Jon Niermann, *Chairman* Bobby Janecka, *Commissioner* Catarina R. Gonzales, *Commissioner* Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 1, 2024

Laurie Gharis, Chief Clerk Office of the Chief Clerk Texas Commission on Environmental Quality P.O. Box 13087, MC-105 Austin, Texas 78711-3087

RE: Application For Equistar Chemicals, LP TCEQ Docket No. 2024-1500-IWD; SOAH Docket 582-25-03099

Dear Ms. Gharis:

Enclosed you will find the Executive Director's portion of the Administrative Record consisting of those documents specified at 30 TAC § 80.118(a)(1)-(4) and (6).

- Draft Permit No. WQ0000391000
- Statement of Basis/Technical Summary and Executive Director's Preliminary Decision
- Technical Memoranda
- Compliance History Report

Please do not hesitate to contact me at Harrison.Malley@tceq.texas.gov if you have any questions. Thank you for your attention to this matter.

Sincerely,

aun Ca Mul

Cole Malley, Staff Attorney - Environmental Law Division



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

PERMIT TO DISCHARGE WASTES

under provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code and 40 CFR Part 414 TPDES PERMIT NO. WQ0000391000 [For TCEQ office use only -EPA I.D. No. TX0003531]

This major amendment replaces TPDES Permit No. WQ0000391000, issued on March 25, 2021.

Equistar Chemicals, LP

whose mailing address is

P.O. Box 777 Channelview, Texas 77530

is authorized to treat and discharge wastes from Equistar Chemicals Channelview Complex, a bulk and commodity organic chemicals and thermoplastics resins production facility (SIC 2869, 2822, 2821, 2813)

located at 8280 Sheldon Road, in the City of Channelview, Harris County, Texas 77530

via Outfalls 001 and 004 to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 002 to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 to an unnamed drainage ditch, thence to Harris County Flood Control District (HCFCD) ditch G103-03-02, thence to the San Jacinto River Tidal; and via Outfall 006 to HCFCD ditch G103-07-05, thence to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin

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

This permit shall expire on March 25, 2026.

ISSUED DATE:

For the Commission

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated organic chemical manufacturing process wastewater, Houston Technology Center (HTC) wastewater, auto shop wastewater, laboratory wastewater, cooling tower and boiler blowdown, sanitary wastewater, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, steam condensate and blowdown, demineralization regeneration blowdown, methanol neutralization sump wastewater, hydrostatic test water, utility wastewater ¹, cooling tower and boiler maintenance wastewaters, water treatment wastewaters, maintenance wastewater, water from landfarm, groundwater from monitoring and recovery wells (on-site and off-site), construction stormwater ², process area stormwater runoff, and process area stormwater from the adjacent co-generation facility subject to the following effluent limitations:

	Di	scharge Limitatic	ons	Minimum Self-Monitori	ng Requirements
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	l Daily Maximum
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Flow	8.9 MGD	Report, MGD	N/A	Continuous	Totalizer
Carbonaceous Biochemical Oxygen Demand, 5-Day (CBOD ₅)	957	1,914	39.0	2/Week	Composite
Ammonia - Nitrogen (NH ₃ -N)	217	434	8.75	2/Week	Composite
Total Suspended Solids (TSS)	2,971	9,070	120	2/Week	Composite
Chemical Oxygen Demand (COD)	10,101	17,825	408	2/Week	Composite
Oil and Grease	595	891	12.0	1/Quarter	Grab
Chromium, total	1.02	2.54	0.0412	1/Year	Composite
Copper, total	1.77	3.75	0.0717	1/Year	Composite
Lead, total	7.84	16.6	0.316	1/Year	Composite
Nickel, total	6.40	15.0	0.258	1/Year	Composite
Zinc, total	4.73	11.75	0.191	1/Year	Composite
Acenaphthene	0.741	1.98	0.040	1/Year	Composite
Acenaphthylene	0.741	1.98	0.040	1/Year	Composite
Acrylonitrile	3.23	8.15	0.165	1/Year	Composite
Anthracene	0.741	1.98	0.040	1/Year	Composite
Benzene	1.24	4.58	0.093	1/Year	Composite
Benzo(<i>a</i>)anthracene	0.063	0.134	0.005	1/Year	Composite

The daily average flow of effluent shall not exceed 8.9 million gallons per day (MGD).

¹ See Other Requirement No. 13.

² See Other Requirement No. 17.

Outfall Number 001

	Discharge Limitations		Minimum Self-Monitoring Requirements		
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	d Daily Maximum
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
3,4-Benzofluoranthene	0.775	2.05	0.042	1/Year	Composite
Benzo(k)fluoranthene	0.741	1.98	0.040	1/Year	Composite
Benzo(a)pyrene	0.0063	0.013	0.005	1/Year	Composite
Bis(2-Ethylhexyl) Phthalate	3.47	9.40	0.190	1/Year	Composite
Carbon Tetrachloride	0.606	1.28	0.026	1/Year	Composite
Chlorobenzene	0.505	0.944	0.019	1/Year	Composite
Chloroethane	3.50	9.03	0.182	1/Year	Composite
Chloroform	0.708	1.55	0.031	1/Year	Composite
2-Chlorophenol	1.04	3.30	0.067	1/Year	Composite
Chrysene	0.741	1.98	0.040	1/Year	Composite
Di-n-butyl Phthalate	0.910	1.92	0.039	1/Year	Composite
1,2-Dichlorobenzene (ortho)	2.59	5.49	0.111	1/Year	Composite
1,3-Dichlorobenzene (meta)	1.04	1.48	0.030	1/Year	Composite
1,4-Dichlorobenzene (para)	0.505	0.944	0.019	1/Year	Composite
1,1-Dichloroethane	0.741	1.98	0.040	1/Year	Composite
1,2-Dichloroethane	2.29	7.11	0.144	1/Year	Composite
1,1-Dichloroethylene	0.539	0.842	0.017	1/Year	Composite
1,2-trans-Dichloroethylene	0.708	1.82	0.037	1/Year	Composite
2,4-Dichlorophenol	1.31	3.77	0.076	1/Year	Composite
1,2-Dichloropropane	5.15	7.75	0.157	1/Year	Composite
1,3-Dichloropropylene	0.977	1.48	0.030	1/Year	Composite
Diethyl Phthalate	2.73	6.84	0.138	1/Year	Composite
2,4-Dimethylphenol	0.606	1.21	0.025	1/Year	Composite
Dimethyl Phthalate	0.640	1.58	0.032	1/Year	Composite
4,6-Dinitro-o-cresol	2.62	9.33	0.189	1/Year	Composite
2,4-Dinitrophenol	2.39	4.14	0.084	1/Year	Composite
2,4-Dinitrotoluene	3.80	9.60	0.194	1/Year	Composite
2,6-Dinitrotoluene	8.59	21.6	0.436	1/Year	Composite
Ethylbenzene	1.07	3.64	0.074	1/Year	Composite
Fluoranthene	0.842	2.29	0.046	1/Year	Composite

Page 2a of TPDES Permit No. WQ0000391000

Outfall Number 001

	Discharge Limitations			Minimum Self-Monitoring Requirements	
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average an	d Daily Maximum
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Fluorene	0.741	1.98	0.040	1/Year	Composite
Hexachlorobenzene	0.002	0.004	0.005	1/Year	Composite
Hexachlorobutadiene	0.558	1.18	0.022	1/Year	Composite
Hexachloroethane	0.708	1.82	0.037	1/Year	Composite
Methyl Chloride	2.89	6.40	0.129	1/Year	Composite
Methylene Chloride	1.34	3.00	0.061	1/Year	Composite
Naphthalene	0.741	1.98	0.040	1/Year	Composite
Nitrobenzene	0.910	2.29	0.046	1/Year	Composite
2-Nitrophenol	1.38	2.32	0.047	1/Year	Composite
4-Nitrophenol	2.42	4.18	0.084	1/Year	Composite
Phenanthrene	0.741	1.67	0.040	1/Year	Composite
Phenol	0.505	0.876	0.018	1/Year	Composite
Pyrene	0.842	2.25	0.046	1/Year	Composite
Tetrachloroethylene	0.741	1.88	0.038	1/Year	Composite
Toluene	0.876	2.69	0.054	1/Year	Composite
1,2,4-Trichlorobenzene	2.29	4.71	0.095	1/Year	Composite
1,1,1-Trichloroethane	0.708	1.82	0.037	1/Year	Composite
1,1,2-Trichloroethane	0.708	1.82	0.037	1/Year	Composite
Trichloroethylene	0.708	1.82	0.037	1/Year	Composite
Vinyl Chloride	3.50	9.03	0.182	1/Year	Composite

2. All sanitary wastewater shall be given complete treatment (both primary and secondary).

3. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored continuously (see Other Requirement No. 2).

- 4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 5. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where commingled wastewaters are discharged prior to entering the on-site, unnamed drainage ditch.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge sanitary wastewater, HTC process wastewater ¹, and HTC stormwater ¹ from a septic chlorinator subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Average Daily Maximum Single Grab			Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow	Report, MGD	Report, MGD	N/A	1/day	Estimate	
Enterococci ²	35	104	104	1/Week	Grab	
Chlorine residual ³	1.0 minimum	N/A	N/A	5/Week	Grab	

¹ Effluent limits for process wastewater and stormwater are applied at the external Outfall 001.

² Most probable number or colony-forming units per 100 mL (MPN or CFU /100 mL).

All sanitary wastewater shall be chlorinated sufficiently to maintain at least a 1.0 mg/L chlorine residual after at least 20 minutes of contact time (based on peak flow).

2. Effluent monitoring samples shall be taken at the following location: At Outfall 101, at the exit of the septic chlorinators and prior to commingling with other wastewaters.

Page 2c of TPDES Permit No. WQ0000391000

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge sanitary wastewater associated with a septic chlorinator, subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Average Daily Maximum Single Grab J			Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type	
Flow	Report, MGD	Report, MGD	N/A	1/day	Estimate	
Enterococci 1	35	104	104	1/Week	Grab	
Chlorine residual ²	1.0 minimum	N/A	N/A	5/Week	Grab	

¹ Most probable number or colony-forming units per 100 mL (MPN or CFU /100 mL).

² All sanitary wastewater shall be chlorinated sufficiently to maintain at least a 1.0 mg/L chlorine residual after at least 20 minutes of contact time (based on peak flow).

2. Effluent monitoring samples shall be taken at the following location: At Outfall 102, at the exit of the septic chlorinators and prior to commingling with other wastewaters.

Page 2d of TPDES Permit No. WQ0000391000

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge *de minimis* quantities from spill cleanups ^{1, 2}, utility wastewater ³, construction water ⁴, non-process area stormwater runoff ¹, stormwater (from secondary containment structures) ^{1, 2}, and post-first flush process area stormwater runoff ¹ subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	scharge Limitations	Minimum Self-Monitoring	g Requirements	
	Daily Average Daily Maximum Single Grab			Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/ week 1	Estimate
Total Organic Carbon (TOC)	N/A	75	75	1/ two weeks ¹	Grab
Oil and Grease	N/A	15	15	1/ two weeks ¹	Grab

¹ When a stormwater discharge occurs, samples shall be collected within the first hour after the stormwater discharge begins and 1/week thereafter for the duration of the stormwater discharge. Samples shall be taken 1/week or 1/two weeks as indicated for all other discharges.

- ² See Other Requirement No. 5.
- ³ See Other Requirement No. 13.
- ⁴ Including stormwater associated with construction activities. See Other Requirement No. 17.
- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/week¹ by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following locations: At Outfall 002, in the plant drainage ditch (on the west side of the sludge lagoons) where groundwater seepage, stormwater runoff, and other authorized wastewaters are discharged.

Outfall Number 003 (003A, 003B, 003C)

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge *de minimis* quantities from spill cleanups ¹, utility wastewater ², construction water ³, and stormwater runoff subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	Discharge Limitations			g Requirements
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/ Quarter 4	Estimate ⁵
Total Organic Carbon (TOC)	N/A	75	75	1/ Quarter 4	Grab ⁵
Oil and Grease	N/A	15	15	1/ Year 4	Grab ⁵
Zinc, total ⁶	N/A	Report	N/A	1/ Quarter 4	Grab ⁵

¹ See Other Requirement No. 5.

² See Other Requirement No. 13.

³ Including stormwater associated with construction activities. See Other Requirement No. 17.

- ⁴ When a discharge occurs, samples shall be collected within the first hour after the discharge begins.
- ⁵ If more than one source is associated with this particular waste category, the highest TOC, oil and grease, and total zinc shall be reported, and the highest and lowest pH shall be reported (note the monitoring sample locations stated below).
- ⁶ See Other Requirement No. 3.
- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/quarter ^{4, 5} by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following locations: Outfall 003, which is comprised of combined intermittent discharges to the road ditches along Sheldon Road and Wallisville Road. Specifically, Outfall 003 is located at the southwest section of the plant adjacent to Sheldon Road; Outfall 003A is located at the southwest section of the plant adjacent to Wallisville Road; Outfall 003B is located at the southwest section of the plant, east of Outfall 003A, adjacent to Wallisville Road; and Outfall 003C is located at the southwest section of the plant, east of Outfall 003B, adjacent to Wallisville Road.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge *de minimis* quantities from spill cleanups ¹, utility wastewater ², construction water ³, non-process area stormwater runoff, stormwater (from secondary containment structures) ¹, and post-first flush process area stormwater runoff subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	scharge Limitations	Minimum Self-Monitoring	g Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/Quarter 4	Estimate
Total Organic Carbon (TOC)	N/A	75	75	1/Quarter 4	Grab
Oil and Grease	N/A	15	15	1/Quarter 4	Grab
Zinc, total ^{5, 6}	N/A	Report	N/A	1/Quarter 4	Grab
Zinc, total ^{5, 7}	N/A	0.439	0.439	1/Quarter 4	Grab

¹ See Other Requirement No. 5.

- ² See Other Requirement No. 13.
- ³ Including stormwater associated with construction activities. See Other Requirement No. 17.
- ⁴ When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
- ⁵ See Other Requirement No. 3.
- ⁶ Beginning upon the date of permit issuance and lasting for two years and 364 days. See Other Requirement No. 15.
- ⁷ Beginning three years from the date of permit issuance and lasting until the date of permit expiration.
- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/Quarter ⁴ by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location: At Outfall 004, where intermittent discharges to an unnamed drainage ditch occur near the northeast corner of the plant site, adjacent to Outfall 001.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge *de minimis* quantities from spill cleanups ¹, utility wastewater ², construction water ³, and stormwater runoff subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average Daily Maximum Single Grab			Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/Quarter 4	Estimate
Total Organic Carbon (TOC)	N/A	75	75	1/Quarter 4	Grab
Oil and Grease	N/A	15	15	1/Quarter 4	Grab

¹ See Other Requirement No. 5.

² See Other Requirement No. 13.

³ Including stormwater associated with construction activities. See Other Requirement No. 17.

⁴ When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.

- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/Quarter ⁴ by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location: At Outfall 005, where intermittent discharges occur from the barge dock area.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge Houston Technology Center-area stormwater subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Di	Discharge Limitations			Minimum Self-Monitoring Requirements		
	Daily Average	Daily Average Daily Maximum Single Grab			Daily Maximum		
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type		
Flow	Report, MGD	Report, MGD	N/A	1/Month ¹	Estimate		
Total Organic Carbon (TOC)	N/A	75	75	1/Month 1	Grab		
Oil and Grease	N/A	15	15	1/Month ¹	Grab		

- ¹ When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/month¹ by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location: At Outfall 006, at the outlet (48-inch drain) of the stormwater impoundment at the Houston Technology Center.

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge stormwater associated with construction activities from a concrete batch plant ¹ subject to the following effluent limitations:

Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring	g Requirements
	Daily Average Daily Maximum Single Grab I			Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/Quarter ²	Estimate
Total Suspended Solids (TSS)	N/A	100	100	1/Quarter ²	Grab
Oil and Grease	N/A	15	15	1/Quarter ²	Grab

¹ Including stormwater associated with construction activities. See Other Requirement No. 17.

² Samples must be obtained within one hour following the commencement of discharge.

- 2. The pH must not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/month ² by grab sample.
- 3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- 4. Effluent monitoring samples shall be taken at the following location: At Outfall 007, at the discharge point of stormwater runoff from the concrete batch plant located in the construction area and prior to combining with other stormwater runoff or wastewaters.

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 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.
 - 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 c. 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:

- That any activity has occurred or will occur that would result in the discharge, on a routine or a. 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.
- That any activity has occurred or will occur that would result in any discharge, on a nonroutine b. 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 μ g/L);
 - ii. one milligram per liter (1 mg/L) for antimony;

Equistar Chemicals, LP

- 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 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

- 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.
- The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, 4. 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.

Equistar Chemicals, LP

- 5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.
- 6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).
- 7. Documentation

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

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

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

- b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.
- c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

Equistar Chemicals, LP

- 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.
 - 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, c. 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.
 - 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; andvi. 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.

TCEQ Revision 05/2021

OTHER REQUIREMENTS

- 1. 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.
- 2. The permittee shall maintain the pH at Outfall 001 within the range specified on Page 2b of this permit. 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 Page 2b. 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 31-day period.
- 3. 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 Compliance Monitoring Team (MC 224):

Pollutant	MAL^{1} (mg/L)
Chromium (Total)	0.003
Copper (Total)	0.002
Lead (Total)	0.0005
Nickel (Total)	0.002
Zinc (Total)	0.005
Pollutant	MAL (mg/L)
Acenaphthene	0.010
Acenaphthylene	0.010
Acrylonitrile	0.050
Anthracene	0.010
Benzene	0.010
Benzo(<i>a</i>)anthracene	0.005
3,4-Benzofluoranthene	0.010
(Benzo(b)Huoranthene)	
Benzo(<i>k</i>)nuorantnene	0.005
Benzo(<i>a</i>)pyrene	0.005
Bis(2-Ethylnexyl) Phthalate	0.010
Carbon Tetrachioride	0.002
Chlorobenzene	0.010
Chloroethane	0.050
Chlorotorm	0.010
2-Chlorophenol	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

¹ Minimum analytical level.

Pollutant	MAL (mg/L)
1,1-Dichloroethane	0.010
1,2-Dichloroethane	0.010
1,1-Dichloroethylene	0.010
1,2-trans-Dichloroethylene	0.010
2,4-Dichlorophenol	0.010
1,2-Dichloropropane	0.010
1,3-Dichloropropylene	0.010
Diethyl Phthalate	0.010
2,4-Dimethylphenol	0.010
Dimethyl Phthalate	0.010
4,6-Dinitro-o-Cresol	0.050
2,4-Dinitrophenol	0.050
2,4-Dinitrotoluene	0.010
2,6-Dinitrotoluene	0.010
Ethylbenzene	0.010
Fluoranthene	0.010
Fluorene	0.010
Hexachlorobenzene	0.005
Hexachlorobutadiene	0.010
Hexachloroethane	0.020
Methylene Chloride	0.020
Methyl Chloride	0.050
Naphthalene	0.010
Nitrobenzene	0.010
2-Nitrophenol	0.020
4-Nitrophenol	0.050
Oil and grease	5.00
Phenanthrene	0.010
Phenol	0.010
Pyrene	0.010
Tetrachloroethylene	0.010
Toluene	0.010
1,2,4-Trichlorobenzene	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 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. 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 <u>[list pollutant(s)]</u> on the self-reporting form for <u>[monitoring period date range]</u> 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.

4. Mixing Zones:

Outfalls 001, 002, 003, 004 - There is no mixing zone for these discharges to an intermittent stream. Acute toxic criteria apply at the point of discharge.

Outfall 005 - The chronic aquatic life mixing zone 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.

- 5. Discharges of *de minimis* quantities from spill cleanups via Outfalls 002, 003, 004, and 005 and stormwater (from secondary containment structures) via Outfalls 002 and 004 are only authorized under the following conditions:
 - a. The discharge must not contain process wastewater or spilled materials (process wastewater includes any water that contains or has come into direct contact with a raw material, intermediate product, by-product, final product, or waste product).
 - b. The discharge may contain secondary washwaters from spill cleanup; however any waters containing spilled material or primary washwaters from spill cleanup must be treated and discharged via Outfall 001 or collected and hauled off-site for treatment and/or disposal at a properly authorized facility.
- 6. This permit does not authorize the permittee to accept wastewaters from third party sources, nor does it prohibit acceptance of such wastewaters. This permit only provides the authorization to discharge these wastes. Should authorization to accept third party waste be required, it is the obligation of the permittee to obtain such authorization from the appropriate regulatory authority.

Wastewater received from non-adjacent (off-site) affiliates may be discharged provided that:

- a. the permittee demonstrates that the off-site wastewaters are generated at a facility that is subject to the same provisions in 40 CFR Part 414 as the Equistar Chemicals Channelview Complex; or the permittee demonstrates that the off-site wastewaters are of similar nature and the treatment of such wastewaters is compatible with the wastewaters produced and treated at the Equistar Chemicals Channelview Complex;
- b. the volume and nature of the off-site wastewaters will not have an impact on the Equistar Chemicals Channelview Complex Wastewater Treatment Plant's ability to consistently achieve the effluent limitations specified in this permit; and
- c. the permittee shall provide written pre-notification of acceptance of wastewaters from non-adjacent affiliates' activities to the TCEQ Region 12 office.
- 7. Monitoring results must be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports must be submitted by January 20th for monitoring conducted during the previous 12-month period (i.e., through December). For pollutants which

are monitored twice per year, effluent reports must be submitted by July 20th and January 20th, for monitoring conducted during the previous six-month period (i.e., through June and December, respectively). For pollutants which are monitored four times per year, effluent reports must be submitted with the discharge monitoring reports by April 20th, July 20th, October 20th, and January 20th for monitoring conducted during the previous calendar quarter (i.e., through March, June, September, and December, respectively).

- 8. This permit does not authorize the diversion of stormwater from active landfarm cells to Outfall 002 or 004. Such diversion shall require written notification to and approval by the TCEQ's Wastewater Permitting Section (MC-148). Additional requirements may be imposed for stormwater from active landfill cells to be approved for diversion. Stormwater from inactive landfarm cells may be diverted to Outfall 002 or Outfall 004.
- 9. Reporting requirements at Outfall 006 and 007 according to 30 TAC §§ 319.1-319.12 and any additional effluent reporting requirements contained in the permit are suspended from the effective date of the permit until plant startup or discharge, whichever occurs first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 12 Office and the Applications Review and Processing Team (MC 148) of the Water Quality Division at least forty-five days prior to plant startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

10. COOLING WATER INTAKE STRUCTURE REQUIREMENTS

The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and Region 12 Office of any changes in the method by which the facility obtains water for cooling purposes. This notification must be submitted 30 days prior to any such change and must include a description of the planned changes. The TCEQ may, upon review of the notification, reopen the permit to include additional terms and conditions as necessary.

11. POND REQUIREMENTS

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

- A. A wastewater pond **subject to 40 CFR Part 257**, **Subpart D** (related to coal combustion residuals) must comply with those requirements in lieu of the requirements in B through G of POND REQUIREMENTS.
- 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 <u>process wastewater</u> as defined in 40 CFR § 122.2. The executive director will review ponds that will contain only <u>non-process wastewater</u> on a case-by-case basis to determine whether the pond must be lined. If a pond will contain only non-process wastewater, the owner shall notify the Industrial Permits Team (MC 148) to obtain a written determination at least 90 days before the pond is placed into service and copy the TCEQ Compliance Monitoring Team (MC 224) and regional office. 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 <u>only contains domestic wastewater</u> 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) <u>Soil liner</u>: 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 (\leq 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) <u>Synthetic membrane</u>: 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) <u>Alternate liner</u>: The permittee shall submit plans signed and sealed by a Texas-licensed professional engineer for any other equivalently protective pond lining method to the TCEQ Industrial Permits Team (MC 148) and copy the regional office
- 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), and regional office. A copy of the liner certification and construction details (i.e., as-built drawings, construction QA/QC documentation, and post construction testing) must be kept on-site or in a reasonably accessible location (in either hardcopy or digital format) until the pond is closed.

- E. Protection and maintenance requirements for a pond subject to subparagraph B or C (including ponds with in-situ soil liners).
 - (1) The permittee shall maintain a liner to prevent the unauthorized discharge of wastewater into or adjacent to water in the state.
 - (2) A liner must be protected from damage caused by animals. Fences or other protective devices or measures may be used to satisfy this requirement.
 - (3) The permittee shall maintain the structural integrity of the liner and shall keep the liner

and embankment free of woody vegetation, animal burrows, and excessive erosion.

- (4) The permittee shall inspect each pond liner and each leak detection system at least once per month. Evidence of damage or unauthorized discharge must be evaluated by a Texaslicensed 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 Industrial Permits Team (MC 150) 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.
- 12. The permittee shall notify the Executive Director in writing, at least 90 days prior to discontinuing use of any surface impoundment, pit, or basin authorized by this permit. The permittee shall, at

the request of the Executive Director, submit such information as is necessary to evaluate closure of the waste management unit(s) including, but not limited to, chemical analyses of bottom sediments, soils, and groundwater samples.

- 13. Utility wastewater includes, but is not limited to: potable water, vehicle rinse water, firewater (which has not come into direct contact with raw material, intermediate product, finished product, by-product, or waste product and is not the result of a fire), hydrotest water, clarified water, demineralized water, steam condensate and blowdown, non-contact once-through cooling water, *de minimis* amounts of cooling tower water, raw and well water, groundwater seepage, condensate, and analyzer instrumentation drain wastewater.
- 14. The permittee may transport wastewater treatment sludge from Equistar Chemicals, LP Channelview Complex, [Texas Pollutant Discharge Elimination Permit (TPDES) Permit No. WQ0000391000] to Lyondell Chemical Company [TPDES Permit No. WQ00002927000] located on adjacent contiguous property, provided all other requirements necessary for the transport of sludge have been met and contingent upon the acceptance of the sludge by the LyondellBasell Industries Channelview South Plant.

15. SCHEDULE OF COMPLIANCE FOR WATER QUALITY-BASED EFFLUENT LIMITS

The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitation for total zinc at Outfall 004:

A. determine exceedance cause(s);

B. develop control options;

- C. evaluate and select control mechanisms;
- D. implement corrective action; and
- E. attain final effluent limitations no later than three years from the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the schedule below. 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

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 total aluminum at Outfall 003 and total zinc at Outfall 004 no later than three years from the date of permit issuance.

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 must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement. All reports must be submitted to the Region 12 Office and to the Enforcement Division (MC 224) of the TCEQ.

16. 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.

17. STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Equistar Chemicals, LP (permittee) must 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 (1) or more acres, or 2) apply under TPDES general permit TXR150000 for authorization to discharge stormwater runoff from construction activities. If the permittee opts to discharge stormwater via this permit, only discharges of stormwater runoff from construction activities that are located at the facility authorized under this TPDES permit are eligible for authorization under this permit. Discharges of stormwater from small and large (1 acre or more) construction activities and support activities, include, but are not limited to: concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage vards, material borrow areas, and excavated material disposal areas, may be authorized under this permit. Also, the following non-stormwater discharges may be discharged as a result of the construction activities: water line flushing and similar potable water sources; uncontaminated pumped groundwater, including infiltrated water in trenches or other excavated areas; air conditioning condensate; and pavement, exterior building, vehicle, and equipment wash water from washing activities conducted without the use of detergents or other chemicals.

I. Construction Stormwater Discharges

The permittee shall develop and implement a stormwater pollution prevention plan (SWP3). The SWP3 must be maintained onsite and made readily available for review by the TCEQ upon request. The SWP3 must, at a minimum, include the following:

- a. a site or project description, which includes the following information:
 - 1) a description of the nature of the construction activity;
 - 2) a list of potential pollutants and their sources;
 - 3) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site;
 - 4) 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 stockpiles of dirt, and borrow areas;
 - 5) data describing the soil or the quality of any discharge from the site;
 - 6) a map showing the general location of the site (e.g., a portion of a city or county map);
 - 7) a detailed site map (or maps) indicating the following:
 - (a) drainage patterns and approximate slopes anticipated after major grading activities;
 - (b) areas where soil disturbance will occur;

- (c) locations of all major erosion and sediment controls and natural buffers, either planned or in place;
- (d) locations where temporary or permanent stabilization practices are expected to be used;
- (e) locations of construction support activities, including off-site activities, including material, waste, borrow, fill, or equipment storage areas;
- (f) surface waters (including wetlands) either at, adjacent, or in close proximity to the site;
- (g) locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system; and
- (h) vehicle wash areas.
- 8) the location and description of support activities such as the concrete plant, gravel washing facilities, and other activities providing support to the construction site; and
- 9) 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).
- b. 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:
 - 1) General Requirements
 - (a) 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.
 - (b) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.
 - (c) Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.
 - 2) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the site(s), including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

- (a) 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.
- (b) The following records must be maintained and either attached to or referenced in the SWP3:
 - (i) the dates when major grading activities occur;
 - (ii) the dates when construction activities temporarily or permanently cease on a portion of the site; and
 - (iii) the dates when stabilization measures are initiated.
- (c) Erosion control and stabilization measures must be initiated immediately in portions of the site(s) where construction activities have temporarily ceased. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site(s) where construction activities have

permanently ceased. Except as provided in (c)(i) through (c)(iii) below, these measures must be completed no more than 14 days after the construction activity in that portion of the site(s) has temporarily or permanently ceased:

- (i) Where the immediate initiation of stabilization measures after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
- (ii) In arid areas, semi-arid areas, or drought-stricken areas where the immediate initiation of stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, erosion control and stabilization measures must be initiated as soon as practicable. Where vegetative controls are not feasible due to arid conditions, the permittee shall immediately install, and within 14 calendar days of a temporary or permanent cessation of work in any portion of the site(s) complete, non-vegetative erosion controls. If non-vegetative controls are not feasible, the permittee shall install temporary sediment controls as required in Paragraph (c)(iii) below.
- (iii) In areas where temporary stabilization measures 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(s) to the extent practicable. The permittee must continue to inspect the BMPs for unstabilized sites.
- 3) 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.

- (a) Sedimentation Basin(s)
 - (i) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) 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(s) and the sediment basin. Capacity calculations shall be included in the SWP3.
 - (ii) 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).
 - (iii) 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(s) conditions.

- (c) Controls for Sites With Drainage Areas Less than Ten Acres:
 - (i) 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(s) conditions.
 - (ii) 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.
- c. Description of Permanent Stormwater Controls

A description of any 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.

- d. Other Required Controls and BMPs
 - 1) The permittee shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 must include a description of controls utilized to accomplish this requirement.
 - 2) 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.
 - 3) The SWP3 must include a description of potential pollutant sources from areas other than construction (such as stormwater discharges from dedicated gravel washing facilities and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.
 - 4) The permittee shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (such as runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.
 - 5) The permittee 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(s).
- e. Maintenance Requirements
 - 1) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, 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.

- 2) 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.
- 3) 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.
- 4) If sediment escapes the site(s), accumulations must be removed at a frequency that minimizes offsite impacts, and prior to the next rain event, if feasible.
- f. Inspections of Controls
 - 1) Personnel provided by the permittee must inspect disturbed areas of the construction site(s) that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of this permit, familiar with the construction site(s), and knowledgeable of the SWP3 for the site(s). Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.
 - 2) Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g., site(s) is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. During periods of drought, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater.
 - 3) As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.
 - 4) The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may 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 must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).
 - 5) 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.
 - 6) 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 (7) 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.
 - 7) The permittee shall prepare, and retain as part of the SWP3 a report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3.

