	PO BOX 3646	HOUSTON	TX	77253
12	MESSER LLC	200 SOMERSET CORPORATE BLVD STE 6000	BRIDGEWATER	NJ	08807
13	MOBLEY OFFICES HOUSTON LP	PO BOX 176	DEER PARK	TX	77536
14	NOLTEX LLC	12220 STRANG RD	LA PORTE	TX	77571
15	OXY VINYLS LP	PO BOX 27570	HOUSTON	TX	77227
16	PORT OF HOUSTON AUTHORITY	111 EAST LOOP N	HOUSTON	TX	77029
17	SOUTH COAST TERMINALS LP	7402 WALLISVILLE RD	HOUSTON	TX	77020
18	STRANG ROAD INDUSTRIAL	207 BLUE POINT RD	KEMAH	TX	77565
19	TEJAS GAS CORP	500 DALLAS ST STE 100	HOUSTON	TX	77002
20	TREP STRANG OWNER LLC	3657 BRIARPARK DR STE 300	HOUSTON	TX	77042
21	VALLEY LA PORTE LLC	PO BOX 18	COMBES	TX	78535

Legend

Equistar/LyondellBasell Property Boundary	Surface Water
1 Adjacent Landowners	In-Plant Collection System, Includes Underground Piping
External Outfalls	Stream Markers
Internal Outfalls	Parcel Source: Harris County Appraisal District, January 2018

N

0 600 1,200 FEET

1 " = 1,200 '

1:14,400

LYONDELLBASELL LA PORTE COMPLEX	DRAWN BY:	L WILSON
	APPROVED BY:	D KOCUREK
ATTACHMENT A-5-1	PROJECT NO:	TPDES 2018
ADJACENT LANDOWNER MAP	FILE NO.	Adjacent Landowner Map.mxd
	DATE:	MARCH 2018

J:\Prj\Equistar\La Porte\TPDES 2018\Adjacent Landowner Map.mxd
Printed By: lauri on 3/21/2018, 12:53 PM

ATTACHMENT A-5-2

Adjacent Landowner List
LyondellBasell La Porte Complex
TPDES WQ0004013000

MAP ID	CURRENT OWNER	ADDRESS	CITY	STATE	ZIP CODE
1	AIR PRODUCTS INCORPORATED	7201 HAMILTON BLVD	ALLENTOWN	PA	18195
2	AIRGAS-SOUTHWEST INC	259 N RADNOR CHESTER RD STE 100	WAYNE	PA	19087
3	BARNES RICHARD & BARBARA	2101 PAINTBRUSH AVE	LEAGUE CITY	TX	77573
4	BATTLEGROUND OIL SPECIALTY	PO BOX 4372	HOUSTON	TX	77210
5	CENTERPOINT ENERGY HOU ELE	PO BOX 1475	HOUSTON	TX	77251
6	COASTAL INDUSTRIAL WATER	1200 SMITH ST STE 2260	HOUSTON	TX	77002
7	DRAGO SUPPLY CO INC	2601 EVERGREEN DR	PORT ARTHUR	TX	77642
8	ENOCH BRINSON LTD	2345 QUENBY ST	HOUSTON	TX	77005
9	EXXON PIPELINE 00480	PO BOX 53	HOUSTON	TX	77001
10	GREIF BROS COOPERAGE CORP	425 WINTER RD	DELAWARE	OH	43015
11	GREIF CONTAINERS INC	425 WINTER RD	DELAWARE	OH	43015
12	LA PORTE METHANOL CO LP	PO BOX 3646	HOUSTON	TX	77253
13	LINDE GAS NORTH AMERICAN LLC	575 MOUNTAIN AVE	NEW PROVIDENCE	NJ	07974
14	MOBLEY OFFICES HOUSTON LP	PO BOX 176	DEER PARK	TX	77536
15	NOLTEX LLC	12220 STRANG RD	LA PORTE	TX	77571
16	OXY VINYLS LP	PO BOX 27570	HOUSTON	TX	77227
17	PORT CENTRAL SERVICE CTR LP	675 BERING DR STE 550	HOUSTON	TX	77057
18	PORT OF HOUSTON AUTHORITY	111 EAST LOOP N	HOUSTON	TX	77029
19	SOUTH COAST TERMINALS LP	7402 WALLISVILLE RD	HOUSTON	TX	77020
20	STRANG ROAD INDUSTRIAL	207 BLUE POINT RD	KEMAH	TX	77565
21	TEJAS GAS CORP	500 DALLAS ST STE 100	HOUSTON	TX	77002
22	VALLEY LA PORTE LLC	4897 FM 1781	ROCKPORT	TX	78382

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

Photo 1. Outfall 001 at Parshall flume.
Discharge exits to underground pipe.

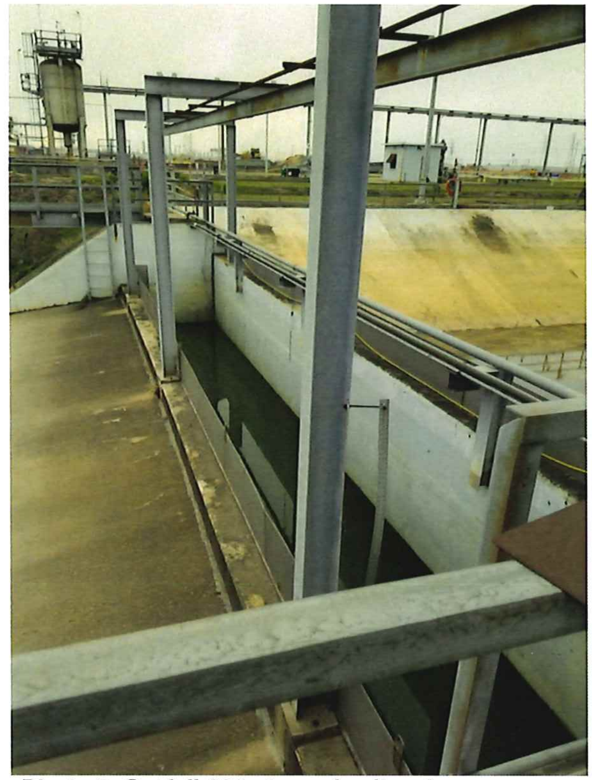


Photo 2. Outfall 003 at pond exit weir.

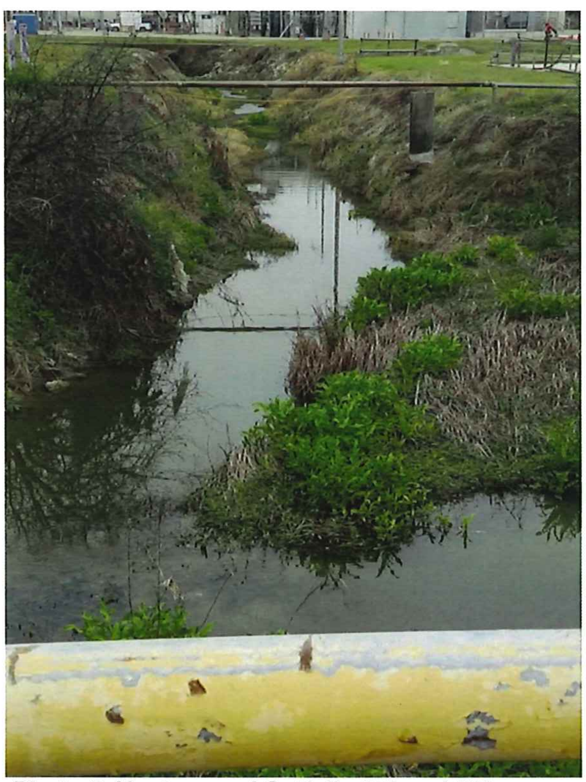


Photo 3. Upstream of Outfalls 001 and 003.

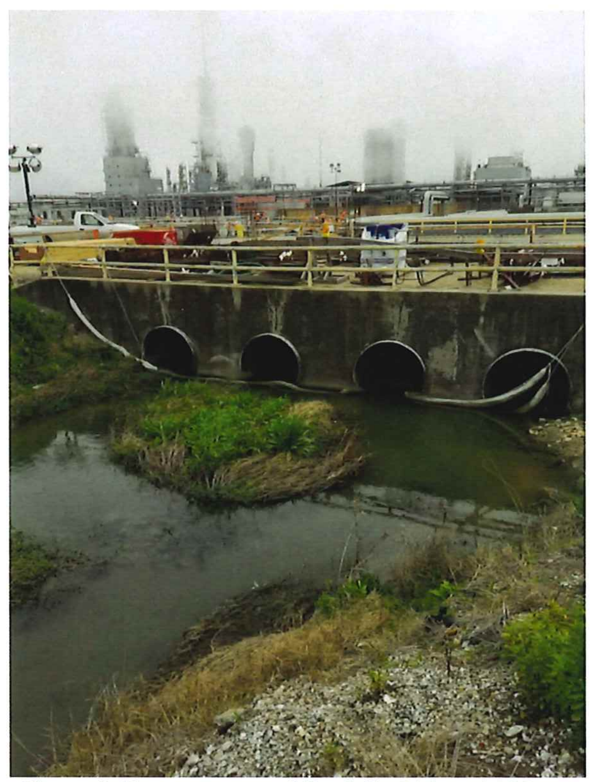
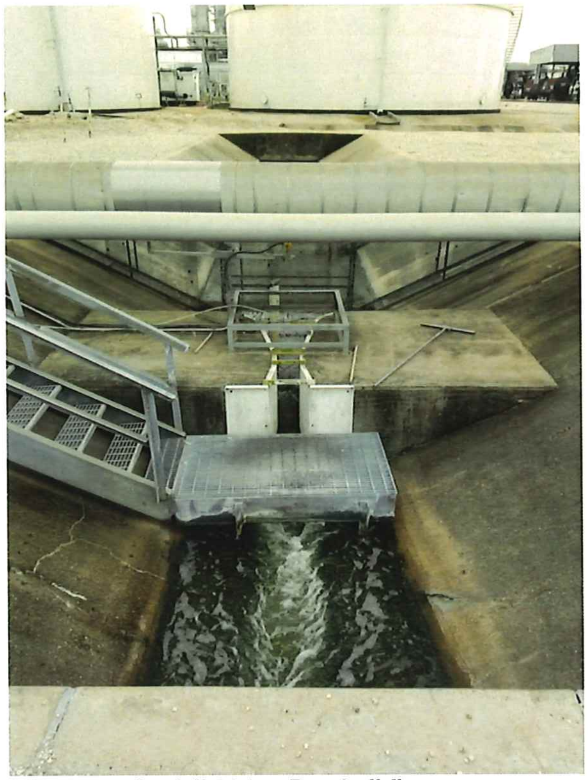
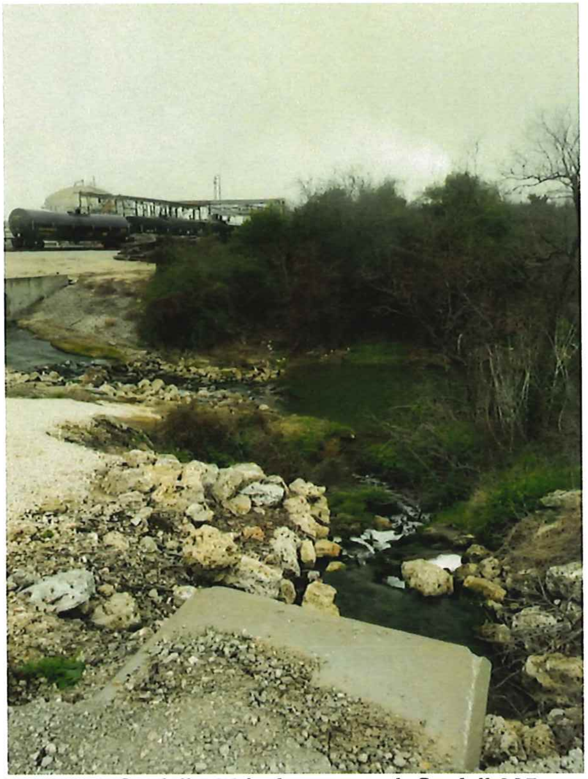
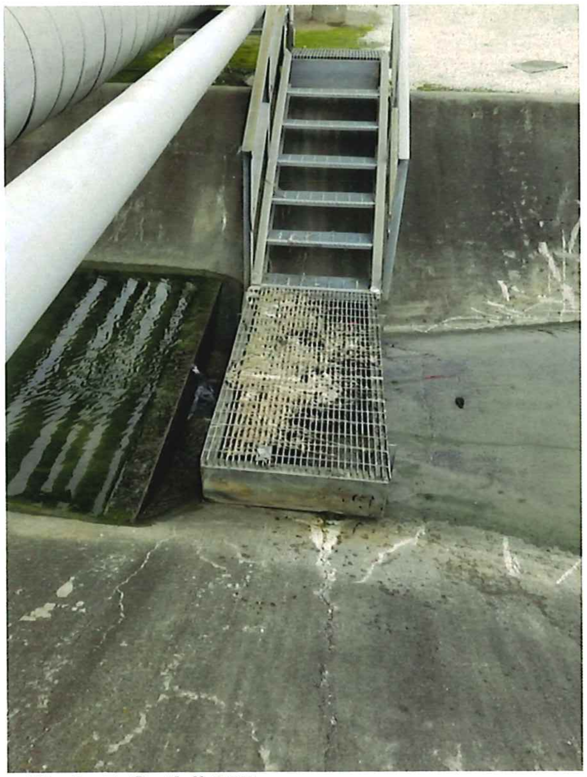


Photo 4. Downstream of Outfalls 001 and 003.