Major observations should include: The locations of discharges of sediment or other pollutants from the site(s); 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.

- 8) 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 non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).
- 9) 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.
- g. Erosion and Sediment Control Requirements

The permittee shall ensure that the discharge, achieves, 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 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(s) to minimize soil erosion;
 - (b) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;
 - (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(s);
 - (f) If earth disturbance activities are located in close proximity to a surface water, provide and maintain appropriate natural buffers if feasible and as necessary, around surface waters, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration unless unfeasible; and
 - (g) Minimize soil compaction and, unless infeasible, preserve topsoil.
 - (h) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the buffer requirement in item (f) above. Also, areas that the permittee does not own or that are otherwise outside their 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(s) and will not resume for a period exceeding 14 calendar days. Temporary stabilization must be completed within 14 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 non-vegetative 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(s) to precipitation and to stormwater; and
 - (c) 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 trucks, 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; and
 - (d) Soaps or solvents used in vehicle and equipment washing.
- 6) Surface outlets When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.
- II. Concrete Batch Plant Stormwater Discharges

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 item 8. The SWP3 must at a minimum include the following:

- a. Description of Potential Pollutant Sources The SWP3 must provide a description of potential sources (activities and materials) that may reasonably be expected to affect the quality of stormwater discharges associated with the concrete batch plant. The SWP3 must describe practices that that will be used to reduce the pollutants in these discharges to assure compliance with this permit, including the protection of water quality, and must ensure the implementation of these practices. The following must be developed, at a minimum, in support of developing this description:
 - 1) Drainage Area Site Map The site map must include the following information:
 - (a) the location of all outfalls for stormwater discharges associated with the concrete batch plant authorized under this permit;

- (b) a depiction of the drainage area and the direction of flow to the outfall(s) and an identification of the types of pollutants that are likely to be present in the stormwater discharges from each area of the facility that generates stormwater discharges with a reasonable potential for containing significant amounts of pollutants, including sediments (for example, toxicity of the chemical, and the quantity of chemicals uses, produced, or discharged);
- (c) structural controls (for example, ponds, vegetated buffers, and constructed stormwater pollution controls) used within the drainage area(s);
- (d) the locations of the following areas associated with the concrete batch plant 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
- (e) 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.
- 2) 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 the concrete batch plant.
- 3) 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 the concrete batch plant must be developed, maintained, and updated as needed.
- 4) Sampling Data A summary of existing stormwater discharge sampling data must be maintained as part of the SWP3.
- b. Pollution Prevention 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" in item 9.a above, and a schedule for implementation of the measures and controls. This must include, at a minimum:
 - 1) Good Housekeeping Measures Good housekeeping measures must be developed and implemented in the area(s) associated with the concrete batch plant.
 - (a) 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 sweeping or other practices. These practices 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, and kiln dust or aggregate is being handled or otherwise processed in the area.
 - (b) The permittee shall prevent the exposure of fine granular solids, such as cement, fly ash and kiln dust to stormwater. Where practicable, these materials must be stored

in enclosed silos, hoppers or buildings, or other structure, to prevent exposure to precipitation or runoff.

- 2) 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.
- 3) 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.
- 4) Inspections The permittee shall identify qualified facility personnel (for example, 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 areas of the facility specified in the SWP3. The inspection frequency must be specified in the SWP3 based upon a consideration of the level of concrete production at the facility, but must be a minimum of once per month while the facility is in operation. 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 or 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.
- 5) 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.
- 6) 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.
- 7) 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 BMP to reduce or limit erosion.
- 8) 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 reusing of runoff.

BIOMONITORING REQUIREMENTS

CHRONIC BIOMONITORING REQUIREMENTS: MARINE

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

- 1. <u>Scope, Frequency and Methodology</u>
 - 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 (*Mysidopsis 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 4%, 5%, 7%, 9%, and 12% effluent. The critical dilution, defined as 9% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.
- d. This permit may be amended to require a WET limit, a chemical-specific limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.
- e. Testing Frequency Reduction
 - 1) If none of the first four consecutive quarterly tests demonstrates significant 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. <u>Required Toxicity Testing Conditions</u>

- a. Test Acceptance The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:
 - 1) a control mean survival of 80% or greater;
 - 2) a control mean dry weight of surviving mysid shrimp of 0.20 mg or greater;
 - 3) a control mean dry weight for surviving unpreserved inland silverside of 0.50 mg or greater and 0.43 mg or greater for surviving preserved inland silverside.
 - 4) a control coefficient of variation percent (CV%) between replicates of 40 or less in the growth and survival tests;
 - 5) a critical dilution CV% of 40 or less in the growth and survival endpoints for either growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test;
 - 6) a percent minimum significant difference of 37 or less for mysid shrimp growth; and
 - 7) a percent minimum significant difference of 28 or less for inland silverside growth.
- b. Statistical Interpretation
 - 1) For the mysid shrimp and the inland silverside larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced in Part 1.b.
 - 2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.
 - 3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.
 - 4) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is

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

- 5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2.
- 6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Part 1.b. will be used when making a determination of test acceptability.
- 7) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.
- c. Dilution Water
 - 1) Dilution water used in the toxicity tests must be the receiving water collected as close as possible to the point of discharge into the perennial marine 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 item 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 item 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 of this Section.
 - 3) The synthetic dilution water shall consist of standard, reconstituted seawater. Upon approval, the permittee may substitute other dilution water with chemical and physical characteristics similar to that of the receiving water.
- d. Samples and Composites
 - 1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

Equistar Chemicals, LP

- 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 o-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. <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 TLP3E, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For the mysid shrimp, Parameter TOP3E, report the NOEC for survival.
 - 3) For the mysid shrimp, Parameter TXP3E, report the LOEC for survival.

- 4) For the mysid shrimp, Parameter TWP3E, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
- 5) For the mysid shrimp, Parameter TPP3E, report the NOEC for growth.
- 6) For the mysid shrimp, Parameter TYP₃E, report the LOEC for growth.
- 7) For the inland silverside, Parameter TLP6B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
- 8) For the inland silverside, Parameter TOP6B, report the NOEC for survival.
- 9) For the inland silverside, Parameter TXP6B, report the LOEC for survival.
- 10) For the inland silverside, Parameter TWP6B, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
- 11) For the inland silverside, Parameter TPP6B, report the NOEC for growth.
- 12) For the inland silverside, Parameter TYP6B, report the LOEC for growth.
- d. Enter the following codes for retests only:
 - 1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. <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.

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 chemicalspecific 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, chemicalspecific analyses for the identified and suspected pollutant and source of

effluent toxicity;

- 3) Quality Assurance Plan The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and
- 4) Project Organization The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.
- c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.
- d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:
 - 1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;
 - 2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;
 - 3) any data and substantiating documentation which identifies the pollutant and source of effluent toxicity;
 - 4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;
 - 5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and
 - 6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.
- e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.
- f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

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

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

- g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond their control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.
- h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and to specify a chemical-specific limit.
- i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

Dates and Times	Date Time	Date Time TO:
Composites Collected	No. 2 FROM:	TO:
	No. 3 FROM:	ТО:
Test initiated:	am/pm	date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

MYSID SHRIMP SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers						Cham	Mean Percent Survival			CV%*	
	A	В	C	D	E	F	G	Н	24h	48h	7 day	
0%												
4%												
5%												
7%												
9%												
12%												

* 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%	4%	5%	7%	9%	12%			
А									
В									
С									
D						А			
E									

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	Mean dry weight in milligrams in replicate chambers								
	0%	4%	5%	7%	9%	12%			
F									
G									
Н									
Mean Dry Weight (mg)				10 B.					
CV%*									
PMSD									

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

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

CRITICAL DILUTION (9%): _____ YES _____ NO

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

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

CRITICAL DILUTION (9%): _____ YES _____ NO

- 3. Enter percent effluent corresponding to each NOEC\LOEC below:
 - a.) NOEC survival = ____% effluent
 - b.) LOEC survival = ____% effluent
 - c.) NOEC growth = ____% effluent
 - d.) LOEC growth = ____% effluent

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE MINNOW LARVAL SURVIVAL AND GROWTH TEST

Dates and Times	No. 1	Date FROM:	Time	Date TO:	Time
Collected	No. 2	FROM:		TO:	
	No. 3	FROM:		TO:	
Test initiated:		am/pm	da	te	
Dilution water used:		_ Receiving water	Synthe	tic Dilutio	on water

INLAND SILVERSIDE SURVIVAL

Percent	Percent Survival in Replicate Chambers				Mean Percent Survival			CV%*	
Effluent	Α	В	C	D	E	24h	48h	7 days	
0%									
4%									
5%									
7%									
9%									
12%									

* Coefficient of Variation = standard deviation x 100/mean

TABLE 1 (SHEET 4 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

INLAND SILVERSIDE GROWTH

Percent Effluent	Averag	ge Dry Weig	Mean Dry Weight	CV%*			
	А	В	C	D	E	(mg)	0.170
0%							
4%							
5%							
7%	-						
9%							
12%							
PMSD							

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

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

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

CRITICAL DILUTION (9%): _____ YES _____ NO

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

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

CRITICAL DILUTION (9%): _____ YES _____ NO

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

a.) NOEC survival = ____% effluent

- b.) LOEC survival = ____% effluent
- c.) NOEC growth = ____% effluent

d.) LOEC growth = ____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: MARINE

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

- 1. <u>Scope, Frequency, and Methodology</u>
 - 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 (*Mysidopsis 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.

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 Part 1.c., the control and dilution water shall consist of standard, synthetic, reconstituted seawater.
- c. Samples and Composites
 - 1) The permittee shall collect one composite sample from Outfall 001.
 - 2) The permittee shall collect the composite sample such that the sample is

representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

- 3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The sample shall be maintained at a temperature of o-6 degrees Centigrade during collection, shipping, and storage.
- 4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

3. <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.
- c. Enter the following codes for the appropriate parameters for valid tests only:
 - 1) For the mysid shrimp, Parameter TIE3E, enter a "o" if the mean survival at 24hours 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 "o" 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 24hours 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 24hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
- 4. <u>Persistent Mortality</u>

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. <u>Toxicity Reduction Evaluation</u>

- 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 chemicalspecific 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, chemicalspecific 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;
 - 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

g.

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.

- The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in Part 5.h. The report shall also specify a corrective action schedule for implementing the selected control mechanism.
- h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

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

- i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for 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.

TABLE 2 (SHEET 1 OF 2)

MYSID SHRIMP SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time Rep	Pop	Percent effluent							
	Kep	0%	6%	13%	25%	50%	100%		
	А								
	В								
out	С								
241	D								
	E								
	MEAN								

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = ____% effluent

TABLE 2 (SHEET 2 OF 2)

INLAND SILVERSIDE SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated	· ·	

PERCENT SURVIVAL

Time Rep	Pop	Percent effluent							
	кер	0%	6%	13%	25%	50%	100%		
	А								
24h	В								
	C								
	D								
	Е								
	MEAN								

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = ____% effluent

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000391000, U.S. Environmental Protection Agency (EPA) ID No. TX0003531, 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 P.O. Box 777 Channelview, Texas 77530
Prepared By:	Cole Gray, DrPH Wastewater Permitting Section Water Quality Division (512) 239-4736
Date:	October 19, 2023
Permit Action:	Major amendment without renewal to authorize the removal of the monitoring and reporting requirement and daily maximum concentration limit for total aluminum at Outfall 003; TPDES Permit No. WQ0000391000

The permittee has requested a major amendment without renewal to authorize the removal of the monitoring and reporting requirement and daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by the amendment request were considered during the drafting of this permit. Otherwise, the existing Statement of Basis/Technical Summary for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

I. <u>EXECUTIVE DIRECTOR RECOMMENDATION</u>

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit retains the current expiration date of March 25, 2026.

II. <u>APPLICANT ACTIVITY</u>

The applicant currently operates Equistar Chemicals Channelview Complex, a bulk and commodity organic chemicals and thermoplastics resins production facility.

III. <u>DISCHARGE LOCATION</u>

The facility is located at 8280 Sheldon Road, in the City of Channelview, Harris County, Texas 77530. Discharge is via Outfalls 001 and 004 to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 002 to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 to an unnamed drainage ditch, thence to Harris County Flood Control District (HCFCD) ditch G103-03-02, thence to the San Jacinto River Tidal; and via Outfall 006 to HCFCD ditch G103-07-05, thence to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin.

IV. <u>RECEIVING STREAM USES</u>

The unclassified water uses are minimal aquatic life use for the unnamed drainage ditches and Wallisville Gully and limited aquatic life use for HCFCD ditch G103-07-05 and HCFCD ditch G103-03-02. The designated uses for Segment No. 1001 are primary contact recreation and high aquatic life use.

V. <u>STREAM STANDARDS</u>

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

VI. <u>DISCHARGE DESCRIPTION</u>

The following is a quantitative description of the discharge described in the monthly effluent report data for the period September 2018 through September 2023. 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). All pH values are expressed in standard units (SU). Bacteria levels are expressed in colony forming units (cfu) or most probable number (MPN) per 100 mL.

Outfall	Frequency	Average of Daily Average, MGD	Maximum of Daily Maximum, MGD
001	Continuous	5.42	7.10
101	Intermittent	0.055	2.21
201	Intermittent	0.003	0.026
002	Intermittent	1.57	75
003	Intermittent	1.62	4.94
004	Intermittent	0.328	2.22
005	Intermittent	0.110	0.950

A. Flow

C. Effluent Characteristics

		Average	e of Daily	Maximur	n of Daily
Outfall	Pollutant	Ave	rage	Maximum	
_		lbs/day	mg/L	lbs/day	mg/L
001	$CBOD_5$	208	-	6958	-
	NH ₃ -N	18.1	-	454	
	TSS	835	-	71,812	-
	Chemical Oxygen Demand (COD)	3,851	-	19,834	-
	Oil and grease	229	-	296	-
	Chromium, Total	0.198	-	0.270	· _
	Copper, Total	0.754	-	1.01	
	Lead, Total	0.030	-	0.120	-
	Nickel, Total	0.598	-	1.00	-
	Zinc, Total	0.851	-	1.39	-
	Acenaphthene	0.00	-	0.00	-
	Acenaphthylene	0.00	-	0.00	-
	Acrylonitrile	0.00	- ·	0.00	·-

C. Effluent Characteristics

		Average of Daily		Maximum of Daily	
Outfall	Pollutant	Average		Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Anthracene	0.00	-	0.00	_
	Benzene	0.00	-	0.00	-
	Benzo(<i>a</i>)anthracene	0.00	-	0.00	and the second se
	3,4-Benzofluoranthene	0.00	_	0.00	-
	Benzo(k)fluoranthene	0.00	-	0.00	-
	Benzo(<i>a</i>)pyrene	0.00	-	0.00	-
	Bis(2-ethylhexyl)phthalate	0.00	-	0.00	-
	Carbon Tetrachloride	0.00	-	0.00	-
	Chlorobenzene	0.00	-	0.00	-
	Chloroethane	0.00	-	0.00	-
	Chloroform	0.326		0.490	-
	2-Chlorophenol	0.00	-	0.00	-
	Chrysene	0.00	-	0.00	_
	Di-n-butyl phthalate	0.00		0.00	_
	1,2-Dichlorobenzene	0.00		0.00	_
	1,3-Dichlorobenzene	0.00	-	0.00	_
	1,4-Dichlorobenzene	0.00		0.00	-
	1,1-Dichloroethane	0.00	_	0.00	_
	1,2-Dichloroethane	0.00	_	0.00	_
	1,1-Dichloroethylene	0.00	_	0.00	_
	1,2-trans Dichloroethylene	0.00	_	0.00	
	2,4-Dichlorophenol	0.00	-	0.00	-
	1,2-Dichloropropane	0.00	_	0.00	-
	1,3-Dichloropropylene	0.00	-	0.00	
	Diethyl phthalate	0.00	-	0.00	_
	2,4-Dimethylphenol	0.00		0.00	-
	Dimethyl phthalate	0.00	-	0.00	_
	4,6-Dinitro-o-cresol	0.00	_	0.00	_
	2,4-Dinitrophenol	0.00	3 00	0.00	-
	2,4-Dinitrotoluene	0.00		0.00	-
	2,6-Dinitrotoluene	0.00		0.00	-
	Ethylbenzene	0.00	_	0.00	-
	Fluoranthene	0.00	-	0.00	-
	Fluorene	0.00	-	0.00	-
	Hexachlorobenzene	0.00	-	0.00	-
	Hexachlorobutadiene	0.00	-	0.00	-
	Hexachloroethane	0.00	-	0.00	-
	Methyl Chloride	0.00	-	0.00	-
	Methylene Chloride	0.00	-	0.00	-
	Naphthalene	0.00		0.00	-
	Nitrobenzene	0.00	-	0.00	-
	2-Nitrophenol	0.00	-	0.00	
	4-Nitrophenol	0.00		0.00	
	Phenanthrene	0.00		0.00	-
	Phenol	0.00	_	0.00	_
	Pyrene	0.00	-	0.00	-

C. Effluent Characteristics

		Average	of Daily	Maximu	n of Daily
Outfall Pollutant		Average		Maximum	
		lbs/day	mg/L	lbs/day	mg/L
001	Tetrachloroethylene	0.00	-	0.00	-
	Toluene	0.00		0.00	-
	1,2,4-Trichlorobenzene	0.00	-	0.00	-
	1,1,1-Trichloroethane	0.00	-	0.00	_
	1,1,2-Trichloroethane	0.00	-	0.00	-
	Trichloroethylene	0.00	-	0.00	-
	Vinyl Chloride	0.00	_	0.00	
	pH	4.2 SU	J (min)	9.1 SU	(max)
	pH range excursions, > 60 minutes		(o	
	pH range excursions, monthly total			-	
	accumulative		•	D	
101	Enterococci (CFU or MPN per 100	1	10	11	50
	mL)	4.	13		
	Chlorine Residual, monthly	-	1.00	-	
	minimum		(min)		
201	Enterococci (CFU or MPN per 100	4.	22	268	
	mL)		1		
		-	1.40	-	-
	Chlorine Residual, minimum		(min)		
002	Total Organic Carbon (TOC)	_	_	-	28.0
	Oil and grease	-	-	-	5.00
	pH	6.4 SU	J (min)	8.8 SU	(max)
	Zinc, Total	-	0.050	-	0.440
003	TOC		-	-	22.0
003A	Oil and grease	-	-		5.00
003B	Aluminum, Total	-	_		23.2
003C	Zinc, Total	-	_		0.324
	pH	6.3 SU (min)		8.6 SU	(max)
004	TOC	-	-	-	44.0
	Oil and grease	-	-	-	5.00
	Zinc, Total	-	-	-	0.731
	рН	6.6 SU	U (min)	8.5 SU	(max)
005	TOC	_	_	-	17.0
	Oil and grease	-	-	-	5.00
	pH	6.5 SU	(min)	8.8 SU	(max)

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

D.	Effluent	Limitation	Violations
	And the second data and the se		

		Month/ Daily Average		Average	Daily Maximum	
Outtail	Pollutant (units)	Year	Limit	Reported	Limit	Reported
001	CBOD (lbs/day)	10/2019	-	-	1,914	6,958
	CBOD (lbs/day)	2/2020	·	1	1,914	4,005
	CBOD (lbs/day)	6/2023	957	1,076	1,914	5,295

0.10.11		Month/	Daily Average		Daily Maximum	
Outtail	Pollutant (units)	Year	Limit	Reported	Limit	Reported
001	Nitrogen, ammonia	6/2023	-	-	434	454
	total (lbs/day)					
	COD (lbs/day)	6/2023	-	-	17,825	19,834
	TSS (lbs/day)	2/2022	2,971	8,444	9,070	71,812
101	Enterococci (CFU or	3/2023	-	-	104	160
	MPN per 100 mL)					
201	Enterococci (CFU or	11/2022	-	-	104	268
	MPN per 100 mL)					
	Enterococci (CFU or	6/2023	-	-	104	136
	MPN per 100 mL)					

D. Effluent Limitation Violations

The draft permit was not changed to address these effluent limit violations because they did not occur with enough frequency to indicate an ongoing pattern of noncompliance at the permitted facility.

VII. DRAFT EFFLUENT LIMITATIONS

Effluent limitations are established in the draft permit as follows:

Outfall	Dollutont	Daily A	Average	Daily Maximum	
Outian	Pollutant	lbs/day	mg/L	lbs/day	mg/L
001	Flow	8.9	MGD	Repor	t, MGD
	CBOD ₅	957	-	1,914	-
	NH ₃ -N	217	-	434	-
	TSS	2,971	-	9,070	-
	COD	10,101	-	17,825	-
	Oil and grease	595	-	891	_
	Chromium, Total	1.02	-	2.54	-
	Copper, Total	1.77	-	3.75	-
	Lead, Total	7.84	-	16.6	-
	Nickel, Total	6.40	-	15.0	-
	Zinc, Total	4.73	-	11.75	-
	Acenaphthene	0.741	-	1.98	-
	Acenaphthylene	0.741	-	1.98	-
	Acrylonitrile	3.23	-	8.15	-
	Anthracene	0.741	-	1.98	-
	Benzene	1.24	-	4.58	
	Benzo(a)anthracene	0.063	-	0.134	
	3,4-Benzofluoranthene	0.775	-	2.05	-
	Benzo(k)fluoranthene	0.741		1.98	
	Benzo(<i>a</i>)pyrene	0.0063	-	0.0134	-
	Bis(2-ethylhexyl)phthalate	3.47	-	9.40	-
	Carbon Tetrachloride	0.606		1.28	-
	Chlorobenzene	0.505	-	0.944	
	Chloroethane	3.50	-	9.03	-
	Chloroform	0.708	-	1.55	-
	2-Chlorophenol	1.04		3.30	

FACT SHEET ANI	DEXECUTIVE DIRECTOR'S	PRELIMINARY DECISION
----------------	-----------------------	----------------------

0	D - lloote ant	Daily Average		Daily Maximum	
Outfall	Pollutant	lbs/day	mg/L	lbs/day	mg/L
001	Chrysene	0.741	-	1.98	_
	Di-n-butyl phthalate	0.910	-	1.92	-
	1,2-Dichlorobenzene	2.59	-	5.49	_
	1,3-Dichlorobenzene	1.04	-	1.48	_
	1,4-Dichlorobenzene	0.505	-	0.944	-
	1,1-Dichloroethane	0.741	_	1.98	_
	1,2-Dichloroethane	2.29		7.11	-
	1,1-Dichloroethylene	0.539	_	0.842	_
	1,2-trans Dichloroethylene	0.708		1.82	_
	2,4-Dichlorophenol	1.31	-	3.77	-
	1,2-Dichloropropane	5.15	-	7.75	-
	1,3-Dichloropropylene	0.977		1.48	
	Diethyl phthalate	2.73	-	6.84	
	2,4-Dimethylphenol	0.606	_	1.21	_
	Dimethyl phthalate	0.640	-	1.58	
	4,6-Dinitro-o-cresol	2.62	· -	9.33	·
	2,4-Dinitrophenol	2.39	_	4.14	_
	2,4-Dinitrotoluene	3.80	2000	9.60	<u></u>
	2,6-Dinitrotoluene	8.59	-	21.6	_
	Ethylbenzene	1.07	-	3.64	-
	Fluoranthene	0.842	-	2.29	-
	Fluorene	0.741	_	1.98	-
	Hexachlorobenzene	0.002		0.004	-
	Hexachlorobutadiene	0.558	-	1.18	_
	Hexachloroethane	0.708		1.82	
	Methyl Chloride	2.89		6.40	-
	Methylene Chloride	1.34	-	3.00	_
	Naphthalene	0.741	_ ·	1.98	_
	Nitrobenzene	0.910	-	2.29	_
	2-Nitrophenol	1.38	_	2.32	_
	4-Nitrophenol	2.42	_	4.18	_
	Phenanthrene	0.741		1.67	_
	Phenol	0.505	_	0.876	_
	Pyrene	0.842	_	2.25	_
	Tetrachloroethylene	0.741	_	1.88	_
	Toluene	0.876	-	2.69	_
	1,2,4-Trichlorobenzene	2.29	_	4.71	_
	1.1.1-Trichloroethane	0.708	_	1.82	_
	1,1,2-Trichloroethane	0.708	_	1.82	_
	Trichloroethylene	0.708		1.82	_
	Vinyl Chloride	3.50	-	9.03	-
	pH	6.0 SU	(min)	9.0 SU	(max)
101	Flow	Report	, MGD	Report	, MGD
	Enterococci (CFU or MPN per 100	2	<u>, </u>	10)4
	mL)		0		•
	Chlorine Residual, minimum		1.0 mg/	L (min)	
201	Flow	Report	, MGD	Report	, MGD
·			·	<u>F</u>	

Outfall	Dutfall Dollutont		Daily Average		Daily Maximum	
Outian Tonutant		lbs/day	mg/L	lbs/day	mg/L	
201	Enterococci (CFU or MPN per 100	0	35	10	04	
	mL)					
	Chlorine Residual, minimum		1.0 mg/	L (min)		
002	Flow	Repor	t, MGD	Repor	t, MGD	
	TOC		-	-	75	
	Oil and grease	-	-	-	15	
	pH	6.0 SI	J (min)	9.0 SL	J (max)	
003	Flow	Repor	t, MGD	Repor	t, MGD	
(003A	TOC	-	-	-	75	
003B	Oil and grease	-	-		15	
003C)	Zinc, Total	-	-	-	Report	
	pH	6.0 SU (min)		9.0 SU (max)		
004	Flow	Report, MGD		Report, MGD		
	TOC	-	N/A		75	
	Oil and grease	-	N/A	-	15	
	Zinc, Total ¹	-	N/A	-	Report	
	Zinc, Total ²	-	N/A	ш	0.439	
	pH	6.0 SI	J (min)	9.0 SU	J (max)	
005	Flow	Repor	t, MGD	Repor	t, MGD	
	TOC	-	N/A	-	75	
	Oil and grease	-	N/A	-	15	
	pH	6.0 SI	J (min)	9.0 SU	J (max)	
006	Flow	Repor	t, MGD	Repor	t, MGD	
	TOC	-	N/A		75	
	Oil and grease	-	N/A	-	15	
	pH	6.0 SI	J (min)	9.0 SU	J (max)	
007	Flow	Repor	t, MGD	Repor	t, MGD	
	ТОС	_	N/A	_	100	
	Oil and grease	-	N/A	-	15	
	pH	6.0 SI	J (min)	9.0 SU	J (max)	

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	29.833583 N	95.107181 W
002	29.8304 N	95.10715 W
003	29.824703 N	95.126414 W
003A	29.8215861 N	95.1244889 W
003B	29.8221583 N	95.1223778 W
003C	29.82435 N	95.120452778 W
004	29.833411 N	95.106332 W
005	29.816261 N	95.098182 W

¹ Beginning upon the date of permit issuance and lasting for two years and 364 days. ² Beginning three years from the date of permit issuance and lasting until the date of permit expiration.

006	29.838328 N	95.114848 W
007 ³	See Footnote	See Footnote

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant requested the following amendments that the executive director did not grant:

1. Removal of the monitoring and reporting requirement for total zinc from Outfall 003 (003A, 003B, 003C).

The permittee requested the removal of the monitoring and reporting requirement for total zinc from Outfall 003. This request was made based on recent DMR data indicating that the average concentration of total zinc in the discharge from Outfall 003 over the previous two years was below 70% of the calculated daily average water quality-based effluent limitation. DMR data, however, is not sufficient to exempt a permittee from anti-backsliding regulations under CWA 402(0)(2). Therefore, this request was not granted.

2. Removal of the monitoring requirement and daily maximum concentration limit for total zinc from Outfall 004.

The permittee requested the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total zinc from Outfall 004 based on recent DMR data. DMR data, however, is not sufficient to exempt a permittee from anti-backsliding regulations under CWA 402(0)(2). Therefore, this request was not granted.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The permittee requested the following amendments that the Executive Director recommends granting:

1. Removal of the monitoring and reporting requirement and daily maximum concentration limit for total aluminum from Outfall 003 (003A, 003B, 003C).

The permittee requested the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum from Outfall 003. This request was made based on the findings of an aluminum source study conducted by the permittee which demonstrated that significant sources of aluminum in the discharge are naturally occurring from soil particles carried in by stormwater. This study was submitted to TCEQ on January 11, 2022, and approved on March 3, 2023.

In accordance with anti-backsliding in CWA 402(0)(2)(b)(i), a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

³ Outfall 007 is authorized in the current permit to discharge stormwater from a concrete batch plant. The latitude and longitude of the concrete batch plant change based on locations of construction projects at the facility. The concrete batch plant is not active, and therefore, latitude and longitude for Outfall 007 have not been designated.

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

- 1. Pages 3-13 were updated (May 2021 version).
- 2. Other Requirement No. 15 was removed from the draft permit as the aluminum partitioning coefficient study and source evaluation study were completed and submitted to TCEQ. Other Requirements No. 16 18 were renumbered accordingly.
- 3. Aluminum (Total) was removed from Other Requirement No. 3.
- 4. TMDL Project No. 1 and the associated waste load allocation is no longer applicable to this facility's discharge.
- 5. Added Outfall 007 longitude and latitude footnote to the Outfall Locations table.
- 6. Mixing zone language in Other Requirement No. 4 was updated based on the Critical Conditions memo, dated July 20, 2023.
- 7. The routing description for Outfall 002 was changed from "to an unnamed ditch, thence to Wallisville Gully" to "directly to Wallisville Gully".

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. <u>REASON FOR PERMIT ISSUANCE</u>

The applicant applied to the TCEQ for a major amendment to Permit No. WQ0000391000 to authorize removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003; removal of the monitoring and reporting requirement for total zinc at Outfall 003; and removal of the monitoring and reporting requirement and daily maximum concentration limit for total zinc at Outfall 004. The existing permit authorizes the discharge of treated organic chemical manufacturing process wastewater, Houston Technology Center (HTC) wastewater, auto shop wastewater, laboratory wastewater, cooling tower and boiler blowdown, sanitary wastewater, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, utility wastewater, cooling tower and boiler maintenance wastewaters, water treatment wastewaters, water from landfarm, steam condensate and blowdown, demineralization regeneration blowdown, methanol neutralization sump wastewater, hydrostatic test water, maintenance wastewater, groundwater from monitoring and recovery wells (on-site and off-site), process area stormwater runoff, construction stormwater, and process area stormwater from the adjacent co-generation facility at a daily average flow not to exceed 8,900,000 gallons per day via Outfall 001; process wastewater, stormwater, sanitary wastewater associated with a septic chlorinator on an intermittent and flow-variable basis via Outfalls 101; sanitary wastewater associated with a septic chlorinator on an intermittent and flowvariable basis via Outfall 201; de minimis quantities from spill cleanups, utility wastewater, construction water, non-process area stormwater runoff, stormwater (from secondary containment structures), and post-first flush process area stormwater runoff on an intermittent and flow-variable basis via Outfalls 002 and 004; de minimis quantities from spill cleanups, utility wastewater, construction water, and stormwater runoff on an intermittent and flow-variable basis via Outfalls 003 (003A, 003B, and

003C) and 005; HTC-area stormwater on an intermittent and flow-variable basis via Outfall 006; and stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 007.

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. <u>WATER QUALITY SUMMARY</u>

Discharge Routes

The discharge route is via Outfalls 001 and 004 to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 002 to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 (003A, 003B, 003C) to an unnamed drainage ditch, thence to Harris County Flood Control District (HCFCD) ditch G103-03-02, thence to the San Jacinto River Tidal; and via Outfall 006 to HCFCD ditch G103-07-05, thence to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin. The unclassified water uses are minimal aquatic life use for the unnamed drainage ditches and Wallisville Gully and limited aquatic life use for HCFCD ditch G103-07-05 and HCFCD ditch G103-03-02. The designated uses for Segment No. 1001 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 Texas Administrative Code §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 San Jacinto River Tidal, which has 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 action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System program (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 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. 1001 is currently listed on the state's inventory of impaired and threatened waters, the 2022 Clean Water Act Section 303(d) list. The listings are for dioxin in edible tissue and polychlorinated biphenyls (PCBs) in edible tissue from Lake Houston Dam to IH 10 (AUs 1001_01 and 1001_02).

The permittee has indicated that dioxins and PCBs are not expected to be present in the discharge from Outfalls 003 and 004. The major amendment request does not include increased flow or increased loading of these pollutants of concern. Therefore, the draft permit is not anticipated to contribute to the impairment of the receiving segment.

Completed Total Maximum Daily Loads (TMDLs)

Fourteen Total Maximum Daily Loads for Nickel in the Houston Ship Channel System (TMDL Project No. 1) has been withdrawn and is no longer applicable to this segment. As such, there are no completed TMDLs for Segment No. 1001.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. <u>GENERAL COMMENTS</u>

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 permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. It does not include changes to the authorized wastestreams, or the wastewater treatment system. Therefore, the information provided in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

2. <u>CALCULATIONS</u>

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. The calculations for technology-based effluent limitations in the existing Fact Sheet for the permit issued on March 25, 2021 are still valid and are provided in Attachment 1 of this document.

3. <u>316(B) COOLING WATER INTAKE STRUCTURES</u>

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Technical review of 316(B) cooling water intake structure requirements is not within the scope of the amendment requests, therefore no technical review with regards to 316(B) cooling water

intake structure requirements was performed. The review conducted in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. <u>GENERAL COMMENTS</u>

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* (IPs) 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.

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. The calculations for water quality-based effluent limitations in the existing Fact Sheet for the permit issued on March 25, 2021 are still valid and are provided in Attachment 1 of this document.

2. <u>AQUATIC LIFE CRITERIA</u>

a. <u>SCREENING</u>

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).

Outfall 003 (003A, 003B, 003C)

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted

by this amendment request were considered during the drafting of this permit. The screening for aquatic life criteria in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge. The following critical effluent percentages are being used:

Acute Effluent % 100% Chronic Effluent % 100 %

General Screening Procedures

Wasteload 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-ofpipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded.

From the WLA for Outfall 003, 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.

The lower of the two 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).

Assumptions used in deriving the effluent limitations include segmentspecific values for TSS, pH, hardness, and chloride according to the *IPs*. The segment values are 12 mg/L for TSS was used for the unnamed ditch, The segment value of 8 mg/L for TSS for Segment No. 1001 was used for the saltwater portion of the discharge route. A site-specific hardness (as calcium carbonate, CaCO₃) of 147 mg/L was used. The site-specific value was developed for Lyondell's Channelview Complex-South (WQ0002927000) which discharges to a drainage ditch similar to the unnamed ditches included in this Fact Sheet and are more representative of the immediate receiving water bodies than Segment No. 1016. For additional details on the calculation of water quality-based effluent limitations, refer to the *IPs*.

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. <u>PERMIT ACTION FOR OUTFALL 003</u>

As discussed in Section IX of this document, the existing water quality-based monitoring requirements and effluent limits for total aluminum have been removed from the draft permit based on the results of an aluminum source study submitted by the permittee. This removal is in accordance with antibacksliding regulations in CWA 402(0)(2)(b)(i).

3. WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Whole effluent toxicity criteria established in the existing Fact Sheet for the permit issued on March 25, 2021 are still valid and are provided in Attachment 1 of this document.

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

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Aquatic organism toxicity criteria in the existing Fact Sheet for the permit issued on March 25, 2021 are still valid and are provided in Attachment 1 of this document.

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Aquatic organism bioaccumulation criteria in the existing Fact Sheet for the permit issued on March 25, 2021 are still valid and are provided in Attachment 1 of this document.

6. DRINKING WATER SUPPLY PROTECTION

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Screening for drinking water supply protection in the existing Fact Sheet for the permit
issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

7. <u>TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS</u> <u>PROTECTION</u>

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Screening for TDS, chloride, or sulfate in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

8. <u>PROTECTION OF pH STANDARDS</u>

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. The pH screening in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

9. DISSOLVED OXYGEN PROTECTION

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. The dissolved oxygen screening in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

10. <u>BACTERIA STANDARDS PROTECTION</u>

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. The bacteria screening in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

XI. <u>PRETREATMENT REQUIREMENTS</u>

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 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 Cole Gray, DrPH at (512) 239-4736.

XIV. <u>ADMINISTRATIVE RECORD</u>

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

A. <u>PERMIT(S)</u>

TPDES Permit No. WQ0000391000 issued on March 25, 2021.

B. <u>APPLICATION</u>

TPDES wastewater permit application received on March 1, 2023.

C. <u>40 CFR CITATION(S)</u>

40 CFR Part 414 (BPT).

D. <u>LETTERS/MEMORANDA/RECORDS OF COMMUNICATION</u>

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).

TCEQ Interoffice Memorandum dated June 27, 2023, from Jenna Lueg of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated July 20, 2023, from Brian Christman 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 July 21, 2023, from Josi Robertson of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Modeling Memo).

TCEQ Interoffice Memorandum dated August 3, 2023, from Brad Caston of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

E. <u>MISCELLANEOUS</u>

The *State of Texas 2022 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, July 7, 2022.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 1, 2018, as approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not 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 IPs 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.

TPDES Permit No. WQ0000391000

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix A Calculated Technology-Based Effluent Limits

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Appendix A in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

TPDES Permit No. WQ0000391000

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix B Calculated Water Quality-Based Effluent Limits

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Appendix B in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

Appendix C pH Screening

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Appendix C in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and are provided in Attachment 1 of this document.

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

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Appendix D in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document. Only those sections affected by the major amendment request are updated herein.

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

Outfall	Pollutant	Technology-Based		Water Quality-Based		Existing Permit	
		Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
003	Aluminum, Total 1	-	-	-	1.765	-	1.765

¹ Although the removal of the daily maximum limit for total aluminum makes the proposed draft permit less stringent than the existing permit, the permittee submitted an aluminum source study to TCEQ which demonstrated that the significant sources of aluminum in their discharge are naturally occurring from soil particulates carried in the stormwater. This source study was approved by TCEQ. As such, the removal of the daily maximum limit for total aluminum is in compliance with anti-backsliding in CWA 402(0)(2)(b)(i).

Appendix E Calculations of Single Grab Limits for Outfall 001

The permittee has requested a major amendment without renewal for the removal of the monitoring and reporting requirement and the daily maximum concentration limit for total aluminum at Outfall 003. Therefore, only items impacted by this amendment request were considered during the drafting of this permit. Appendix E in the existing Fact Sheet for the permit issued on March 25, 2021 is still valid and is provided in Attachment 1 of this document.

То:	Municipal Permits Team
	Wastewater Permitting Section
From:	Brad Caston, Standards Implementation Team
RA	Water Quality Assessment Section
8/3/22	Water Quality Division
Date:	August 3, 2023

Subject: Equistar Chemicals, LP Channelview Complex Permit No. WQ0000391-000

BIOMONITORING

The following information applies to Outfall 001. We recommend saltwater chronic and 24hour acute testing. For chronic testing, we recommend the mysid shrimp (*Mysidopsis bahia*) and the inland silverside (*Menidia beryllina*) as test species, and we recommend a testing frequency of once per quarter for both test species. We recommend a dilution series of 4%, 5%, 7%, 9%, and 12% with a critical dilution of 9%.

For 24-hour acute testing, we recommend the same test species and a testing frequency of once per six months for both test species.

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

REASONABLE POTENTIAL DETERMINATION

In the past three years, the permittee performed 19 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 of the test results were used for this determination.

WET testing history, 00391-000

\sim			
(:hr	Onic	testin	n -
U 111	OLIC	Courr	

Outfall	Sp	Test date	Lethal Results	NOEC survival	Sub-Lethal Results	NOEC Sublethal
001	is	8/24/2020	Pass	12	Pass	12
001	mb	8/24/2020	Pass	12	Pass	12
001	is	11/2/2020	Pass	12	Pass	12
001	mb	11/2/2020	Pass	12	Pass	12
001	is	2/8/2021	Pass	12	Pass	12
001	mb	2/8/2021	Pass	12	Pass	12
001	is	5/3/2021	Pass	12	Pass	12
001	mb	5/3/2021	Pass	12	Pass	12
001	is	8/16/2021	Pass	12	Pass	12
001	mb	8/16/2021	Pass	12	Pass	12
001	is	11/8/2021	Pass	12	Pass	12
001	mb	11/8/2021	Pass	12	Pass	12
001	is	2/7/2022	Pass	12	Pass	12
001	mb	2/7/2022	Pass	12	Pass	12
001	is	5/2/2022	Pass	12	Pass	12
001	mb	5/2/2022	Pass	12	Pass	12
001	mb	8/8/2022	Pass	12	Pass	12
001	mb	2/6/2023	Pass	12	Pass	12
001	is	2/6/2023	Invalid		Invalid	
001	is	6/5/2023	Pass	12	Pass	12

24-Hour Acute Testing

Outfall	Sp	Test date	Results	LC50
001	is	8/24/2020	Pass	>100
001	mb	8/24/2020	Pass	>100
001	is	2/8/2021	Pass	>100
001	mb	2/8/2021	Pass	>100
001	is	8/16/2021	Pass	>100
001	mb	8/16/2021	Pass	>100
001	is	2/7/2022	Pass	>100
001	mb	2/7/2022	Pass	>100
001	is	8/8/2022	Pass	>100
001	mb	8/8/2022	Pass	>100
001	is	2/6/2023	Pass	>100
001	mb	2/6/2023	Pass	>100

То:	Industrial Permits Team Wastewater Permitting Section
From:	Josi Robertson Modeler, Water Quality Assessment Team Water Quality Assessment Section
Date:	July 21, 2023
Subject:	Equistar Chemicals, L.P. Permit Amendment (WQ0000391000, TX0003531) Discharge to a tributary of San Jacinto River Tidal (Segment No. 1001)

The referenced applicant is proposing to amend their current permit to remove monitoring and daily maximum concentration limit for total aluminum at Outfall 003 (003A, 003B, 003C); to remove monitoring for total zinc at Outfall 003 (003A, 003B, 003C); and to remove monitoring and daily maximum concentration limit for total zinc at Outfall 004. A dissolved oxygen analysis of the 8.9 MGD permitted discharge via Outfall 001 was conducted using a default QUAL-TX modeling in combination with an updated version of the calibrated model documented in the *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (September 2006). The facility is located in Harris County.

Based on model results, the existing effluent limits of **957 lbs/day CBOD**₅ and **217 lbs/day NH**₃/**N** is predicted to be adequate to maintain the dissolved oxygen levels above the criteria stipulated by the Standards Implementation Team for the unnamed ditch and Wallisville Gully (2.0 mg/L) and Segment No. 1001 (4.0 mg/L). Due to the intermittent nature and limited oxygen demanding constituents of the discharges via Outfalls 002-007, no significant depletion of dissolved oxygen is expected in the receiving waters due to these discharges.

Coefficients and kinetics used in the models are a combination of site-specific, standardized default, and estimated values. The results of this evaluation can be reexamined upon receipt of information that conflicts with the assumptions employed in this analysis.

Segment No. 1001 is currently listed on the State's inventory of impaired and threatened waters (the 2022 Clean Water Act Section 303(d) list). The listings are for dioxin in edible tissue and PCBs in edible tissue from Lake Houston Dam to IH 10 (AUs 1001_01 and 1001_02).

TMDL Project No. 1 has been withdrawn and is no longer applicable.

To:	Industrial Permits Team Wastewater Permitting Section
From:	Brian Christman, Water Quality Assessment Team Water Quality Assessment Section
Date:	July 20, 2023
Subject:	Equistar Chemicals, LP Wastewater Permit No. WQ0000391000 Critical Conditions Recommendation Memo

The following information applies to **Outfalls 001** and **004**.

The TexTox menu number is **10** for an intermittent water body within 3 miles of a bay, estuary, wide tidal water body, or narrow tidal water body with no upstream flow.

This discharge is to an unnamed drainage ditch within three miles of the San Jacinto River Tidal (Segment No. 1001).

Segment No. (freshwater)	1016	
Effluent Flow for Aquatic Life (MGD), OTFL 001	6.200 (2-yr max)	
Effluent Flow for Aquatic Life (MGD), OTFL 004	2.220 (2-yr max)	
% Effluent for Acute Aquatic Life (Intermittent)	100	
Segment No.	1001	
% Effluent for Chronic Aquatic Life (Bay/Tidal River)	9	
% Effluent for Acute Aquatic Life (Bay/Tidal River)	35	
Oyster Waters?	No	
Effluent Flow for Human Health (MGD), OTFL 001	5.442 (2-yr avg)	
Effluent Flow for Human Health (MGD), OTFL 004	0.391 (2-yr avg)	
% Effluent for Human Health (Bay/Tidal River)	4	

Human Health criteria apply for Fish Only.

The immediate receiving water body is an unnamed drainage ditch, which is intermittent. Chronic aquatic life criteria do not apply. Human health criteria do not apply.

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

The width of the San Jacinto River Tidal (Segment No. 1001) at the point the discharge enters it is approximately 347 feet.

This discharge is into a freshwater body that flows into a saltwater segment. Therefore, data from a representative freshwater segment is recommended for screening the freshwater portion of the discharge route. **Use Segment No. 1016 values for pH, TSS and chloride** for the evaluation of the immediate receiving waters. **Use site-specific value of 147 mg/L for hardness** for the evaluation of the immediate receiving waters.

The following information applies to **Outfall 002**.

The TexTox menu number is **10** for an intermittent water body within 3 miles of a bay, estuary, wide tidal water body, or narrow tidal water body with no upstream flow.

This discharge is to Wallisville Gully within three miles of the San Jacinto River Tidal (Segment No. 1001).

Segment No. (freshwater)	1016	
Effluent Flow for Aquatic Life (MGD)	6.100 (2-yr max)	
% Effluent for Acute Aquatic Life (Intermittent)	100	
Segment No.	1001	
% Effluent for Chronic Aquatic Life (Bay/Tidal River)	9	
% Effluent for Acute Aquatic Life (Bay/Tidal River)	35	
Oyster Waters?	No	
Effluent Flow for Human Health (MGD)	1.109 (2-yr avg)	
% Effluent for Human Health (Bay/Tidal River)	4	

Human Health criteria apply for Fish Only.

The immediate receiving water body is Wallisville Gully, which is intermittent. Chronic aquatic life criteria do not apply. Human health criteria do not apply.

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

The width of the San Jacinto River Tidal (Segment No. 1001) at the point the discharge enters it is approximately 347 feet.

This discharge is into a freshwater body that flows into a saltwater segment. Therefore, data from a representative freshwater segment is recommended for screening the freshwater portion of the discharge route. **Use Segment No. 1016 values for pH, TSS and chloride** for the evaluation of the immediate receiving waters. **Use site-specific value of 147 mg/L for hardness** for the evaluation of the immediate receiving waters.

Page 2 of 5

The following information applies to **Outfall 003**.

The TexTox menu number is 7 for an intermittent water body with perennial pools.

This discharge is to an unnamed drainage ditch thence to Harris County Flood Control District ditch G103-02-03.

Segment No. (freshwater)	1016
Critical Low Flow [7Q2] (cfs)	0
% Effluent for Chronic Aquatic Life (Mixing Zone)	100
% Effluent for Acute Aquatic Life (ZID)	100
Effluent Flow for Human Health (MGD)	1.421 (2-yr avg)
Harmonic Mean Flow (cfs)	0.1

Human Health criteria apply for Incidental Fish Only.

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

This discharge enters a freshwater body that flows into a saltwater segment. Therefore, data from a representative freshwater segment is recommended for screening the freshwater portion of the discharge route. **Use Segment No. 1016 values for pH, TSS and chloride** for the evaluation of the immediate receiving waters. **Use site-specific value of 147 mg/L for hardness** for the evaluation of the immediate receiving waters.

Also check menu number 5.

This discharge is to the San Jacinto River Tidal (Segment No. 1001).

Segment No.	1001
Oyster Waters?	No
Effluent Flow for Human Health (MGD)	1.421 (2-yr avg)
% Effluent for Human Health	4

Human Health criteria apply for Fish Only.

The width of the San Jacinto River Tidal (Segment No. 1001) at the point of discharge is greater than or equal to 400 feet.

<u>Additional Comments</u>: The discharge from Outfall 003 may enter the unnamed drainage ditch at four different locations. These locations are listed as 003, 003A, 003B and 003C in the Outfall Locations table at the end of this memo.

Page 3 of 5

Texas Commission on Environmental Quality

The following information applies to **Outfall 005**.

The TexTox menu number is **5** for a bay, estuary, wide tidal water body, or narrow tidal water body with no upstream flow.

This discharge is to the San Jacinto River Tidal (Segment No. 1001).

Segment No.	1001
Effluent Flow for Aquatic Life (MGD)	0.230 (2-yr max)
% Effluent for Chronic Aquatic Life (Mixing Zone)	8
% Effluent for Acute Aquatic Life (ZID)	30
Oyster Waters?	No
Effluent Flow for Human Health (MGD)	0.035 (2-yr avg)
% Effluent for Human Health	4

Human Health criteria apply for Fish Only.

The chronic aquatic life mixing zone 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 width of the San Jacinto River Tidal (Segment No. 1001) at the point of discharge is greater than or equal to 400 feet. The ZID is defined as a volume within a radius of 50 feet from the point of discharge. The human health mixing zone is defined as a volume within a radius of 400 feet from the point of discharge.

The following information applies to **Outfalls 006** and **007**.

This current permit authorizes the discharge of stormwater on an intermittent and flow-variable basis. Typically, critical conditions are not developed for stormwater outfalls. If the permit writer determines that water quality-based limits are necessary, critical conditions can be calculated upon request.

OUTFALL LOCATIONS¹

Outfall Number	Latitude	Longitude	
001	29.833441 N	95.106399 W	
002	29.830115 N	95.107521 W	
003	29.823203 N	95.126175 W	
003A	29.821787 N	$95.124312\mathrm{W}$	
003B	29.822350 N	$95.122517\mathrm{W}$	
003C	29.824416 N	95.120143 W	
	Page 4 of	5	

004	29.833444 N	95.106398 W
005	29.816481 N	95.098202 W
006	29.839109 N	95.114685 W
007	See Additional comments	See Additional comments

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

<u>Additional comments</u>: Outfall 007 is authorized in the current permit to discharge stormwater from a concrete batch plant. The latitude and longitude of the concrete batch plant change based on locations of construction projects at the facility. The concrete batch plant is not active, and therefore, latitude and longitude for Outfall 007 have not been designated.

Page 5 of 5

То:	ImdustrialPermits Team Wastewater Permitting Section
From:	Jenna R. Lueg Standards Implementation Team Water Quality Assessment Section Water Quality Division
Thru:	C. Brad Caston, Standards Implementation Team Peer Review Water Quality Assessment Section Water Quality Division
Date:	6/27/2023
Subject:	Equistar Chemicals LP; Permit no. WQ0000391000 Major Amendment; Application received 3/1/2023

The discharge route for the above referenced permit is via Outfalls 001 and 004 is to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 002 is to is to anunnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 to an unnamed drainage ditch, thence to Harris County Flood Control District (HCFCD) ditch G103-03-02, thence to the San Jacinto River Tidal; and via Outfall 006 to HCFCD ditch G103-07-05; thence to the San Jacinto River Tidal in Segment 1001 of the San Jacinto River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 Texas Administrative Code §307.10) for Segment 1001 are primary contact recreation, high aquatic life use, and 4.0 mg/L dissolved oxygen.

Since the discharge is directly to an unclassified water body, the permit action was reviewed in accordance with 30 Texas Administrative Code §307.4(h) and (l) of the 2018 Texas Surface Water Quality Standards and the TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. Based on other available information, a preliminary determination of the aquatic life uses in the area of the discharge impact has been performed and the corresponding dissolved oxygen criterion assigned.

Unnamed drainage ditches and Wallisville Gully; minimal aquatic life use; 2.0 mg/L dissolved oxygen. HCFCD ditch G103-07-05; limited aquatic life use; 3.0 mg/L dissolved oxygen. HCFCD ditch G103-03-02; limited aquatic life use; 3.0 mg/L dissolved oxygen.

In accordance with 30 Texas Administrative Code §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 San Jacinto River Tidal, which has 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 discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (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 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.

Equistar Chemicals, LP

TPDES Permit No. WO0000391000

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION **ATTACHMENT 1**

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000391000, U.S. Environmental Protection Agency (EPA) ID No. TX0003531, 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 P.O. Box 777 Channelview, Texas 77530
Prepared By:	Sarah A. Johnson Wastewater Permitting Section Water Quality Division (512) 239-4649
Date:	September 2, 2020; Revised October 19, 2020
Permit Action:	Major amendment with renewal of TPDES Permit No. WQ0000391000 to authorize a reduction in the monitoring frequency for Outfall 002 for flow, total organic carbon (TOC), oil and grease, and pH; a reduction in the monitoring frequency for Outfalls 004 and 005 for oil and grease; the addition of process wastewater and stormwater to Outfall 101; the addition of construction stormwater and utility wastewaters to Outfall 001; and the removal of provisions in Other Requirements Nos. 9, 10, 15, and 16.

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 applicant currently operates Equistar Chemicals Channelview Complex, a bulk and commodity organic chemicals and thermoplastics resins production facility.

III. DISCHARGE LOCATION

As described in the application, the facility is located at 8280 Sheldon Road, in Channelview, Harris County, Texas 77530. Discharge is via Outfalls 001, 002, and 004 to unnamed drainage ditches, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 to an unnamed drainage ditch, thence to Harris County Flood Control District (HCFCD) ditch G103-03-02, thence to the San Jacinto River Tidal: and via Outfall 006 to HCFCD ditch G103-07-05; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin.

IV. <u>RECEIVING STREAM USES</u>

The unclassified receiving water uses are minimal aquatic life use for the unnamed ditches and Wallisville Gully and limited aquatic life use for HCFCD ditch G103-07-05 and HCFCD ditch G103-03-02. The designated uses for Segment No. 1001 are primary contact recreation and high aquatic life use.

V. <u>STREAM STANDARDS</u>

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

VI. <u>DISCHARGE DESCRIPTION</u>

The following is a quantitative description of the discharge described in the monthly effluent report data for the period May 2015 through April 2020. 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). All pH values are expressed in standard units (SU). Outfalls 006 and 007 are not yet active.

Outfall	Frequency	Average of Daily Average, MGD	Maximum of Daily Maximum, MGD
001	Continuous	5.28	9.60
101	Intermittent	0.08	0.52
201	Intermittent	0.0039	0.0700
002	Intermittent	1.44	33.60
0031	Intermittent	0.80	9.20
004	Intermittent	0.22	4.10
005	Intermittent	0.16	0.95

A. Flow

B. Effluent Characteristics

		Average of Daily	Maximum of Daily
Outfall	Pollutant	Average,	Maximum,
		lbs/day	lbs/day
001	Carbonaceous Biochemical Oxygen	179.9	6,958
	Demand, 5-day (CBOD ₅)		
	Ammonia Nitrogen (NH ₃ -N)	14.31	364
	Total Suspended Solids (TSS)	701.8	6,269
	Chemical Oxygen Demand (COD)	3,816	12,420
	Oil and grease	219.4	272.0

¹ Outfalls 003, 003A, 003B, and 003C are in close proximity to each other and discharge to the same immediate receiving water. The existing permit requires the permittee to sample and monitor at each outfall, but report only the highest value for flow, TOC, oil and grease, and zinc and the highest and lowest pH values across all sampling points for Outfall 003 in the monthly discharge monitoring report.

		Average of Daily	Maximum of Daily	
Outfall	Pollutant	Average	Maximum	
Outlun	1 onutant	lbs/day	lbs/day	
001	Sulfate ²	47.126	68,550	
001	Chlorine Residual, minimum	N/A	1.10 mg/L(min)	
	Chromium, Total	0.38	0.70	
	Copper. Total	1.32	3.77	
	Lead. Total	0.03	0.06	
	Nickel. Total	0.48	0.85	
	Zinc. Total	1.92	5.26	
	Acenaphthene	0	0	
	Acenaphthylene	0	0	
	Acrylonitrile	0	0	
	Anthracene	0	0	
	Benzene	0	0	
	Benzo(<i>a</i>)anthracene	0	0	
	3.4-Benzofluoranthene	0	0	
	Benzo(k)fluoranthene	0	0	
	Benzo(<i>a</i>)pyrene	0	0	
	Bis(2-ethylbexyl)phthalate	0	0	
	Carbon Tetrachloride	0	0	
	Chlorobenzene	0	0	
	Chloroethane	0	0	
	Chloroform	0.25	0.40	
	2-Chlorophenol	0	0	
	Chrysene	0	0	
	Di-n-butyl phthalate	0	0	
	1.2-Dichlorobenzene	0	0	
	1.3-Dichlorobenzene	0	0	
	1.4-Dichlorobenzene	0	0	
	1,1-Dichloroethane	0	0	
	1,2-Dichloroethane	0	0	
	1.1-Dichloroethylene	0	0	
	1,2-trans Dichloroethylene	0	0	
	2,4-Dichlorophenol	0	0	
	1,2-Dichloropropane	0	0	
	1.3-Dichloropropylene	0	0	
	Diethyl phthalate	0	0	
	2,4-Dimethylphenol	0	0	
	Dimethyl phthalate	0	0	
	4,6-Dinitro-o-cresol	0	Õ	
	2,4-Dinitrophenol	0	0	
	2,4-Dinitrotoluene	0	0	
	2,6-Dinitrotoluene	0	0	
	Ethylbenzene	0	0	

B. Effluent Characteristics

² Sulfate monitoring data is from September 2016 through March 2020. Monitoring requirements expired April 1, 2020.

D. Lane				
Outfall	Pollutont	Average of Daily	Maximum of Daily	
Outian	Pollutalit	Average,		
		lbs/day	<u>Ibs/day</u>	
001	Fluoranthene	0	0	
	Fluorene	0	0	
	Hexachlorobenzene	0	0	
	Hexachlorobutadiene	0	0	
	Hexachloroethane	0	0	
	Methyl Chloride	0	0	
	Methylene Chloride	0	0	
,	Naphthalene	0	0	
	Nitrobenzene	0	0	
-	2-Nitrophenol	0	. 0	
	4-Nitrophenol	0	0	
	Phenanthrene	0	0	
	Phenol	<u> </u>	0	
	Pyrene	0	0	
	Tetrachloroethylene	0	0	
	Toluene	0	0	
	1,2,4-Trichlorobenzene	0	0	
	1,1,1-Trichloroethane	0	0	
	1,1,2-Trichloroethane	0	0	
	Trichloroethylene	0	0	
	Vinyl Chloride	0	0	
	pH	5.7 SU (min)	13.2 SU (max)	
	pH range excursions, > 60 minutes		0	
	pH range excursions, monthly total accum		0	

B. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average,	Maximum of Daily Maximum,
		mg/L	mg/L
101	Enterococci (CFU or MPN per 100 mL)	6.40	160
	Chlorine Residual, minimum	N/A	1.70 mg/L (min)
201	Enterococci (CFU or MPN per 100 mL)	5.79	72
	Chlorine Residual, minimum	N/A	1.10 mg/L (min)
002	TOC	N/A	23.0
	Oil and grease	N/A	5.0
	Zinc, Total	0.06	0.58
	pH	6.0 SU (min)	8.80 SU (max)
003	TOC	N/A	22.0
	Oil and grease	N/A	5.0
	Zinc, Total	N/A	0.57
	pH	6.50 SU (min)	8.70 SU (max)
004	TOC	N/A	44.0
	Oil and grease	N/A	5.0
	Zinc, Total	N/A	1.02
	pH	6.80 SU (min)	8.60 SU (max)
005	ТОС	N/A	19.0

Equistar Chemicals, LP

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION
ATTACHMENT 1

	Pollutant	Average of Daily	Maximum of Daily
Outfall		Average,	Maximum,
		mg/L	mg/L
	Oil and grease	N/A	5.0
	pH	7.0 SU (min)	8.70 Su (max)

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

C. Effluent Limitation Violations

Outfall	Pollutant (units)	Month/	Daily Average		Daily Maximum	
Outtail		Year	Limit	Reported	Limit	Reported
001	$CBOD_5$ (lbs/day)	Oct. 2019			1.014	6,958
		Feb. 2020			1,914	4,005
	Copper, total (lbs/day)	Aug. 2015			3.75	3.77
	pH (SU)	April 2016				13.2
		May 2016			9.0	13.2
		Mar. 2020	6.0 (min)	5.7		

The draft permit was not changed to address these effluent limit violations because these violations are infrequent and uncommon and do not represent a pattern of chronic non-compliance. These violations may be reviewed by the Office of Compliance and Enforcement during the next records review.