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

 Photo 5. Outfall 004 at Parshall flume.	 Photo 6. Outfall 004 in foreground. Outfall 005 center left. Ditch in background, upstream (left), downstream (right).
 Photo 7. Outfall 005	 Photo 8. In foreground, Outfall 005 (left) and Outfall 004 (right). Ditch in background, upstream (left) and downstream (right).

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

Photo 9. Outfall 006 at stairs, discharge in foreground.

Photo 10. Outfall 006 at stairs, downstream in background.

Photo 11. Outfall 007 at Parshall flume. Discharge exits to underground pipe.

Photo 12. Ditch downstream of Outfall 008, flow is towards upper left.

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

 **Photo 13. Outfall 009 (proposed), looking upstream at in-plant ditch.**	 **Photo 14. Outfall 009 (proposed), looking downstream at in-plant ditch.**
 **Photo 15. Outfall 010 (proposed), looking upstream.**	 **Photo 16. Outfall 010 (proposed), looking downstream.**

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

Photo 17. Outfall 101

Photo 18. Outfall 104

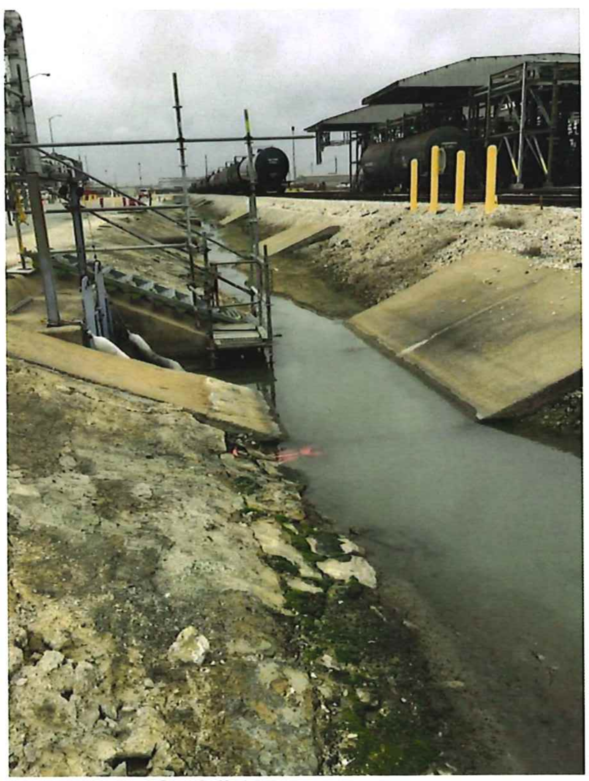


Photo 19. Outfall 105

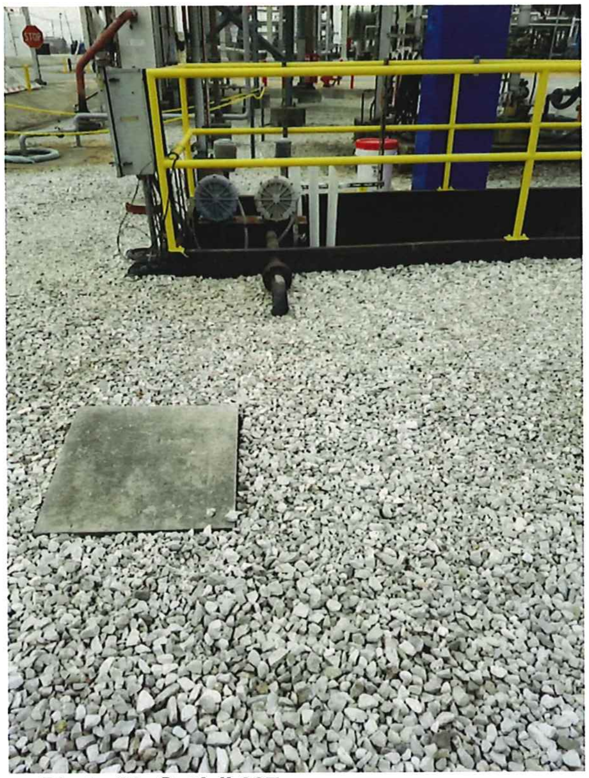


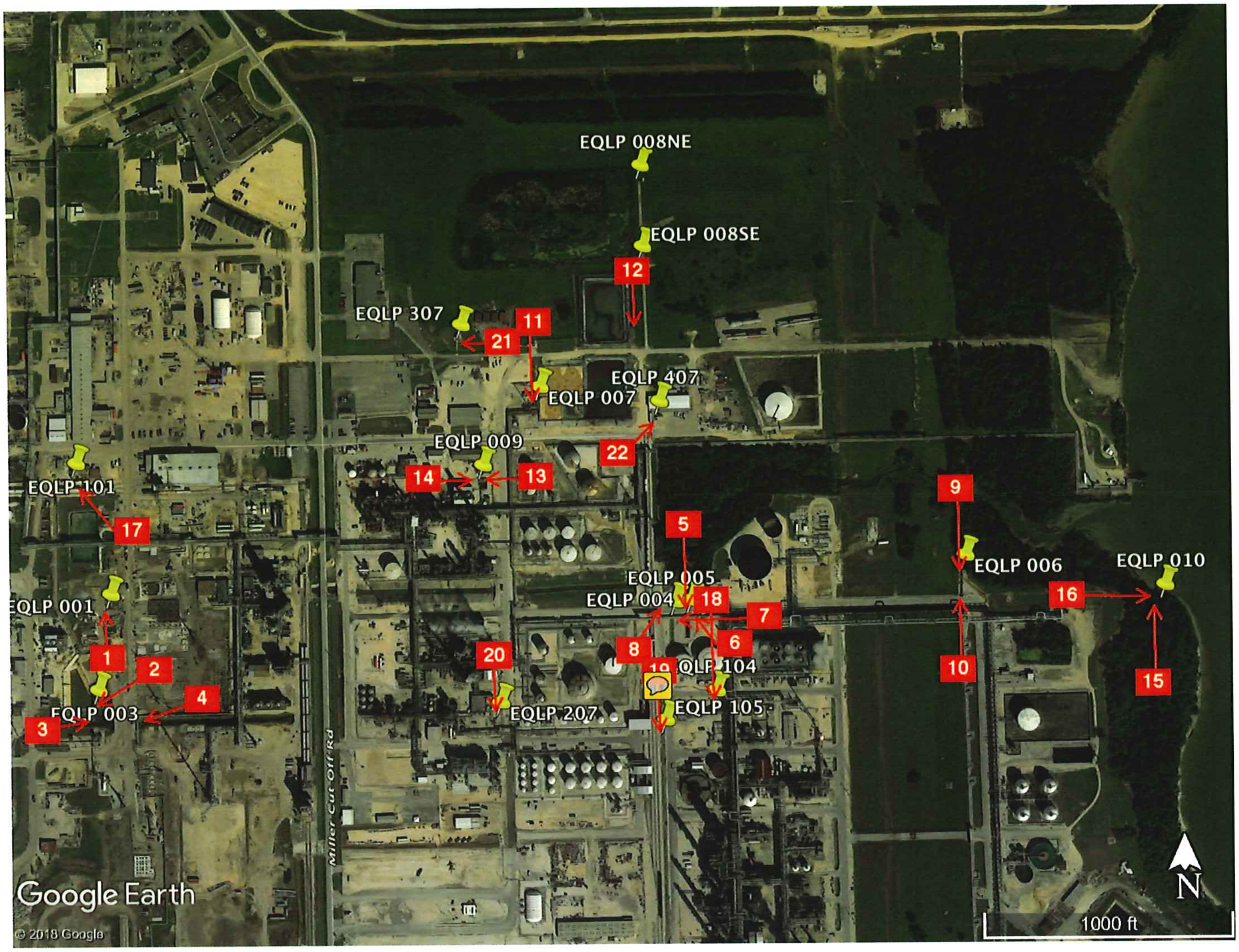
Photo 20. Outfall 207

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex

Photo 21. Outfall 307

Photo 22. Outfall 407

Attachment A-6
Outfall Photos
LyondellBasell La Porte Complex



Aerial Showing Location of Outfall Photos

ATTACHMENT A-7

lyondellbasell

March 13, 2018

Harris County Public Infrastructure Department
Mr. Russ Poppe, P.E.
Executive Director
9900 Northwest Freeway
Houston, Texas 77092-8615
CERTIFIED MAIL – 7017 1000 0000 5923 3936

Re: Application for Discharge to County or District Facility
LyondellBasell La Porte Complex Wastewater Treatment Plant (WWTP)
Equistar Chemicals L.P. and LyondellBasell Acetyls, LLC
TPDES Permit No. WQ0004013000
CN600124705; RN100210319

Dear Mr. Poppe:

The LyondellBasell – La Porte Complex (LyondellBasell) consists of two entities, Equistar Chemicals, LP and LyondellBasell Acetyls, LLC. LyondellBasell is renewing the TPDES permit for the complex and is submitting this "Application for Discharge to County or District Facility" form as part of the renewal process.

Should you require any additional information regarding this event, please contact Chris Freed at (713) 209-1405.

Sincerely,

Heath McCartney
LyondellBasell – La Porte Complex
HSE Supervisor

enclosure

ATTACHMENT T-1
LYONDELLBASELL LA PORTE COMPLEX
FACILITY DESCRIPTION
TPDES PERMIT NO. WQ0004013000

LYONDELLBASELL LA PORTE COMPLEX
FACILITY DESCRIPTION
TPDES PERMIT NO. WQ0004013000

This document has been prepared as a part of the 2018 TPDES Permit No. WQ0004013000 renewal application and contains a description of the LyondellBasell La Porte Complex in relation to its wastewater discharge, including, outfall locations, discharges through the outfalls, wastewater and storm water management, and applicability of national effluent guidelines.

FACILITY OVERVIEW

The LyondellBasell La Porte Complex consists of two facilities, the Equistar Chemicals, LP facility (Equistar) and the LyondellBasell Acetyls, LLC facility (LyondellBasell). Raw materials, intermediates, and final products associated with the complex are listed in Table 1.

EQUISTAR CHEMICALS, LP FACILITY

The Equistar facility is divided into two major operations: (1) Polymers and (2) Olefins.

Polymers Unit

The Polymers Unit consists of two production units, AB-III and Q1. A third operating unit, LB-1, is currently being constructed.

AB-III utilizes ethylene and co-monomers in the presence of a catalyst to produce low density polyethylene. The combined stream undergoes compression before entering the reactor. The unreacted ethylene is flashed from the molten polymer in the high pressure separator. The molten polymer is discharged from the high pressure separator to the extrusion hopper. The molten polymer flows to the bottom of the extrusion hopper and into the product extruder. The product extruder pelletizes the molten polymer. The pellets are then passed to a centrifugal dryer. After drying, the pellets are transferred to the silo farm for loading into railcars.

Q1 utilizes ethylene, hydrogen, and co-monomers in the presence of a catalyst to produce linear low density polyethylene. The ethylene and co-monomer are dried and then mixed prior to being fed to the unit reactor. Catalyst is added to the reactor to form the linear low density polyethylene powder. The linear low density polyethylene powder is then heated and pelletized. The pellets are then loaded into railcars.

The LB-1 Unit, currently under construction to the west of the Q-1 Unit, will produce low density polyethylene from ethylene, hydrogen, and co-monomers in the presence of a catalyst. Raw materials are combined and will be fed to the unit reactor to produce the low density polyethylene.

The Polymers Unit also has typical ancillary operations associated with the major manufacturing processes, which include loading/unloading, equipment maintenance, utilities, laboratories, and wastewater treatment.

Olefins Unit

The Olefins Unit receives hydrocarbon feedstock that is fed into pyrolysis furnaces. The pyrolysis furnaces heat the feedstock to a high temperature where it cracks into alkenes (olefins).

The process effluent from the furnaces is quenched and scrubbed with water. Pyrolysis gasoline (Pygas) is removed as a product during water scrubbing. The quenched gases are compressed, dried, and cooled prior to beginning a series of purification/distillation steps. A hydrogen-rich stream from the final chilling step is further purified to produce hydrogen product.

The purification section consists of a demethanizer, deethanizer, acetylene recovery unit (ARU), depropanizer, methyl acetylene propadiene conversion unit (MAPD), debutanizer, C3 splitter, and C2 splitter. This equipment separates the process gas stream into acetylene, ethylene, propylene, mixed C4s, and Pygas products. Ethane and propane recovered during distillation and separation are recycled as feedstock into the pyrolysis furnaces.

Periodically, carbon (coke) deposits in the furnace tubes and must be removed. The decoking operation produces a waste coke that is shipped offsite for disposal.

Most products are sent offsite via pipeline, except for Pygas and C4s, which are sent to storage tanks. From the storage tanks, Pygas and C4s are loaded into barges for shipment to customers.