VII. DRAFT EFFLUENT LIMITATIONS

Effluent limitations are established in the draft permit as follows:

Outfall	Pollutant	Daily Average	Daily Maximum
Outian		lbs/day	lbs/day
001	Flow	8.9 MGD	Report
	CBOD ₅	957	1,914
	NH ₃ -N	217	434
	TSS	2,971	9,070
	COD	10,101	17,825
	Oil and grease	595	891
	Chromium, Total	1.02	2.54
	Copper, Total	1.77	3.75
	Lead, Total	7.84	16.6
	Nickel, Total	6.40	15.0
	Zinc, Total	4.73	11.75
	Acenaphthene	0.741	1.98
	Acenaphthylene	0.741	1.98
	Acrylonitrile	3.23	8.15
	Anthracene	0.741	1.98
	Benzene	1.24	4.58
	Benzo(<i>a</i>)anthracene	0.063	0.134
	3,4-Benzofluoranthene	0.775	2.05
	Benzo(k)fluoranthene	0.741	1.98
	Benzo(<i>a</i>)pyrene	0.0063	0.0134

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION
ATTACHMENT 1

Outfall	Dellutant	Daily Average	Daily Maximum
Outraii	Pollutant	lbs/day	lbs/day
	Bis(2-ethylhexyl)phthalate	3.47	9.40
	Carbon Tetrachloride	0.606	1.28
	Chlorobenzene	0.505	0.944
	Chloroethane	3.50	9.03
	Chloroform	0.708	1.55
	2-Chlorophenol	1.04	3.30
001	Chrysene	0.741	1.98
	Di-n-butyl phthalate	0.910	1.92
	1,2-Dichlorobenzene	2.59	5.49
	1,3-Dichlorobenzene	1.04	1.48
	1,4-Dichlorobenzene	0.505	0.944
	1,1-Dichloroethane	0.741	1.98
	1,2-Dichloroethane	2.29	7.11
	1,1-Dichloroethylene	0.539	0.842
	1,2-trans Dichloroethylene	0.708	1.82
	2,4-Dichlorophenol	1.31	3.77
	1,2-Dichloropropane	5.15	7.75
	1,3-Dichloropropylene	0.977	1.48
	Diethyl phthalate	2.73	6.84
	2,4-Dimethylphenol	0.606	1.21
	Dimethyl phthalate	0.640	1.58
	4,6-Dinitro-o-cresol	2.62	9.33
	2,4-Dinitrophenol	2.39	4.14
	2,4-Dinitrotoluene	3.80	9.60
	2,6-Dinitrotoluene	8.59	21.6
	Ethylbenzene	1.07	3.64
	Fluoranthene	0.842	2.29
	Fluorene	0.741	1.98
	Hexachlorobenzene	0.002	0.004
	Hexachlorobutadiene	0.558	1.18
	Hexachloroethane	0.708	1.82
	Methyl Chloride	2.89	6.40
	Methylene Chloride	1.34	3.00
	Naphthalene	0.741	1.98
	Nitrobenzene	0.910	2.29
	2-Nitrophenol	1.38	2.32
	4-Nitrophenol	2.42	4.18
	Phenanthrene	0.741	1.67
	Phenol	0.505	0.876
	Pyrene	0.842	2.25
	Tetrachloroethylene	0.741	1.88
	Toluene	0.876	2.69
	1,2,4-Trichlorobenzene	2.29	4.71
	1,1,1-Trichloroethane	0.708	1.82
	1,1,2-Trichloroethane	0.708	1.82
	Trichloroethylene	0.708	1.82
	Vinyl Chloride	3.50	9.03

Equistar Chemicals, LP

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION ATTACHMENT 1

Outfall	Pollutant	Daily Average	Daily Maximum
		lbs/day	lbs/day
	рН	6.0 SU (min)	9.0 SU (max)

		Average of Daily	Maximum of Daily
Outfall	Pollutant	Average,	Maximum,
		mg/L	mg/L
101	Flow (MGD)	Report	Report
and	Enterococci (CFU or MPN per 100 mL)	35	104
201	Chlorine Residual, minimum	1.0 mg/L (min)	
002	Flow (MGD)	Report	Report
	TOC	N/A	75
	Oil and grease	N/A	15
	рН	6.0 SU (min)	9.0 SU (max)
003,	Flow (MGD)	Report	Report
003A,	TOC	N/A	75
003B,	Oil and grease	N/A	15
003C	Aluminum, Total ³	N/A	1.765
	Zinc, Total	N/A	Report
	рН	6.0 SU (min)	9.0 SU (max)
004	Flow (MGD)	Report	Report
	TOC	N/A	75
	Oil and grease	N/A	15
	Zinc, Total ³	N/A	0.439
	рН	6.0 SU (min)	9.0 SU (max)
005	Flow (MGD)	Report	Report
	TOC	N/A	75
	Oil and grease	N/A	15
	pH	6.0 SU (min)	9.0 SU (max)
006	Flow (MGD)	Report	Report
	TOC	N/A	75
	Oil and grease	N/A	15
	pH	6.0 SU (min)	9.0 SU (max)
007	Flow (MGD)	Report	Report
	TSS	N/A	100
	Oil and grease	N/A	15
	pH	6.0 SU (min)	9.0 SU (max)

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	29.833583 N	95.107181 W
002	29.8304 N	95.10715 W
003	29.824703 N	95.126414 W
003A	29.8215861 N	95.1244889 W

³ Numerical effluent limitations begin upon completion of a three-year compliance period.

Outfall	Latitude	Longitude
003B	29.8221583 N	95.1223778 W
003C	29.82435 N	95.120452778 W
004	29.833411 N	95.106332 W
005	29.816261 N	95.098182 W
006	29.838328 N	95.114848 W

VIII. SUMMARY OF CHANGES FROM APPLICATION

- A. The applicant requested the following amendments that the executive director did not grant:
 - 1. Reduction in the monitoring frequency for Outfall 002 for flow, total organic carbon (TOC), and pH to quarterly, and for oil and grease to annually; a reduction in the monitoring frequency for Outfalls 004 and 005 for oil and grease to annually.

The least frequent monitoring frequency recommended in *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* (TCEQ Document No. 98-001.000-OWR-WQ, May 1998) for industrial facilities is once per week for flow and pH; and once per two weeks for TOC and oil and grease. The existing permit's monitoring frequency is at or below the lowest frequency recommended for industrial facilities, with the exception of TOC and oil and grease at Outfall 002. Therefore, the draft permit includes a reduced monitoring frequency from once per week to once per two weeks for TOC and oil and grease at Outfall 002 only. All other monitoring frequency reduction requests are declined.

The permittee has a satisfactory compliance history rating for both the customer and facility site. There have been no effluent violations for TOC or oil and grease at Outfall 002 during the period of review. The effluent limitations for TOC and oil and grease remain the same as the existing permit. No antibacksliding justification is required.

- B. The following changes have been made from the application that make the draft permit more stringent:
 - 1. A water quality-based effluent limitation for the protection of aquatic life has been added for total aluminum at Outfall 003. See Section X.D of this fact sheet. An interim three-year compliance period is included in the draft permit for total aluminum at Outfall 003 in accordance with 30 TAC § 307.2(f). The interim compliance period will give the applicant time to identify sources of the aforementioned pollutant, develop mitigation strategies and treatment options, and attain the water quality-based limits.
 - 2. Water quality-based effluent limitations have been added for total zinc at Outfall 004. An interim three-year compliance period is included in the draft permit for total zinc at Outfall 004 in accordance with 30 TAC § 307.2(f). The interim compliance period will give the applicant time to identify sources of the pollutant, develop mitigation strategies and treatment options, and attain the water quality-based limits.
 - 3. Water quality-based effluent limits for the protection of human health are more stringent than the existing permit limits for benzo(*a*)anthracene, benzo(*a*)pyrene, hexachlorobenzene, and hexachlorobutadiene at Outfall 001. The draft permit includes the more stringent water quality-based effluent limits for these pollutants.

No compliance period is included because the permittee's discharge monitoring reports indicate no detectable concentrations present in the effluent.

4. Technology-based effluent calculations for TSS at Outfall 001 are more stringent than the existing permit and are included in the draft permit. This discrepancy is due to differences in the production percentages used to calculate the conventional pollutants in Appendix A of this fact sheet.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

- A. The permittee requested the following amendments that the executive director recommends granting:
 - 1. Addition of process wastewater and stormwater from the Houston Technology Center (HTC) complex to internal Outfall 101.

Internal Outfall 101 discharges via Outfall 001, which currently authorizes process wastewater and process area stormwater. The addition of these wastestreams to the internal Outfall 101 does not alter the nature of the discharge via Outfall 001. No antibacksliding justification is required. Effluent limitations for process wastewater and stormwater contributed by Outfall 101 are incorporated at Outfall 001.

2. Addition of construction stormwater and utility wastewaters (as defined in existing Other Requirement No. 13) and cooling tower and boiler maintenance wastewaters, water treatment wastewaters, and water from landfarm to Outfall 001.

The existing permit authorizes the discharge of construction stormwater via Outfalls 002, 003, and 004, which share the same immediate receiving water body as Outfall 001. EPA guidelines for stormwater recommend effluent limitations of TOC or COD, oil and grease, and pH. The existing permit includes limits for COD, TSS, oil and grease, and pH at Outfall 001.

The Fact Sheet and Executive Director's Preliminary Decision for the existing permit includes pollutant allocations for utility wastewater at Outfall 001. Other Requirement No. 13 of the existing permit defines *utility wastewater* as including, among others, steam condensate and blowdown, hydrotest water, demineralized water, raw and well water, and groundwater seepage. The existing permit authorizes the discharge of steam condensate and blowdown, demineralization regeneration blowdown, hydrostatic test water, groundwater from monitoring and recovery wells at Outfall 001. The addition of *utility wastewater* cooling tower and boiler maintenance wastewaters, water treatment wastewaters, and water from landfarm at Outfall 001 is similar to, if not the same as, wastestreams currently authorized by the existing permit. Therefore, the authorization of these additional wastestreams at Outfall 001 does not alter the nature of the discharge.

The major amendment request does not include a request to increase the total flow authorized at Outfall 001 or to recalculate the effluent limits to include increased loadings for the additional wastestreams. No antibacksliding justification is required.

- 3. Removal of total zinc monitoring requirements at Outfall 002.
- Monitoring requirements have been included in the permit since at least 2006.

Monitoring requirements are included in a permit to provide a more detailed data set for use in determining the need for a numerical limit. The average total zinc concentration for Outfall 002 reported for May 2015 through April 2020 is 0.06 mg/L. This is below the 70% of the calculated daily average water quality-based effluent limitation for aquatic life protection (see Appendix B of this Fact Sheet). The permittee has demonstrated that the effluent discharged via Outfall 002 does not contain total zinc in concentrations necessitating monitoring requirements. This constitutes information that was not available at the time of permit issuance in accordance with 40 CFR § 122.44(l)(2)(i)(B)(1).

San Jacinto River Tidal is currently attaining water quality standards for total zinc, which satisfies the requirements of Clean Water Act (CWA) §§402(0)(1) and 303(d)(4). In compliance with CWA §402(0)(3), the revision complies with any applicable effluent guidelines (of which there are none for this outfall) and water quality standards.

For all these reasons, the removal of total zinc monitoring requirements at Outfall 002 meets anti-backsliding requirements.

4. Removal or revision of Other Requirements Nos. 8, 9, 10, 15, and 16.

Other Requirement No. 8 pertains to stormwater from landfarm cells. The permittee has requested clarification that stormwater from inactive landfarm cells may be diverted to Outfalls 002 or 004. This clarification does not alter the effluent quality from these outfalls and does not represent a changes in the permit limits for the outfalls. Other Requirement No. 9 pertains to notification of start-up for Outfalls 006, 007, 101 and 201. The permittee submitted notification for internal Outfalls 101 and 201. Other Requirement No. 9 has been updated accordingly. Other Requirement No. 10, pertaining to pollutant analysis, has been fulfilled and is no longer necessary. It has been removed and replaced with a requirement pertaining to cooling water. Other Requirement No. 15 pertains to the development of an aluminum partitioning coefficient for Outfalls 002 and 003. The final report for Outfall 002 was submitted on August 6, 2020 and is currently under review by the TCEQ. This requirement has been updated. Other Requirement No. 16 pertains to a compliance schedule for the attainment of water quality-based effluent limits at Outfall 001. While the compliance period for the existing permit limits has been completed, this requirement has been retained but revised to address the water qualitybased limits in the draft permit for Outfalls 001, 003, and 004.

The removal of completed or expired requirements, or the revision of requirements for accuracy and correctness does not constitute a relaxation of the permit. No antibacksliding justification is required.

- B. The following additional changes have been made to the draft permit:
 - 1. The single grab limitations were revised for several pollutants at Outfall 001. Single grab limits were calculated as discussed in Appendix E of this fact sheet.
 - 2. Pages 3-13 were updated (January 2016 version).
 - 3. Other Requirement No. 3 was updated to include minimum analytical level for total aluminum.
 - 4. Other Requirement No. 10 was added to the draft permit to address cooling water intake structure requirements under CWA §316(b). Although CWA §316(b) does not

currently apply to this facility, the applicant would be required to notify the TCEQ if there is a change in how the facility obtains cooling water.

5. Other Requirement No. 17 was added to the draft permit to allow the TCEQ to amend the permit regarding plastic pellets, flake, or powder following the adoption of any new requirements on plastics.

Existing Permit	Draft Permit
1	1
2	2
3	3 (revised)
4	- 4
5	5
6	6
7	7
8	8 (revised)
9	9 (revised)

6	The Other	Requirements	section has	heen renum	hered and	revised	as follows:
υ.	The Other	Requirements	section has	been renum	bereu and	i ieviseu	as ionows.

Existing Permit	Draft Permit
10	10 (replaced)
11	11
12	12
13	13
14	14
15	15 (revised)
16	16 (revised)
17	18
	17 (new)

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. <u>REASON FOR PERMIT ISSUANCE</u>

The applicant applied to the TCEQ for a major amendment to Permit No. WQ0000391000 to authorize a reduction in the monitoring frequency for Outfall 002 for flow, TOC, and pH to quarterly, and for oil and grease to annually; a reduction in the monitoring frequency for Outfalls 004 and 005 for oil and grease to annually; the addition of process wastewater and stormwater to Outfall 101; the addition of construction stormwater and utility wastewaters to Outfall 001; and the removal of provisions in Other Requirements Nos. 9, 10, 15, and 16. The existing permit authorizes the discharge of treated organic chemical manufacturing process wastewater, HTC wastewater, auto shop wastewater, laboratory wastewater, cooling tower and boiler blowdown, sanitary wastewater, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, steam condensate and blowdown, demineralization regeneration blowdown, methanol neutralization sump wastewater, hydrostatic test water, maintenance wastewater, landfarm runoff, groundwater from monitoring and recovery wells (on-site and off-site), process area stormwater runoff, and process area stormwater from the adjacent co-generation facility at a daily average flow not exceed 8,900,000 gallons per day via Outfall 001; sanitary wastewater associated with a septic chlorinator on an intermittent and flow-variable basis via Outfalls 101 and 201; de minimis quantities from spill cleanups, utility wastewater, construction water,

non-process area stormwater runoff, stormwater (from secondary containment structures), and post-first flush process area stormwater runoff on an intermittent and flow-variable basis via Outfalls 002 and 004; de minimis quantities from spill cleanups, utility wastewater, construction water, and stormwater runoff on an intermittent and flow-variable basis via Outfalls 003 and 005; HTC-area stormwater on an intermittent and flow-variable basis via Outfall 006; and stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 006; and stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 007.

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. <u>WATER QUALITY SUMMARY</u>

Discharge Routes

The discharge route is via Outfalls 001, 002, and 004 to unnamed drainage ditches, thence to Wallisville Gully, thence to San Jacinto River Tidal; via Outfall 005 directly to the San Jacinto River Tidal; via Outfall 003 to an unnamed drainage ditch, thence to HCFCD ditch G103-03-02, thence to the San Jacinto River Tidal; and via Outfall 006 to HCFCD ditch G103-07-05; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin. The unclassified receiving water uses are minimal aquatic life use for the unnamed ditches and Wallisville Gully and limited aquatic life use for HCFCD ditch G103-07-05 and HCFCD ditch G103-07-05. The designated uses for Segment No. 1001 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 San Jacinto River Tidal, which has 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. 1001 is currently listed on the state's inventory of impaired and threatened waters, the 2018 Clean Water Act Section 303(d) list. The listing is for dioxin and polychlorinated biphenyls (PCBs) in edible tissue in the reach from Interstate Highway 10 upstream to the Lake Houston Dam (AUs 1001_1 and 1001_02). The permittee indicated that dioxin is not expected to be present in the effluent and reported non-detectable levels of PCBs at Outfalls 001 through 005. The discharge is not expected to contribute to the impairments for dioxin and PCBs in edible tissue.

Completed Total Maximum Daily Loads (TMDLs)

Segment No. 1001 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 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 the existing limit of 6.40 lbs/day Nickel for Outfall 001 is consistent with the TMDL and the TMDL Implementation Plan.

C. <u>TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS</u>

1. <u>GENERAL COMMENTS</u>

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 discharge of treated organic chemical manufacturing process wastewater, HTC wastewater, auto shop wastewater, laboratory wastewater, cooling tower and boiler blowdown, sanitary wastewater, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, steam condensate and blowdown, demineralization regeneration blowdown, methanol neutralization sump wastewater, hydrostatic test water, utility wastewater, cooling tower and boiler maintenance wastewaters, water treatment wastewaters, water from landfarm, maintenance wastewater, groundwater from monitoring and recovery wells (on-site and off-site), construction stormwater, process area stormwater runoff, and process area stormwater from the adjacent co-generation facility at a daily average flow not exceed 8,900,000 gallons per day via Outfall 001; sanitary wastewater associated with a septic chlorinator, process wastewater, and stormwater on an intermittent and flow-variable basis via Outfall 101; sanitary wastewater associated with a septic chlorinator on an intermittent and flow-variable basis via Outfall 201; de minimis quantities from spill cleanups, utility wastewater, construction water, non-process area stormwater runoff, stormwater (from secondary containment structures), and post-first flush process area stormwater runoff on an intermittent and flow-variable basis via Outfalls 002 and 004; de minimis quantities from spill cleanups, utility wastewater, construction water, and

stormwater runoff on an intermittent and flow-variable basis via Outfalls 003 and 005; HTC-area stormwater on an intermittent and flow-variable basis via Outfall 006; and stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 007.

The discharge of sanitary wastewater via Outfall 001 is subject to federal effluent limitation guidelines at 40 CFR Part 133-Secondary Treatment Regulation and 30 TAC Chapter 309. The discharge of process wastewater via Outfall 001 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 414. A new source determination was performed, and the discharge of sanitary wastewater and process wastewater is not a new source as defined at 40 CFR §122.2. Therefore, new source performance standards (NSPS) are not required for these discharges.

The discharge of HTC wastewater, auto shop wastewater, laboratory wastewater, cooling tower and boiler blowdown, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, steam condensate and blowdown, demineralization regeneration blowdown, methanol neutralization sump wastewater, utility wastewater, cooling tower and boiler maintenance wastewaters, water treatment wastewaters, water from landfarm stormwater, hydrostatic test water, maintenance wastewater, and groundwater from monitoring and recovery wells (onsite and offsite) via Outfall oo1 are not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on BPJ.

The discharge of *de minimis* quantities from spill cleanups, utility wastewater (which includes potable water, vehicle rinse water, firewater [which has not come into direct contact with raw material, intermediate product, finished product, by-product, or waste product, and is not the result of a fire], hydrotest water, clarified water, demineralized water, steam condensate and blowdown, non-contact once-through cooling water, *de minimis* amounts of cooling tower water, raw and well water, groundwater seepage, condensate, and analyzer instrumentation drain wastewaters), construction water (which includes stormwater associated with construction activities), non-process area stormwater runoff, stormwater (from secondary containment structures), and post-first flush process area stormwater runoff via Outfalls 002 and 004 are not subject to federal effluent limitation guidelines, and any technology-based effluent limitations are based on BPJ.

The discharge of HTC-area stormwater via Outfall 006 and the discharge of *de minimis* quantities from spill cleanups, utility wastewater, construction water, and stormwater runoff via Outfalls 003 and 005 are also not subject to federal effluent limitation guidelines, and any technology-based effluent limitations are based on BPJ.

The discharge of stormwater associated with construction activities from a concrete batch plant via Outfall 007 is not subject to federal effluent limitation guidelines, and any technology-based effluent limitations are based on BPJ and the Construction General Stormwater Permit (TXR150000).

The Channelview North Complex produces bulk, commodity and specialty organic chemicals and thermoplastic resins. Chemicals are produced by high temperature cracking of various petroleum-based feedstocks. Chemicals are compressed, fractionated, and then recovered in downstream units. The primary waste streams are process wastewaters subject to 40 CFR Part 414 – Organic Chemicals, Plastics, and Synthetic Fibers, Subparts D (Thermoplastic Resins), F (Commodity Organic Chemicals), G (Bulk Organic Chemicals), and I (Direct Discharge Point Sources that Use End-of-Pipe Biological Treatment). These process wastewaters are routed to the wastewater treatment system prior to discharge via Outfall 001.

The following additional waste streams are also sent to the wastewater treatment system: first flush of stormwater runoff from production units (process area), auto shop wastewater, laboratory wastewater, HTC wastewater, utility wastewater, cooling tower blowdown, sanitary wastewater (including sanitary wastewater from the adjacent Lyondell Chemical Channelview South Plant), loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab waste, steam condensate and blowdown, non-contact cooling water during maintenance activities, demineralization regeneration blowdown, methanol neutralization sump wastewater, boiler blowdown, hydrostatic test water, maintenance wastewater, landfarm runoff, groundwater from monitoring and recovery wells (both on-site and off-site), and process area stormwater from an adjacent co-generation facility.

The wastewater system at the Channelview Complex begins with pretreatment, which may consist of separation, neutralization, and/or steam stripping. Pretreatment is accomplished in the operation units prior to routing to the wastewater treatment facility. The wastewater treatment facility employs activated sludge bio-treatment systems operated in parallel (OPI, OPII, and the East Plant). The wastewater treatment systems consist of equalization, stabilization, filtration, activated sludge biological treatment, clarification, and settling. Sanitary wastewater is collected separately, chlorinated, and then mixed with the industrial wastewater prior to routing to the biological unit. Treated wastewater is discharged via Outfall 001.

Wastewaters discharged via Outfalls 002, 003, 004, and 005 and proposed Outfalls 006 and 007 typically will not receive treatment.

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.

Technology-based effluent limitations for acenaphthene, acenaphthylene, acrylonitrile, anthracene, benzene, 3,4-benzofluoranthene, benzo(*k*)fluoranthene, bis(2-ethylhexyl) phthalate, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, 2-chorophenol, chrysene, di-*n*-butyl phthalate, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2dichloroethane, 1,1-dichloroethylene, 1,2- trans-dichloroethylene, 2,4dichlorophenol, 1,2-dichloropropane, 1,3-dichloropropylene, diethyl phthalate,

2,4-dimethyphenol, 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, phenanthrene, phenol, pyrene, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, vinyl chloride, total chromium, total nickel, total zinc, and pH at Outfall 001 are continued from the existing permit.

Technology-based effluent limitations for chlorine residual at Outfalls 101 and 201; TOC, oil and grease, and pH at Outfalls 002, 003, 004, 005, and 006; and TSS, oil and grease, and pH at Outfall 007 are continued from the existing permit.

The technology-based limitation for certain pollutants calculated in Appendix A is slightly less stringent than the existing permit. This discrepancy is likely due to differences in rounding or truncation. The existing limit is continued in the draft permit as indicated with an asterix in this table. The following technology-based effluent limitations are proposed in the draft permit:

Outfall	Pollutant	Daily Average,	Daily Maximum,
		IDS/day	ibs/day
001		2,971	9,070
COD		10,101	17,825
	Oil and Grease	595	891
	Chromium, total	1.02	2.54
	Nickel, total	6.40	15.0
	Zinc, total	4.73	11.75
	Acenaphthene	0.741 *	1.98
	Acenaphthylene	0.741 *	1.98
	Acrylonitrile	3.23	8.15
	Anthracene	0.741 *	1.98
	Benzene	1.24	4.58
	3,4-Benzofluoranthene	0.775	2.05
Benzo(k)fluoranthene		0.741 *	1.98
	Bis(2-Ethylhexyl) Phthalate	3.47	9.40
	Carbon Tetrachloride	0.606 *	1.28
	Chlorobenzene	0.505 *	0.944
	Chloroethane	3.50	9.03
	Chloroform	0.708	1.55
	2-Chlorophenol	1.04	3.30
	Chrysene	0.741 *	1.98
	Di-n-butyl Phthalate	0.910	1.92
	1,2-Dichlorobenzene (ortho)	2.59	5.49
	1,3-Dichlorobenzene (meta)	1.04	1.48
	1,4-Dichlorobenzene (para)	0.505 *	0.944
	1,1-Dichloroethane	0.741 *	1.98
	1,2-Dichloroethane	2.29	7.11
	1,1-Dichloroethylene	0.539	0.843
1,2-trans-Dichloroethylene		0.708	1.82
2,4-Dichlorophenol		1.31	3.77
	1,2-Dichloropropane	5.15	7.75

Outfall	Pollutant	Daily Average,	Daily Maximum,
		lbs/day	lbs/day
001	1,3-Dichloropropylene	0.977 *	1.48
	Diethyl Phthalate	2.73	6.84
	2,4-Dimethylphenol	0.606 *	1.21
	Dimethyl Phthalate	0.640 *	1.58
	4,6-Dinitro-o-cresol	2.62 *	9.33
	2,4-Dinitrophenol	2.39	4.14
	2,4-Dinitrotoluene	3.80 *	9.60
	2,6-Dinitrotoluene	8.59	21.6
	Ethylbenzene	1.07	3.64
	Fluoranthene	0.842 *	2.29
	Fluorene	0.741 *	1.98
	Hexachloroethane	0.708	1.82
	Methyl Chloride	2.89	6.40
	Methylene Chloride	1.34	3.00
	Naphthalene	0.741 *	1.98
	Nitrobenzene	0.910	2.29
	2-Nitrophenol	1.38	2.32
	4-Nitrophenol	2.42	4.18
	Phenanthrene	0.741 *	1.98
	Phenol	0.505 *	0.877
	Pyrene	0.842 *	2.25
	Tetrachloroethylene	0.741 *	1.88
	Toluene	0.876 *	2.69
	1,2,4-Trichlorobenzene	2.29	4.71 *
	1,1,1-Trichloroethane	0.708	1.82
	1,1,2-Trichloroethane	0.708	1.82
	Trichloroethylene	0.708	1.82
	Vinyl Chloride	3.50	9.03
	pH	6.0-0).0 SU

Outfall	Pollutant	Daily Average,	Daily Maximum,
		mg/L	mg/L
101, 201	Chlorine residual	1.0 (min)	
002, 003,	TOC	N/A	75
004, 005	Oil and Grease	N/A	15
006	pH		
007	TSS	N/A	100
	Oil and Grease	N/A	15
l	pH	6.0-9.0 SU	

3. <u>316(B) COOLING WATER INTAKE STRUCTURES</u>

a. <u>SCREENING</u>

The facility obtains water from the City of Houston, a public water system (PWS No. TX1010013), for cooling purposes. The use of water obtained from a public water system for cooling purposes does not constitute the use of a cooling water intake structure; therefore, the
facility is not subject to Section 316(b) of the CWA or 40 CFR Part 125, Subpart J.

b. <u>PERMIT ACTION</u>

The Other Requirement No. 10 in the draft permit has been revised to require the permittee to notify the TCEQ of any changes in the method by which cooling water is obtained. Upon receipt of such notification, the TCEQ may reopen the permit to include additional terms and conditions as necessary.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. <u>GENERAL COMMENTS</u>

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 (IPs)* 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 technologybased effluent limits and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

2. <u>AQUATIC LIFE CRITERIA</u>

a. <u>SCREENING</u>

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).

Outfalls 001, 002, 003, 003A, 003B, 003C, and 004

There is no mixing zone or zone of initial dilution (ZID) for this discharge to an unnamed drainage ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Acute and chronic saltwater criteria are

applied in the bay, estuary, or wide 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 cubic feet per second (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 the two-year maximum monthly average flow of <10 MGD:

Acute Effluent % (stream)	100 %
Acute Effluent % (bay, estuary, or wide tidal river)	34~%
Chronic Effluent % (bay, estuary, or wide tidal river)	9 %

Outfall 005

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 River Tidal. 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 River Tidal. River Tidal.

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%

Outfalls 006 and 007

Outfalls 006 and 007 discharge stormwater only. Typically, critical conditions are not developed for stormwater outfalls. Water quality-based effluent limits are developed for these outfalls.

General Screening Procedures

Wasteload 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-ofpipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded.

From the WLA for Outfalls 001, 002, 003, 003A, 003B, 003C, and 004, 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.

From the WLA for Outfall 005, a long-term average (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 lower of the two 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).

Assumptions used in deriving the effluent limitations include the segment-specific value for TSS according to the *IPs*. The discharge to the unnamed drainage ditch is a freshwater body that flows into a saltwater segment. Therefore, data from a representative freshwater segment was used for screening the freshwater portion of the discharge route. The segment value of 12 mg/L for TSS for Segment No. 1016 was used for the unnamed drainage ditch. The segment value of 8 mg/L for TSS for Segment No. 1001 was used for the saltwater portion of the discharge route. A site-specific hardness of 147 mg/L of calcium carbonate was used. The site-specific value was developed for Lyondell's Channelview Complex-South (WQ0002927000) which discharges to a drainage ditch similar to the unnamed ditches included in this Fact Sheet and are more representative of the immediate receiving water bodies than Segment No. 1016. For additional details on the calculation of water quality-based effluent limitations, refer to the *IPs*.

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. <u>PERMIT ACTION</u>

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 Outfalls 002 and 005 do 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 at Outfalls 002 or 005.

Reported analytical data for total aluminum for Outfalls 003, 003A, 003B, and 003C and total zinc for Outfall 004 exceed 85 percent of the

calculated daily average water quality-based effluent limitation for aquatic life protection.

A site-specific water-effect-ratio of 1.8 was used for total copper based on TSWQS, Appendix E.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The existing limits are still protective of aquatic life..

An interim three-year compliance period is included in the draft permit for total aluminum at Outfall 003 and total zinc at Outfall 004 in accordance with 30 TAC § 307.2(f). The interim compliance period will give the applicant time to identify sources of the aforementioned pollutants, develop mitigation strategies and treatment options, and attain the water quality-based limits.

3. <u>WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (7-DAY</u> <u>CHRONIC)</u>

a. <u>SCREENING AND REASONABLE POTENTIAL ANALYSIS</u>

The existing permit includes chronic saltwater biomonitoring requirements at 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 of the test results were used for this determination.

b. <u>PERMIT ACTION</u>

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, the TCEQ has determined that there may be pollutants present in the effluent 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 shall be 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 shall be once per quarter.

Toxicity tests shall 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 to continue quarterly testing for that species until the permit to continue quarterly testing for that

c. <u>DILUTION SERIES</u>

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 4%, 5%, 7%, 9%, and 12%. The low-flow effluent

concentration (critical dilution) is defined as 9% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. 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. <u>SCREENING</u>

The existing permit includes 24-hour acute freshwater biomonitoring requirements for Outfall 001. In the past three years, the permittee has performed twelve 24-hour acute tests, with no demonstrations of significant mortality.

b. <u>PERMIT ACTION</u>

Twenty-four-hour 100% acute biomonitoring tests are required at Outfall 001 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:

- Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.
- ii) Acute 24-hour static toxicity test using the inland silverside (*Menidia beryllina*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

Toxicity tests shall 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. <u>SCREENING</u>

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).

Outfalls 001, 002, 003, 003A, 003C, and 004

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 practice is to establish a minimum estimated effluent percentage 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%

Outfall 005

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 volume within a radius of 400 feet from the point where the discharge enters San Jacinto River Tidal. 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%

Outfalls 006 and 007

Outfalls 006 and 007 discharge stormwater only. Typically, critical conditions are not developed for stormwater outfalls. Water quality-based effluent limits are developed for these outfalls.

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>

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data for all outfalls 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.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The calculated water quality-based effluent limits for benzo(*a*)anthracene, benzo(*a*)pyrene, hexachlorobenzene, and hexachlorobutadiene are more stringent than the existing limits at Outfall

001.

An interim three-year compliance period is not included in the draft permit for these pollutants because the permittee's discharge monitoring reports indicate the pollutants are not present in detectable concentrations.

6. DRINKING WATER SUPPLY PROTECTION

a. <u>SCREENING</u>

Segment No. 1001, which receives the discharge 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. <u>PERMIT ACTION</u>

None.

7. <u>TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS</u> <u>PROTECTION</u>

a. <u>SCREENING</u>

Segment No. 1001, 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. <u>PERMIT ACTION</u>

None.

8. <u>PROTECTION OF pH STANDARDS</u>

a. <u>SCREENING</u>

The existing permit includes pH limits of 6.0 – 9.0 standard units at Outfalls 001, 002, 003, 003A, 003B, 003C, 004, 006, and 007 which discharge into unclassified water bodies. Consistent with the procedures for pH screening that were submitted to EPA with a letter dated May 28, 2014, and approved by EPA in a letter dated June 2, 2014, requiring a discharge to an unclassified water body to meet pH limits of 6.0 – 9.0 standard units reasonably ensures instream compliance with *Texas Surface Water Quality Standards* pH criteria.

The existing permit includes pH limits of 6.0 - 9.0 SU at Outfall 005, which discharges directly into San Jacinto River Tidal, Segment No. 1001. Screening was performed to ensure that these existing pH limits would not cause a violation of the 6.5-9.0 SU pH criteria for San Jacinto River

Tidal (see Appendix C).

b. **PERMIT ACTION**

The existing pH limits of 6.0 - 9.0 standard units are carried forward in the draft permit at Outfalls 001, 002, 003, 003A, 003B, 003C, 004, 006, and 007. The existing effluent limits of 6.0 - 9.0 SU at Outfall 005 are adequate to ensure that the discharge will not violate the pH criteria in San Jacinto River Tidal.

9. DISSOLVED OXYGEN PROTECTION

a. <u>SCREENING</u>

While the ELGs at 40 CFR Part 414 include limitations for biochemical oxygen demand, five-day (BOD₅), the existing permit includes limits for CBOD₅. Limits for daily average and daily maximum loading for CBOD₅ have been included since the permit issued on September 6, 1994. While BOD₅ limits are calculated in Appendix A of this document, CBOD₅ and ammonia nitrogen limits are continued in the draft permit.

The existing effluent limits have been reviewed for consistency with the minimum treatment recommendations contained in the *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (September 2006).

A dissolved oxygen modeling analysis was previously performed for this permit on January 25, 2017 by Xiaoxia Lu, P.E. Applicable water body uses and criteria, proposed permitted flow conditions, and modeling analytical procedures pertaining to this discharge situation remain unchanged from the previous review. In addition, the amendment request did not affect the effluent limitations or the nature of the proposed discharge from the facility. Therefore, the existing effluent set of 957 lbs/day CBOD₅ and 217 lbs/day NH₃-N for Outfall 001 is applicable to this permit. Due to the intermittent nature and limited oxygen demanding constituents of the discharges via Outfalls 002-006, no significant depletion of oxygen is expected in the receiving waters due to these outfalls. No additional modeling work was performed for the current permit action.

b. <u>PERMIT ACTION</u>

The existing effluent set of 957 lbs/day CBOD5 and 217 lbs/day NH3-N for Outfall 001 is continued in the draft permit.

10. <u>BACTERIA STANDARDS PROTECTION</u>

a. <u>SCREENING</u>

Sanitary wastewater generated at the facility is authorized for discharge via Outfall 001. Current agency policy is to impose appropriate effluent

limitations for Enterococci for discharges of treated domestic wastewater directly to marine receiving waters or to freshwater bodies within three miles of marine receiving waters. Protection from exposure to human pathogens is therefore required.

TCEQ rules in 30 TAC Chapter 309 include the regulatory requirements regarding effluent limitations for bacteria for domestic wastewaters.

b. <u>PERMIT ACTION</u>

The existing permit limits for Enterococci at Outfalls 101 and 201 of 35 CFU or MPN per 100 mL (daily average) and 104 CFU or MPN per 100 mL (daily maximum) are continued in the draft permit.

XI. <u>PRETREATMENT REQUIREMENTS</u>

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 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, Ph.D., 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. <u>PERMIT(S)</u>

TPDES Permit No. WQ0000391000 issued on September 5, 2017.

B. <u>APPLICATION</u>

TPDES wastewater permit application received on December 30, 2019 and additional information received on February 18, 2020, March 17, 2020, July 16, 2020, August 6, 2020, and August 18, 2020.

C. <u>40 CFR CITATION</u>

40 CFR Part 414 (BPT).

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).

TCEQ Interoffice Memoranda dated March 4, 2020 and July 7, 2020, from Jeff Paull of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated March 30, 2020, 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 May 1, 2020 from Gunnar Dubke of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Modeling Memo).

TCEQ Interoffice Memorandum dated May 29, 2020, from Brad Caston of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

Electronic mail dated July 7, 2020, from Sarah A. Johnson of the Industrial Permits Team, Wastewater Permitting Section, to Nancy Ross, Lyondell Basell, requesting pollutant analysis data.

Electronic mail dated July 16, 2020, from Manish Pawar of Lyondell Basell, to Sarah A. Johnson of the Industrial Permits Team, Wastewater Permitting Section, providing pollutant analysis data.

Electronic mail dated August 6, 2020, from Nancy Ross of Lyondell Basell, to Sarah A. Johnson of the Industrial Permits Team, Wastewater Permitting Section, providing aluminum partitioning coefficient final report for Outfall 002.

Electronic mail dated August 18, 2020, from Nancy Ross of Lyondell Basell, to Sarah A. Johnson of the Industrial Permits Team, Wastewater Permitting Section, providing metal-bearing process wastewater flows.

E. <u>MISCELLANEOUS</u>

The *State of Texas 2018 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, December 23, 2019.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 1, 2018, as approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not 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 IPs 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

Effluent limitations guidelines (ELGs) under 40 CFR Part 414 are applicable to the Equistar Chemicals Channelview Complex. Effluent limitations calculated using the applicable ELGs, which includes Subparts D, F, G, and I, are included in the draft permit. The following calculations are based on the most recent available information and are not included in the draft permit in any instance where the calculated effluent limitations are less stringent than effluent limitations included in the existing permit. See Appendix D for a comparison of existing effluent limitations and the following calculated technology-based effluent limitations.

OUTFALL 001

Conventional Pollutants

40 CFR Part 414, Subparts D, F, and G

ELG concentrations are required to be production-proportioned in accordance with 40 CFR §414.11(i). The ELG production percentages provided by the permittee are used to calculate the plant concentrations that are subsequently used to calculate daily average and daily maximum mass loadings (in lbs/day). Best practicable control technology currently available (BPT) limits are applied for Subpart D (40 CFR §414.41), Subpart F (40 CFR §414.61), and Subpart G (40 CFR §414.71).

Biochemical Oxygen Demand, 5-day (BOD₅)

Source	%	Daily Average Guideline	Daily Maximum Guideline
Subpart D	0.2	24 mg/L x 0.002 = 0.048 mg/L	64 mg/L x 0.002 = 0.128 mg/L
Subpart F	69.5	$30 \text{ mg/L} \times 0.695 = 20.9 \text{ mg/L}$	80 mg/L x 0.695 = 55.6 mg/L
Subpart G	30.3	34 mg/L x 0.303 = 10.3 mg/L	92 mg/L x 0.303 = 27.9 mg/L
Calculated Guideline		31.2 mg/L	83.6 mg/L

Total Suspended Solids (TSS)

Source	%	Daily Average Guideline	Daily Maximum Guideline
Subpart D	0.2	40 mg/L x 0.002 = 0.08 mg/L	130 mg/L x 0.002 = 0.26 mg/L
Subpart F	69.5	46 mg/L x 0.695 = 32 mg/L	149 mg/L x 0.695 = 104 mg/L
Subpart G	30.3	49 mg/L x 0.303 = 14.8 mg/L	159 mg/L x 0.303 = 48.2 mg/L
Calculated Guideline		46.9 mg/L	152 mg/L

Effluent Flows

Process wastewater: 3.04 MGD Process area stormwater: 1.00 MGD Total: 4.04 MGD Utility Wastewater: 4.62 MGD Sanitary wastewater: 0.24 MGD **Total permitted flow:** 8.9 MGD

The following technology-based effluent limitations are calculated by converting the above-calculated guideline concentrations to daily average and daily maximum mass loadings (in lbs/day) by multiplying the flow by a conversion factor of 8.345 and then multiplying that product by the concentrations (in mg/L).

Process wastewater and process area stormwater flows were combined for calculating loadings. Daily mass loading allocations for utility wastewater and sanitary wastewater are included. Sources for the concentrations used to calculated daily average and daily maximum allocations include 40 CFR Part 423 for utility wastewater (low-volume wastes) and 30 TAC Chapter 309 for sanitary wastewater.

TSS

Source	Flow	Conversion Factor	Daily Average Guideline	Daily Maximum Guideline	Daily Average Limit	Daily Maximum Limit
			(mg/L)	(mg/L)	(lbs/day)	(lbs/day)
Process and process area stormwater	4.04	8.345	46.9	152	1,581	5,124
Utility	4.62	8.345	35	100	1,350	3,855
Sanitary	0.24	8.345	20	45	40	90
				Total	2.971	9,070

BOD₅

Source	Flow	Conversion Factor	Daily Average Guideline (mg/L)	Daily Maximum Guideline (mg/L)	Daily Average Limit (lbs/day)	Daily Maximum Limit (lbs/day)
Process and process area stormwater	4.04	8.345	31.2	83.6	1,052	2,819
Utility	4.62	8.345	10	20	386	771
Sanitary	0.24	8.345	20	45	40	90
				Total	1,477	3,680

Chemical Oxygen Demand (COD) and Oil and Grease

Calculations of mass loading for COD and oil and grease were not performed. Limitations for COD and oil and grease are recommended by the EPA for stormwater discharges associated with industrial activities. The inclusion of limits, based on best professional judgement, date at least as far back as the permit issued in 1987 by the Texas Water Commission. The major amendment request does not include a request to increase the total flow authorized at Outfall 001 or to recalculate the effluent limits to include increased loadings for the additional wastestreams. The existing COD and oil and grease effluent limitations have not been recalculated and are continued in accordance with federal antibacksliding regulations under 40 CFR §122.44(l)(2).

pН

Effluent limitations for pH (6.0 minimum and 9.0 maximum) are technology-based and continued from the existing permit in accordance with 40 CFR §§414.41, 414.61, and 414.71 and 40 CFR §122.44(l), anti-backsliding regulations.

Toxic Pollutants

Best available technology economically achievable (BAT) limits for pollutant parameters under 40 CFR Part 414, Subpart I are presented below. Process wastewater flows (below) were calculated using process wastewater flows and the conversion factor of 8.345 used for calculated mass limitations.

[ELG concentration in $\mu g/L/1,000$] = mg/L

[ELG concentration in μ g/L/1,000] x 8.345 x process wastewater flow = lbs/day

40 CFR Part 414, Subpart I

BAT Effluent Limitations for the Organic Chemicals, Plastics

and Synthetic Fibers Point Source Category

40 CFR 414.91 (Subpart I)

Total Flow from Outfall (MGD) =	8.9
Process Wastewater Flow (MGD) =	4.04
Chromium Bearing Wastewater Flow (MGD) =	0.11
Copper Bearing Wastewater Flow (MGD) =	0.54
Nickel Bearing Wastewater Flow (MGD) =	0.47
Zinc Bearing Wastewater Flow (MGD) =	0.54

	Daily	Daily		
	Avg	Max	Daily Avg	Daily Max
Parameter	(µg/L)	(µg/L)	(lb/day)	(lb/day)
Chromium	1110	2770	1.02	2.54
Copper	1450	3380	6.53	15.2
Cyanide	420	1200	0.000	0.000
Lead	320	690	0.000	0.000
Nickel	1690	3980	6.63	15.6
Zinc	1050	2610	4.73	11.7
Acenaphthene	22	59	0.742	1.98
Acenaphthylene	22	59	0.742	1.98
Acrylonitrile	96	242	3.23	8.15
Anthracene	22	59	0.742	1.98
Benzene	37	136	1.24	4.58
Benzo(a)anthracene	22	59	0.742	1.98
3,4-Benzofluoranthene	23	61	0.775	2.05
Benzo(k)fluoranthene	22	59	0.742	1.98
Benzo(a)pyrene	23	61	0.775	2.05
Bis(2-ethylhexyl) phthalate	103	279	3.47	9.40
Carbon Tetrachloride	18	38	0.607	1.28
Chlorobenzene	15	28	0.506	0.944
Chloroethane	104	268	3.50	9.03
Chloroform	21	46	0.708	1.55
2-Chlorophenol	31	98	1.04	3.30
Chrysene	22	59	0.742	1.98

Di-n-butyl phthalate	27 Daily	57 Daibu	0.910	1.92
	Δνσ	Daliy Max	Daily Δνσ	Daily Max
Parameter	(ug/L)	(ug/L)	(lh/day)	(lh/day)
1 2-Dichlorobenzene	77	163	2 59	<u> </u>
1 3-Dichlorobenzene	31	44	1.04	1 48
1 4-Dichlorobenzene	15	28	0.506	0 944
1.1-Dichloroethane	22	59	0.742	1.98
1.2-Dichloroethane	68	211	2 29	7 11
1.1-Dichloroethylene	16	25	0 539	0.843
1.2-trans Dichloroethylene	21	5 4	0.708	1.82
2.4-Dichlorophenol	39	112	1.31	3.77
1.2-Dichloropropane	153	230	5.15	7.75
1,3-Dichloropropylene	29	44	0.978	1.48
Diethyl phthalate	81	203	2.73	6.84
2,4-Dimethylphenol	18	36	0.607	1.21
Dimethyl phthalate	19	47	0.641	1.58
4,6-Dinitro-o-cresol	78	277	2.63	9.33
2,4-Dinitrophenol	71	123	2.39	4.14
2,4-Dinitrotoluene	113	285	3.81	9.60
2,6-Dinitrotoluene	255	641	8.59	21.6
Ethylbenzene	32	108	1.07	3.64
Fluoranthene	25	68	0.843	2.29
Fluorene	22	59	0.742	1.98
Hexachlorobenzene	15	28	0.506	0.944
Hexachlorobutadiene	20	49	0.674	1.65
Hexachloroethane	21	54	0.708	1.82
Methyl Chloride	86	190	2.89	6.40
Methylene Chloride	40	89	1.34	3.00
Naphthalene	22	59	0.742	1.98
Nitrobenzene	27	68	0.910	2.29
2-Nitrophenol	41	69	1.38	2.32
4-Nitrophenol	72	124	2.42	4.18
Phenanthrene	22	59	0.742	1.98
Phenol	15	26	0.506	0.877
Pyrene	25	67	0.843	2.25
Tetrachloroethylene	22	56	0.742	1.88
Toluene	26	80	0.877	2.69
1,2,4-Trichlorobenzene	68	140	2.29	4.72
1,1,1-Trichloroethane	21	54	0.708	1.82
1,1,2-Trichloroethane	21	54	0.708	1.82
Trichloroethylene	21	54	0.708	1.82
Vinyl Chloride	104	268	3.50	9.03

Appendix B Calculated Water Quality-Based Effluent Limits

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, 2018 Texas Surface Water Quality Standards for Human Health "Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION					
Permittee Name:	Equistar Chemicals, LP				
TPDES Permit No:	WQ0000391000				
Outfall No:	001, 002, 003 (003A, 003B, 003C), and 004				
Prepared by:	S. Johnson				
Date:	August 3, 2020				
DISCHARGE INFORMATION					
Intermittent Receiving Waterbody:	unnamed drainage ditch				
Segment No. for Freshwater Ambient Data:	1016				
TSS (mg/L) (Intermittent):	12				
pH (Standard Units) (Intermittent):	7.5				
Hardness (mg/L as CaCO₃) (Intermittent):	147 *site-specific value*				
Chloride (mg/L) (Intermittent):	82				
Effluent Flow for Aquatic Life (MGD):	<10				
% Effluent for Acute Aquatic Life (Intermittent):	100				
Saltwater Receiving Waterbody:	San Jacinto River Tidal				
Segment No.:	1001				
TSS (mg/L) (Bay/Tidal River):	8				
% Effluent for Chronic Aquatic Life (Bay/Tidal River):	9				
% Effluent for Acute Aquatic Life (Bay/Tidal River):	34				
Oyster Waters?	no				
Effluent Flow for Human Health (MGD):	<10				
% Effluent for Human Health (Bay/Tidal River):	4				

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

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 (trivalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	15840.73	0.888		1.80	TSWQS
Lead	6.06	-0.85	196053.01	0.389		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel		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	155493.92	0.446		1.00	Assumed
Zinc	5.36	-0.52	77695.02	0.617		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

CriterionCriterionFilterionFilterionFilterionFilterionSW WLAcSW WLAcSW WLAcFilterionAldrin3.01.3N/A3.003.82N/A1.72Aluminum991N/AN/A991N/AN/A568Arsenic34014978658438867377Cadmium12.540.08.75448.411897.227.8Carbary2.0631N/A2.001803N/A1.15Chlordane2.40.090.0042.400.2650.04441.38Parameter(ig/l)(ig/l)(ig/l)(ig/l)(ig/l)(ig/l)(ig/l)(ig/l)Chlordynfos0.0830.0110.0060.08300.03240.06670.0476Chromium (trivalent)781N/AN/AN/A859N/AN/A2211Chorpyrfos0.0830.0110.0060.08300.03240.06670.0476Chromium (trivalent)781N/AN/AN/AN/AN/A1.151.5Copper20.424.36.4861.280.581.1351Copper (vsister waters)N/AN/AN/AN/AN/AN/AN/ACyanide (free)45.85.65.645.816.562.226.2Cyanide (free)0.210.0310.0020.0220.1000.10000.126		FW Acute	SW Acute	SW Chronic					
Parameter Jug/L	Deremator	Criterion	Criterion	Criterion	FW WLAa	SW WLAa	SW WLAC	FW LTAa	SL
Adumin 3.0 1.3 N/A 9.00 S.22 N/A N/A 5.22 Aluminum 991 N/A N/A 991 N/A 901 N/A 901 N/A 568 438 867 377 Cadmium 12.5 40.0 8.75 48.4 118 97.2 27.8 Carbaryl 2.0 613 N/A 2.00 1803 N/A 1.15 Chlordane 2.4 0.09 0.004 2.40 0.255 0.0444 1.33 Chlordane 2.4 0.09 0.004 2.40 0.265 0.0444 1.33 Chlordane 2.4 0.09 0.004 0.025 0.0476 0.0476 Chordinim (trivalent) 15.7 1000 49.6 15.7 3206 551 9.00 Copper (cyster waters) N/A N/A N/A N/A N/A N/A N/A Copper (cyster waters) N/A N/A N/A	Aldrin	<u>(μg/L)</u>	(μg/L) 1.2	<u>(μg/L)</u>	(µg/L)	(μg/L) 2.92	(µg/L)	<u>[μg/L]</u>	1
Administri 321 IV/A	Aluminum	5.0	1.5	N/A			N/A	1.72 EC0	
Mistin 340 149 76 658 438 607 577 Carbinyin 12.5 40.0 8.75 44.4 118 97.2 27.8 Carbaryi 2.0 6.03 N/A 2.00 1803 N/A 1.15 Chordane 2.4 0.09 0.004 2.40 0.265 0.044 1.38 Parameter (µq/I)	Arconic		140	N/A 79	551	N/A	N/A	500	
Catharyl 12.5 40.0 8.7.4 11.8 37.2 17.8 Carbaryl 2.0 613 N/A 2.00 1803 N/A 1.15 Chlordane 2.4 0.09 0.004 2.40 0.265 0.0444 1.38 Parameter Chloroynico Chloroynico Chloroynico 0.063 0.011 (ug/1)	Codmium	10 540	149	/0	000	430	07.2	5// 0 דר	
Carladyi 2.0 0.13 N/A 2.00 1805 N/A 1.13 FW Acute SW Acute SW Chronic Criterion FW WLAg SW MLag SW MLag SW MLG SW MLG <	Carbond		40.0	0.75 NI/A	40.4	110_	97.2 N/A	1 15	
Chronizate L.A. D.039 D.034 L.A. D.034 L.A. D.034 D.044 D.043 D.044 L.As Parameter (jug/l) (jug/l) <th(< td=""><td>Chlordana</td><td>2.0</td><td>0.00</td><td>0.004</td><td>2.00</td><td>1803</td><td>0.0444</td><td>1,15</td><td></td></th(<>	Chlordana	2.0	0.00	0.004	2.00	1803	0.0444	1,15	
Criterion Criterion FW WLAa SW SUAa	Chiordane	FIN/ Acute	Stal Acute	SW Chronic	2.40	0.205	0.0444	1.30	
Parameter (µg/L) (µg/		Criterion	Criterion	Criterion	FW WLAa	SW WLAa	SW WLAC	FW LTAa	S
Chlorpyrifos 0.083 0.011 0.006 0.0830 0.0324 0.0667 0.0476 Chromium (trivalent) 781 N/A N/A 3859 N/A N/A 2211 Chromium (trivalent) 15.7 1090 46.48 61.2 80.5 511 9.00 Copper 20.4 24.3 64.8 61.2 80.5 81.1 35.1 Copper (oyster waters) N/A M/A N/A N/A N/A N/A M/A	Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
Chromium (trivalent)781N/AN/A3859N/AN/A2211Chromium (hexavelent)15.7109049.615.732065519.00Copper (oyster waters)N/A24.36.4861.280.581.135.1Copper (oyster waters)N/AN/AN/AN/AN/AN/AN/ACyanide (free)45.85.65.645.816.562.226.24.4'DDT1.10.130.0011.100.3220.0110.630DemetonN/AN/AN/AN/AN/AN/A1.11N/ADialon0.170.8190.190.1702.419.000.0074Dicofol [Kelthane]59.3N/AN/A59.3N/AN/A34.0Diedrin0.240.710.0020.2000.0000.126Endosulfan I (lpha)0.220.0340.0090.2200.1000.126Endosulfan I (beta)0.220.0340.0090.2200.1000.022Endosulfan I (lpha)0.220.0340.0090.2000.1000.126Endosulfan I (lpha)0.620.0370.020.1660.0440.298Endosulfan I (lpha)0.120.16N/AN/A0.11N/AHeptachlor0.520.0530.0040.5200.1560.0440.298Endosulfan II (lpha)N/AN/A0.01N/AN/A0.11 </td <td>Chlorpyrifos</td> <td>0.083</td> <td>0.011</td> <td>0.006</td> <td>0.0830</td> <td>0.0324</td> <td>0.0667</td> <td>0.0476</td> <td></td>	Chlorpyrifos	0.083	0.011	0.006	0.0830	0.0324	0.0667	0.0476	
Chromium (hexavalent) 15.7 1090 49.6 15.7 3206 551 9.00 Copper 20.4 24.3 6.48 61.2 80.5 81.1 35.1 Copper (oyster waters) N/A 111 N/A Diardion 0.17 0.819 0.170 2.41 9.10 0.0974 Dicofol [Kelthane] 0.22 N/A N/A N/A 10.0 0.022 0.138 Diuron 0.21 N/A N/A 0.02 0.000 0.100 0.126 Endosulfan I (lepha) 0.22 0.034 0.009 0.220 0.100 0.126 <t< td=""><td>Chromium (trivalent)</td><td>781</td><td>N/A</td><td>N/A</td><td>3859</td><td>N/A</td><td>N/A</td><td>2211</td><td></td></t<>	Chromium (trivalent)	781	N/A	N/A	3859	N/A	N/A	2211	
Copper 20.4 24.3 6.48 61.2 80.5 81.1 35.1 Copper (oyster waters) N/A N/A N/A N/A N/A N/A N/A Cyanide (free) 45.8 5.6 5.6 45.8 16.5 22.2 26.2 A/4-DDT 1.1 0.13 0.001 1.10 0.382 0.011 0.632 Demeton N/A N/A N/A 0.1 N/A N/A 1.11 N/A Diazinon 0.17 0.819 0.819 0.170 2.41 9.10 0.0974 Dieldrin 0.24 0.71 0.002 0.240 0.02 0.023 0.038 Diuron 210 N/A N/A 100 N/A 120 N/A 120 Endosulfan I (alpha) 0.22 0.034 0.009 0.220 0.100 0.100 0.126 Endosulfan Sulfate 0.22 0.044 0.298 0.33 0.002 0.100	Chromium (hexavalent)	15.7	1090	49.6	15.7	3206	551	9.00	
Copper (oyster waters) N/A N/A N/A N/A N/A N/A Cyanide (free) 45.8 5.6 5.6 45.8 16.5 62.2 26.2 4,4'DDT 1.1 0.13 0.001 1.0 0.82 0.011 0.630 Demeton N/A N/A N/A N/A N/A N/A 1.1 N/A Diazinon 0.17 0.819 0.819 0.170 2.41 9.10 0.097 Dicofol [Kelthane] 59.3 N/A N/A N/A 59.3 N/A N/A 34.0 Dicofol [Kelthane] 0.24 0.71 0.002 0.240 2.09 0.022 0.138 Diuron 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan I (bata) 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan Sulfate 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan Sulfat	Copper	20.4	24.3	6.48	61.2	80.5	81.1	35.1	
Cyanide (free)45.85.65.645.816.562.226.24.4'-DDT1.10.130.0011.100.3820.0110.630DemetonN/AN/AN/A0.1N/AN/A1.11N/ADiazion0.170.8190.8190.1702.419.100.0974Dicofol [Kelthane]59.3N/AN/A59.3N/AN/A59.3N/AN/ADicofol [Kelthane]0.240.710.0020.2402.090.0220.138Diuron210N/AN/A210N/AN/A120Endosulfan I (alpha)0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0330.0090.2200.1000.10000.126Endosulfan sulfate0.520.0530.0040.5200.1560.0440.28Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.6451.16Hexachlorcyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.001N/AN/A0.333N/AMetroxychlorN/AN/A0.001N/A0.333N/AMirexN/A<	Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4,4'-DDT 1.1 0.13 0.001 1.10 0.382 0.0111 0.630 Demeton N/A N/A 0.1 N/A 0.1 N/A N/A 1.11 N/A Diazinon 0.17 0.819 0.819 0.170 2.41 9.10 0.0974 Dicofo [Kelthane] 59.3 N/A N/A N/A N/A 34.0 Dieldrin 0.24 0.71 0.002 0.200 2.09 0.022 0.138 Dieldrin 0.24 0.71 0.002 0.200 0.100 0.100 0.126 Endosulfan I (alpha) 0.22 0.034 0.009 0.220 0.100 0.100 0.126 Endosulfan II (beta) 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan Sulfate 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan Sulfate 0.22 0.037 0.002 0.010 0.100 0.126 Endosulfan Sulfate 0.22 0.033 0.004 0.520 0.150 0.044 <td>Cyanide (free)</td> <td>45.8</td> <td>5.6</td> <td>5.6</td> <td>45.8</td> <td>16.5</td> <td>62.2</td> <td>26.2</td> <td></td>	Cyanide (free)	45.8	5.6	5.6	45.8	16.5	62.2	26.2	
Demeton N/A N/A 0.1 N/A 1.11 N/A Diazinon 0.17 0.819 0.819 0.170 2.41 9.10 0.0974 Dicofol [Kelthane] 59.3 N/A N/A 59.3 N/A N/A 34.0 Dicofol [Kelthane] 0.24 0.71 0.002 0.240 2.09 0.0222 0.138 Diuron 210 N/A N/A 210 N/A N/A 120 1.11 0.126 Endosulfan I (alpha) 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan I (beta) 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan sulfate 0.22 0.034 0.009 0.220 0.100 0.126 Endosulfan I (beta) 0.22 0.034 0.001 N/A 0.111 N/A Endosulfan I (beta) 0.22 0.035 0.004 0.520 0.150 0.044 0.298 Endosulfan	4,4'-DDT	1.1	0.13	0.001	1.10	0.382	0.0111	0.630	
Diazinon 0.17 0.819 0.819 0.170 2.41 9.10 0.0974 Dicofol [Kelthane] 59.3 N/A N/A 59.3 N/A 0.002 0.209 0.022 0.138 Diuron 210 N/A N/A N/A 210 N/A 0.009 0.220 0.100 0.1000 0.126 Endosulfan I (beta) 0.22 0.034 0.009 0.220 0.100 0.1000 0.126 Endosulfan Sulfate 0.22 0.033 0.002 0.0860 0.109 0.022 0.0493 Guthion [Azinphos Methyl] N/A N/A 0.011 N/A 0.011 N/A Hezachlorocyclohexane (gamma) [Lindane] 1.126 0.16 N/A 1.13 <	Demeton	N/A	N/A	0.1	N/A	N/A	1.11	N/A	
Dicofol [Kelthane] 59.3 N/A N/A S9.3 N/A S9.3 S9.3 <t< td=""><td>Diazinon</td><td>0.17</td><td>0.819</td><td>0.819</td><td>0.170</td><td>2.41</td><td>9.10</td><td>0.0974</td><td></td></t<>	Diazinon	0.17	0.819	0.819	0.170	2.41	9.10	0.0974	
Dieldrin0.240.710.0020.2402.090.02220.138Diuron210N/AN/A210N/AN/A120Endosulfan I (alpha)0.220.0340.0090.2200.1000.10000.126Endosulfan II (beta)0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.001N/AN/A0.033N/AMirexN/AN/A0.001N/AN/A0.011N/ANickel64911813.11573347146902Nonylphenol2871.728.0<	Dicofol [Kelthane]	59.3	N/A	N/A	59.3	N/A	N/A	34.0	
Diuron210N/AN/A210N/AN/A120Endosulfan I (alpha)0.220.0340.0090.2200.1000.10000.126Endosulfan II (beta)0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.03N/AN/A0.033N/AMirexN/AN/A0.001N/A0.011N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Dieldrin	0.24	0.71	0.002	0.240	2.09	0.0222	0.138	
Endosulfan I (alpha)0.220.0340.0090.2200.1000.10000.126Endosulfan II (beta)0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMetroxychlor2.42.11.12.406.1812.21.38MirexN/AN/A0.001N/AN/A0.0111N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Diuron	210	N/A	N/A	210	N/A	N/A	120	
Endosulfan II (beta)0.220.0340.0090.2200.1000.10000.126Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.001N/AN/A0.0111N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Endosulfan I (alpha)	0.22	0.034	0.009	0.220	0.100	0.1000	0.126	
Endosulfan sulfate0.220.0340.0090.2200.1000.10000.126Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.03N/AN/A0.011N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Endosulfan II (beta)	0.22	0.034	0.009	0.220	0.100	0.1000	0.126	
Endrin0.0860.0370.0020.08600.1090.02220.0493Guthion [Azinphos Methyl]N/AN/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.03N/AN/A0.333N/AMirexN/AN/A0.001N/AN/A0.0111N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Endosulfan sulfate	0.22	0.034	0.009	0.220	0.100	0.1000	0.126	
Guthion [Azinphos Methyl]N/AN/AN/A0.01N/AN/A0.111N/AHeptachlor0.520.0530.0040.5200.1560.04440.298Hexachlorocyclohexane (gamma) [Lindane]1.1260.16N/A1.130.471N/A0.645Lead981335.35521005151316MalathionN/AN/A0.01N/AN/A0.111N/AMercury2.42.11.12.406.1812.21.38MethoxychlorN/AN/A0.03N/AN/A0.333N/AMirexN/AN/A0.001N/AN/A0.0111N/ANickel64911813.11573347146902Nonylphenol2871.728.020.618.916.0	Endrin	0.086	0.037	0.002	0.0860	0.109	0.0222	0.0493	
Heptachlor 0.52 0.053 0.004 0.520 0.156 0.0444 0.298 Hexachlorocyclohexane (gamma) [Lindane] 1.126 0.16 N/A 1.13 0.471 N/A 0.645 Lead 98 133 5.3 552 1005 151 316 Malathion N/A N/A 0.01 N/A N/A 0.111 N/A Mercury 2.4 2.1 1.1 2.40 6.18 12.2 1.38 Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A 0.011 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Guthion [Azinphos Methyl]	N/A	N/A	0.01	N/A	N/A	0.111	N/A	
Hexachlorocyclohexane (gamma) [Lindane] 1.126 0.16 N/A 1.13 0.471 N/A 0.645 Lead 98 133 5.3 552 1005 151 316 Malathion N/A N/A 0.01 N/A N/A 0.111 N/A Mercury 2.4 2.1 1.1 2.40 6.18 12.2 1.38 Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A 0.011 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Heptachlor	0.52	0.053	0.004	0.520	0.156	0.0444	0.298	
Lead 98 133 5.3 552 1005 151 316 Malathion N/A N/A 0.01 N/A N/A 0.11 N/A Mercury 2.4 2.1 1.1 2.40 6.18 12.2 1.38 Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A N/A 0.011 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Hexachlorocyclohexane (gamma) [Lindane]	1.126	0.16	N/A	1.13	0.471	N/A	0.645	
Malathion N/A N/A 0.01 N/A N/A 0.111 N/A Mercury 2.4 2.1 1.1 2.40 6.18 12.2 1.38 Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A N/A 0.0111 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Lead	98	133	5.3	552	1005	151	316	
Mercury 2.4 2.1 1.1 2.40 6.18 12.2 1.38 Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A N/A 0.011 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Malathion	N/A	N/A	0.01	N/A	N/A	0.111	N/A	
Methoxychlor N/A N/A 0.03 N/A N/A 0.333 N/A Mirex N/A N/A 0.001 N/A N/A 0.0111 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Mercury	2.4	2.1	1.1	2.40	6.18	12.2	1.38	
Mirex N/A N/A 0.001 N/A N/A 0.0111 N/A Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.333	N/A	
Nickel 649 118 13.1 1573 347 146 902 Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Mirex	N/A	N/A	0.001	N/A	N/A	0.0111	N/A	
Nonylphenol 28 7 1.7 28.0 20.6 18.9 16.0	Nickel	649	118	13.1	1573	347	146	902	
	Nonylphenol	28	7	1.7	28.0	20.6	18.9	16.0	