The Olefins Unit also has typical ancillary operations associated with the major manufacturing processes, which include loading/unloading, equipment maintenance, utilities, laboratories, and wastewater treatment.

LyondellBasell Acetyls, LLC Facility

The LyondellBasell facility has two major operational units, the Acetic Acid (AA) Unit and the Vinyl Acetate Monomer (VAM) Unit.

Acetic Acid Unit

The Acetic Acid Unit produces acetic acid through the continuous reaction of carbon monoxide with methanol in the presence of a catalyst and promoter. The carbon monoxide and methanol are fed to a reactor where crude acetic acid is formed. Liquids from the reactor are released to the flash tank, and flashed vapors are routed to purification. Liquids from the flash tank are recycled back to the reactor. Overheads from the reactor are routed to the light ends recovery system and reprocessed. The final acetic acid product is sent to storage tanks. From the storage tanks, acetic acid is either piped to the VAM Unit or loaded to truck, rail, or barge for shipment to customers. Water with small amounts of organic impurities from miscellaneous equipment cleaning and chemical sewers is generated.

Vinyl Acetate Monomer Unit

The Vinyl Acetate Monomer Unit produces vinyl acetate monomer through the continuous reaction of ethylene, oxygen, and acetic acid in the presence of a catalyst. The process consists of three reaction trains operating independently and in parallel feeding to two purification lines, which handle the combined output of the three reaction trains.

In addition, an Acid Recovery Unit (ARU) receives a slip stream composed of acetic acid with light and heavy impurities from the reactor section. The purpose of the ARU is to recover most of the acetic acid from the slip stream received from the reactor section and pump any organic impurities removed from the acid in the ARU to an organic waste tank prior to shipment for off-site treatment. A purification unit then separates water, acetic acid, VAM product, and any organic impurities. Purified VAM product is pumped to day storage tanks for product shipment by rail, truck, and/or barge. Acetic acid recycle from the purification section is pumped back to the reactor section. Water with small amounts of organic impurities is generated.

In addition, a co-located facility operated by INEOS manufactures polyalphaolefins and generates associated wastewaters that are routed to the Acetyls wastewater system.

The Acetic Acid and VAM units also have ancillary operations, which include loading/unloading, equipment maintenance, utilities, and wastewater treatment.

WATER SUPPLY

The Equistar Olefins operation utilizes a combination of water purchased from Coastal Water Authority and on-site well water to operate the Olefins unit.

The Equistar Polymers operation utilizes a combination of water purchased from Battleground Water Supply and on-site well water to operate the AB-III and Q-1 units. A third polymer unit, LB-1 will also use water from Battleground Water Supply and onsite well water. Battleground Water Supply is a partnership of several local industrial facilities, including LyondellBasell, that provides water from the Coastal Water Authority.

The LyondellBasell Acetyls facility utilizes a combination of water from Battleground Water Supply and on-site well water to operate both the Acetic Acid and VAM units.

WASTEWATER SOURCES AND OUTFALLS

Wastewater flow diagrams for the three production areas at the LyondellBasell La Porte Complex are shown in Figure 1 (Polymers), Figure 2 (Olefins), and Figure 3 (Acetyls). These flow diagrams show the wastewater sources/flows and treatment systems associated with the TPDES permit outfalls.

Wastewater sources for each outfall are summarized in Table 2. The table includes wastewaters that are currently listed for each outfall in the TPDES permit, as well as additional wastewaters that Equistar/Lyondell is requesting in the TPDES application as amendments.

Wastewater flows to each outfall are summarized in Table 3. For each outfall, the percentage of flow for process wastewater, utility wastewater, storm water, and sanitary wastewater is provided.

EQUISTAR POLYMERS WASTEWATER SYSTEM

Figure 1 shows the routing of the various wastewaters from the Equistar Polymers operations, including the current AB-III and Q-1 Units and future LB-1 Unit. Outfalls associated with Equistar Polymers are 001, 101, and 003. Wastewaters discharged through these outfalls are listed in Tables 2 and 3.

Wastewaters that are collected inside the battery limits of the AB-III Unit and Q-1 Unit are routed to Sump #2. Flow from Sump #2 is routed along with other wastewaters from these units to Sump

#5. Wastewaters from inside the battery limits of the future LB-1 Unit and other LB-1 wastewaters will also be routed to Sump #5. Wastewaters that will be generated during commissioning of the LB-1 Unit, will also be routed to Sump #5. Storm water, including construction storm water, is routed to both Sump #2 (via AB-III and Q-1 unit sumps) and Sump #5.

Flow from Sump #2 is routed to Sump #5 via a concrete conveyance. Sump #5 is pumped to Skim Pond 001 where solids can settle solids prior to the effluent discharge to Outfall 001. During periods of heavy rain events or when maintenance is being conducted on Outfall 001, the wastewaters from Sump #2 and from the AB-III and LB-1 processes combine in the concrete conveyance and overflow a weir to Skim Pond 003 where solids can settle prior to effluent discharge to Outfall 003.

Sanitary wastewater from Sanipack 201 (Outfall 201) had been routed to Sump #2; however, this flow was terminated when Sanipack 201 was shut down. There is an amendment request as part of this application to remove Outfall 201 from the TPDES permit.

Equistar Olefins Wastewater System

Figure 2 shows the routing of the various wastewaters from the Equistar Olefins operations. Outfalls associated with Equistar Olefins are 004, 104, 005, 105, 006, and 010 (proposed). Wastewaters discharged through these outfalls are listed in Tables 2 and 3.

Wastewaters generated inside the battery limits of the Olefins Unit are collected in the Olefins sumps. The Olefins sumps are also used to manage wastewaters from the Acetyls and Polymers Units from time to time, based on the pH and hydrocarbons present in the wastewaters.

Flow from the Olefins Unit sumps is routed to the Equalization Tank (8402F). Spent caustic wash water from olefins production is treated by oxidation and pH adjusted prior to being pumped to the Equalization Tank. Cooling tower blowdown and boiler blowdown can be routed to the Equalization Tank or directly discharged to Outfall 004.

From the Equalization Tank, wastewater is routed to the Aeration and Clarification Tank (8704F), which includes an aeration section for biological treatment and clarification section for biosolids settling. Solids removed from the clarification section are dewatered in a filter press and the dewatered solids are shipped off-site for disposal. Effluent from the clarification section gravity flows to Outfall 004.

The first flush storm water from the Equistar Olefins area is collected and routed to treatment. During heavier rains, larger volumes of first flush storm water are routed to the Storm Water Surge Tanks (8403F and 8407F). Afterwards, storm water from the tanks is gradually released to the Equalization Tank. Post first flush process area storm water can be diverted through Outfall 105 to Outfall 005.

Treated sanitary wastewater from the Olefins Sanipack (Outfall 104) is routed to the Equalization Tank. Because the Olefins Sanitary Package Unit receives intermittent flow from the restrooms, sinks, and showers within the Olefins unit, water is added to the mixing tank or sump at the front section of the Sanipack to ensure good contact and mixing with the chlorine. This water addition is solely for the purpose of facilitating treatment.

Outfall 006 primarily discharges wastewaters from outside the boundary limits of the Olefins production areas. The C4 Sump is used to contain storm water from the tank farm area prior to discharging to Outfall 006.

Storm water discharged through Outfalls 004, 005, 105, and 006 can include construction storm water.

Equistar/Lyondell is considering a modification of the point of discharge for all or a portion of the wastewaters currently discharged through Outfall 004. Option 1 would be the discharge of all the Outfall 004 flow, with relocation of the current discharge point from the unnamed ditch, to a point directly into Upper San Jacinto Bay. Option 2 would be the segregated discharge of only the cooling tower blowdown from the Olefins Unit directly into Upper San Jacinto Bay through proposed Outfall 010, with the remainder of the Outfall 004 wastewaters discharge at the current location into the unnamed ditch.

LyondellBasell Acetyls Wastewater System

Figure 3 shows the routing of the various wastewaters from the LyondellBasell Acetyls operations. Outfalls associated with Lyondell Acetyls are 007, 207, 307, 407, 008, and 009 (proposed). Wastewaters discharged through these outfalls are listed in Tables 2 and 3.

Wastewaters from inside the battery limits of the Acetic Acid Unit is routed to the Acetic Acid Sump. Wastewater from the Acetic Acid Sump and treated sanitary wastewater from the Acetyls Administration Building Sanipack (Outfall 307) are routed to the Off-Spec Basin. The Off-Spec Basin allows atypical wastewater to be blended into the Acetyls Wastewater Treatment system at a slow and controlled rate. Treated sanitary wastewater from Sanipack 107 (Outfall 107) had been routed to the North Aeration Basin; however, this flow was terminated when Sanipack 107 was shut down. Sanipack 107 is in the process of being decontaminated and this TPDES application includes an amendment request to remove Outfall 107 from the permit.

Wastewaters from inside the battery limits of the the Vinyl Acetate Monomer (VAM) production process is routed to the VAM Sump. The VAM Sump also collects wastewater from the Tank Farm scrubbers, wastewater from the INEOS PAO Catch Basin, and the treated sanitary wastewater from the PAO Sanipack (Outfall 207).

Flow from the VAM Sump is then routed either to the Equalization Pond, Storm Water Pond, or to the Off-Spec Basin. Wastewaters from the Chemical Loading Sump are either routed to the Equalization Pond or the Off-Spec Basin. Treated sanitary wastewater from the Chemical Loading Sanipack (Outfall 407) is routed to the Equalization Pond. Wastewater from the Off-Spec Pond and the Storm Water Pond are routed to the Equalization Basin.

From the Equalization Basin, wastewater is routed to the North Aeration Basin for biological treatment. From the North Aeration Basin, wastewater is routed to the South Aeration Basin for further biological treatment. Effluent from the South Aeration Basin is routed to the Clarifier Tank where biosolids are separated from the treated wastewater. Effluent from the Clarifier Tank is either discharged to Outfall 007 or, if needed, routed back to treatment through the Storm Water Pond. Blowdown from the Acetic Acid VAM cooling towers is either routed directly to Outfall 007 or to the North Aeration Basin.

Solids from the Clarifier Tank are piped to the Settling Basin. Solids from the Settling Basin are pumped to the Landfarm (an impoundment), which is used for additional solids settling. Decant water from solids settling and storm water from within the Landfarm is discharged through Outfall 008, which has two discharge points located at the southeast and northeast corners of the Landfarm.

Because the three Sanipacks (Outfalls 207, 307, and 407) receive intermittent flow from the restrooms, sinks, and showers, water is sometimes added to the mixing tank or sump at the front section of the Sanipacks to ensure good contact and mixing with the chlorine. This water addition is solely for the purpose of facilitating treatment.

Storm water and other wastewaters collected in the VAM, AA, and PAO unit storm sewers are routed to the VAM Catch Basin if they are potentially contaminated and need to be routed to wastewater treatment. To allow the direct discharge of storm water and non-process wastewaters from the unit storm sewers when these wastewater do not need treatment, Equistar/Lyondell is requesting to add a new Outfall 009.

TREATMENT CHEMICALS

Treatment chemicals are used in the cooling tower, boiler, and water/wastewater treatment systems to maintain water quality. A list of treatment chemicals is included in the TPDES application as Attachment T-5.

EFFLUENT GUIDELINES

National effluent guidelines for the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) industry at 40 CFR 414 apply to process wastewaters at the LyondellBasell La Porte Complex. The specific §414 subcategories that apply to the facility are identified in Table 3, which also includes the production percentages related to the subcategories for each outfall.