Parathion (ethyl)	0.065	N/A	N/A	0.0650	N/A	N/A	0.0372
Pentachlorophenol	14.4	15.1	9.6	14.4	44.4	107	8.26
Phenanthrene	30	7.7	4.6	30.0	22.6	51.1	17.2
Polychlorinated Biphenyls [PCBs]	2.0	10	0.03	2.00	29.4	0.333	1.15
Selenium	20	564	136	20.0	1659	1511	11.5
Silver	0.8	2	N/A	17.8	13.2	N/A	10.2
Toxaphene	0.78	0.21	0.0002	0.780	0.618	0.00222	0.447
Tributyltin [TBT]	0.13	0.24	0.0074	0.130	0.706	0.0822	0.0745
2,4,5 Trichlorophenol	136	259	12	136	762	133	77.9
Zinc	162	92.7	84.2	593	442	1517	340

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

	Fish Only				
	Criterion	WLAh	LTAh	Daily Avg.	Daily Max.
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(μg/L)
Acrylonitrile	115	2875	2674	3930	8315
Aldrin	1.147E-05	0.000287	0.000267	0.000392	0.000829
Anthracene	1317	32925	30620	45011	95228
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	581	14525	13508	19857	42010
Benzidine	0.107	2.68	2.49	3.65	7.73
Benzo(a)anthracene	0.025	0.625	0.581	0.854	1.80
Benzo(a)pyrene	0.0025	0.0625	0.0581	0.0854	0.180
Bis(chloromethyl)ether	0.2745	6.86	6.38	9.38	19.8
Bis(2-chloroethyl)ether	42.83	1071	996	1463	3096
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	7.55	189	176	258	545
Bromodichloromethane [Dichlorobromomethane]	275	6875	6394	9398	19884
Bromoform [Tribromomethane]	1060	26500	24645	36228	76645
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	1150	1070	1572	3326
Chlordane	0.0025	0.0625	0.0581	0.0854	0.180
Chlorobenzene	2737	68425	63635	93543	197905
Chlorodibromomethane [Dibromochloromethane]	183	4575	4255	6254	13232
Chloroform [Trichloromethane]	7697	192425	178955	263064	556550
Chromium (hexavalent)	502	12550	11672	17157	36298
Chrysene	2.52	63.0	58.6	86.1	182
Cresols [Methylphenols]	9301	232525	216248	317884	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0500	0.0465	0.0683	0.144
4,4'-DDE	0.00013	0.00325	0.00302	0.00444	0.00939
4,4'-DDT	0.0004	0.0100	0.00930	0.0136	0.0289
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	11825	10997	16165	34201
1,2-Dibromoethane [Ethylene Dibromide]	4.24	106	98.6	144	306
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	14875	13834	20335	43022
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	3299	82475	76702	112751	238542
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	56.0	52.1	76.5	161
1,2-Dichloroethane	364	9100	8463	12440	26319
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1377850	1281401	1883658	3985155
Dichloromethane [Methylene Chloride]	13333	333325	309992	455688	964075
1.2-Dichloropropane	259	6475	6022	8851	18727
1.3-Dichloropropene [1.3-Dichloropropylene]	119	2975	2767	4067	8604
Dicofol [Kelthane]	0.30	7 50	6.98	10.2	21.6
Dieldrin	2.0F-05	0.000500	0.000465	0.000683	0.00144

Page 37

2,4-Dimethylphenol	8436	210900	196137	288321	609986
Di-n-Butyl Phthalate	92.4	2310	2148	3158	6681
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000020	0.0000019	0.0000027	0.0000058
Endrin	0.02	0.500	0.465	0.683	1.44
Epichlorohydrin	2013	50325	46802	68799	145554
Ethylbenzene	1867	46675	43408	63809	134998
Ethylene Glycol	1.68E+07	420000000	390600000	574182000	1214766000
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.00250	0.00233	0.00341	0.00723
Heptachlor Epoxide	0.00029	0.00725	0.00674	0.00991	0.0209
Hexachlorobenzene	0.00068	0.0170	0.0158	0.0232	0.0491
	Fish Only				
Devenue a face	Criterion	WLAh	LTAh	Daily Avg.	Daily Max.
	(µg/L)	<u>(μg/L)</u>	<u>(μg/L)</u>	(µg/L)	<u>(µg/L)</u>
	0.22	5.50	5.12	7.51	15.9
Hexachiorocyclonexane (dipnd)	0.0084	0.210	0.195	0.287	0.607
Hexachlorocyclonexane (<i>beta</i>)	0.26	6.50	6.05	8.88	18.7
Hexachlorocyclonexane (gamma) [Lindane]	0.341	8.53	7.93	11.6	24.6
Hexachiorocyclopentadiene	11.6	290	270	396	838
Hexachioroethane	2.33	58.3	54.2	79.6	168
A 4 lagranulidana diakanat (Biankanat A)	2.90	72.5	67.4	99.1	1155619
	15982	399550	3/1582	546224	
	3.83	246	229	330	/11
Nethewshier	0.025	0.625	0.581	0.854	
Methodychiof	3.0	75.0	22004000	22004080	71720040
Methyl tert butyl other [MTDE]	9.926+05	24800000	23064000	33904080	71729040
Nickel	10482	262050	243707	356246	92420
Nitrate Nitrogen (ac Total Nitrogen)		26500	20505	56902	8245U
Nitrohenzene	1972	16925	125/17	64014	125/21
Nitrosediethylamine		40623 E2 E	45547	71 7	155451
N-Nitroso di a Butylamino	4.2	105	43.8	142	
Pentachlorobenzene	0.255	0 00	9.25	143	25.6
Pentachlorophenol	0.333	7 25	6.74	0.01	20.0
Polychlorinated Binhopyls [PCRc]	6 45 04	0.0160	0.74	0.0219	0.0462
Pyridine	947	23675	22018	32366	68475
Selenium		23075	N/A		00475
1 2 4 5-Tetrachlorobenzene	0.24	<u> </u>	5 58	8 20	17.3
1 1 2 2-Tetrachloroethane	26 35	659	613	900	1905
Tetrachloroethylene [Tetrachloroethylene]	20.35	7000	6510	9569	20246
Thallium	0.23	5 75	5 35	7.86	16.6
Toluene	0.25			N/Δ	N/A
Toxaphene	0.011	0.275	0.256	0 375	0.795
2.4.5-TP [Silvex]	369	9225	8579	12611	26681
1.1.1-Trichloroethane	784354	19608850	18236231	26807258	56714676
1.1.2-Trichloroethane	166	4150	3860	5673	12002
Trichloroethylene [Trichloroethene]	71 9	1798	1672	2457	5198
2.4.5-Trichlorophenol	1867	46675	43408		134998
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/Δ	03005	N/A
Vinyl Chloride	16.5	413	384	563	1193

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

Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(μg/L)	(μg/L)
Aldrin	1.25	1.52
Aluminum	584	709

Arsenic	144	175
Cadmium	28.5	34.6
Carbaryl	1.17	1.43
Chlordane	0.0278	0.0338
Chlorpyrifos	0.0106	0.0129
Chromium (trivalent)	2275	2763
Chromium (hexavalent)	9.25	11.2
Copper	26.5	32.1
Copper (oyster waters)	N/A	N/A
Cyanide (free)	5.42	6.58
4,4'-DDT	0.00697	0.00846
Demeton	0.697	0.846
	70% of	85% of
Aquatic Life	Daily Avg.	Daily Avg.
Parameter	(μg/L)	(µg/L)
Diazinon	0.100	0.121
Dicofol [Kelthane]	34.9	42.4
Dieldrin	0.0139	0.0169
Diuron	123	150
Endosulfan I (<i>alpha</i>)	0.0329	0.0399
Endosulfan II (beta)	0.0329	0.0399
Endosulfan sulfate	0.0329	0.0399
Endrin	0.0139	0.0169
Guthion [Azinphos Methyl]	0.0697	0.0846
Heptachlor	0.0278	0.0338
Hexachlorocyclohexane (gamma) [Lindane]	0.154	0.188
Lead	94.9	115
Malathion	0.0697	0.0846
Mercury	1.41	1.71
Methoxychlor	0.209	0.254
Mirex	0.00697	0.00846
Nickel	91.3	110
Nonylphenol	6.77	8.23
Parathion (ethyl)	0.0383	0.0465
Pentachlorophenol	8.50	10.3
Phenanthrene	7.45	9.05
Polychlorinated Biphenyls [PCBs]	0.209	0.254
Selenium	11.7	14.3
Silver	4.34	5.27
Toxaphene	0.00139	0.00169
Tributyltin [TBT]	0.0516	0.0626
2,4,5 Trichlorophenol	80.1	97.3
Zinc	145	176
	70% of	85% of
Human Health	Daily Avg.	Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	2751	3340
Aldrin	0.000274	0.000333
Anthracene	31508	38260
Antimony	25622	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	13899	16878
Benzidine	2.55	3.10
Benzo(a)anthracene	- 0.598	0.726
Benzo(<i>a</i>)pyrene	0.0598	0.0726

Bis(chloromethyl)ether	6.56	7.97
Bis(2-chloroethyl)ether	1024	1244
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	180	219
Bromodichloromethane [Dichlorobromomethane]	6579	7988
Bromoform [Tribromomethane]	25359	30793
Cadmium	N/A	N/A
Carbon Tetrachloride	1100	1336
Chlordane	0.0598	0.0726
Chlorobenzene	65480	79512
Chlorodibromomethane [Dibromochloromethane]	4378	5316
Chloroform [Trichloromethane]	184144	223604
Chromium (bexavalent)	12009	14583
Chrysene	60.2	73.2
	70% of	85% of
Human Health	Daily Avg.	Daily Avg.
Parameter	(µg/L)	(µg/L)
Cresols [Methylphenols]	222519	270202
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0478	0.0581
4,4'-DDE	0.00311	0.00377
4,4'-DDT	0.00956	0.0116
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	11316	13741
1.2-Dibromoethane [Ethylene Dibromide]	101	123
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	14234	17285
o-Dichlorobenzene [1.2-Dichlorobenzene]	78926	95838
<i>p</i> -Dichlorobenzene [1.4-Dichlorobenzene]	N/A	N/A
3 3'-Dichlorobenzidine	53.5	65.0
1.2-Dichloroethane	8708	10574
1.1-Dichloroethylene [1.1-Dichloroethene]	1318561	1601109
Dichloromethane [Methylene Chloride]	318982	387335
1.2-Dichloropropane	6196	7524
1 3-Dichloropropene [1 3-Dichloropropylene]	2846	3457
Dicofol [Kelthane]	7 17	8 71
Dieldrin	0.000478	0.000581
2 4-Dimethylphenol	201824	245073
Di-n-Butyl Phthalate	2210	2684
Dioxins/Furans [TCDD Fourivalents]	0.0000019	0.000023
Endrin	0.478	0.581
Enichlorohydrin	48159	58479
Ethylhenzene	44666	54237
Ethylene Glycol	401927400	488054700
Fluoride	N/A	N/A
Hentachlor	0.00239	0.00290
Hentachlor Enovide	0.00293	0.00842
Hexachlorobenzene	0.0162	0.0197
Hexachlorobutadiene	5 26	6.39
Hexachlorocyclohexane (alpha)	0.200	0.35
Hexachlorocyclohexane (<i>upnu</i>)	6.22	755
Hexachlorocyclohexane (beta)	9.15	0.00
Heyachlorocyclonentadiene	0.13 777	3.30
Heyachlereethane	<u>۲//</u>	530
Heyachlerophone		01.0
A A' teopropylidopodiphonal [Disphanal A]	5.50 507757	04.2
4,4-isopropyndenedipitettor (Bisphenol A)	382357	404291
Moreury	235	285
Methowychlor	0.598	U.726
methoxychior	/1./	87.1

A A A A MALE AND A		
Methyl Ethyl Ketone	23732856	28818468
Methyl tert-butyl ether [MTBE]	250773	304511
Nickel	27273	33117
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	44810	54412
N-Nitrosodiethylamine	50.2	61.0
N-Nitroso-di-n-Butylamine	100	122
Pentachlorobenzene	8.49	10.3
Pentachlorophenol	6.93	8.42
Polychlorinated Biphenyls [PCBs]	0.0153	0.0185
Pyridine	22656	27511
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	5.74	6.97
1 1 2 2 Totrachlereothana	620	765
1,1,2,2-Tetrachloroethane	650	705
1,1,2,2-Tetrachioroethane		85% of
Luman Health	70% of Daily Avg.	85% of Daily Avg.
Human Health Parameter	70% of Daily Avg. (μg/L)	85% of Daily Avg. (μg/L)
Human Health Parameter Tetrachloroethylene [Tetrachloroethylene]	70% of Daily Avg. (µg/L) 6698	85% of Daily Avg. (μg/L) 8134
1,1,2,2-retractionocemane Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium	70% of Daily Avg. (µg/L) 6698 5.50	85% of Daily Avg. (μg/L) 8134 6.68
1,1,2,2-retractionocemane Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene	70% of Daily Avg. (μg/L) 6698 5.50 N/A	85% of Daily Avg. (μg/L) 8134 6.68 N/A
1,1,2,2-retractionocemane Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene	70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263	763 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319
1,1,2,2-Tetrachloroethane Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex]	70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263 8828	763 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319 10719
1,1,2,2-retractionoethane Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex] 1,1,1-Trichloroethane	830 70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263 8828 18765081	763 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319 10719 22786170
1,1,2,2-retractionoethate Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex] 1,1,1-Trichloroethane 1,1,2-Trichloroethane	70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263 8828 18765081 3971	103 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319 10719 22786170 4822
1,1,2,2-retractionoethate Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex] 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene [Trichloroethene]	70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263 8828 18765081 3971 1720	103 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319 10719 22786170 4822 2088
1,1,2,2-retractionoethate Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex] 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene [Trichloroethene] 2,4,5-Trichlorophenol	70% of Daily Avg. (µg/L) 6698 5.50 N/A 0.263 8828 18765081 3971 1720 44666	103 85% of Daily Avg. μg/L) 8134 6.68 N/A 0.319 10719 22786170 4822 2088 54237
Human Health Parameter Tetrachloroethylene [Tetrachloroethylene] Thallium Toluene Toxaphene 2,4,5-TP [Silvex] 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene [Trichloroethene] 2,4,5-Trichlorophenol TTHM [Sum of Total Trihalomethanes]	70% of Daily Avg. (μg/L) 6698 5.50 N/A 0.263 8828 18765081 3971 1720 44666 N/A	763 85% of Daily Avg. (μg/L) 8134 6.68 N/A 0.319 10719 22786170 4822 2088 54237 N/A

Mass loading limits in lbs/day for Outfall 001 are calculated below for pollutant parameters in the existing permit with applicable water quality criteria. The most stringent criteria is applied for pollutants with both aquatic life and human health criteria.

[(Concentration in μ g/L)/ 1000] x 8.345 x Flow MGD

Pollutont	Daily Average	Daily Max	Daily Average	Daily Max Iba/day
Copper	$\mu g/L$	$\mu g/L$		
Cyanida free	3/.0	16.0	2.01	5.95
Lead	/•/4	10.3	10.02	01.0
Niekol	135	280	10.03	21.2
Zinc	130	2/0	9.00	20.5
Aardonitrilo	207	439	15.4	32.0
Arthracono	3930	0315	292	010
Ponzono	45011	95228	3343	7073
Banga (g) anthra aona	19857	42010	1475	3120
	0.854	1.8	0.063	0.134
Benzo(<i>a</i>)pyrene Bio(a, athylhawyl) phthalata	0.0854	0.18	0.0063	0.013
Garbar Tatra ablarida	258	545	19.2	40.5
Carbon Tetrachloride	1572	3326	117	247
Chlorobenzene	93543	197905	6947	14699
Chloroform	263064	556550	19538	41335
Chrysene	86.1	182	6.39	13.52
Di-n-butyl phthalate	3158	6681	235	496
1,2-Dichlorobenzene	112751	238542	8374	17717
1,3-Dichlorobenzene	20335	43022	1510	3195
1,4-Dichlorobenzene	N/A	N/A	-	-
1,2-Dichloroethane	12440	26319	924	1955
1,1-Dichloroethylene	1883658	3985155	139900	295979
1,2-Dichloropropane	8851	18727	657	1391
1,3-Dichloropropylene	4067	8604	302	639
2,4-Dimethylphenol	288231	609986	21407	45304
Ethylbenzene	63809	134998	4739	10026
Hexachlorobenzene	0.0232	0.0491	0.002	0.004
Hexachlorobutadiene	7.51	15.9	0.558	1.18
Hexachloroethane	79.6	168	5.91	12.5
Methylene Chloride	455688	964075	33844	71602
Nitrobenzene	64014	135431	4754	10059
Phenanthrene	10.6	22.5	0.787	1.67
Tetrachloroethylene	9569	20246	711	1504
Toluene	N/A	N/A	-	-
1,1,1-Trichloroethane	26807258	56714676	1990988	4212227
1,1,2-Trichloroethane	5673	12003	421	891
Trichloroethylene	2457	5198	182	386
Vinyl Chloride	563	1193	41.8	88.6

....

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION ATTACHMENT 1

TEXTOX MENU #5 - BAY OR WIDE TIDAL RIVER

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

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Saltwater Aquatic Life Table 2, 2018 Texas Surface Water Quality Standards for Human Health "Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

DISCHARGE INFORMATION

Permittee Name:	Equistar Chemicals, LLC
TPDES Permit No:	WQ000039100
Outfall No:	005
Prepared by:	S. Johnson
Date:	August 3, 2020

Receiving Waterbody:	San Jacinto Riv
Segment No:	1001
TSS (mg/L):	
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	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 (trivalent)	N/A		N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (hexavalent)	N/A		N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85		-0.72	15840.73	0.888		1.8	TSWQS, Appendix E
Lead	6.06		-0.85	196053.01	0.389		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	155493.92	0.446		1.00	Assumed
Zinc	5.36		-0.52	77695.02	0.617		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	SW Acute Criterion (μg/L)	SW Chronic Criterion (μg/L)	WLAa (µg/L)	WLAc (µg/L)	LTAa (µg/L)	LTAc (µg/L)	Daily Avg. (μg/L)	Daily Max. (μg/L)
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	4.33	N/A	1.39	N/A	2.03	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	233	494
Cadmium	40.0	8.75	133	109	42.7	66.7	62.7	132
Carbaryl	613	N/A	2043	N/A	654	N/A	961	2033
Chlordane	0.09	0.004	0.300	0.0500	0.0960	0.0305	0.0448	0.0948

	SIA/ Acuto	SW						Dailu
	Criterion	Criterion	W/I Aa	M/LAC	ITAα	ITAC	Daily Ava	Max
Parameter	(μg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(μg/L)	μg/L)	(µg/L)
Chlorpyrifos	0.011	0.006	0.0367	0.0750	0.0117	0.0458	0.0172	0.0364
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	3633	620	1163	378	555	1176
Copper	13.5	3.6	50.7	50.7	16.2	30.9	42.9	90.8
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	18.5
4,4'-DDT	0.13	0.001	0.433	0.0125	0.139	0.00763	0.0112	0.0237
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	2.71
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	2.37	0.0250	0.757	0.0153	0.0224	0.0474
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.034	0.009	0.113	0.113	0.0363	0.0686	0.0533	0.112
Endosulfan II (<i>beta</i>)	0.034	0.009	0.113	0.113	0.0363	0.0686	0.0533	0.112
Endosulfan sulfate	0.034	0.009	0.113	0.113	0.0363	0.0686	0.0533	0.112
Endrin	0.037	0.002	0.123	0.0250	0.0395	0.0153	0.0224	0.0474
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.125	N/A	0.0763	0.112	0.237
Heptachlor	0.053	0.004	0.177	0.0500	0.0565	0.0305	0.0448	0.0948
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	0.533	N/A	0.171	N/A	0.250	0.530
Lead	133	5.3	1139	170	364	104	152	322
Malathion	N/A	0.01	N/A	0.125	N/A	0.0763	0.112	0.237
Mercury	2.1	1.1	7.00	13.8	2.24	8.39	3.29	6.96
Methoxychlor	N/A	0.03	N/A	0.375	N/A	0.229	0.336	0.711
Mirex	N/A	0.001	N/A	0.0125	N/A	0.00763	0.0112	0.0237
Nickel	118	13.1	393	164	126	99.9	146	310
Nonylphenol	7	1.7	23.3	21.3	7.47	13.0	10.9	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	23.6	50.0
Phenanthrene	7.7	4.6	25.7	57.5	8.21	35.1	12.0	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	1870
Silver	2	N/A	15.0	N/A	4.79	N/A	7.03	14.8
Toxaphene	0.21	0.0002	0.700	0.00250	0.224	0.00153	0.00224	0.00474
Tributyltin [TBT]	0.24	0.0074	0.800	0.0925	0.256	0.0564	0.0829	0.175
2,4,5 Trichlorophenol	259	12	863	150	276	91.5	134	284
Zinc	92.7	84.2	501	1707	160	1041	235	498

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	115	2875	2674	3930	8315
Aldrin	1.147E-05	0.000287	0.000267	0.000392	0.000829
Anthracene	1317	32925	30620	45011	95228
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	581	14525	13508	19857	42010
Benzidine	0.107	2.68	2.49	3.65	7.73
Benzo(<i>a</i>)anthracene	0.025	0.625	0.581	0.854	1.80
Benzo(a)pyrene	0.0025	0.0625	0.0581	0.0854	0.180
Bis(chloromethyl)ether	0.2745	6.86	6.38	9.38	19.8

Bis(2-chloroethyl)ether	42.83	1071	996	1463	3096
	Fish Only				
	Criterion	WLAh	LTAh	Daily Avg.	Daily Max.
Parameter	(µg/L)	(μg/L)	(μg/L)	(µg/L)	(μg/L)
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl)	7.55	100	170	25.0	EAE
	7.55	189	1/6	258	545
[Dichlorobromomethane]	275	6875	6394	9398	19884
Bromoform [Tribromomethane]	1060	26500	24645	36228	76645
Cadmium	N/A	N/A	N/A		N/A
Carbon Tetrachloride	46	1150	1070	1572	3326
Chlordane	0.0025	0.0625	0.0581	0.0854	0.180
Chlorobenzene	2737	68425	63635	93543	197905
Chlorodibromomethane					
[Dibromochloromethane]	183	4575	4255	6254	13232
Chloroform [Trichloromethane]	7697	192425	178955	263064	556550
Chromium (hexavalent)	502	12550	11672	17157	36298
Chrysene	2.52	63.0	58.6	86.1	182
Cresols [Methylphenols]	9301	232525	216248	317884	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0500	0.0465	0.0683	0.144
4,4'-DDE	0.00013	0.00325	0.00302	0.00444	0.00939
4,4'-DDT	0.0004	0.0100	0.00930	0.0136	0.0289
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	11825	10997	16165	34201
1,2-Dibromoethane [Ethylene Dibromide]	4.24	106	98.6	144	306
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	14875	13834	20335	43022
o-Dichlorobenzene [1,2-Dichlorobenzene]	3299	82475	76702	112751	238542
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	56.0	52.1	76.5	161
1,2-Dichloroethane	364	9100	8463	12440	26319
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1377850	1281401	1883658	3985155
Dichloromethane [Methylene Chloride]	13333	333325	309992	455688	964075
1,2-Dichloropropane	259	6475	6022	8851	18727
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2975	2767	4067	8604
Dicofol [Kelthane]	0.30	7.50	6.98	10.2	21.6
Dieldrin	2.0E-05	0.000500	0.000465	0.000683	0.00144
2,4-Dimethylphenol	8436	210900	196137	288321	609986
Di-n-Butyl Phthalate	92.4	2310	2148	3158	6681
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000020	0.0000019	0.0000027	0.0000058
Endrin	0.02	0.500	0.465	0.683	1.44
Epichlorohydrin	2013	50325	46802	68799	145554
Ethylbenzene	1867	46675	43408	63809	134998
		42000000			
Ethylene Glycol	1.68E+07	0	390600000	574182000	1214766000
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.00250	0.00233	0.00341	0.00723
Heptachlor Epoxide	0.00029	0.00725	0.00674	0.00991	0.0209
Hexachlorobenzene	0.00068	0.0170	0.0158	0.0232	0.0491
Hexachlorobutadiene	0.22	5.50	5.12	7.51	15.9
Hexachlorocyclohexane (alpha)	0.0084	0.210	0.195	0.287	0.607
Hexachlorocyclohexane (beta)	0.26	6.50	6.05	8.88	18.7
Hexachlorocyclohexane (gamma) [Lindane]	0.341	8.53	7.93	11.6	24.6
Hexachlorocyclopentadiene	11.6	290	270	396	838
Hexachloroethane	2.33	58.3	54.2	79.6	168
Hexachlorophene	2.90	72.5	67.4	99.1	209
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	399550	371582	546224	1155618
Lead	3.83	246	229	336	711

Mercury	0.0250	0.625	0.581	0.854	1.80
Methoxychlor	3.0	75.0	69.8	102	216
	Fish Only				
	Criterion	WLAh	LTAh	Daily Avg.	Daily Max.
Parameter	(µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
Methyl Ethyl Ketone	9.92E+05	24800000	23064000	33904080	71729040
Methyl tert-butyl ether [MTBE]	10482	262050	243707	358248	757927
Nickel	1140	28500	26505	38962	82430
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	46825	43547	64014	135431
N-Nitrosodiethylamine	2.1	52.5	48.8	71.7	151
N-Nitroso-di-n-Butylamine	4.2	105	97.7	143	303
Pentachlorobenzene	0.355	8.88	8.25	12.1	25.6
Pentachlorophenol	0.29	7.25	6.74	9.91	20.9
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0160	0.0149	0.0218	0.0462
Pyridine	947	23675	22018	32366	68475
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	6.00	5.58	8.20	17.3
1,1,2,2-Tetrachloroethane	26.35	659	613	900	1905
Tetrachloroethylene [Tetrachloroethylene]	280	7000	6510	9569	20246
Thallium	0.23	5.75	5.35	7.86	16.6
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.275	0.256	0.375	0.795
2,4,5-TP [Silvex]	369	9225	8579	12611	26681
1,1,1-Trichloroethane	784354	19608850	18236231	26807258	56714676
1,1,2-Trichloroethane	166	4150	3860	5673	12003
Trichloroethylene [Trichloroethene]	71.9	1798	1672	2457	5198
2,4,5-Trichlorophenol	1867	46675	43408	63809	134998
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	413	384	563	1193

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

Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(μg/L)	(µg/L)
Acrolein	N/A	N/A
Aldrin	1.42	1.73
Aluminum	N/A	N/A
Arsenic	163	198
Cadmium	43.9	53.3
Carbaryl	672	817
Chlordane	0.0313	0.0381
Chlorpyrifos	0.0120	0.0146
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	389	472
Copper	30.0	36.4
Copper (oyster waters)	N/A	N/A
Cyanide (free)	6.14	7.46
4,4'-DDT	0.00784	0.00952
Demeton	0.784	0.952
Diazinon	0.898	1.09
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0156	0.0190
Diuron	N/A	N/A
Endosulfan I (alpha)	0.0373	0.0453
Endosulfan II (<i>beta</i>)	0.0373	0.0453

Endosulfan sulfate	0.0373	0.0453
Endrin	0.0156	0.0190
Guthion [Azinphos Methyl]	0.0784	0.0952
Aquatic Life	70% of Daily Avg.	85% of Daily Avg
Parameter	(µg/L)	(μg/L)
Heptachlor	0.0313	0.0381
Hexachlorocyclohexane (gamma) [Lindane]	0.175	0.213
Lead	106	129
Malathion	0.0784	0.0952
Mercury	2.30	2.79
Methoxychlor	0.235	0.285
Mirex	0.00784	0.00952
Nickel	102	124
Nonylphenol	7.68	9.32
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	16.5	20.1
Phenanthrene	8.45	10.2
Polychlorinated Biphenyls [PCBs]	0.235	0.285
Selenium	619	751
Silver	4.92	5.98
Toxaphene	0.00156	0.00190
Tributyltin [TBT]	0.0580	0.0705
2,4,5 Trichlorophenol	94.1	114
Zinc	164	200
Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(μ <u>g</u> /L)	(µg/L)
Acrylonitrile	2751	3340
Aldrin	0.000274	0.000333
Anthracene	31508	38260
Antimony	25622	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	13899	16878
Benzidine	2.55	3.10
Benzo(a)anthracene	0.598	0.726
Benzo(<i>a</i>)pyrene	0.0598	0.0726
Bis(chloromethyl)ether	6.56	7.97
Bis(2-chloroethyl)ether	1024	1244
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	180	219
Bromodichloromethane [Dichlorobromomethane]	6579	7988
Bromoform [Tribromomethane]	25359	30793
Cadmium	N/A	N/A
Carbon Tetrachloride	1100	1336
Chlordane	0.0598	0.0726

Carbon Tetrachloride	1100	1336	
Chlordane	0.0598	0.0726	
Chlorobenzene	65480	79512	
Chlorodibromomethane [Dibromochloromethane]	4378	5316	
Chloroform [Trichloromethane]	184144	223604	
Chromium (hexavalent)	12009	14583	
Chrysene	60.2	73.2	
Cresols [Methylphenols]	222519	270202	
Cyanide (free)	N/A	N/A	
4,4'-DDD	0.0478	0.0581	
4,4'-DDE	0.00311	0.00377	
4,4'-DDT	0.00956	0.0116	
2,4'-D	N/A	N/A	•
Danitol [Fenpropathrin]	11316	13741	

1,2-Dibromoethane [Ethylene Dibromide]	101	123
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	14234	17285
o-Dichlorobenzene [1,2-Dichlorobenzene]	78926	95838
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(μg/L)	(μg/L)
3,3'-Dichlorobenzidine	53.5	65.0
1,2-Dichloroethane	8708	10574
1,1-Dichloroethylene [1,1-Dichloroethene]	1318561	1601109
Dichloromethane [Methylene Chloride]	318982	387335
1,2-Dichloropropane	6196	7524
1,3-Dichloropropene [1,3-Dichloropropylene]	2846	3457
Dicofol [Kelthane]	7.17	8.71
Dieldrin	0.000478	0.000581
2,4-Dimethylphenol	201824	245073
Di-n-Butyl Phthalate	2210	2684
Dioxins/Furans [TCDD Equivalents]	0.0000019	0.000023
Endrin	0.478	0.581
Epichlorohydrin	48159	58479
Ethylbenzene	44666	54237
Ethylene Glycol	401927400	488054700
Fluoride	N/A	N/A
Heptachlor	0.00239	0.00290
Heptachlor Epoxide	0.00693	0.00842
Hexachlorobenzene	0.0162	0.0197
Hexachlorobutadiene	5.26	6.39
Hexachlorocyclohexane (alpha)	0.200	0.244
Hexachlorocyclohexane (beta)	6.22	7.55
Hexachlorocyclohexane (gamma) [Lindane]	8.15	9.90
Hexachlorocyclopentadiene	277	336
Hexachloroethane	55.7	67.6
Hexachlorophene	69.3	84.2
4,4'-Isopropylidenediphenol [Bisphenol A]	382357	464291
Lead	235	285
Mercury	0.598	0.726
Methoxychlor	71.7	87.1
Methyl Ethyl Ketone	23732856	28818468
Methyl tert-butyl ether [MTBE]	250773	304511
Nickel	27273	33117
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	44810	54412
N-Nitrosodiethylamine	50.2	61.0
N-Nitroso-di-n-Butylamine	100	122
Pentachlorobenzene	8.49	10.3
Pentachlorophenol	6.93	8.42
Polychlorinated Biphenyls [PCBs]	0.0153	0.0185
Pyridine	22656	27511
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	5.74	6.97
1,1,2,2-Tetrachloroethane	630	765
Ietrachloroethylene [Tetrachloroethylene]	6698	8134
I hallium	5.50	6.68
loluene	N/A	N/A
loxaphene	0.263	0.319
2,4,5-1P [Silvex]	8828	10719
1,1,1-Trichloroethane	18765081	22786170
1,1,2-Trichloroethane	3971	4822

Trichloroethylene [Trichloroethene]	1720	2088
2,4,5-Trichlorophenol	44666	54237
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	394	479

TPDES Permit No. WQ0000391000

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION ATTACHMENT 1

Appendix C pH Screening

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			Equistar Chemicals LP WQ0000391000, 005 Seg. 1001
INPUT			Notes on Data Sources
1. MIXING ZONE BOUNDARY CHARACTERISTICS			Alexandra da Alexandra en este en el contra en
Dilution factor at mixing zone boundary	12.500	12.500	Calculated from chronic effluent % at edge of mixing zone given in $3/30/2020$ critical conditions memo. Inverse of effluent fraction ($1/0.08 = 12.5$).
Depth at plume trapping level (m)	2.000	2.000	Default value. Range of depths tested.
2. BACKGROUND RECEIVING WATER CHARACTERISTICS			
Temperature (deg C):	20.00	20.00	Range of temperatures tested (5 to 35 degrees C)
pH:	7.50	7.50	Ambient pH for Segment 1001 (2010 IPs).
Salinity (psu):	10.00	15.00	Range of salinity tested (5 to 30 psu)
lotal alkalinity (meq/L)	44.00	44.00	Hardness from 2010 IP's used for arkalinity
3. EFFLUENT CHARACTERISTICS			yr ynny yn yngannyn yn yr yn
Temperature (deg C):	26.50	26.50	Range of temperatures tested (5 to 35 degrees C)
pH:	6.00	9.00	Proposed permit limit.
Salinity (psu)	5.00	5.00	Minimum salinity assumed because discharge is freshwater. However, values up to 5 ppt tested.
Total alkalinity (meq/L):	0.40	10.00	For high pH scenario, tested a range of values. For low pH scenarios, used default of 20 mg/L CaCO3 = 0.40 meq/L
4. CLICK THE 'calculate" BUTTON TO UPDATE OUTPUT RESULTS >>>			
OUTPUT			
CONDITIONS AT THE MIXING ZONE BOUNDARY			
Temperature (deg C):	20.52	20.52	-
Salinity (psu)	9.60	14.20	
Density (kg/m^3)	1005.38	1008.86	, belander en
Alkalinity (mmol/kg-SW):	40.30	40.92	,
I otal Inorganic Carbon (mmol/kg-SW):	41.16	41.31 7 EE	Segment 1001 Criteria: 6 5 to 9 0
pri at mixing Zone boundary.	7,49	/.55	2-2 CHICHT TOAT CHICHT 0.3 (0 3.0
Notes:			
To convert from units of mgCaCO3/L to meq/L divide by 50.044 mg/meq			
PSU refers to the Practical Salinity Scale (PSS) and is approximately equiva	elent to parts per t	thousand (ppt)	το που το ποθολογιστικό με το ποιοποίο το πολογιστικό το πολογιστικό το ποιοποίο το πολογιστικό του που που πο -

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, calculated/ assessed water quality-based effluent limitations, and effluent limitations in the existing permit. Effluent limitations appearing in bold are included in the draft permit.

		Technolog	gy-Based	Water Qua	lity-Based	Existing	y Permit
Outfall	Pollutant	Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
101 and	Flow	Report	Report	Report	Report	Report	Report
201	Enterococci (CFU or MPN per 100 mL)		-	35	104	35	104
	Chlorine residual	1.0 (min)	-	-	-	1.0 (min)	N/A
002	Flow (MGD)	Report	Report	Report	Report	Report	Report
	Total Organic Carbon (TOC)	-	75	-	-	N/A	75
	Oil and Grease	-	15	-	-	N/A	15
	Zinc, total	-	-	Data does not exce	ed screening value	Report	Report
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.o SU
003	Flow	Report	Report	Report	Report	Report	Report
	TOC	-	75	-	-	N/A	75
	Oil and Grease	-	15	-	-	N/A	15
	Aluminum, total	-	-	N/A	1.765	-	-
	Zinc, total	-	-	N/A	Report	N/A	Report
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.o SU
004	Flow	Report	Report	Report	Report	Report	Report
	TOC	-	75	-	-	N/A	75
	Oil and Grease	-	15	-	-	N/A	15
	Zinc, total	-	-	-N/A	0.439	N/A	Report
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.o SU
005	Flow	Report	Report	Report	Report	Report	Report
and	TOC	-	75	-	-	N/A	75
006	Oil and Grease	-	15	-	-	N/A	15
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.o SU
007	Flow	Report	Report	Report	Report	Report	Report
	TSS	-	100	-	-	N/A	100
	Oil and Grease	-	15	-	-	N/A	15
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.o SU

		Technolo	gy-Based	Water Que	ality-Based	Existing	g Permit
Outfall	Pollutant	Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
001	Flow	Report	Report	-	-	8.9 MGD	Report
	Carbonaceous Biochemical Oxygen Demand, 5-Day (CBOD ₅)	-	-	Existing permit lim	its are still protective	957	1,914
	Biochemical Oxygen Demand, 5-day (BOD ₅)	1,477	3,680	-	-	-	-
	Ammonia - Nitrogen (NH ₃ -N)		-	Existing permit lim	its are still protective	217	434
	Total Suspended Solids (TSS)	2,971	9,070	-	-	3,010	9,201
	Chemical Oxygen Demand (COD)	10,101	17,825		_	10,101	17,825
	Oil and Grease	595	891	-	· _	595	891
	Chromium, total	1.02	2.54	-	-	1.02	2.54
	Copper, total	6.53	15.2	2.81	5.95	1.77	3.75
	Lead, total	-		10.03	21.2	7.84	16.6
	Nickel, total	6.63	15.6	9.66	20.5	6.40	15.0
	Zinc, total	4.73	11.76	15.4	32.6	4.73	11.75
	Acenaphthene	0.742	1.98	-	-	0.741	1.98
	Acenaphthylene	0.742	1.98	-	-	0.741	1.98
	Acrylonitrile	3.23	8.15	292	618	3.23	8.15
	Anthracene	0.742	1.98	3,343	7,076	0.741	1.98
	Benzene	1.24	4.58	1,475	3,120	1.24	4.58
	Benzo(a)anthracene	0.742	1.98	0.063	0.134	0.741	1.77
	3,4-Benzofluoranthene	0.775	2.05	-	-	0.775	2.05
	Benzo(k)fluoranthene	0.742	1.98		-	0.741	1.98
	Benzo(a)pyrene	0.775	2.05	0.0063	0.013	0.775	1.77
	Bis(2-Ethylhexyl) Phthalate	3.47	9.40	19.2	40.5	3.47	9.40
	Carbon Tetrachloride	0.607	1.28	117	247	0.6 <u>06</u>	1.28
	Chlorobenzene	0.506	0.944	6,947	14,699	0.505	0.944
	Chloroethane	3.50	9.03	-	_	3.50	9.03
	Chloroform	0.708	1.55	19,538	41,335	0.708	1.55
	2-Chlorophenol	1.04	3.30	-	-	1.04	3.30
	Chrysene	0.742	1.98	6.39	13.5	0.741	1.98
	Di-n-butyl Phthalate	0.910	1.92	235	496	0.910	1.92
	1,2-Dichlorobenzene (ortho)	2.59	5.49	8,374	17,717	2.59	5.49
	1,3-Dichlorobenzene (meta)	1.04	1.48	1,510	3,195	1.04	1.48
	1,4-Dichlorobenzene (para)	0.506	0.944	_	-	0.505	0.944

	Pollutant	Technology-Based		Water Quality-Based		Existing Permit	
Outfall		Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
001	1,1-Dichloroethane	0.742	1.98	-		0.741	1.98
,	1,2-Dichloroethane	2.29	7.11	924	1,955	2.29	7.11
	1,1-Dichloroethylene	0.539	0.843	139,900	295,979	0.539	0.842
	1,2-trans-Dichloroethylene	0.708	1.82	-	-	0.708	1.82
	2,4-Dichlorophenol	1.31	3.77	-	-	1.31	3.77
	1,2-Dichloropropane	5.15	7.75	657	1,391	5.15	7.75
	1,3-Dichloropropylene	0.978	1.48	302	639	0.977	1.48
	Diethyl Phthalate	2.73	6.84	-	-	2.73	6.84
	2,4-Dimethylphenol	0.607	1.21	21,407	45,304	0.606	1.21
	Dimethyl Phthalate	0.641	1.58	_	_	0.640	1.58
	4,6-Dinitro-o-cresol	2.63	9.33		-	2.62	9.33
	2,4-Dinitrophenol	2.39	4.14	-	-	2.39	4.14
	2,4-Dinitrotoluene	3.81	9.60	-	Here	3.80	9.60
	2,6-Dinitrotoluene	8.59	21.6	-		8.59	21.6
	Ethylbenzene	1.07	3.64	4,739	10,026	1.07	3.64
	Fluoranthene	0.843	2.29	-	, -	0.842	2.29
	Fluorene	0.742	1.98	-		0.741	1.98
	Hexachlorobenzene	0.506	0.944	0.002	0.004	0.0111	0.0245
	Hexachlorobutadiene	0.674	1.65	0.558	1.18	0.674	1.65
	Hexachloroethane	0.708	1.82	5.91	12.5	0.708	1.82
	Methyl Chloride	2.89	6.40	-	-	2.89	6.40
	Methylene Chloride	1.34	3.00	33,844	71,602	1.34	3.00
	Naphthalene	0.742	1.98	-	-	0.741	1.98
	Nitrobenzene	0.910	2.29	4,754	10,058	0.910	2.29
	2-Nitrophenol	1.38	2.32	_	-	1.38	2.32
	4-Nitrophenol	2.42	4.18	-		2.42	4.18
	Phenanthrene	0.742	1.98	0.787	1.67	0.741	1.67
	Phenol	0.506	0.877			0.505	0.876
	Pyrene	0.843	2.25	-		0.842	2.25
	Tetrachloroethylene	0.742	1.88	711	1,504	0.741	1.88
	Toluene	0.877	2.69	-	-	0.876	2.69
	1,2,4-Trichlorobenzene	2.29	4.72			2.29	4.71
	1,1,1-Trichloroethane	0.708	1.82	1,990,998	4,212,227	0.708	1.82
	1,1,2-Trichloroethane	0.708	1.82	421	891	0.708	1.82
FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

		Technolo	gy-Based	Water Qua	ılity-Based	Existing	g Permit
Outfall	Pollutant	Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
001	Trichloroethylene	0.708	1.82	182	386	0.708	1.82
	Vinyl Chloride	3.50	9.03	41.8	88.6	3.50	9.03
	pH	6.0-9	.o SU	6.0-9	.o SU	6.0-9	.0 SU

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION ATTACHMENT 1

Appendix E Calculations of Single Grab Limits for Outfall 001

The column labeled "Single Grab Method" in the table below refers to an explanation of how the single grab limit was calculated for each pollutant. The single grab limit included in the draft permit is shown in bold type.

Pollutant (Outfall 001)	Daily .	Average	Daily M	laximum	Calculated Single Grab	Single Grab Method	Existing Single Grab	MAL
	lbs/day	mg/L	lbs/day	mg/L	mg/L		mg/L	mg/L
CBOD5	957	12.9	1914	25.8	39	А	39	-
Ammonia Nitrogen	217	2.9	434	5.8	8.77	А	8.75	
TSS	2971	40.0	9070	122.1	120	А	122	-
COD	10101	136.0	17825	240.0	408	A	408	-
Oil and grease	595	8.0	891	12.0	12	D	24	
Chromium, total	1:02	-	2.54	-	0.0514	C	0.0412	0.003
Copper, total	1.77	0.0378	3.75	0.0801	0.113	A	0.0717	0.002
Lead, Total	7.84	0.1056	16.6	0.2	0.316	Α	0.316	0.0005
Nickel, Total	6.40	-	15.0	-	0.315	С	0.258	0.002
Zinc, total	4.73	-	11.75	-	0.238	C	0.191	0.005
Acenaphthene	0.742	-	1.989	-	0.040	С	0.0536	0.01
Acenaphthylene	0.742	-	1.989	-	0.040	С	0.0536	0.01
Acrylonitrile	3.237	-	8.159	-	0.165	С	0.2190	0.05
Anthracene	0.742	-	1.989	-	0.040	С	0.0536	0.01
Benzene	1.247	-	4.585	-	0.093	С	0.1230	0.01
Benzo(a)anthracene	0.063	0.0008540	1.9891	0.0018	0.00256	Е	0.0536	0.005
3,4-Benzofluoranthene	0.775		2.057		0.042	С	0.0554	0.01
Benzo(k)fluoranthene	0.742		1.989		0.040	C	0.0536	0.005
Benzo(a)pyrene	0.0063	0.00008540	0.0134	0.0001800	0.0002562	E	0.0554	0.005
Bis(2-ethylhexyl) phthalate	3.473	-	9.406	-	0.190	C	0.2530	0.01
Carbon Tetrachloride	0.607	-	1.281	-	0.026	С	0.0345	0.002

Pollutant (Outfall 001)	Daily	Average	Daily M	Iaximum	Calculated Single Grab	Single Grab Method	Existing Single Grab	MAL
	lbs/day	mg/L	lbs/day	mg/L	mg/L		mg/L	mg/L
Chlorobenzene	0.506	-	0.944	-	0.019	C	0.0254	0.01
Chloroethane	3.506	-	9.035	-	0.182	C	0.2430	0.05
Chloroform	0.708	-	1.551	-	0.031	C	0.0418	0.01
2-Chlorophenol	1.045	-	3.304	-	0.067	C	0.0890	0.01
Chrysene	0.742	-	1.989	-	0.040	C	0.0536	0.005
Di-n-butyl phthalate	0.910	-	1.922	-	0.039	C	0.0517	0.01
1,2-Dichlorobenzene	2.596	-	5.495	-	0.111	C	0.1480	0.01
1,3-Dichlorobenzene	1.045	-	1.483	-	0.030	C	0.0399	0.01
1,4-Dichlorobenzene	0.506	-	0.944	-	0.019	C	0.0254	0.01
1,1-Dichloroethane	0.742	-	1.989	-	0.040	C	0.0536	0.01
1,2-Dichloroethane	2.293	-	7.114	-	0.144	C	0.1910	0.01
1,1-Dichloroethylene	0.539	-	0.843	-	0.017	C	0.0227	0.01
1,2-trans Dichloroethylene	0.708	-	1.821	-	0.037	С	0.0490	0.01
2,4-Dichlorophenol	1.315	-	3.776	-	0.076	C	0.1010	0.01
1,2-Dichloropropane	5.158	-	7.754	-	0.157	C	0.2080	0.01
1,3-Dichloropropylene	0.978	-	1.483	-	0.030	С	0.0399	0.01
Diethyl phthalate	2.731	-	6.844	-	0.138	C	0.1840	0.01
2,4-Dimethylphenol	0.607	-	1.214	-	0.025	C	0.0327	0.01
Dimethyl phthalate	0.641	-	1.585	-	0.032	C	0.0427	0.01
4,6-Dinitro-o-cresol	2.630	-	9.339	-	0.189	C	0.2510	0.05
2,4-Dinitrophenol	2.394	-	4.147	-	0.084	С	0.1110	0.05
2,4-Dinitrotoluene	3.810	-	9.608	-	0.194	C	0.2580	0.01
2,6-Dinitrotoluene	8.597	-	21.611	-	0.436	C	0.5810	0.01
Ethylbenzene	1.079	-	3.641	-	0.074	C	0.0980	0.01
Fluoranthene	0.843	-	2.293	-	0.046	С	0.0617	0.01
Fluorene	0.742	-	1.989	-	0.040	C	0.0536	0.01
Hexachlorobenzene	0.0017	2.32E-05	0.0036	4.91E-05	0.0001	E	0.00077	0.005
Hexachlorobutadiene	0.558	0.00751	0.001180	0.0159	0.022	Α	0.0445	0.01
Hexachloroethane	0.708	-	1.821	-	0.037	C	0.049	0.02
Methyl Chloride	2.899	-	6.406	-	0.129	С	0.172	0.05
Methylene Chloride	1.349	-	3.001	-	0.061	С	0.0808	0.02

Pollutant (Outfall 001)	Daily A	verage	Daily Ma	aximum	Calculated Single Grab	Single Grab Method	Existing Single Grab	MAL
	lbs/day	mg/L	lbs/day	mg/L	mg/L		mg/L	mg/L
Naphthalene	0.742	-	1.989	-	0.040	С	0.0536	0.01
Nitrobenzene	0.910	-	2.293	-	0.046	С	0.0617	0.01
2-Nitrophenol	1.382	-	2.326	-	0.047	С	0.0626	0.02
4-Nitrophenol	2.427	-	4.181	-	0.084	С	0.112	0.05
Phenanthrene	0.742	-	1.989	-	0.040	С	0.0536	0.01
Phenol	0.506	-	0.877	-	0.018	С	0.0236	0.01
Pyrene	0.843	-	2.259	-	0.046	С	0.0608	0.01
Tetrachloroethylene	0.742	-	1.888	-	0.038	С	0.0508	0.01
Toluene	0.877	-	2.697	-	0.054	С	0.0726	0.01
1,2,4-Trichlorobenzene	2.293	-	4.720	-	0.095	С	0.127	0.01
1,1,1-Trichloroethane	0.708	-	1.821	-	0.037	С	0.049	0.01
1,1,2-Trichloroethane	0.708	-	1.821	-	0.037	С	0.049	0.01
Trichloroethylene	0.708	-	1.821	_	0.037	С	0.049	0.01
Vinyl Chloride	3.506	=	9.035	-	0.182	С	0.243	0.01

Note	Single grab limit =		
A	<u>Daily Avg (lbs/day)</u> × 3	=	Daily Avg (mg/L) $\times 3$
	$8.9 \text{ MGD} \times 8.345$		
В	Daily Max (lbs/day) × 2		Daily Max (mg/L) \times 2
	$8.9 \text{ MGD} \times 8.345$		
С	<u>Daily Max (lbs/day) × 4.04 MGD</u> × 1.5	=	Daily Max (mg/L) × 4.04 MGD × 1.5
	4.04 MGD × 8.345 8.9 MGD		8.9 MGD
D	<u>Daily Max (lbs/day)</u>	=	Daily Max (mg/L) [when sample type is grab]
	8.9 MGD × 8.345		
E	MAL		



Compliance History Report

Compliance History Report for CN600124705, RN100542281, Rating Year 2023 which includes Compliance History (CH) components from September 1, 2018, through August 31, 2023.

Customer, Respondent, or Owner/Operator:	CN600124705, Equistar Chemicals,	LP Classification: SATISFACTORY	Rating: 7.79
Regulated Entity:	RN100542281, EQUISTAR CHEMICA CHANNELVIEW COMPLEX	LS Classification: SATISFACTORY	Rating: 12.22
Complexity Points:	44	Repeat Violator: NO	
CH Group:	05 - Chemical Manufacturing		
Location:	8280 SHELDON RD CHANNELVIEW	TX 77530-2693, HARRIS COUNTY	
	REGION 12 - HOUSTON	· · · · · · · · · · · · · · · · · · ·	
ICEQ REGION.			
ID Number(s):			
AIR OPERATING PERMITS /	ACCOUNT NUMBER HG0033B	AIR OPERATING PERMITS PERMIT 1426	
AIR OPERATING PERMITS	PERMIT 3585	IGI 106088529	
PUBLIC WATER SYSTEM/SU 1011578	JPPLY REGISTRATION	AIR NEW SOURCE PERMITS AFS NUM 48201	.01886
AIR NEW SOURCE PERMITS	PERMIT 1768	AIR NEW SOURCE PERMITS PERMIT 2128	
AIR NEW SOURCE PERMITS	PERMIT 2933	AIR NEW SOURCE PERMITS PERMIT 2936	
AIR NEW SOURCE PERMITS	PERMIT 3130A	AIR NEW SOURCE PERMITS PERMIT 3294	
AIR NEW SOURCE PERMITS	PERMIT 6245	AIR NEW SOURCE PERMITS PERMIT 6387	
AIR NEW SOURCE PERMITS	PERMIT 8125	AIR NEW SOURCE PERMITS REGISTRATION	10586
AIR NEW SOURCE PERMITS	REGISTRATION 10700	AIR NEW SOURCE PERMITS REGISTRATION	10812
AIR NEW SOURCE PERMITS	REGISTRATION 11735	AIR NEW SOURCE PERMITS REGISTRATION	12334
AIR NEW SOURCE PERMITS	REGISTRATION 12341	AIR NEW SOURCE PERMITS PERMIT 22779	
AIR NEW SOURCE PERMITS	PERMIT 24887	AIR NEW SOURCE PERMITS ACCOUNT NUME	3ER HG0033B
AIR NEW SOURCE PERMITS	REGISTRATION 54098	AIR NEW SOURCE PERMITS REGISTRATION	76017
AIR NEW SOURCE PERMITS	REGISTRATION 153580	AIR NEW SOURCE PERMITS AFS NUM 48201	.00075
AIR NEW SOURCE PERMITS	PERMIT 49120	AIR NEW SOURCE PERMITS PERMIT 49130	
AIR NEW SOURCE PERMITS	PERMIT 83799	AIR NEW SOURCE PERMITS ACCOUNT NUME	3ER HGA0611
AIR NEW SOURCE PERMITS	EPA PERMIT PSDTX1280	AIR NEW SOURCE PERMITS EPA PERMIT PSI	JIXI2/2
AIR NEW SOURCE PERMITS	EPA PERMIT PSDTX1270	AIR NEW SOURCE PERMITS REGISTRATION	101590
AIR NEW SOURCE PERMITS	REGISTRATION 140033	AIR NEW SOURCE PERMITS REGISTRATION	140403
AIR NEW SOURCE PERMITS	EQUISICATION 140401	AIR NEW SOURCE PERMITS REGISTRATION	
ATR NEW SOURCE PERMITS		AIR NEW SOURCE PERMITS EPA PERMIT PSI	151017
ATD NEW SOURCE PERMITS	DECISTRATION 150586	ATE NEW SOURCE PERMITS REGISTRATION	151917
ATD NEW SOURCE PERMITS	REGISTRATION 150500	ATD NEW SOURCE PERMITS REGISTRATION	1628//
ATR NEW SOURCE PERMITS	REGISTRATION 167206	ATR NEW SOURCE PERMITS REGISTRATION	166340
AIR NEW SOURCE PERMITS	REGISTRATION 167200	ATR NEW SOURCE PERMITS REGISTRATION	163918
AIR NEW SOURCE PERMITS	REGISTRATION 170911	ATR NEW SOURCE PERMITS REGISTRATION	148101
ATR NEW SOURCE PERMITS	REGISTRATION 146626	ATR NEW SOURCE PERMITS REGISTRATION	150493
ATR NEW SOURCE PERMITS	REGISTRATION 159958	ATR NEW SOURCE PERMITS REGISTRATION	160251
AIR NEW SOURCE PERMITS	PERMIT AMOC157	AIR NEW SOURCE PERMITS REGISTRATION	156159
AIR NEW SOURCE PERMITS	REGISTRATION 157683	AIR NEW SOURCE PERMITS REGISTRATION	160287
AIR NEW SOURCE PERMITS	REGISTRATION 157139	AIR NEW SOURCE PERMITS EPA PERMIT N14	40M1
AIR NEW SOURCE PERMITS	REGISTRATION 159783	AIR NEW SOURCE PERMITS REGISTRATION	161239
AIR NEW SOURCE PERMITS	REGISTRATION 158833	AIR NEW SOURCE PERMITS REGISTRATION	159310
AIR NEW SOURCE PERMITS	REGISTRATION 155453	AIR NEW SOURCE PERMITS EPA PERMIT N14	42M1
AIR NEW SOURCE PERMITS	REGISTRATION 162742	AIR NEW SOURCE PERMITS EPA PERMIT N28	80
AIR NEW SOURCE PERMITS	REGISTRATION 159818	AIR NEW SOURCE PERMITS REGISTRATION	157687
AIR NEW SOURCE PERMITS	REGISTRATION 156509	AIR NEW SOURCE PERMITS REGISTRATION	173961