Table 1. Raw Materials, Major Intermediates, and Final Products

Outfalls 001 and 003					
Raw Materials	**CAS No.**	**Intermediate (Includes Impurities)**	**CAS No.**	**Products**	**CAS No.**
Methanol	67-58-1	Lube Oils	-	Polyethylene	9002-88-4
Vinyl Acetate	108-05-4	Diesel	68334-30-5		
Zinc Compounds	-	Gasoline	8006-61-9		
Isopentane	78-78-4	Petroleum Naphtha	64742-48-9		
1-Hexene	592-42-6	Acetaldehyde	75-07-0		
1-Butene	106-98-9				
Propylene	115-07-1				
Outfalls 004 and 005					
Raw Materials	**CAS No.**	**Intermediate (Includes Impurities)**	**CAS No.**	**Products**	**CAS No.**
Methanol	67-58-1	Vinyl Acetate	108-05-4	Pyrolysis Gasoline	68921-67-5
Dimethylformamide	68-12-2	Acetaldehyde	75-07-0	Ethylene	74-85-1
Dimethylsulfide	75-18-3	Benzene	71-43-2	Propylene	115-07-1
Sulfuric Acid	7664-93-9	Toluene	108-88-3		
Sodium Hydroxide	1310-73-2	Xylenes	1330-20-7		
		Acetic Acid	64-19-7		
		Pentanes	109-66-0		
		Dicyclopentadiene	77-73-6		
		Heavy Aromatic Solvent	68987-42-8		
Outfall 007					
Raw Materials	**CAS No.**	**Intermediate (Includes Impurities)**	**CAS No.**	**Products**	**CAS No.**
Acetic Acid	64-19-7	Acetaldehyde	75-07-0	Acetic Acid	64-19-7
Methanol	67-58-1	Acrolein	107-02-8	Vinyl Acetate	108-05-4
Hydroquinone	123-31-9	Crotonaldehyde	4170-30-3	Polyalphaolefin (oil)	68037-01-4
Methyl Acetate	79-20-9	Propionic Acid	79-09-4		
Methyl Iodide	74-88-4	Ethylene Glycol Diacetate	111-55-7		
Potassium Hydroxide	1310-58-3	Ethyl Acetate	141-78-6		
Propanol	71-23-8				

Table 2. Wastewater Sources and Additions by Outfall

Source	Outfall																
	001	003	004	005	006	007	008	009	010	101	201	104	105	107	207	307	407
Process Wastewater	x	x	x			x											
Utility Wastewater [3]	x	x	x	x		x											
Treated Sanitary Wastewater	x	x	x	x		x				x	[1]	x	x	[1]	x	x	x
Hydrostatic Test Water	x	x	x	x	x	x		Add [2]									
Fire System Test Water	x	x	Add	x	x	Add		Add [2]									
Service Water	x	x	x	Add	x	Add		Add [2]									
Potable Water	x	x	Add	x	x	Add		Add [2]					x				
Construction Storm Water	x	x	Add	Add	x	Add		Add [2]					Add				
Demineralized Water	x	x	x	x	x	Add		Add [2]					x				
Steam Condensate	x	x	x	x	x	Add		Add [2]									
De minimis Spill Cleanup Water	x	x	x	x	x	Add		Add [2]									
Storm Water	x	x	x	x	x	x	x	Add [2]									
Groundwater Infiltration				x													
Utility Decanted Water from Biosolids						Add	x										
Post First Flush Process Area Storm Water				x									x				
Raw Water	Add	Add	Add	x	x	Add		Add [2]									
Wastewater from Decene Terminal				x													
Air Conditioner Condensate	Add	Add	Add			Add		Add [2]									
Laboratory Wastewater	Add	Add	Add														
Commissioning Wastewaters [4]	Add	Add	Add	Add	Add	Add		Add									
Cooling Tower Blowdown									Add [2]								

Notes
x - Listed in TPDES permit issued 10-31-2014.
[1] Discontinued outfall. Amendment request to remove outfall from permit.
[2] Amendment request to add outfall to permit.
[3] Utility wastewaters are primarily cooling tower and boiler blowdown.
[4] Commissioning wastewaters include wastewaters such as equipment wash waters and hydrostatic test water.
Add - Amendment request to add wastewater to existing outfall.

Table 3. Wastewater Sources and Flows by Outfall

Outfall		Wastewater Sources	Monthly Average (MGD)	Flow % by Wastewater Source	Applicable Effluent Guideline (EGL)[1] and Percent of Production
001		Process Wastewater	1.624	62.5%	40 CFR 414, Subpart D (100%)
		AB-III Process Wastewater	0.150		
		AB-III Process Washdown	0.233		
		AB-III Fly-Knife Water	0.080		
		Q1 Process Wastewater	0.090		
		Q1 Process Washdown	0.233		
		LB-1 Process Wastewaters	0.578		
		Storm water [3][4]	0.260		
		Utility Wastewater	0.965	37.1%	N/A
		Tempered and Chilled Water	0.468		
		RO Unit	0.250		
		AB-III Cooling Tower	0.052		
		Q1 Cooling Tower	0.052		
		LB-1 Cooling Tower	0.052		
		Boiler Blowdown	0.050		
		Fire Water	0.040		
		Miscellaneous (Eye Wash Stations, Lab)	0.001		
	101	Sanitary Wastewater (Sanipack 101)	0.010	0.4%	
		Outfall 001 Total	2.60	100%	
003		Same wastewaters as Outfall 001	Intermittent and variable	N/A	40 CFR 414, Subpart D
004		Process Wastewater	0.63	42.0%	40 CFR 414, Subpart F (100%)
		Process Condensate Blowdown	0.58		
		Spent Caustic Oxidation	0.05		
		Storm water and Miscellaneous Flows [3][4]	Varies		
		Utility Wastewater	0.86	57.3%	N/A
		Olefins Cooling Tower	0.86		
		Wash Water, Fire Water, Service Water	Varies		
		RO and Demineralization Blowdown, Regeneration, Neutralization	Varies		
		Miscellaneous	Varies		
	104	Sanitary Wastewater	0.01	0.7%	
		Outfall 004 Total	1.50	100%	
005		Miscellaneous utility wastewaters, groundwater infiltration, de minimis spill clean-up water, Decene Terminal wastewaters	Intermittent and variable	N/A	

Outfall		Wastewater Sources	Monthly Average (MGD)	Flow % by Wastewater Source	Applicable Effluent Guideline (EGL)[1] and Percent of Production
		Storm Water [4]			
	105	Utility Wastewater			
		Sanitary Wastewater (via Outfall 104)			
006		Storm Water, utility wastewater, de minimis spill clean-up water	Intermittent and variable		
		Process Wastewater	0.643		
		AA Process	0.024		
		VAM Process	0.346		
		PAO Sumps and Catch Basin	0.058	64%	40 CFR 414, Subpart D (PAO) (8.7%) 40 CFR 414, Subpart F (AA, VAM) (91.3%)
		Tank Farm Acid Scrubbers	0.041		
		Unit Storm Water Sewers (VAM, AA, PAO) [3][4]	0.161		
		Chemical Loading Sump	0.013		
007 [5]		Utility Wastewater	0.346		
		AA Cooling Tower Blowdown	0.204	35%	
		VAM Cooling Tower Blowdown	0.142		
		Sanitary Wastewater	0.011		
	207	PAO Sanipack	0.0036		
	307	Acetyls Admin Sanipack	0.0036	1%	
	407	Chemical Loading Sanipack	0.0036		N/A
		Outfall 007 Total	1.00	1.00	
008		Storm Water, Decanted Water from Biosolids (from Landfarm)	Intermittent and variable	N/A	
009		Storm water [4], utility wastewaters from unit storm water sewers (VAM, AA, PAO)	Intermittent and variable	N/A	
010		Same as Outfall 004 (Option 1)	See Outfall 004.		
		Olefins Cooling Tower (Option 2)	0.860	100%	

Notes

[1] 40 CFR 414, Subpart D - Organic Chemicals, Plastics, and Synthetic Fibers, Thermoplastic Resins

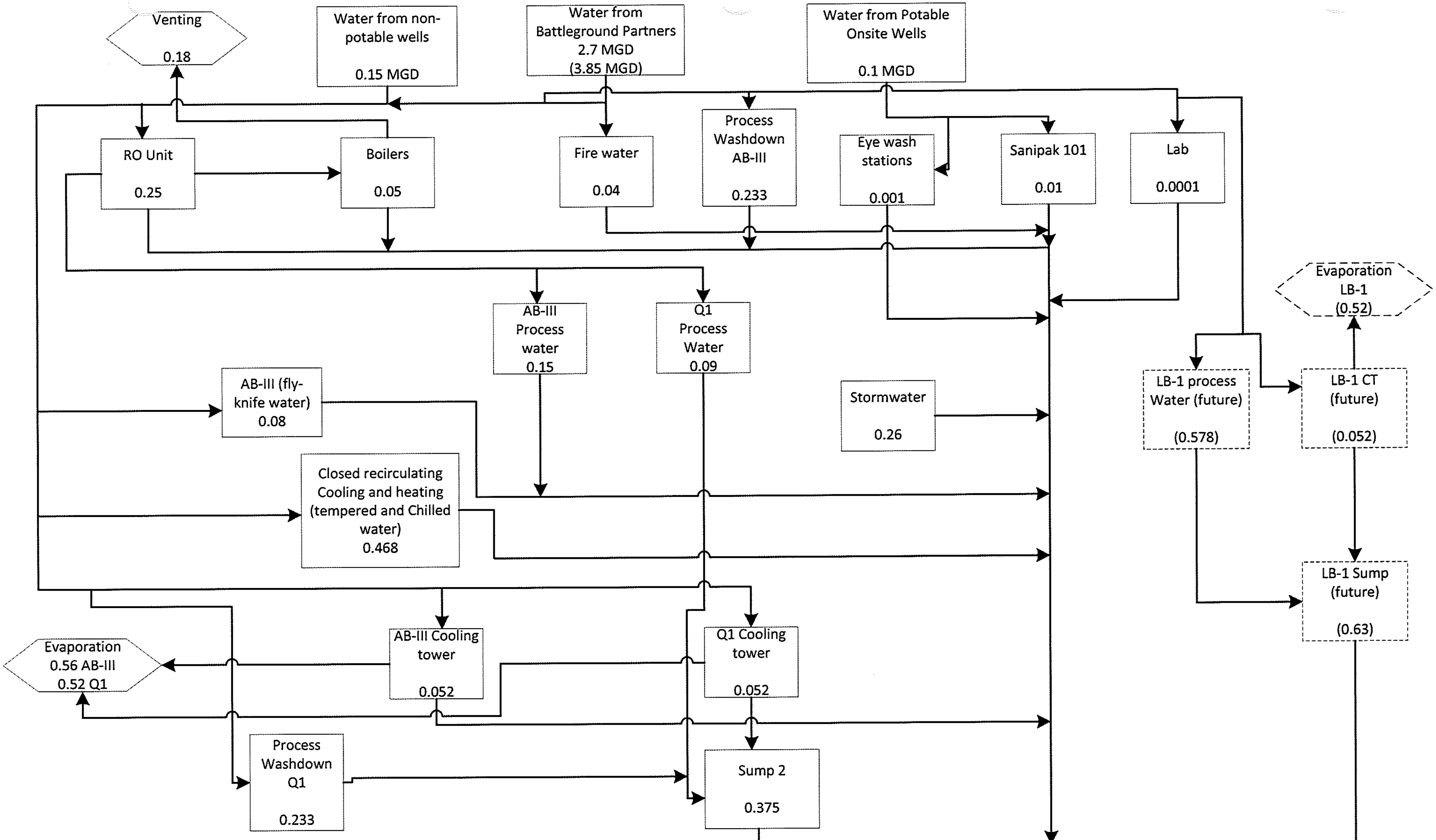
[2] 40 CFR 414, Subpart F - Organic Chemicals, Plastics, and Synthetic Fibers, Commodity Organic Chemicals

[3] Storm water that is potentially contaminated.

[4] Construction storm water included in flows.

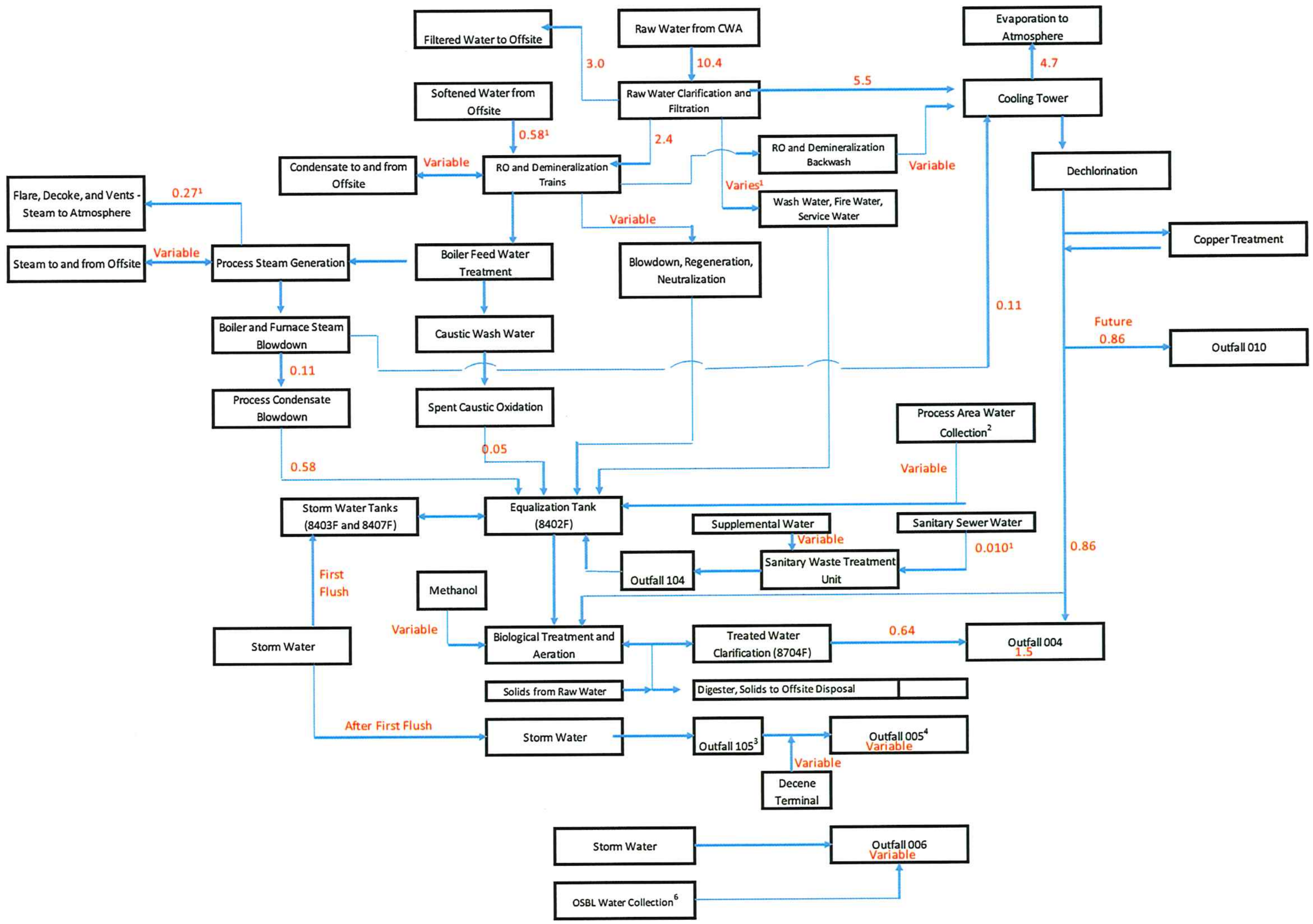
[5] For the amendment request to increase the daily average flow for Outfall 007 to 1.22 MGD, flow percentages will be the same as for the current average.

N/A Not applicable



1. Values in parentheses are for the final phase of LB-1
2. AB-III wastewaters include: Hydrostatic Test Water, Fire System Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimis Spill Cleanup Water, Post First Flush Process Area Stormwater, Raw Water, and Air Conditioner Condensate.
3. Q1 wastewaters include: Hydrostatic Test Water, Fire System Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimis Spill Cleanup Water, Post First Flush Process Area Stormwater, Raw Water, and Air Conditioner Condensate.
4. LB-1 wastewaters include: Hydrostatic Test Water, Fire System Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimis Spill Cleanup Water, Post First Flush Process Area Stormwater, Raw Water, and Air Conditioner Condensate. Upon startup, the LB-1 unit will also produce Commissioning Wastewaters.

Figure 1. Polymers Wastewater Flow Diagram



¹Variable

²Can include Hydrostatic Test Water, Fire System Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimus Spill Cleanup Water, Post First Flush Process Area Stormwater, Raw Water, Laboratory Wastewater, and Air Conditioner Condensate.

³Can include Potable Water, Demineralized Water, and previously monitored effluent (treated domestic wastewater from Sanitary Package 104).

⁴Can include Utility Wastewater, Post First Flush Process Area Stormwater, Treated Sanitary Wastewater, Hydrostatic Test Water, Fire System Test Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimis Spill Cleanup Water, Groundwater Infiltration, Raw Water, and Wastewater from the Decene Terminal.

⁵Can include Treated Sanitary Wastewater, Hydrostatic Test Water, Fire System Test Water, Service Water, Potable Water, Construction Stormwater, Demineralized Water, Steam Condensate, De Minimis Spill Cleanup Water, Stormwater, and Raw Water.

⁶C4 Spheres, Flare, C4 Sump, Etc.

4/2/18

Figure 2. Olefins Wastewater Flow Diagram

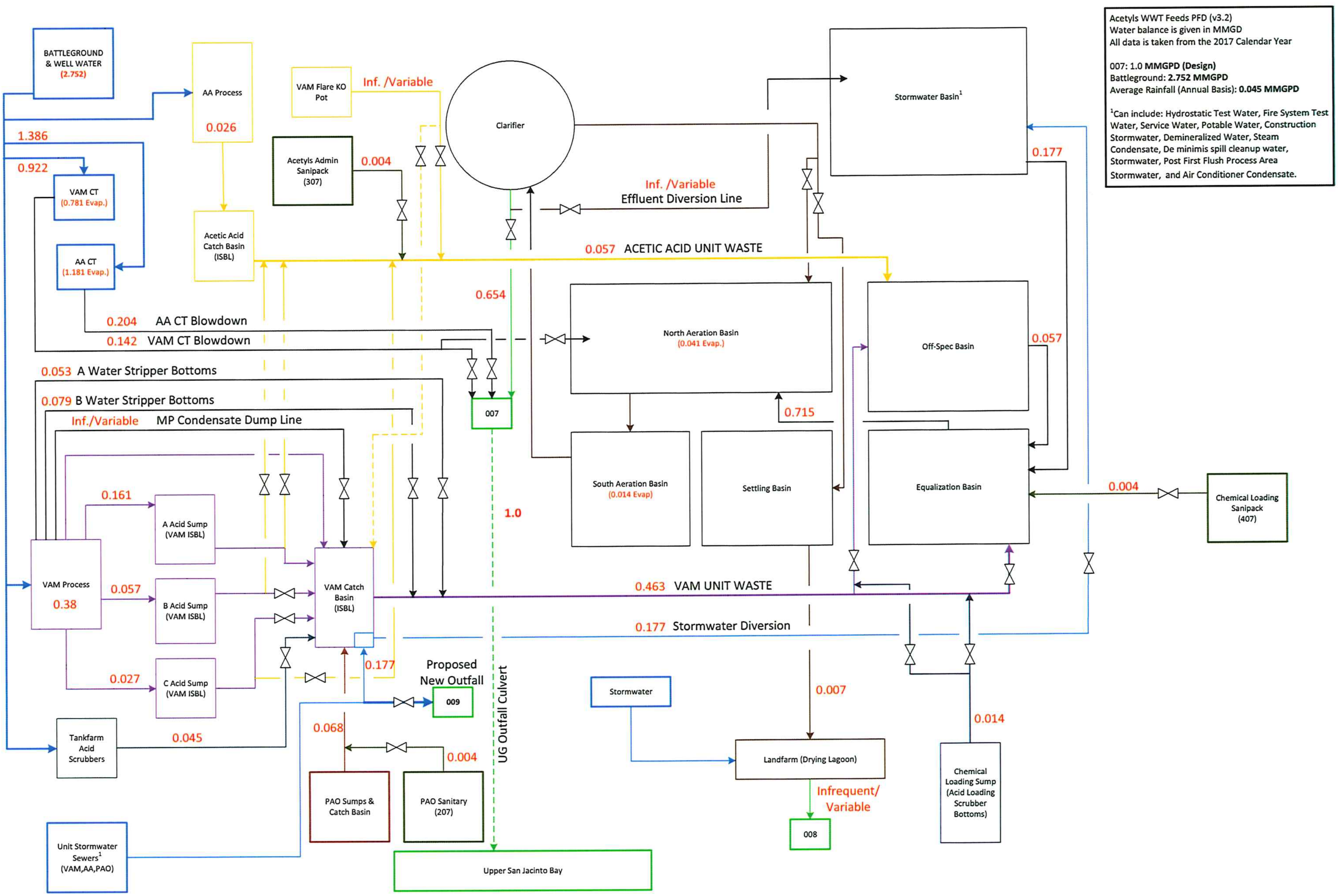
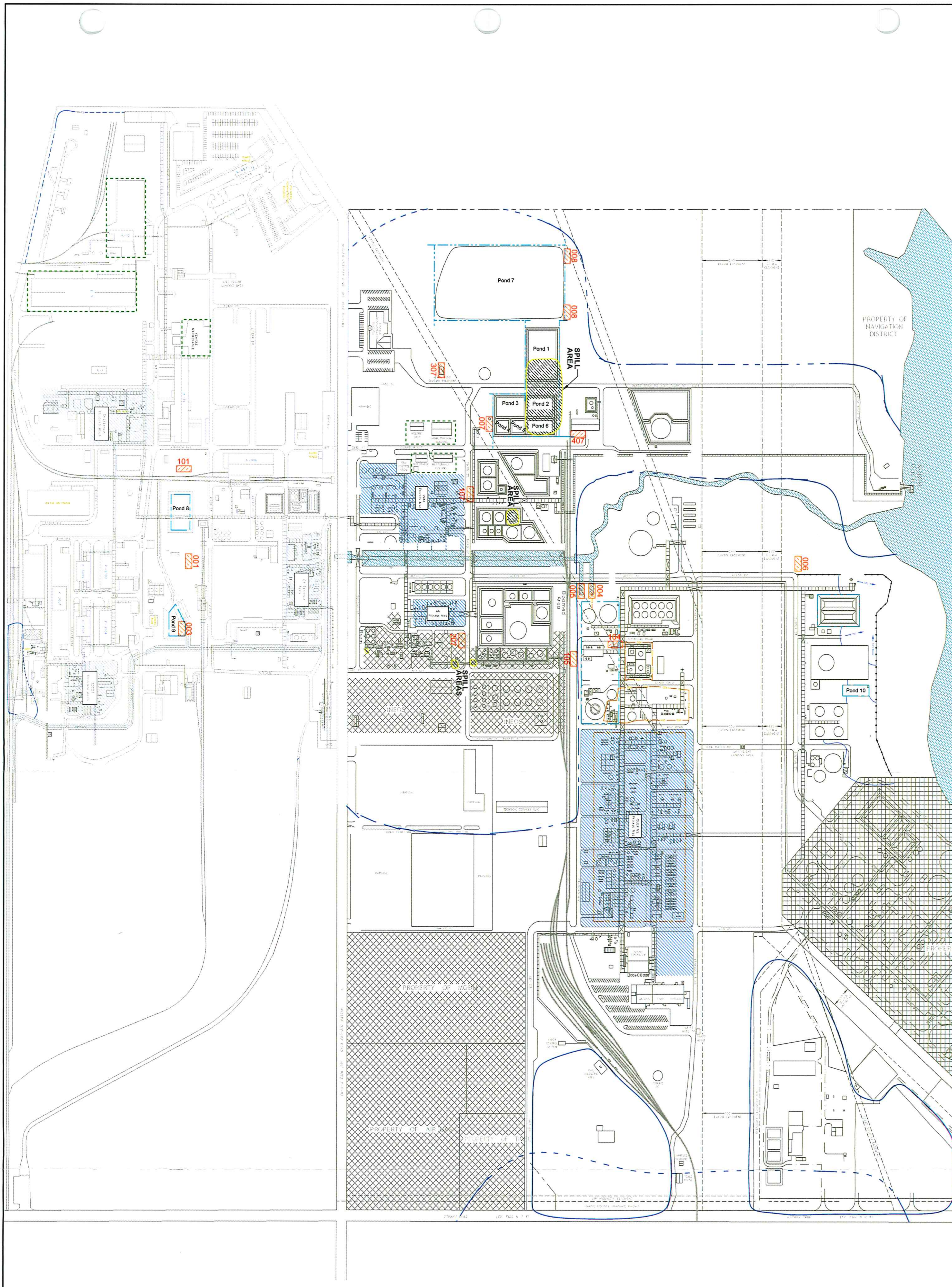


Figure 3. Acetyls Wastewater Flow Diagram



Outfall Locations

Process Areas

Wastewater Treatment

Maintenance, materials-handling, and Waste-disposal Areas

Spill Locations

Drainage Area Limits

ATTACHMENT T-2
Facility Map
Equistar Chemicals, LP
LaPorte Complex, LaPorte, TX

Brown AND Caldwell

Date: 3/2/2018

Path: P:\Lyondell\141209 - LBI La Porte 2011\GIS\2018 Projects\MXD's\TPDES Outfalls.mxd

ATTACHMENT T-3
LYONDELLBASELL LA PORTE COMPLEX
AMENDMENT REQUESTS
TPDES PERMIT NO. WQ0004013000

LyondellBasell La Porte Complex
Amendment Requests
TPDES Permit No. WQ0004013000

Equistar Chemicals, LP and LyondellBasell Acetyls, LLC (Equistar/Lyondell) request the following amendments to TPDES Permit No. WQ0004013000 for the LyondellBasell La Porte Complex.

1. Modification of Outfall 004 discharge point: relocation of Outfall 004 (Option 1), new Outfall 010 (Option 2)
2. For Outfall 007, increase the daily average and daily maximum flow limits to 1.22 million gallons per day (MGD) and 1.60 MGD, respectively, with corresponding increases in applicable concentration and mass limits for the outfall parameters.
3. For Outfall 007, change the biochemical oxygen demand (BOD) daily average mass limit, daily maximum limit, and single grab limit to carbonaceous biochemical oxygen demand (CBOD).
4. Increase the daily average and daily maximum mass limits and single grab concentration limits for Outfalls 001, 004, and 007 for BOD. Remove the dissolved oxygen limit for Outfall 007.
5. Add wastewater sources to Outfalls 001, 003, 004, and 007.
6. Add Outfall 009.
7. Remove internal Outfalls 201 and 107.
8. Remove BOD and TSS limits from Outfalls 101, 104, 207, 307, and 407.
9. Correct error in TSS daily average limit for Outfall 004.
10. Modify due dates for discharge monitoring reports (DMRs).

Further discussion of the requested amendments is provided in the following sections.

Modification of Outfall 004 Discharge Point: Relocation of Outfall 004 (Option 1), New Outfall 010 (Option 2)

Equistar/Lyondell is considering a modification of the point of discharge for all or a portion of the wastewaters currently discharged through Outfall 004. Option 1 would be the discharge of all the Outfall 004 flow, with relocation of the current discharge point from the unnamed ditch, to a point directly into Upper San Jacinto Bay. Option 2 would be the segregated discharge of only the cooling tower blowdown from the Olefins Unit directly into Upper San Jacinto Bay through proposed Outfall 010, with the remainder of the Outfall 004 wastewaters discharge at the current location into the unnamed ditch.

Equistar/Lyondell requests that both options be incorporated into the permit as: (1) Outfall 004 Interim Phase (current Outfall 004 discharge); (2) Outfall 004 Final Phase – Option 1 (relocation of entire discharge to bay); (3) Outfall 004 Final Phase and Outfall 010 – Option 2 (with only Olefins Unit cooling water blowdown segregated for discharge through Outfall 010).

OUTFALL 007 INCREASED FLOW LIMITS

Equistar/Lyondell requests an increase in flow limits for Outfall 007 to 1.22 MGD for the daily average and 1.60 MGD for the daily maximum, and with corresponding increases, as appropriate, in concentration and mass limits for all outfall parameters. The flow increases are needed to allow operational improvements in the wastewater system, including the debottlenecking of flows. Equistar/Lyondell requests that the Outfall 007 permit limits be established as an Interim Phase for current operations, and as a Final Phase for when the increase in flow commences.

With regard to flows representing current operation, Equistar/Lyondell understands that the TCEQ's standard approach for permit renewals is to use the maximum monthly average outfall flow from the most recent two years. However, flow has had to be restricted in the Outfall 007 wastewater system due to operational constraints, and the 2-year historical outfall flow is not truly representative of normal operation. The legacy design of the Outfall 007 wastewater system employed a settling pond for settling of waste activated sludge (WAS) before removal and transport offsite for disposal. Due to maintenance issues, use of the settling pond was stopped in 2012 and WAS was removed directly from the wastewater system, which eventually resulted in a bottleneck of the system in late 2016. Since 2016, the system has run using batch WAS removal and as a consequence currently runs at elevated mixed liquor suspended solids. In order to maintain control of the clarifier at these elevated levels, feed rate into the unit has been frequently reduced below the influent demand as more recycle activated sludge (RAS) flow is required. This results in the artificial lowering of the Outfall 007 flow rate below the design 1.0 MGD permit limit. If flow through the system had not been constrained during 2016-2017, the system would have run near or at the 1.0 MGD permitted flow. As a consequence, Equistar/Lyondell requests that a 1.0 MGD flow be used for the TCEQ's limit calculations for current operations.

OUTFALL 007 CHANGE BOD TO CBOD MONITORING

Equistar/Lyondell requests that monitoring of BOD for Outfall 007 be changed to CBOD. Equistar/Lyondell understands that the TCEQ allows this modification when a CBOD limit is paired with an ammonia limit for the outfall. The BOD parameter itself reflects both CBOD and the oxygen demand of ammonia nitrification, and in that sense, is an unnecessary duplication of the separate monitoring of ammonia. When CBOD is analyzed, nitrification is suppressed so that only the carbon-based BOD is measured. Furthermore, when the TCEQ models the impacts of oxygen-demanding substances on the dissolved oxygen in the receiving water, they are modeled as CBOD and ammonia. The TCEQ will typically specify the CBOD limit determined by the modeling as a BOD limit in the permit, but will change this to CBOD upon request by the permittee.

INCREASE BOD LIMITS FOR OUTFALLS 001, 004, AND 007. REMOVE DO LIMIT FOR OUTFALL 007

When the current permit was issued in 2014, the BOD mass limits for for Outfalls 001, 004, and 007 were reduced significantly, more than 40% for Outfall 001, more than 60% for Outfall 004, and more than 20% for Outfall 007. In the Fact Sheet for the 2014 permit, the TCEQ states that the revised limits were based on a the TCEQ's *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (WLE-1R).[1] For each of these outfalls, the BOD mass limits are based on concentrations of 10 milligrams per liter (mg/L) (daily average) and 21.2 mg/L (daily maximum) and the permitted daily average flow. In the 2014 Fact Sheet, the TCEQ states that the mass limits are consistent with the WLE-1R requirements for new and amended permits. However, the facility was not a new discharger in 2014 and the amendments that the facility did request for the outfalls should not have triggered a reduction in the concentrations used to set BOD limits.

The 10 mg/L and 3 mg/L limits for CBOD and ammonia-nitrogen, respectively, that are specified in WLE-1 (the original basis for WLE-1R) are the default for domestic dischargers, not for industrial dischargers. Industrial discharge limits under WLE-1 were to be assessed on a case-by-case basis. Appendix C of WLE-1R (Implementing Monte Carlo Results in Modeling to Develop TPDES Permit Limits) states that the following procedure will be followed for evaluating both new discharges and amendments to existing permits:

"When a new discharger is to be permitted, or when an existing discharger amends its permit to increase its flow, $CBOD_5$, and/or NH_3-N limits (i.e., increase its UOD loading) for the tidal segments, the existing or increased load will be evaluated at the proposed permitted loadings while applying the Monte Carlo scale factor to all other discharges. If the model predicts that DO criteria are maintained, then the permit will be issued as proposed. If not, the permit limits will be adjusted to achieve the DO criterion."

For the 2014 permit, increases in flow were requested for Outfall 001 (Interim and Final Phases) and Outfall 007; for Outfall 004, the facility actually requested a <u>decrease</u> in the outfall daily average flow limit and did not request any increase in BOD mass limits. Certainly, for Outfall 004, with no increase requested, reducing the BOD limits based on the WLE-1 default set is not reasonable. For Outfalls 001 and 007, based on the WLE-1R procedure cited above, the technology-based limits (TBELs) calculated for the 2014 permit, which were based on the flow increases, should have been modeled, and if the model results showed the dissolved oxygen (DO) criteria for the receiving water was met, the TBELs could have been allowed as amended permit limits. Modeling done for these outfalls by the TCEQ for the facility in 2009 showed that much higher BOD mass TBELs were compliant with the DO standard for the receiving water, and these were allowed as the permit limits. The 2009 modeling results are also consistent with the TCEQ's surface water quality monitoring (SWQM) database for the receiving water for the outfall discharges, Segment 2427 (San Jacinto Bay), which shows that the dissolved oxygen concentrations in the bay are compliant with the water quality standard (4 mg/L) and are only rarely below 5 mg/L.

Therefore, Equistar/Lyondell requests increased permit mass limits (daily average, daily maximum) for Outfalls 001, 004, and 007 up to the maximum of the allowable TBELs. Equistar/Lyondell also requests that if the evaluation shows that the receiving water is not very sensitive to the Outfall 007 discharge, that its concentration limit for dissolved oxygen be removed.

Equistar/Lyondell believes that its requests for amendments to the BOD limits for Outfalls 001, 004, and 007 and DO limit for Outfall 007 are compliant with anti-backsliding provisions. The limits for BOD and DO in the current 2014 permit are water quality based effluent limits

[1] Waste Load Evaluation WLE-1R for the Houston Ship Channel System, Texas Commission on Environmental Quality, September 2006. The original waste load evaluation was WLE-1, published in 1984.

(WQBELs) based on the TCEQ's waste load allocation for the receiving water (WLE-1R). As outlined in EPA's permit writer manual,[2] an exception to anti-backsliding for WQBELs is allowed under the Clean Water Act (CWA) when the existing limit is based on a waste load allocation (CWA §303(d)(4)(A)) and the revised limit will maintain the water quality standard and be consistent with any applicable effluent guideline (CWA §402(o)(3)).

ADD WASTEWATER SOURCES TO OUTFALLS 001, 003, 004, 005, AND 007

Equistar/Lyondell requests that certain wastewater sources be added to Outfalls 001, 003, 004, 005, and 007. These additional wastewaters are identified in Attachment T-1 Facility Description, Table 2. Wastewater Sources and Additions by Outfall.

OUTFALL 009 (PROPOSED)

A new Outfall 009 is proposed at the LyondellBasell Acetyls facility to manage post first flush storm water from within the boundary limits of the Acetic Acid (AA), Vinyl Acetate Monomer (VAM), and INEOS Polyalphaolefins (PAO) production areas. Other wastewaters that may be discharged through Outfall 009 are hydrostatic test water, fire system water, service water, potable water, construction storm water, demineralized water, steam and air conditioning condensate, de minimis spill cleanup water, and raw water.

Outfall 009 would discharge into the same unnamed ditch as the other facility outfalls, which flows downstream into Upper San Jacinto Bay in Segment No. 2427 of the Bays and Estuaries.

REMOVE OUTFALLS 201 AND 107

Equistar/Lyondell requests the removal of internal Outfalls 201 and 107 from the permit. These outfalls were authorized for treated sanitary wastewater from two separate Sanipack units; however, these units have been shut down and will be closed permanently. Sanitary wastewater generated at the facility is treated in five other Sanipack units, whose effluents are currently authorized in the permit as internal Outfalls 101, 104, 207, 307, and 407.

REMOVE BOD AND TSS LIMITS FROM OUTFALLS 101, 104, 207, 307, AND 407

Equistar/Lyondell requests that the BOD and TSS limits for internal Outfalls 101, 104, 207, 307, and 407 be removed because both of these parameters are also monitored at the final outfalls (001, 004, and 007). Ultimately, any impacts on the receiving water from BOD and TSS are controlled by the final outfall limits, and therefore, limits at the internal outfalls appear duplicative.

[2] U.S. Environmental Protection Agency NPDES Permit Writers Manual, EPA-833-K-10-001, September 2010, Section 7.2, Applying Anti-backsliding Requirements.

CORRECT ERROR IN TSS DAILY AVERAGE LIMIT FOR OUTFALL 004

Equistar/Lyondell requests that the TSS daily average limit for Outfall 004 be corrected because an error was made in the calculation for the current permit. The calculation of this limit is presented in Appendix A of the 2014 permit Fact Sheet. The error involves the daily average TSS allocation for utility wastewaters. On pg. 55 of the Fact Sheet, the TSS allocation for utility wastewater is correctly calculated as 127.68 pounds per day (lb/d); however, this value was not transcribed correctly to pg. 56 where the total allocations from utility wastewater, process wastewater, and sanitary wastewater are summed. The value shown for utility wastewaters in this summation is 85.12 lb/d and should be 127.68 lb/d. Correcting the error would result in a daily average TSS limit for Outfall 004 of 506 lb/d rather than the incorrect sum (464 lb/d) that was put in the permit.

Equistar/Lyondell believes that an increase in the daily average TSS limit for Outfall 004 is compliant with anti-backsliding provisions, which allows for correction of calculation errors pursuant to 40 CFR 122.44(l) and 40 CFR 122.62(a)(15).

MODIFY DMR DUE DATES

Equistar/Lyondell requests that the due dates for discharge monitoring reports (DMRs), which are currently in the TPDES permit as Provision 10, Other Requirements, be modified to the following language.

> Monitoring results must be provided at the intervals specified in the permit. For pollutants that are monitored annually, effluent reports must be submitted by January 20th for monitoring conducted during the previous 12-month period (i.e., January through December). For pollutants that are monitored twice per year, effluent reports must be submitted by July 20th and January 20th, for monitoring conducted during the previous 6-month period (i.e., January through June and July through December, respectively). For pollutants that are monitored four times per year, effluent reports must be submitted by April 20th, July 20th, October 20th, and January 20th for monitoring conducted during the previous calendar quarter (i.e., January through March, April through June, July through September, and October through December, respectively).

ATTACHMENT T-5
Treatment Chemicals

Outfall	Product Name	Dosage	Usage
001 & 003	3DT191	0.2 GPD	Polymers Cooling Tower
001 & 003	3DT184	0.1 GPD	Polymers Cooling Tower
001 & 003	3DT198	0.1 GPD	Polymers Cooling Tower
001 & 003	3DT396	0.2 GPD	Polymers Cooling Tower
001 & 003	Nalsperse 73550	Intermittent	Polymers Cooling Tower
001 & 003	Nalco 7357	Intermittent	Polymers Cooling Tower
001 & 003	3DT180	Intermittent	Polymers Cooling Tower
001 & 003	Nalco 7330	Intermittent	Polymers Cooling Tower
001 & 003	Nalco 71D5Plus	Intermittent	Polymers Cooling Tower
001 & 003	Trac107Plus	0.3 GPD	Polymers Cooling Tower
001 & 003	Trac101	0.5 GPD	Polymers Cooling Tower
001 & 003	Sur-Gard 1700	3.125 GPD	Polymers Boilers
001 & 003	Tri-Act 1820	0.2 GPD	Polymers Boilers
001 & 003	Trasar 22305	10 GPD	Polymers Boilers
001 & 003	NexGuard 22352	1.2 GPD	Polymers Boilers
004	Spectrus NX1106	1625 lbs/Quarter	Olefins Cooling Tower
004	Spectrus BD1501E	600 lbs/Quarter	Olefins Cooling Tower
004	Gengard GN8020	300 lbs/Day	Olefins Cooling Tower
004	Gengard GN8300	27 lbs/Day	Olefins Cooling Tower
004	Inhibitor AZ8104	136 lbs/Day	Olefins Cooling Tower
004	Cortrol OS7785	60 lbs/Day	Olefins Boiler Feed Water
004	Steamate NA2460	60 lbs/Day	Olefins Boiler Feed Water
004	Optisperse HTP78609	165 lbs/Day	Olefins Boiler Feed Water
004	Optisperse HTP73611	136 lbs/Day	Olefins Boiler Feed Water
004	Klaraid PC1192	200 lbs/Day	Olefins Inlet Clarifier Coagulant
004	Novus CE2680	30 lbs/Day	Clarifier and Belt Press; Olefins Cationic Emulsion Polymer for WWT
004	KlaraidPC1195	Intermittent	Olefins WWT Clarifier Coagulant
004	Bioplus BA3900	50 lbs/Month	Olefins WWT Aeration Basin Bio-Cultures
007	3DT394	24 GPD	Acetyls Cooling Tower
007	3DT179	14 GPD	Acetyls Cooling Tower
007	3DT186	3.5 GPD	Acetyls Cooling Tower
007	3DT198	Intermittent	Acetyls Cooling Tower
007	Nalco 7357	Intermittent	Acetyls Cooling Tower
007	Nalco 7330	Intermittent	Acetyls Cooling Tower
007	Trac107Plus	Intermittent	INEOS
007	Nalco 8187	4.2 GPH	Acetyls Wastewater Treatment
007	Nalco 9818	1.2 GPH	Acetyls Wastewater Treatment
007	Nalco 7161	Intermittent	Acetyls Wastewater Treatment
007	3DT185	0.1 GPH	Acetyls Wastewater Treatment

ATTACHMENT T-4
LYONDELLBASELL LA PORTE COMPLEX
DOMESTIC SEWAGE SLUDGE MANAGEMENT PLAN

The LyondellBasell La Porte Complex currently operates five Sanipacks for the treatment of sanitary (domestic) wastewater at the facility. Treated sanitary wastewater from the individual Sanipacks is authorized as internal Outfalls 101, 104, 207, 307, and 407 under the facility's TPDES Permit No. WQ0004013000.

Each Sanipack is approximately 30 feet long by 10 feet wide by 11 feet high with a capacity of approximately 24,500 gallons. The volume of the sludge handling section is approximately 440 cubic feet.

Domestic sewage sludge is removed from the Sanipacks generally once per quarter. A vacuum truck is utilized by Texas Outhouse to remove and transport the sludge to the Gulf Coast Authority Washburn Tunnel Facility (TPDES Permit No. WQ0001740000). A shipping manifest provides a tracking mechanism for the shipment and quantity shipped. Based on the quantity, the dry weight of each shipment can be calculated.

A letter is attached from Texas Outhouse that states they have the capacity and necessary equipment to manage the domestic sewage sludge produced from the Sanipacks for the next five years.

Mr. Christopher Freed
LyondellBasell – La Porte Complex
Principal Environmental Engineer
1515 Miller Cut Off Road
La Porte, Texas 77571

Dear Mr. Freed:

Texas Outhouse is pleased to perform your current domestic sewage sludge management for the seven Sanitary Packages located at the LyondellBasell – La Porte Complex. With regard to future domestic sewage sludge management and disposal, Texas Outhouse has the necessary resources and capacity to accept and manage the domestic sewage sludge from the facility for the life of your TPDES renewal permit (at least 5 years).

If you have any questions, please do not hesitate to call me at 713.785.8050, ext. 289.

Sincerely,

Denita Lucas

950 McCarty St| Houston, Texas 77029
713.785.8051

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 17, 2018

CERTIFIED MAIL

Mr. Chris Freed
Principal Environmental Engineer
Equistar Chemicals, LP
P.O. Drawer D
Deer Park, Texas 77536

Re: Application to Amend Permit No. WQ0004013000 (EPA I.D. TX0119792)
Applicant Name Equistar Chemicals, LP and LyondellBasell Acetyls, LLC
CN600124705 and CN6003674862, RN100210319

Dear Mr. Freed:

We have received the application for the above referenced permit and it is currently under review. Your attention to the following items is requested before we can declare the application administratively complete. Please submit one original and two copies (including a cover letter) of the complete response.

1. Section 2. C on page 3 of the administrative report: Thank you for submitting the Core Data Forms; however, a few of the items need clarification. The location of the facility on the existing permit is 1515 Miller Cut-Off Road, but the location listed on the Core Data Form for LyondellBasell Acetyls, LLC lists the address as 1350 Miller Cut-Off Road. On the Equistar Chemicals, LP Core Data, Form, corporation is selected as the type of customer, but it appears to be a partnership. Also, the latitude and longitude coordinates for the facility listed on the forms are not consistent. Confirm the coordinates for the facility. Please make the necessary revisions and submit a revised Core Data Form for each customer.

2. Section 11 on page 11 of the administrative report: The signature page submitted for LyondellBasell Acetyls, LLC is not valid because the name of the person who signed was not indicated in the space after the "Subscribed and Sworn" statement. The notary is required to witness the signature and fill out all applicable information. Please submit a new original notarized signature page. Also, the signature pages must be signed by a responsible corporate officer who meets the signatory requirements specified in 30 Texas Administrative Code (TAC) 305.44. Please provide documentation from both the applicant and co-applicant stating Mr. Christopher M. Cain, Site Manager, is authorized to sign on behalf of both applicants or submit new notarized signature pages signed by someone who does meet the signatory requirements.

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

APPLICATION. Equistar Chemicals, LP and LyondellBasell Acetyls, LLC, 1221 McKinney Street, Suite 300, Houston, Texas 77010, which owns a facility that manufactures ethylene, propylene, polyethylene, acetyls, acetic acid, vinyl acetate monomer, and poly alpha olefins, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004013000 (EPA I.D. No. TX0119792) to authorize a modification to Outfall 004 by either relocating it or proposing a new outfall, an increase in the discharge of treated wastewater to a volume not to exceed a daily average flow of 1,220,000 million gallons a day and a daily maximum flow to 1,600,000 for Outfall 007, changing the monitoring of biochemical oxygen demand (BOD) to carbonaceous biochemical oxygen demand (CBOD) for Outfall 007, increasing the BOD limits for Outfall 001, 004, and 007, removing dissolved oxygen limit for Outfall 007, adding wastewater sources to Outfalls 001, 003, 004, 005, and 007, proposing a new outfall, correcting an error in Total Suspended Solids daily average limit for Outfall 004, and modifying the due dates for discharge monitoring reports. The facility is located at 1515 Miller Cut-Off Road, La Porte, in Harris County, Texas 77571. The discharge route is from the plant site to an unnamed ditch; thence to San Jacinto Bay. TCEQ received this application on April 3, 2018. The permit application is available for viewing and copying at La Porte Branch Library, 600 South Broadway, La Porte, Texas 77571. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=29.711737&lng=-95.061592&zoom=13&type=r

Further information may also be obtained from Equistar Chemicals, LP and LyondellBasell Acetyls, LLC at the address stated above or by calling Mr. Chris Freed at 713-209-1405.

Please submit the complete response, addressed to my attention by May 17, 2018. If the requested information is not received by the given deadline, pursuant to 30 TAC Chapter 281, the application may be removed from our list of pending applications. If you should have any questions, please do not hesitate to call me at (512) 239-3321.

Sincerely,

Velma Fuller

Velma Fuller
Applications Review and Processing Team (MC148)
Water Quality Division
Texas Commission of Environmental Quality

cc: Ms. Dianna Kocurek, Partner, Tischler/Kocurek, 107 South Mays Street, Round Rock, Texas 78664 lyondellbasell

May 17, 2018

Ms. Velma Fuller
Texas Commission on Environmental Quality
Applications Review and Processing Team (MC-148)
Water Quality Division
P. O. Box 13087
Austin, Texas 78711-3087
CERTIFIED MAIL – 7017 1000 0000 5923 4209

Re: Application to Amend Permit No. WQ0004013000 (EPA I.D. TX0119792)
Applicants: Equistar Chemicals, LP and LyondellBasell Acetyls, LLC
CN600124705 and CN6003674862, RN100210319

Dear Ms. Fuller:

This letter is in response to your letter dated April 17, 2018, regarding the TPDES permit application for the LyondellBasell - La Porte Complex in La Porte, Texas.

For your convenience, the items from your letter are listed below, followed by our response.

TCEQ Item 1

Section 2.C on page 3 of the administrative report: Thank you for submitting the Core Data Forms; however, a few of the items need clarification. The location of the facility on the existing permit is 1515 Miller Cut-Off Road, but the location listed on the Core Data Form for LyondellBasell Acetyls, LLC lists the address as 1350 Miller Cut-Off Road. On the Equistar Chemicals, LP Core Data Form, corporation is selected as the type of customer, but it appears to be a partnership. Also, the latitude and longitude coordinates for the facility listed on the forms are not consistent. Confirm the coordinates for the facility. Please make the necessary revisions and submit a revised Core Data Form for each customer.

Response to Item 1

Enclosed are revised Core Data Forms for both Equistar Chemicals, LP and LyondellBasell Acetyls, LLC. Specific changes are: (1) the customer type (Item #11) is listed as limited partnership for Equistar Chemicals, LP; (2) the street address for the regulated entity (Item #23) is listed as 1515 Miller Cut-Off Road, La Porte, TX 77571-9816 on both forms; (3) the mailing address for the regulated entity (Item #34) is listed as P.O. Drawer D, Deer Park, TX 77536-1900 on both forms; (4) the latitude/longitude for the regulated entity (Items #27 and 28) is listed as 29.710278° / 29°42'37" (N), 95.068056° / 95°04'05"(W) on both forms; (5) the primary business of the regulated entity (Item #33) is listed as polymers, olefins, and acetyls manufacturing on both forms; (6) the secondary SIC/NAICS codes (Items #30 and 32) are listed as 2821 and 325211 on both forms; and (7) the customer/company mailing address (Item #15) is listed as P.O. Drawer D, Deer Park, TX 77536-1900 on both forms. Regarding the last item, it is our understanding that the TCEQ uses the address in Item #15 as the mailing address for the permit, as well as the applicant address for the application public notices. Per Ms. Lana D'Souza, Team Leader for Applications Review and Processing, as well as per our discussion with yourself, we understand that the TCEQ allows the facility address to be used for Item #15.

TCEQ Item 2

Section 11 on page 11 of the administrative report: The signature page submitted for LyondellBasell Acetyls, LLC is not valid because the name of the person who signed was not indicated in the space after the "Subscribed and Sworn" statement. The notary is required to witness the signature and fill out all applicable information. Please submit a new original notarized signature page. Also, the signature pages must be signed by a responsible corporate officer who meets the signatory requirements specified in 30 Texas Administrative Code (TAC) 305.44. Please provide documentation from both the applicant and co-applicant stating Mr. Christopher M. Cain, Site Manager, is authorized to sign on behalf of both applicants or submit new notarized signature pages signed by someone who does meet the signatory requirements.

Response to Item 2

Attached is a newly signed and notarized signature page for LyondellBasell Acetyls, LLC with the required items completed. Mr. Christopher M. Cain, Site Manager for LyondellBasell Acetyls, LLC as well as Equistar Chemicals, LP in La Porte, TX, is authorized to sign on behalf of both applicants. A copy of the delegation of authority for Mr. Cain was previously provided as Attachment A-3 of the TPDES application submitted on April 3, 2018.

TCEQ Item 3

The following is a portion of the Notice of Receipt of Application and Intent to Obtain a Water Quality Permit, which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

Response to Item 3

We request the following revisions (**bolded**).

> "APPLICATION. Equistar Chemicals, LP and LyondellBasell Acetyls, **LLC, P.O. Drawer D, Deer Park, Texas 77536**, which **own** a facility that manufactures ethylene, propylene, polyethylene, acetyls **(acetic acid and vinyl acetate monomer)**, and **polyalphaolefins**, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004013000 (EPA I.D. No. TX0119792) to authorize a modification to Outfall 004 by either relocating it or proposing a new outfall, an increase in the discharge of treated wastewater to a volume not to exceed a daily average flow of 1,220,000 ~~**million**~~ gallons a day and a daily maximum flow to 1,600,000 **gallons a day** for Outfall 007, changing the monitoring of biochemical oxygen demand (BOD) to carbonaceous biochemical oxygen demand (CBOD) for Outfall 007, increasing the BOD limits for Outfall 001, 004, and 007, removing **the** dissolved oxygen limit for Outfall 007, adding wastewater sources to Outfalls 001, 003, 004, 005, and 007, proposing a new outfall, correcting an error in Total Suspended Solids **(TSS)** daily average limit for Outfall 004, **remove internal Outfalls 201 and 107, remove BOD and TSS limits from Outfalls 101, 104, 207, 307, and 407,** and modifying the due dates for discharge monitoring reports. The facility is located at 1515 Miller Cut-Off Road, La Porte, in Harris County, Texas 77571. The discharge route is from the plant site to an unnamed ditch; thence to San Jacinto Bay. TCEQ received this application on April 3, 2018. The

permit application is available for viewing and copying at La Porte Branch Library, 600 South Broadway, La Porte, Texas 77571. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application.
http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=29.710278&lng=-95.068056&zoom=l3&type=r...."

In addition to the above items, we are included a revised page 9 from Administrative Report 1.0 of the TPDES application, related to Item 9.h, authorization to discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch. In our 4-3-18 application submittal, we indicated that authorization was pending and we included as proof of contact, a letter to the Harris County Public Infrastructure Department as Attachment A-7 in the application. Afterward, we received a response from the Harris County Flood Control District (HCFCD) that stated that our outfalls do not discharge into a ditch owned or operated by HCFCD. Consequently, we have revised Item 9.h to "no," that the outfalls do not discharge to a city, county, state, or flood district ditch. A copy of the letter from HCFCD is also enclosed.

If you have any questions or need additional information please contact Chris Freed at 713-209-1405.

Sincerely,

Heath McCartney
LyondellBasell – La Porte Complex
HSE Supervisor

Enclosures
- Signature page for LyondellBasell Acetyls, LLC
- Core Data Form for Equistar Chemicals, LP
- Core Data Form for LyondellBasell Acetyls, LLC
- Administrative Report 1.0, pg. 9 (revised)
- HCFCD Letter 3-28-18

11. SIGNATURE PAGE (Instructions, Page29)

Permit Number: WQ0004013000

Applicant: LyondellBasell Acetyls, LLC

Certification:

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

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

Signatory name (typed or printed): Christopher M. Cain

Signatory title: Site Manager

Signature: ______________________ Date: 05/17/18
(Use blue ink)

Subscribed and Sworn to before me by the said Christopher M. Cain

on this 17th day of May, 2018.

My commission expires on the 6th day of June, 2022.

Notary Public

[SEAL]

LORI GARDNER
My Notary ID # 125717474
Expires June 6, 2022

Harris, Texas
County, Texas

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

TCEQ

TCEQ Core Data Form

TCEQ Use Only

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** *(if issued)*
CN 600124705		RN 100210319

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

Equistar Chemicals, LP

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0010258111	17605504814	760550481	016452471

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees ☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated? ☐ Yes ☒ No

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

☐ Owner ☐ Operator ☒ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address: P.O. Drawer D

City	State	ZIP	ZIP + 4
Deer Park	TX	77536	1900

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	Phyllis.Rodriquez@lyondellbasell.com

18. Telephone Number	**19. Extension or Code**	**20. Fax Number** *(if applicable)*
(713) 336-5374		(713) 209-1440

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Equistar Chemicals La Porte Complex

23. Street Address of the Regulated Entity: *(No PO Boxes)*	1515 Miller Cut-Off Road							
	City	La Porte	State	TX	ZIP	77571	ZIP + 4	9816
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 1 mile north of Highway 225 on Miller Cut-Off Road

26. Nearest City	State	Nearest ZIP Code
La Porte	TX	77571

27. Latitude (N) In Decimal:		29.710278	28. Longitude (W) In Decimal:		95.068056
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	42	37	95	04	05

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
2869	2821	325199	325211

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

Polymers, olefins, and acetyls manufacturing

34. Mailing Address:	P.O. Drawer D							
	City	Deer Park	State	TX	ZIP	77536	ZIP + 4	1900
35. E-Mail Address:	Phyllis.Rodriquez@lyondellbasell.com							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(713) 336-5374		(713) 209-1440

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004013000			

SECTION IV: Preparer Information

40. Name:	Christopher Freed	41. Title:	Principal Environmental Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(713) 209-1405		(713) 209-1440	Christopher.Freed@lyondellbasell.com

SECTION V: Authorized Signature

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

Company:	Equistar Chemicals, LP	Job Title:	Site Manager
Name(*In Print*) :	Christopher M. Cain	Phone:	(713) 336-5475
Signature:		Date:	05/17/18

TCEQ

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 603674862		RN 100210319

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates (mm/dd/yyyy)**

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

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

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

LyondellBasell Acetyls, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0801196716	12711912332	271191233	039821301

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☒ 501 and higher

13. Independently Owned and Operated?
☐ Yes ☒ No

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

☒ Owner ☐ Operator ☐ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:	P.O. Drawer D						
	City	Deer Park	State	TX	ZIP	77536	ZIP + 4: 1900

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	Phyllis.Rodriquez@lyondellbasell.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(713) 336-5374		(713) 209-1440

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Equistar Chemicals La Porte Complex

23. Street Address of the Regulated Entity: *(No PO Boxes)*	1515 Miller Cut-Off Road							
	City	La Porte	State	TX	ZIP	77571	ZIP + 4	9816
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	Approximately 1 mile north of Highway 225 on Miller Cut-Off Road

26. Nearest City	State	Nearest ZIP Code
La Porte	TX	77571

27. Latitude (N) In Decimal:		29.710278	28. Longitude (W) In Decimal:		95.068056
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	42	37	95	04	05

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
2869	2821	325199	325211

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

Polymers, olefins, and acetyls manufacturing

34. Mailing Address:	P.O. Drawer D							
	City	Deer Park	State	TX	ZIP	77536	ZIP + 4	1900
35. E-Mail Address:	Phyllis.Rodriquez@lyondellbasell.com							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(713) 336-5374		(713) 209-1440

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0004013000			

SECTION IV: Preparer Information

40. Name:	Christopher Freed	41. Title:	Principal Environmental Engineer
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(713) 209-1405		(713) 209-1440	Christopher.Freed@lyondellbasell.com

SECTION V: Authorized Signature

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

Company:	LyondellBasell Acetyls, LLC	Job Title:	Site Manager
Name*(In Print)*:	Christopher M. Cain	Phone:	(713) 336-5475
Signature:		Date:	05/17/18

Revised 5-2-18

☐ Yes ☐ No

If **no, or a new permit application**, please give an accurate description:

N/A

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

☒ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

e. City nearest the outfall(s): La Porte

f. County in which the outfalls(s) is/are located: Harris

g. Outfall Latitude: Multiple outfalls. See Technical Report, pg. 6. Longitude: Multiple outfalls. See Technical Report, pg. 6.

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

☐ Yes ☒ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: N/A

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

N/A

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

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description:

N/A

k. City nearest the disposal site: N/A

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

HARRIS COUNTY
FLOOD
CONTROL
DISTRICT

9900 Northwest Freeway
Houston, Texas 77092
713-684-4000

March 28, 2018

Mr. Heath McCartney
LyondellBasell – La Port Complex
1515 Miller Cut Off Rd.
La Porte, Texas 77571

RE: Wastewater Discharge from LyondellBasell – La Porte Complex
Discharge of Approximately 7.10 MGD
TCEQ Discharge Permit: WQ0004013000
HCFCD Unit G100-00-00

Dear Mr. McCartney:

The Harris County Flood Control District (HCFCD) has received your application for discharge into a nearby waterway (Upper San Jacinto Bay). Due to the location of your facility, located in Harris County, discharge to property owned by others. HCFCD cannot authorize a discharge into property that HCFCD does not own or operate. Additionally HCFCD records do not show any previous discharge authorizations granted to the LyondellBasell – La Porte Complex.

If you have any questions or need additional information, please feel free to call me at 713-684-4063.

Sincerely,

Roberto J. Vega,
Stormwater Quality Department Project Manager

CAE:rv:rop

Attachment: Copy of Application

cc: Marcus Stuckett
Andrew Orlando
Project File 450

From:	Paschal, Terrie A.
To:	michael.sunderlin@tceq.texas.gov
Cc:	Anker, Maria F
Subject:	WQ0004013000 Notification New Treatment Chemical
Date:	Wednesday, May 8, 2019 6:25:00 AM
Attachments:	Novus CE2688 SDS.PDF image001.png

Good morning Michael,

Equistar Chemicals, LP and LyondellBasell Acetyls, LLC (LYB), WQ0004013000 (RN100210319) is submitting notification of a new treatment chemical for current permit record file and an update to the current renewal application for the Olefins unit. It is my understanding that you have taken over the LYB permit after Karen Holligan retired in March 2019.

Please see below information needed for your review and the attached new chemical treatment SDS:

New product: Novus CE2688, flocculating polymer for solids settling in raw water filter backwash water

Similar to existing product CE2680 (flocculating polymer for solids separation at the belt press)

Usage rate: 7 gal/day or 2,555 gal/yr

Fill rate: 0 gpm (totes are swapped not refilled)

Storage: 270gal totes

Est usage start date: 5/20/2019

Please contact me for any questions.

Thank you,

Terrie Paschal
Environmental Engineer – La Porte Complex
PO Drawer D, Deer Park, TX 77505
1350 Miller Cut-Off Rd, Laporte, TX 77571
Office: + 713.767.1028
Mobile: + 281-795-2738
Terrie.Paschal@LYB.com
www.LYB.com

LYB_signature_logo

SAFETY DATA SHEET

NOVUS* CE2688

1. Identification

Product identifier	**NOVUS CE2688**
Other means of identification	None.
Recommended use	Flocculant
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
OSHA defined hazards	Not classified.	

Label elements

Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of soap and water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Distillates (petroleum), hydrotreated light	64742-47-8	20 - 40
ALCOHOLS,C11-C14-ISO,C13-RICH,ETHOXYLATED	78330-21-9	1 - 2.5
Diethylenetriamine pentaacetic acid, pentasodium salt	140-01-2	0.1 - 1

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. Aspiration into the lungs will result in chemical pneumonia and may be fatal.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Powder. Dry chemicals. Carbon dioxide (CO_2).

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

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

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

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Cool containers / tanks with water spray.

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

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch or walk through spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up	Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat and sources of ignition. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	PEL	400 mg/m3
		100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Eye wash facilities and emergency shower must be available when handling this product. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product.

9. Physical and chemical properties

Appearance

Color	White to off-white
Physical state	Emulsion

Odor	Slight hydrocarbon
Odor threshold	Not available.
pH in aqueous solution	4.1 (0.5% SOL.)
Melting point/freezing point	< 23 °F (< -5 °C)
Initial boiling point and boiling range	210 °F (99 °C)
Flash point	> 200 °F (> 93 °C) P-M(CC)
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.04
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	715 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	< 28 °F (< -2 °C)
Specific gravity	1.036
VOC	30 % (Calculated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon evolved in fire. Hydrogen chloride, oxides of nitrogen and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Headache. Nausea, vomiting. May cause irritation to the respiratory system. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.

Ingestion	May cause gastrointestinal irritation with possible nausea, vomiting, diarrhea, mental confusion, dizziness and lethargy.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness and dizziness. Headache. Nausea, vomiting. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Narcotic effects. May cause respiratory irritation.

Product	Species	Test Results
NOVUS CE2688 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Inhalation		
LC50	Rat	> 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Diethylenetriamine pentaacetic acid, pentasodium salt (CAS 140-01-2)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	4550 mg/kg
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.2 mg/l, 4 Hour
Oral		
LD50	Rat	> 5000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

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

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
NOVUS CE2688 (CAS Mixture)			
	IC25	Ceriodaphnia	0.35 mg/l, Chronic Bioassay, 7 day
	LC50	Ceriodaphnia	2.1 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	3.2 mg/l, Static Acute Bioassay, 96 hour
	NOEL	Ceriodaphnia	1 mg/l, Static Renewal Bioassay, 48 hour
			0.25 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	1.3 mg/l, Static Acute Bioassay, 96 hour
Aquatic			
Crustacea	10% Mortality	Daphnia magna	0.04 mg/l, Static Acute Bioassay, 48 hour
	LC50	Daphnia magna	0.34 mg/l, Static Acute Bioassay, 48 hour

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
Distillates (petroleum), hydrotreated light 3 - 6
Bioconcentration factor (BCF)
Distillates (petroleum), hydrotreated light 207.7

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

- COD (mgO2/g)	792
- BOD 5 (mgO2/g)	144
- BOD 28 (mgO2/g)	160
- Closed Bottle Test (% Degradation in 28 days)	21
- Zahn-Wellens Test (% Degradation in 28 days)	49
- TOC (mg C/g)	210

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

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

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

14. Transport information

DOT

Not regulated as dangerous goods.

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

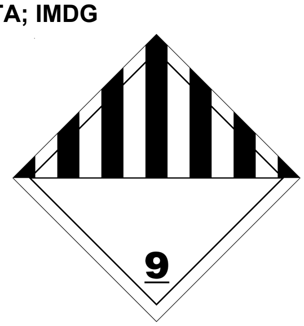
IATA

UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (QUATERNARY AMMONIUM POLYACRYLAMIDE)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
ERG Code	171
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

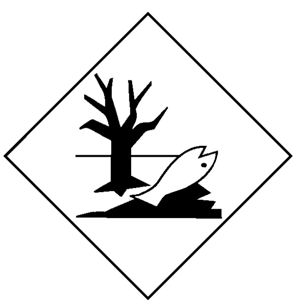
IMDG

UN number	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (QUATERNARY AMMONIUM POLYACRYLAMIDE), MARINE POLLUTANT
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-F
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA; IMDG



Marine pollutant



General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

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

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

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

1,4-DIOXANE (CAS 123-91-1)	Listed: January 1, 1988
ACETALDEHYDE (CAS 75-07-0)	Listed: April 1, 1988
Ethylene oxide (oxirane) (CAS 75-21-8)	Listed: July 1, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: August 7, 2009

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Ethylene oxide (oxirane) (CAS 75-21-8) Listed: August 7, 2009

US - Massachusetts RTK - Substance List

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

US - Pennsylvania RTK - Hazardous Substances

Distillates (petroleum), hydrotreated light (CAS 64742-47-8) Listed.

US - Rhode Island RTK

Distillates (petroleum), hydrotreated light (CAS 64742-47-8)

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

Distillates (petroleum), hydrotreated light (CAS 64742-47-8) Hazardous substance

US. California Proposition 65

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

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

Issue date	Nov-18-2014
Revision date	Feb-19-2018
Version #	4.2

List of abbreviations	CAS: Chemical Abstract Service Registration Number ACGIH: American Conference of Governmental Industrial Hygienists NOEL: No Observed Effect Level STEL: Short Term Exposure Limit LC50: Lethal Concentration, 50% TWA: Time Weighted Average BOD: Biochemical Oxygen Demand COD: Chemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code LD50: Lethal Dose, 50% TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References:	No data available
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

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