Page 1

AIR NEW SOURCE PERMITS REGISTRATION 169708 AIR NEW SOURCE PERMITS REGISTRATION 170912 AIR NEW SOURCE PERMITS REGISTRATION 173801 AIR NEW SOURCE PERMITS REGISTRATION 174053 AIR NEW SOURCE PERMITS REGISTRATION 157735 AIR NEW SOURCE PERMITS EPA PERMIT N142 AIR NEW SOURCE PERMITS EPA PERMIT N140 AIR NEW SOURCE PERMITS EPA PERMIT N140 AIR NEW SOURCE PERMITS EPA PERMIT OH 106675 AIR NEW SOURCE PERMITS REGISTRATION 106675 AIR NEW SOURCE PERMITS REGISTRATION 106675 AIR NEW SOURCE PERMITS REGISTRATION 167021 AIR NEW SOURCE PERMITS REGISTRATION 151575 AIR NEW SOURCE PERMITS REGISTRATION 150877 IHW CORRECTIVE ACTION SOLID WASTE REGISTRATION # (SWR) 30030 STORMWATER PERMIT TXR05DX41	AIR NEW SOURCE PERMITS REGISTRATION 172596 AIR NEW SOURCE PERMITS REGISTRATION 172784 AIR NEW SOURCE PERMITS REGISTRATION 173800 AIR NEW SOURCE PERMITS REGISTRATION 173044 AIR NEW SOURCE PERMITS REGISTRATION 96384 AIR NEW SOURCE PERMITS EPA PERMIT N146 AIR NEW SOURCE PERMITS EPA PERMIT N144 AIR NEW SOURCE PERMITS EPA PERMIT M144 AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX17 AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1280M1 AIR NEW SOURCE PERMITS REGISTRATION 152979 AIR NEW SOURCE PERMITS REGISTRATION 161846 AIR NEW SOURCE PERMITS REGISTRATION 160943 STORMWATER PERMIT TXR05BR93 WASTEWATER PERMIT WQ0000391000
AIR EMISSIONS INVENTORY ACCOUNT NUMBER HGA0611	AIR EMISSIONS INVENTORY ACCOUNT NUMBER HG0033B POLLUTION PREVENTION PLANNING ID NUMBER P00405
INDUSTRIAL AND HAZARDOUS WASTE EPA ID TXD058275769 INDUSTRIAL AND HAZARDOUS WASTE PERMIT 50117 TAX RELIEF ID NUMBER 17981	INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE REGISTRATION # (SWR) 30030 TAX RELIEF ID NUMBER 17982
Compliance History Period: September 01, 2018 to Augu	Jst 31, 2023 Rating Year: 2023 Rating Date: 09/01/2023
Date Compliance History Report Prepared: October	17, 2023
Agency Decision Requiring Compliance History:	ermit - Issuance, renewal, amendment, modification, denial, suspension, or evocation of a permit.
Component Period Selected: September 30, 2018 to S	eptember 30, 2023
TCEQ Staff Member to Contact for Additional Inform	nation Regarding This Compliance History.
Name: Cole Gray	Phone: (512) 239-4736
Name: Cole Gray	Phone: (512) 239-4736
Name: Cole Gray	Phone: (512) 239-4736
Name: Cole Gray	Phone: (512) 239-4736
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five	re year compliance period? YES
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the	Phone: (512) 239-4736 re year compliance period? YES ne site during the compliance period? NO
Name: Cole Gray <u>Site and Owner/Operator History:</u> 1) Has the site been in existence and/or operation for the full fiv 2) Has there been a (known) change in ownership/operator of th <u>Components (Multimedia) for the Site Are List</u>	Phone: (512) 239-4736 'e year compliance period? YES ne site during the compliance period? NO :ed in Sections A - J YES
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full fiv 2) Has there been a (known) change in ownership/operator of th Components (Multimedia) for the Site Are List	Phone: (512) 239-4736 re year compliance period? YES ne site during the compliance period? NO red in Sections A - J NO
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full fiv 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dec 1 Effective Date: 06/04/2019	Phone: (512) 239-4736 ve year compliance period? YES he site during the compliance period? NO ced in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full fiv 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dec 1 Effective Date: 06/04/2019 Classification: Moderate	Phone: (512) 239-4736 // YES he site during the compliance period? NO :ed in Sections A - J PRE 2018-0986-AIR-E (1660 Order-Agreed Order With Denial)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full fiv 2) Has there been a (known) change in ownership/operator of th Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dec 1 Effective Date: 06/04/2019 ADMINORD Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10	Phone: (512) 239-4736 we year compliance period? YES he site during the compliance period? NO reed in Sections A - J PER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 111	Phone: (512) 239-4736 we year compliance period? YES he site during the compliance period? NO :ed in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 112, SubChapter B 12	Phone: (512) 239-4736 ve year compliance period? YES he site during the compliance period? NO ced in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORE Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 111 30 TAC Chapter 122, SubChapter B 121 5C THSC Chapter 382 382.085(b)	Phone: (512) 239-4736 re year compliance period? YES he site during the compliance period? NO reed in Sections A - J DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORU Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 114 30 TAC Chapter 122, SubChapter B 124 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissors organic compounds from the Olefins Plant 1 ("OP1 emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere.	Phone: (512) 239-4736 re year compliance period? YES the site during the compliance period? NO ced in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable ed on September 3, 2017 and lasted three hours and 30 minutes. The leaking into the OP1 Cooling Tower system, resulting in a release to the
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORD Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 114 30 TAC Chapter 122, SubChapter B 124 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere. 2 Effective Date: 03/05/2020 ADMINORD	Phone: (512) 239-4736 we year compliance period? YES he site during the compliance period? NO red in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The ' leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORE Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 121 30 TAC Chapter 122, SubChapter B 122 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissor organic compounds from the Olefins Plant 1 ("OP1 emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere. 2 Effective Date: 03/05/2020 ADMINORE Classification: Major Citation: Major ADMINORE	Phone: (512) 239-4736 re year compliance period? YES he site during the compliance period? NO redi n Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The - leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORE Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 112 30 TAC Chapter 122, SubChapter B 122 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissions event (Incident No. 266775) that occurre emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere. 2 Effective Date: 03/05/2020 ADMINORE 2 Effective Date: 03/05/2020 ADMINORE 2 Effective Date: 03/05/2020 ADMINORE 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10	Phone: (512) 239-4736 re year compliance period? YES he site during the compliance period? NO red in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 5.115(c)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 122, SubChapter B 12: 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissions event (Incident No. 266775) that occurre emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere. 2 Effective Date: 03/05/2020 ADMINORU Classification: Major Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter A 10 30 TAC Chapter 116, SubChapter A 10	Phone: (512) 239-4736 re year compliance period? YES the site during the compliance period? NO Ead in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The ' leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full fiv. 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 1 Effective Date: 06/04/2019 2 Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter B 12: 5C THSC Chapter 122, SubChapter B 12: 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emiss organic compounds from the Olefins Plant 1 ("OP1 emissions event (Incident No. 266775) that occurre emissions event occurred due to a heat exchanger atmosphere. 2 Effective Date: 03/05/2020 ADMINORE 2 Effective Date: 03/05/2020 ADMINORE Classification: Major Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 122, SubChapter B 12: 5C THSC Chapter 122; 5C THSC Ch	Phone: (512) 239-4736 re year compliance period? YES the site during the compliance period? NO Ead in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) sions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORE Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 122, SubChapter B 12: 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissions event (Incident No. 266775) that occurre emissions event (Incident No. 266775) that occurre atmosphere. 2 Effective Date: 03/05/2020 ADMINORE Classification: Major Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter A 10 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 122, SubChapter B 12: 5C THSC Chapter 122, SubChapter B 12:	Phone: (512) 239-4736 re year compliance period? YES he site during the compliance period? NO ced in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) ions. Specifically, the Respondent released 309 pounds of volatile "Ocoling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4)
Name: Cole Gray Site and Owner/Operator History: 1) Has the site been in existence and/or operation for the full five 2) Has there been a (known) change in ownership/operator of the Components (Multimedia) for the Site Are List A. Final Orders, court judgments, and consent dect 1 Effective Date: 06/04/2019 ADMINORE Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 122, SubChapter B 12: 5C THSC Chapter 382 382.085(b) Description: Failed to prevent unauthorized emissions event occurred due to a heat exchanger atmosphere. 2 2 Effective Date: 03/05/2020 ADMINORE Classification: Major Citation: 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 116, SubChapter B 11: 30 TAC Chapter 116, SubChapter B 12: 2 Effective Date: 03/05/2020 ADMINORE Classification: Major 30 TAC Chapter 116, SubChapter B 12: 30 TAC Chapter 122, SubChapter B 12:	Phone: (512) 239-4736 re year compliance period? YES he site during the compliance period? NO ced in Sections A - J rees: DER 2018-0986-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) itions. Specifically, the Respondent released 309 pounds of volatile ") Cooling Tower, Emissions Point Number 38E11, during an avoidable red on September 3, 2017 and lasted three hours and 30 minutes. The ' leaking into the OP1 Cooling Tower system, resulting in a release to the DER 2019-0147-AIR-E (1660 Order-Agreed Order With Denial) 1.20(3) 6.115(c) 2.143(4) <i>Rating Year 2023 which includes Compliance History (CH) components from</i>

GTC and STC No. 37 OP

Description: Failure to prevent unauthorized emissions.

3

4

Effective Date: 06/16/2020 ADMINORDER 2019-1360-AIR-E (1660 Order-Agreed Order With Denial) Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

- 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b)
- Rgmt Prov: Special Condition No.1 PERMIT

Description: Failure to meet the demonstration criteria for an affirmative defense for unauthorized emissions during an emissions event. (Category A12.i.(6))

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(F) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b)

Rqmt Prov: FOP O-1426, GTC and STC No. 2.F OP

Description: Failure to report the actual duration of an emissions event. (Category C3)

Effective Date:10/06/2020ADMINORDER2020-0290-AIR-E(1660 Order-Agreed Order With Denial)

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: SPECIAL CONDITION 1 PERMIT

SPECIAL CONDITION 9 PERMIT

Description: Failure to prevent the release of unauthorized emissions to the atmosphere during an emissions event [Category A12i(6)].

5 Effective Date: 06/17/2022

ADMINORDER 2020-1437-AIR-E (Findings Order-Agreed Order Without Denial)

Classification: Major

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)

30 TAC Chapter 115, SubChapter H 115.722(c)(1)

30 TAC Chapter 116, SubChapter B 116.115(c)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: NSR 1768 Special Condition 1 PERMIT

Description: Failed to prevent unauthorized emissions and failed to limit HRVOC emissions to 1,200.00 lbs or less per one-hour block period, in violation of 30 TEX. ADMIN. CODE §§?101.20(3), 115.722(c)(1), 116.115(c), and 122.143(4), New Source Review Permit Nos. 1768, PSDTX1272, and N142, Special Conditions No. 1, Federal Operating Permit ("FOP") No. 01426, General Terms and Conditions ("GTC") and Special Terms and Conditions ("STC") No. 38, and TEX Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(b)(1)(J)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: GTC and STC No. 2.F OP

Description: Failed to identify all required information on the final record for a reportable emissions event, in violation of 30 TEX. ADMIN. CODE §§?101.201(b)(1)(J) and 122.143(4), FOP No. 01426, GTC and STC No. 2.F, and TEX. HEALTH & SAFETY CODE §?382.085(b).

6 Effective Date: 07/07/2022

ADMINORDER 2021-0222-AIR-E (1660 Order-Agreed Order With Denial)

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: GTC and STC 37 OP

NSR 6245, Special Condition 1 PERMIT

Description: Failure to prevent unauthorized emissions to the atmosphere during an emissions event that was discovered on October 14, 2020, TCEQ/STEERS Incident No. 344019. [Category A12(i)(6)] Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)

30 TAC Chapter 115, SubChapter H 115.722(c)(1)

30 TAC Chapter 116, SubChapter B 116.115(c) 5C THSC Chapter 382 382.085(b) Rgmt Prov: GTC and STC Nos. 1.A and 37 OP Special Condition 1 PERMIT Description: Failure to prevent unauthorized emissions to the atmosphere during an emissions event that was discovered on February 26, 2020, TCEQ/STEERS Incident No. 331037. [Category A12(i)(6)] Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) Rgmt Prov: GTC and STC 38 OP NSR 2128, Special Condition 1 PERMIT Description: Failure to prevent unauthorized emissions to the atmosphere during an emission event that was discovered on January 19, 2018, TCEQ/STEERS Incident No. 276744. [Category A12(i)(6)] Effective Date: 12/20/2022 ADMINORDER 2020-1543-AIR-E (1660 Order-Agreed Order With Denial) Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 101.20(2) 30 TAC Chapter 113, SubChapter C 113.130 30 TAC Chapter 113, SubChapter C 113.390 30 TAC Chapter 115, SubChapter D 115.354(2) 30 TAC Chapter 115, SubChapter D 115.354(2)(C) 30 TAC Chapter 122, SubChapter B 122.143(4) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.163(b)(1) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.168(b) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.174(b) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT HH 63.769(c) 5C THSC Chapter 382 382.085(b) Rqmt Prov: GTC OP Special Term and Condition 1A OP Description: Failure to conduct LDAR monitoring. Specifically, the Respondent did not conduct monthly LDAR monitoring for one pump that was in VOC service from April 1, 2014 through May 31, 2019 and did not conduct quarterly LDAR monitoring for one valve and seven connectors that were in VOC service from April 1, 2014 through March 31, 2019. Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 101.20(2) 30 TAC Chapter 101, SubChapter A 101.20(3) 30 TAC Chapter 113, SubChapter C 113.130 30 TAC Chapter 115, SubChapter D 115.354(2)(B) 30 TAC Chapter 115, SubChapter H 115.781(b) 30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.163(b)(1) 5C THSC Chapter 382 382.085(b) Rgmt Prov: GTC and STC No. 38 OP SC No. 11.G PERMIT SC No. 14.G PERMIT SC No. 16.G PERMIT SC No. 6.G PERMIT SC No. 8.G PERMIT Special Condition 15G PERMIT Special Term and Condition 1A OP Description: Failure to conduct LDAR monitoring. Specifically, the Respondent did not conduct quarterly LDAR monitoring for 23 pumps that were in VOC service from the fourth quarter of 2004 to the fourth quarter of 2017 and did not conduct monthly LDAR monitoring for 15 of those pumps that were also in light liquid service from September 2004 to December 2017. ADMINORDER 2017-1021-AIR-E (1660 Order-Agreed Order With Denial) Effective Date: 02/13/2023 Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 101.20(1) 30 TAC Chapter 101, SubChapter A 101.20(2) 30 TAC Chapter 101, SubChapter A 101.20(3)

7

8

30 TAC Chapter 113, SubChapter C 113.100

30 TAC Chapter 116, SubChapter B 116.115(c)

30 TAC Chapter 122, SubChapter B 122.143(4)

40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)

40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Condition 11A PERMIT

Special Term and Condition 1A OP

Special Term and Condition 32 OP

Description: Failed to maintain the minimum net heating value at or above 300 Btu/scf for steam-assisted or air-assisted flares, in violation of 30 TEX. ADMIN. CODE §§ 101.20(1), (2), and (3), 113.100, 116.115(c), and 122.143(4), 40 CODE OF FEDERAL REGULATIONS §§ 60.18(c)(3)(ii) and 63.11(b)(6)(ii), TEX. HEALTH & SAFETY CODE § 382.085(b), Federal Operating Permit ("FOP") No. 01426, Special Terms and Conditions ("STC") Nos. 1.A and 32, and New Source Classification: Moderate

Citation: 30 TAC Chapter 117, SubChapter B 117.310(c)(2)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Term and Condition 1A OP

Description: Failed to comply with the NH3 concentration limit, in violation of 30 TEX. ADMIN. CODE §§ 117.310(c)(2) and 122.143(4), TEX. HEALTH & SAFETY CODE § 382.085(b), and FOP No. 01426, STC No. 1.A.

9

ADMINORDER 2022-0907-AIR-E (Findings Order-Agreed Order Without Denial)

Effective Date: 08/07/2023 Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter F 101.201(a)(1)(B)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: FOP 1426, GTC OP

FOP, Special Term and Condition 2F OP

Description: Failed to submit an initial notification for a reportable emissions event no later than 24 hours after the discovery of an emissions event. Specifically, the Respondent had a reportable emissions event that began on November 1, 2021 at 2:00 p.m. and the initial notification was due by November 2, 2021 at 2:00 p.m., but the initial notification was not submitted.

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)

30 TAC Chapter 116, SubChapter B 116.115(c)

30 TAC Chapter 122, SubChapter B 122.143(4)

5C THSC Chapter 382 382.085(b)

Rqmt Prov: FOP 1426, GTC OP

FOP 1426, STC No. 38 OP

NSR, Special Condition 1 PERMIT

Description: Failed to prevent unauthorized emissions. Specifically, the Respondent released 48.31 pounds ("lbs") of benzene and 41.94 lbs of volatile organic compounds as fugitive emissions, during an emissions event that began on November 1, 2021 and lasted 24 hours and 15 minutes. The emissions event occurred due to a roof defect on Storage Tank 3912, resulting in the release to the atmosphere.

Classification: Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)

30 TAC Chapter 122, SubChapter B 122.145(2)(A) 5C THSC Chapter 382 382.085(b)

Rqmt Prov: FOP 1426, GTC OP

Description: Failed to report all instances of deviations. Specifically, the deviation report for the January 1, 2020 through June 30, 2020 reporting period did not include the deviation for failing to comply with the ammonia emissions limit for Cracking Heater 4419.

B. Criminal convictions:

N/A

C. Chronic excessive emissions events:

N/A

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

Item 1 October 18, 2018 (1517770)

Item 2	October 25, 2018	(1499831)
Item 3	October 29, 2018	(1524816)
Item 4	November 19, 2018	(1541396)
Item 5	November 21, 2018	(1513798)
Item 6	December 20, 2018	(1545180)
Item 7	January 16, 2019	(1499798)
Item 8	January 18, 2019	(1559514)
Item 9	February 20, 2019	(1559512)
Item 10	March 20, 2019	(1559513)
Item 11	March 21, 2019	(1549959)
Item 12	April 15, 2019	(1551355)
Item 13	April 18, 2019	(1571777)
Item 14	April 24, 2019	(1554385)
Item 15	May 14, 2019	(1555082)
Item 16	May 20, 2019	(1558304)
Item 17	June 05, 2019	(1555640)
Item 18	June 06, 2019	(1555652)
Item 19	June 20, 2019	(1583164)
Item 20	June 28, 2019	(1540598)
Item 21	July 18, 2019	(1593090)
Item 22	July 29, 2019	(1581312)
Item 23	August 16, 2019	(1599436)
Item 24	September 12, 2019	(1581499)
Item 25	September 20, 2019	(1606341)
Item 26	October 17, 2019	(1613187)
Item 27	December 20, 2019	(1626353)
Item 28	January 17, 2020	(1633994)
Item 29	February 20, 2020	(1640613)
Item 30	April 28, 2020	(1639046)
Item 31	May 14, 2020	(1647047)
Item 32	May 15, 2020	(1647024)
Item 33	May 19, 2020	(1660055)
Item 34	June 01, 2020	(1612768)
Item 35	June 17, 2020	(1575143)
Item 36	July 16, 2020	(1645374)
Item 37	July 17, 2020	(1673516)
Item 38	August 04, 2020	(1663519)
Item 39	August 18, 2020	(1680290)
Item 40	August 27, 2020	(1633242)
Item 41	August 28, 2020	(1657041)
Item 42	September 17, 2020	(1686861)
Item 43	September 18, 2020	(1672612)
Item 44	October 06, 2020	(1678886)
Item 45	October 19, 2020	(1693207)
Item 46	October 23, 2020	(1652131)
Item 47	November 04, 2020	(1686001)
Item 48	November 17, 2020	(1672688)
Item 49	November 19, 2020	(1712313)
Item 50	December 17, 2020	(1712314)
Item 51	January 18, 2021	(1712315)
Item 52	February 19, 2021	(1725369)
Item 53	February 26, 2021	(1703728)
Item 54	April 12, 2021	(1707502)
Item 55	April 20, 2021	(1725371)
Item 56	May 20, 2021	(1739998)
Item 57	June 02, 2021	(1724432)
Item 58	June 14, 2021	(1701515)
Item 59	June 18, 2021	(1747548)

Item 60	July 20, 2021	(1751657)
Item 61	August 13, 2021	(1723383)
Item 62	August 20, 2021	(1757123)
Item 63	August 31, 2021	(1755437)
Item 64	September 02, 2021	(1756136)
Item 65	September 08, 2021	(1724837)
Item 66	September 17, 2021	(1766199)
Item 67	October 20, 2021	(1776604)
Item 68	November 11, 2021	(1685584)
Item 69	November 19, 2021	(1783573)
Item 70	December 20, 2021	(1790597)
Item 71	January 20, 2022	(1798392)
Item 72	February 16, 2022	(1806267)
Item 73	April 20, 2022	(1819904)
Item 74	May 20, 2022	(1828744)
Item 75	June 20, 2022	(1835034)
Item 76	June 27, 2022	(1708042)
Item 77	July 19, 2022	(1842240)
Item 78	July 22, 2022	(1832568)
Item 79	July 25, 2022	(1824530)
Item 80	August 10, 2022	(1838531)
Item 81	August 19, 2022	(1848374)
Item 82	September 19, 2022	(1856170)
Item 83	October 11, 2022	(1789778)
Item 84	October 20, 2022	(1862528)
Item 85	November 18, 2022	(1869443)
Item 86	January 20, 2023	(1882112)
Item 87	January 31, 2023	(1873199)
Item 88	February 13, 2023	(1878945)
Item 89	February 20, 2023	(1889929)
Item 90	February 28, 2023	(1874822)
Item 91	March 01, 2023	(1873120)
Item 92	March 14, 2023	(1886225)
Item 93	March 20, 2023	(1898486)
Item 94	April 14, 2023	(1852359)
Item 95	April 19, 2023	(1905275)
Item 96	May 17, 2023	(1912460)
Item 97	May 18, 2023	(1880533)
Item 98	June 16, 2023	(1919060)
Item 99	June 27, 2023	(1909873)
Item 100	August 04, 2023	(1916194)
Item 101	August 08, 2023	(1916202)
Item 102	August 17, 2023	(1932990)

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

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

1	Date: 11/3	0/2022 (1875290)	Classifications	Madausta
	Self Report?	TES	Classification:	Moderate
	Citation:	2D TWC Chapter 26, SubChapter A 26.121(30 TAC Chapter 305, SubChapter F 305.125	(a) 5(1)	
	Description:	Failure to meet the limit for one or more pe	rmit parameter	
2	Date: 02/2	8/2023 (1879557)		
	Self Report?	NO	Classification:	Moderate
	Citation:	30 TAC Chapter 305, SubChapter F 305.125 Provision III.D PERMIT	5(1)	
	Description:	Failure to meet a permit provision requirem	ent.	

3 Date: 06/30/2023 (1926025)

Self Report?	YES	Classification:	Moderate
Citation:	2D TWC Chapter 26, SubChapter A 26.12	1(a)	
Description:	30 TAC Chapter 305, SubChapter F 305.1 Failure to meet the limit for one or more p	25(1) permit parameter	
Date: 08/	16/2023 (1846460)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 116, SubChapter B 116.1 5C THSC Chapter 382 382.085(b) FOP ST&C 37 OP	15(c)	
Description:	NSR Special Condition 8C PERMIT Failure to conduct the annual inspection f tower (EPN 6E04) (Category B1)	or the drift elimina	tors for the cooling
Date: 08/	18/2023 (1846459)		
Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 122, SubChapter B 122.1 40 CFR Chapter 63, SubChapter C, PT 63, 5C THSC Chapter 382 382.085(b) FOP ST&C 1A OP	43(4) SubPT ZZZZ 63.66	545(h)(2)
Description:	Failure to submit the annual performance engine (unit ID OP2EN1) (C3)	test results within	60 days for the
Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 116, SubChapter B 116.1 30 TAC Chapter 122, SubChapter B 122.1 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(E) PERMIT FOP ST&C 1A OP FOP ST&C 37 OP	15(c) 43(4)	
Description:	Failure to maintain the net heating value of British thermal units per square cubic foot	of the combustion z : (Btu/scf) for the E	one at or above 270 ast Plant Flare (unit
Self Report?	NO	Classification:	Minor
Citation:	30 TAC Chapter 111, SubChapter A 111.1 30 TAC Chapter 116, SubChapter B 116.1 30 TAC Chapter 122, SubChapter B 122.1 40 CFR Chapter 60, SubChapter C, PT 60, 40 CFR Chapter 63, SubChapter C, PT 63, 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(C) PERMIT FOP ST&C 1A OP FOP ST&C 37 OP FOP ST&C 47 OP NSR SC 11C PERMIT	11(a)(4)(A)(II) 15(c) 43(4) SubPT A 60.18(c)(SubPT A 63.11(b)((1) (4)
Description:	Failure to prevent visible emissions for the	e East Plant Flare (ι	init ID EUTFL1701)
Solf Doport?	(Category C4)	Classification	Minor
Citation:	30 TAC Chapter 111, SubChapter A 111.1 30 TAC Chapter 116, SubChapter B 116.1 30 TAC Chapter 122, SubChapter B 122.1 40 CFR Chapter 60, SubChapter C, PT 60, 40 CFR Chapter 63, SubChapter C, PT 63, 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(C) PERMIT FOP ST&C 1A OP FOP ST&C 37 OP FOP ST&C 47 OP NSR SC 14C PERMIT NSR SC 14E PERMIT	11(a)(4)(A)(ii) 15(c) 43(4) SubPT A 60.18(c)(SubPT A 63.11(b))	(1) (4)
Description:	Failure to prevent visible emissions for the (Category C4)	e OP-2 Flare (unit Il	D OP2FL4801)
Self Report?	NÒ	Classification:	Moderate
Citation:	30 TAC Chapter 122, SubChapter B 122.1 40 CFR Chapter 63, SubChapter C, PT 63, 5C THSC Chapter 382 382.085(b) FOP ST&C 1A OP	43(4) SubPT G 63.133(f))
Description:	Failure to conduct the semi-annual seal in	spection for tank 4	7 (unit ID EMTTK47)
Self Report?	NO	Classification:	Minor

4

5

Compliance History Report for CN600124705, RN100542281, Rating Year 2023 which includes Compliance History (CH) components from September 30, 2018, through September 30, 2023. Ratings are pending Mass Classification.

0155

Citation:	30 TAC Chapter 111, SubChapter A 111.111(a)(4)(A)(ii) 30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(1) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(4) 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(C) PERMIT FOP ST&C 1A OP FOP ST&C 37 OP FOP ST&C 47 OP NSR SC 16C PERMIT NSR SC 16C PERMIT
Description:	Failure to prevent visible emissions for the Flare (unit ID OP1FL3801) (Category
Self Report?	NO Classification: Minor
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(C) PERMIT FOP ST&C 47 OP NSR SC 16E PERMIT
Description:	Failure to maintain the net heating value of the combustion zone at or above 270 British thermal units per square cubic foot (Btu/scf) for the OP1 Flare (unit ID OP1FL3801) (Category C4)
Self Report?	NO Classification: Minor
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 117, SubChapter B 117.310(c)(2)(A) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) FOP ST&C 1A OP FOP ST&C 37 OP NSR SC 8 PERMIT
Description:	Failure to maintain the ammonia slip concentration at or below 10parts per million by volume dry (ppmvd) for unit ID MEOHT7001 (Category C4)
Self Report?	NO Classification: Minor
Citation: Description:	30 IAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) AMOC Special Condition (I)(E) PERMIT FOP ST&C 1A OP FOP ST&C 47 OP NSR SC 14E PERMIT Failure to maintain the net heating value of the combustion zone at or above 270 British thormal units per square cubic fact (Btu(ccf) for the OP3 Elare (unit ID
	OP2FL4801) (Category C4)
Self Report?	NO Classification: Minor 30 TAC Chanter 122 SubChanter B 122 143(4)
	40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii) 5C THSC Chapter 382 382.085(b) FOP ST&C 1A OP NSR SC 12A PERMIT
Description:	Failure to maintain the net heating value at or above 200 British thermal units per square cubic foot (Btu/scf) for the Methanol Flare (unit ID MEOHFLARE) (Category C4)
Self Report?	NO Classification: Moderate
Citation:	30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) FOP ST&C 37 OP NSR SC 1 PERMIT
Description:	Failure to maintain nitrous oxides (NOx) emissions within the Maximum Allowable Emission Rate (MAERT) for the Methanol Reformer (unit ID MEOH7001) (Category B13)
Self Report?	NO Classification: Minor
Citation:	30 TAC Chapter 122, SubChapter B 122.143(4) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT ZZZZ 63.6620(b) 5C THSC Chapter 382 382.085(b) FOP ST&C 1A OP
Description:	Failure to conduct the annual compliance test for the East Plant engine (unit ID EUTENAIR1) (Category B1)
Self Report?	NO Classification: Moderate

	Citation:	30 TAC Chapter 116, Su	bChapter B 116.160(c)(2)	
	Description: Failure to maintain the Nitrogen Oxide (NOx) 12-month rolling emissions within the Allowable Emission Rate (MAER) for the furnace (unit ID OP2HT4419)		rolling emissions within it ID OP2HT4419)	
	Calf Danast2	(Category B17)	Classifiasti	- Madavata
	Self Report?	NU 20 TAC Chapter 116 Su		on: Moderate
	Citation:	50 TAC Chapter 116, Su 5C THSC Chapter 382 38 FOP ST&C 37 OP	32.085(b)	
	Description:	Failure to install the mul for the OP1 Flare (unit I	tivariable transmitter as require O OP1FL3801) (Category B1)	ed by the Consent Decree
	Self Report?	NO	Classificati	on: Moderate
	Citation:	30 TAC Chapter 116, Su 5C THSC Chapter 382 3 FOP ST&C 37 OP	bChapter B 116.115(c) 32.085(b)	
	Description:	NSR Special Condition 1 Failure to install the mul for the OP2 Flare (unit I	4E PERMIT tivariable transmitters as requii D OP2FL4801) (Category B1)	red by the Consent Decree
F.	Environmental audits	5:	22)	
	Disclosure Date	e: 06/20/2018 (149/9/ 04/24/2019	(3)	
	Viol. Classification	: Moderate		
	Citation: 30 TA	AC Chapter 116, SubChapte	er B 116.110(a)	
	Description: Failed	to properly authorize one s	mall tote. Specifically, docume	entation of NSR authorization for the small
	tote was not available due to being inadvertently removed from NSR 1768, instead of transferred to NSR 2933 during the permit renewal/amendment. Viol. Classification: Moderate			
	Citation: 30 TAC Chapter 116, SubChapter B 116.110(a)			
	Description: Failed to properly authorize one small tank. Specifically, documentation of NSR authorization for one small tank was not available following chemical change service.			
	Notice of Intent Dat	e: 03/19/2019 (155436	51)	
	Disclosure Date:	09/13/2019		
	Viol. Classification	: Minor		
	Citation: 30 TA	AC Chapter 106, SubChapte	er A 106.8(c)(2)(B)	
	30 14	AC Chapter 122, SubChapte	er B 122.143(4)	
	Rqmt Prov: OP S	IC 12		
	Description: Failed TAC § Viol. Classification	to update recordkeeping re 106.124(5)(A) Pilot Plant F : Moderate	BR which references 30 TAC §	nce with the emissions limits specified in 30 106.262(a)(2).
	Citation: 40 Cl	FR Chapter 262, SubChapte	er I, PT 262, SubPT A 262.17(a)(1)(vii)(C)
	30 TA	AC Chapter 335, SubChapte	er E 335.112(a)(8)	
	30 TA	AC Chapter 335, SubChapte	er C 335.69(a)(1)(A)	
	Description: Failed in need Viol. Classification	to evaluate containers with d of segregation. : Minor	hazardous waste in the drum	pad area to see if they are incompatible and
	Citation: 40 Cl	FR Chapter 262, SubChapte	er I, PT 262, SubPT A 262.15(a)(5)
	30 TA	AC Chapter 335, SubChapte	er C 335.69(d)(2)	
	Description: Failed indicat	to ensure all hazardous wa ion of the hazard or a cher	ste containers in the facility's S nical hazard label consistent wi	atellite Accumulation Areas contain "an th the NFPA code".
	Notice of Intent Dat Disclosure Date: Viol. Classification	e: 03/29/2019 (15553) 07/10/2019 : Minor)3))7 H 115 725(c)(3)	
	Description: Failed	to conduct quarterly inspect	tions on some PSV monitoring	systems as required by HRV/OC Vent Gas
	Viol. Classification	ring Plan. : Minor		Systems as required by meVOC vent GdS
	Citation: 30 TA	AC Chapter 115, SubChapter	er D 115.352(2)	
	30 TA	AC Chapter 115, SubChapter	er H 115.782(c)	
	30 TA	AC Chapter 116, SubChapte	er B 116.115(c)	

40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.174(d)

Compliance History Report for CN600124705, RN100542281, Rating Year 2023 which includes Compliance History (CH) components from September 30, 2018, through September 30, 2023. Ratings are pending Mass Classification.

Rqmt Prov: PERMIT SC 16.1 Description: Failed to repair three components on DOR when associated equipment was shutdown or could be shutdown. Viol. Classification: Minor Citation: 30 TAC Chapter 116, SubChapter B 116.115(c) 30 TAC Chapter 117, SubChapter G 117.8100(a)(1)(C) Rqmt Prov: PERMIT SC 14.B(2) Description: Failed to conduct the 2019 first quarter cylinder gas audit of the Methanol Reformer NOx CEMS. Notice of Intent Date: 04/12/2019 (1555650) No DOV Associated Notice of Intent Date: 12/09/2020 (1703751) No DOV Associated Notice of Intent Date: 04/22/2021 (1722648) No DOV Associated Notice of Intent Date: 09/12/2022 (1847246) Disclosure Date: 01/23/2023 Viol. Classification: Minor Citation: 30 TAC Chapter 122, SubChapter B 122.143(4) Rqmt Prov: OP STC 46 Description: Failed to maintain the records required for an appliance containing 50 or more pounds of refrigerant. Viol. Classification: Minor 30 TAC Chapter 122, SubChapter B 122.143(4) Citation: Rqmt Prov: OP STC 46 Description: Failed to maintain record of one recovery equipment certificate. 03/02/2023 (1881279) Notice of Intent Date: No DOV Associated

- G. Type of environmental management systems (EMSs): N/A
- H. Voluntary on-site compliance assessment dates: $_{\mbox{N/A}}$
- I. Participation in a voluntary pollution reduction program: $$N\!/\!A$$
- J. Early compliance:

N/A

N/A

Sites Outside of Texas: