NPDES PERMIT NO. TX0067687
FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT

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DATE PREPARED

April 30, 2019

PERMIT ACTION

Renewal of a permit previously issued on October 30, 2014, with an effective date of December 1, 2014, and an expiration date of November 30, 2019.

RECEIVING WATER – BASIN

Rodgers Creek – Sabine River Basin (Segment No. 0506)

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT	Best Available Technology Economically Achievable
BOD_5	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F&WS	United States Fish and Wildlife Service
GPD	Gallon per day
IP	Procedures to Implement the Texas Surface Water Quality Standards
µg/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
MMCFD	Million cubic feet per day
MGD	Million gallons per day
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
RRC	Railroad Commission of Texas
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total Organic Carbon
TRC	Total residual chlorine
TSS	Total suspended solids
TSWQS	Texas Surface Water Quality Standards
WET	Whole effluent toxicity
WQMP	Water Quality Management Plan
WQS	Water Quality Standards

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued on October 30, 2014, with an effective date of December 1, 2014, and an expiration date of November 30, 2019, are as follow:

- Discharge flow has changed to 0.84 MGD from 0.504 MGD;
- Removed Cadmium monitoring requirement;
- Removed Mercury limits;
- Reduced Mercury monitoring frequency to quarterly; and,
- Revised Copper concentration and mass loading limits.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located at FM 1795 Street, Hawkins, TX 75765; County of Wood. Outfall 001 coordination is latitude 32° 36' 25" and longitude 95° 11' 54".

Under the SIC code 1321, the applicant operates a natural gas liquids plant. It is a centralized facility supporting extraction of oil and gas from XTO Energy- Gas Plant's operations in the vicinity of the Hawkins area. The facility includes oil/water separation, nitrogen injection, natural gas compression and natural gas separation processes. The facility utilizes water from wells for non-contact cooling water. Discharge consists of sediment waste from water clarifier supplying water to cooling tower, non-contact cooling water and cooling tower blowdown. Wastewater passes through treatment pit before discharged to Rodgers Creek through Outfall 001, thence to Sabine River. Chemical additives and water treatment products are used in the process.

The discharge is noncontact cooling water; this wastewater is not in contact with gas & oil residue left over in pipeline and/or equipment.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Forms 2C and 2E addendum received on March 19, 2019 and April 19, 2019, respectively, are presented in Table 1.

TABLE 1:

	Outfall 001 (Form 2C)	**Outfall 001 (Form 2E)**
Parameter	*Max. Daily Value (mg/l)*	*Max. Daily Value (mg/l)*
BOD	10.6	10.6
TSS	17.2	17.2
TRC	0	0
Oil & Grease	<4.44	<4.44
COD	< 20	< 20
TOC	0.562	0.562
Ammonia (as N)	0.005	0.005
Discharge Flow	0.84 MGD	0.84 MGD
pH range	6.9 – 8.9 s.u.	6.9 – 8.9 s.u.
Temperature (C), summer	33	33
Temperature (C), winter	13	13
Bromide	< 0.5	
Nitrate-Nitrite (as N)	< 0.1	

	Outfall 001 (Form 2C)	Outfall 001 (Form 2E)
Nitrogen, Total organic (as N)	<0.05	
Phosphorus (as P)	0.162	
Sulfate	4.24	
Sulfide	<0.015	
Sulfite	<2.00	
Surfactants	<0.2	
Barium, Total	0.096	
Boron, Total	0.058	
Cobalt, Total	<0.0003	
Molybdenum, Total	<0.0005	
Manganese, Total	0.00904	
Tin, Total	<0.001	
Titanium, Total	<0.03	
Antimony, Total	0.00217	
Arsenic	<0.0005	
Cadmium, Total	< 0.0002	
Chromium, Total	0.00166	
Copper, Total	0.0211	
Lead, Total	< 0.0005	
Mercury, Total	< 0.00000426	
Nickel, Total	<0.001	
Selenium, Total	0.00236	
Zinc, Total	0.0242	
Thallium, Total	<0.0005	
Benzene	<0.001	
Ethylbenzene	<0.001	
Toluene	<0.001	

According to DMRs from 1/1/2015 to 1/1/2019, there were one exceedance for pH in July 2018, 3 exceedances for copper in December 2015, February 2017 and September 2017, and 3 exceedances for TRC in 2016.

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”; more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered the NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The existing NPDES permit initially issued October 30, 2014, with an effective date of December 1, 2014, and an expiration date of November 30, 2019 is administratively continued until this permit is reissued.

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for BOD and TSS. The facility's discharge is noncontact cooling water. This wastewater is not in contact with gas & oil residue left over in pipeline and/or equipment. EPA has determined that BTEX requirement is not applicable to this discharge. No BTEX limit is proposed in the draft permit. Water quality-based effluent limitations are established in the proposed draft permit for monitoring of applicable WQ-based pollutants, TRC and pH.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. General Comments

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ pursuant to 40 CFR 125.3(c)(2). EPA establishes limitations based on the following technology-based controls: BPT, BCT and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

2. Effluent Limitation

Limitation for BOD_5 in the previous permit is retained in this draft permit. These limitations are based on the BPJ of the permit writer and are consistent with natural gas industry. Since these are technology-based, there is no compliance schedule provided to meet these limits. Compliance is required on the permit effective date.

Regulations at 40 CFR §122.45(f)(1) require all pollutants limited in permits to have limits expressed in terms of mass such as pounds per day if feasible. When determining mass limits, the maximum effluent flow (0.84 MGD) over the last two years is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 (lbs)(l)/(mg)(MG) * max. flow in MGD

Monthly average BOD loading = 20 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.84 MGD = 140.2 lbs/day
Daily max. BOD loading = 30 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.84 MGD = 210.3 lbs/day
Monthly average TSS loading = 30 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.84 MGD = 210.3 lbs/day
Daily max. TSS loading = 45 mg/l * 8.345 (lbs)(l)/(mg)(MG) * 0.84 MGD = 315.4 lbs/day

A summary of the technology-based limits for the facility is listed in Table 2:

Table 2: Discharge Limitation

Parameter	Monthly Avg	Daily Max	Monthly Avg	Daily Max
BOD	140.2 lbs/day	210.3 lbs/day	20 mg/L	30 mg/L
TSS	210.3 lbs/day	315.4 lbs/day	30 mg/L	45 mg/L

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations 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 and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard. Additionally, the TWQS found at 30 TAC Chapter 307 states 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 "Procedures to

Implement the Texas Surface Water Quality Standards" (IP) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater which: (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 which threatens human health.

The IP document is not a state water quality standard, but rather, a non-binding, non-regulatory guidance document. See IP at page 2 stating that "this is a guidance document and should not be interpreted as a replacement to the rules. The TWQS may be found in 30 TAC Sections (§§) 307.1-.10."). EPA does not consider the IP to be a new or revised water quality standard and has never approved it as such. EPA did comment on and conditionally "approve" the IP as part of the Continuing Planning Process (CPP) required under 40 CFR §130.5(c) and the Memorandum of Agreement between TCEQ and EPA, but this does not constitute approval of the IP as a water quality standard under CWA section 303(c). Therefore, EPA is not bound by the IP in establishing limits in this permit – but rather, must ensure that the limits are consistent with the EPA-approved state WQS. However, EPA has made an effort, where we believe the IP procedures are consistent with all applicable State and Federal regulations, to use those procedures.

The general criteria and numerical criteria which make up the stream standards are provided in the 201 EPA-approved partially Texas Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.10, adopted June 30, 2010. The designated uses of the receiving water (Segment 0506) are primary contact recreation, high aquatic life use and public water supply.

4. Reasonable Potential- Procedures

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow the IP where appropriate. However, EPA is bound by the State's WQS, not State guidance, including the IP, in determining permit decisions. EPA performs its own technical and legal review for permit issuance, to assure compliance with all applicable State and Federal requirements, including State WQS, and makes its determination based on that review.

Waste load allocations (WLA's) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long term average (LTA) is calculated, for both chronic and acute toxicity, using a log normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with upstream flow data. The 99th percentile confidence level is for discharges to lakes, reservoirs, bays, estuaries, wide tidal rivers, and narrow tidal rivers without upstream flow data. For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The smaller LTA value between acute and chronic condition is used to calculate the daily average (DLY AVG) and daily maximum (DLY MAX) concentration limits as follow:

DLY AVG = 1.47 LTA and DLY MAX = 3.11 LTA

Procedures found in the IP for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. If the average of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit, monitoring for the toxic pollutant will usually be included as a condition in the permit. If the average of the effluent data is equal to or greater than 85% of the calculated daily average limit, the permit will generally contain effluent limits for the toxic pollutant. The permit may specify a compliance period to achieve this limit if necessary.

Procedures found in the IP require review of the immediate receiving stream and effected downstream receiving waters. Discharges within three miles of perennial water or perennial pools with significant aquatic life uses are designed to protect against chronic toxicity and to protect human health in those waters.

5. Permit-Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

Criteria for pH is between 6.0 and 8.5 s.u. for the water segment 0506 pursuant to 30 TAC 307.10. The pH limit in the previous remains in the draft permit.

b. Aesthetic parameters

Narrative criteria is surface waters must be essentially free of floating debris, visible foam and maintained in an aesthetically attractive condition so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the watercourse; or cause toxicity to man, aquatic life, or terrestrial life pursuant to 30 TAC 307.4(b).

c. Temperature

Criteria for maximum temperature is 90 ^{o}F. There is no numerical criteria for industrial cooling impoundments pursuant to 30 TAC 307.4(f). The reported maximum discharge temperature, 91.5 ^{o}F, is within the regulated temperature differential (rise over ambient). EPA believes monitoring the temperature is not necessary.

d. TRC

TSWQS does not have numerical criteria for TRC. EPA chronic criteria for TRC, 11 ug/l, in the previous permit is retained in this draft permit.

e. TDS

Criteria of TDS is 500 mg/l. TDS effluent value of 94 mg/l was collected on April 11, 2019. Screening Calculations for TDS shows no permit limitations nor reporting requirement for TDS is needed (see Appendix 1).

e. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criteria, the permit must contain an effluent limit for that pollutant.

The critical low flow, site specific 7Q2 for the receiving stream is 0.0592 cfs; the harmonic mean is 0.1834 cfs. Outfall 001 discharges directly Rodgers Creek (intermittent stream), thence to Sabine River in Segment 0506 of Sabine River Basin. TCEQ'S TEXTOX Menu 7 is appropriate for evaluating this discharge.

Critical Dilution (CD) is calculated as follows:

CD = Qe / [Qe + Qa]

Where:
Qa = 0.0592 cfs
Qe = 1.5608 cfs (0.84 MGD)

CD = 1.5608 / [1.5608 + 0.0592] CD = 0.96 or 96%

The reasonable potential calculations were performed based on data obtained from the permit application. Segment specific values for pH, TSS, total hardness, TDS, chloride, and sulphate values were obtained from table D-5 of the 2010 IP. These values were also used in the menu to calculate reasonable potential. The results indicated that only Copper is exceeding the 85% of the calculated daily average limits (i.e., 16.611 ug/l) (see Appendix 2). Limits for copper in the draft permit will be different than the ones in the previous permit due to new input data as shown in the menu. Its mass limitations are calculated using the same equation as for BOD and TSS (see Table 3). Mercury and Cadmium show no reasonable potential exist, and no exceedance of the Mercury effluent limits has occurred since the last permit term. EPA will remove Cadmium monitoring requirement and Mercury limits in the draft permit as consistent with 40 CFR 122.44(l)(i)(C). Mercury monitoring frequency will also be reduced to quarterly.

Table 3: **Discharge Limitation**

Parameter	**Monthly Avg**	**Daily Max**	**Monthly Avg**	**Daily Max**
Copper, total	0.137 lbs/day	0.29 lbs/day	0.0195 mg/l	0.0413 mg/l

D. MONITORING FREQUENCY FOR PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). The monitoring frequencies are based on BPJ, taking into account the nature of the facility, the previous permit, and past compliance history (see Table 4). Composite sample type is appropriate for continuous discharge at Outfall 001, except for TRC and pH, which has to be analyzed within 15 minutes after sample is collected.

Table 4:

Parameter	Frequency at Outfall 001
Flow	Daily
pH	2/month
BOD	1/month
TSS	1/month
TRC	2/month (increase from previous one due to exceedances)
Copper	2/month
Mercury	Quarterly

E. WHOLE EFFLUENT TOXICITY

Biomonitoring is the most direct measure of potential toxicity which incorporates both 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.

Outfall 001 directly discharges to intermittent stream with perennial pools. According to the 2003 IP, the permittee will be required to conduct chronic testing using the same species (i.e., Ceriodaphnia dubia and Pimephales promelas) in the previous permit. The Reasonable Potential Analyzer shows there is RP for lethality and sublethal to the vertebrate, but no RP for lethality to the invertebrate. However, the sublethal endpoint has RP; therefore, there is RP for Chronic effects (which automatically includes the lethal endpoint as well even if they don't have RP for this endpoint) (see Appendix 3). WET limits are established for both species.

The critical condition is 96%. The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations must be 30%, 41%, 54%, 72% and 96%. The low-flow effluent concentration (critical low-flow dilution) is defined as 96% effluent. The permittee must limit and monitor discharge(s) as specified in Table 5.

Table 5:

WET Testing (7-day Chronic Renewal)[1]	VALUE	Frequency	Type
Ceriodaphnia dubia	96%	Quarterly	24-hr Composite
Pimephales promelas	96%	Quarterly	24-hr Composite

[1] Monitoring and reporting requirements begin on the effective date of this permit. See Part II of the permit, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

VI. TMDL REQUIREMENTS

The receiving stream Rodgers Creek, thence to water segment 0506 of the Sabine River Basin, is not listed in 2014 Texas 303(d) List, which EPA approved on November 19, 2015. No additional requirements beyond the already proposed technology-based and/or water-quality based requirements are needed in the proposed permit.

VII. ANTIDEGRADATION

The Texas Commission on Environmental Quality, Texas Surface Water Quality Standards, Antidegradation, Title 30, Part 1, Chapter 307, Rule §307.5 sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the proposed permit are developed from the State WQS and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water.

IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements and exemption to meet Antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR Part 122.44(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. The proposed permit is slightly less restrictive than the previous permit due to a number of factors. The facility effluent quality has been improved. The critical low flow of the receiving stream is changing to 0.0592 cfs from 0 cfs. The RP analysis indicated no reasonable potential exists for both Cadmium and Mercury. No exceedance of the Mercury effluent limits has occurred since the last permit term. EPA removed Cadmium monitoring requirement and Mercury limits as consistent with 40 CFR 122.44(l)(i)(C). BOD and TSS mass loading limits, which are based on the maximum effluent flow, become little bit less restrictive due to the facility maximum effluent flow increase to 0.84 MGD from 0.504 MGD. Changing limits based on new information is an allowable exception to anti-backsliding (CWA section 303(d)(4)(B) and 40 CFR §122.44(l)(2)(i)(A))

VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://www.fws.gov/southwest/es/ES_Lists_Main.cfm, there is four threatened (T) and endangered (E) species: Piping Plover (*Charadrius melodus*) (T), Red knot (*Calidris canutus rufa*) (T), Louisiana pine snake (*Pituophis ruthveni*), and Least tern (*Sterna antillarum*) (E) for Wood County. Least tern (Sterna antillarum) was listed in the previous permit with determination of "no effect".

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, EPA has determined that the reissuance of this permit will have "no effect" on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

Piping Plover (*Charadrius melodus*)- Piping Plover breeds and raises young on sparsely vegetated sandbars and reservoir shorelines on river systems as well as on the shorelines of alkaline lakes. Changes in the quality and quantity of riverine habitat due primarily to damming and water withdrawals are a primary threat to the species. On the wintering grounds, piping plovers forage and roost along barrier and mainland beaches, sand, mud, and algal flats, washover passes, salt marshes, and coastal lagoons. Habitat destruction and degradation are pervasive and have reduced suitable habitat. Human disturbance, predation, and invasive plants further reduce breeding and wintering habitat quality and affect survival. The permit does not authorize activities that may cause destruction of the Piping Plover habitat, and reissuance of the permit will have no effect on this species.

Louisiana pine snake (*Pituophis ruthveni*) - The primary threat to this snake is modification and curtailment of its habitat and range due to a variety of human-induced impacts, particularly habitat loss (forest conversion, degradation, and fragmentation), vehicle caused mortality, and isolation of small population with questionable genetic robustness. This species's small, isolated populations, low genetic diversity and reduced range also increase its vulnerability to catastrophic events.

The rufa red knot (*Calidris canutus rufa*) - The rufa red knot is a medium-sized shorebird about 9 to 11 inches (in) (23 to 28 centimeters (cm)) in length. The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast United States (Southeast), the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. During both the northbound (spring) and southbound (fall) migrations, red knots use key staging and stopover areas to rest and feed. The rufa red knot is threatened due to loss of both breeding and nonbreeding habitat; potential for disruption of natural predator cycles on the breeding grounds; reduced prey availability throughout the nonbreeding range; and increasing frequency and severity of asynchronies (''mismatches'') in the timing of the birds' annual migratory cycle relative to favorable food and weather conditions.

The proposed permit does not authorize constructions and land development, nor will cause release of toxic pesticides or spread of disease. Based on the information available to EPA, that the reissuance of this permit will have no effect on these federally listed threatened or endangered species.

IX. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

X. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of Texas WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated. Should the State adopt a new WQS, and/or develop a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR §122.44(d). Modification of the permit is subject to the provisions of 40 CFR §124.5.

XI. VARIANCE REQUESTS

None

XII. CERTIFICATION

This permit is in the process of certification by the State agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XIII. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XIV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION

NPDES Application for Permit to Discharge, Form 1, 2C and 2E dated on March 12, 2019.

B. State of Texas References

2014 Texas Integrated Report - Texas 303(d) List, November 19, 2015
Procedures to Implement the Texas Surface Water Quality Standards, June 2010
Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.10, adopted June 30, 2010

C. 40 CFR CITATIONS

Sections 122, 124, 125, 133, and 136

D. MISCELLANEOUS

Permittee's letter dated March 12, 2019; emails dated April 18, 2019 and August 13, 2019.

Appendix 1

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 7 - Discharge to an Intermittent Stream with Perennial Pools

Screen the Perennial Pool Characteristics of the Stream

Applicant Name:	**Hawkins Gas Plant**
Permit Number, Outfall:	**001**
Segment Number:	**0506**

Enter values needed for screening:			**Data Source (edit if different)**
QE - Average effluent flow	**0.84**	MGD	Permit application
QS - Stream harmonic mean flow	**0.18**	cfs	Critical conditions memo
QE - Average effluent flow	**1.2997**	cfs	Calculated
CA - TDS - ambient segment concentration	**201**	mg/L	2010 IP, Appendix D
CA - chloride - ambient segment concentration	**32**	mg/L	2010 IP, Appendix D
CA - sulfate - ambient segment concentration	**27**	mg/L	2010 IP, Appendix D
CC - TDS - segment criterion	**500**	mg/L	2010 TSWQS, Appendix A
CC - chloride - segment criterion	**200**	mg/L	2010 TSWQS, Appendix A
CC - sulfate - segment criterion	**100**	mg/L	2010 TSWQS, Appendix A
CE - TDS - average effluent concentration	**94**	mg/L	Permit application
CE - chloride - average effluent concentration		mg/L	Permit application
CE - sulfate - average effluent concentration	**4.24**	mg/L	Permit application

Screening Equation

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

Preliminary Calculations	**Load in River**	**Effluent Load**	**New Concentration**	**% Change in**	**% Change in Assim.**
Parameter	**QSCA**	**QECE**	**Equation 2**	**Ambient**	**Capacity**
TDS	36.8634	122.1693	107.23	-46.7	-31.4
Chloride	5.8688	0	3.96	-87.6	-16.7
Sulfate	4.9518	5.510614	7.05	-73.9	-27.3

Note: do not copy Preliminary Calculations into Fact Sheet or Statement of Basis/Technical Summary

Permit Limit Calculations

TDS

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	**542.19**
Calculate the LTA	LTA = WLA * 0.93	**504.24**
Calculate the daily average	Daily Avg. = LTA * 1.47	**741.23**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**1568.18**
Calculate 70% of the daily average	70% of Daily Avg. =	**518.86**
Calculate 85% of the daily average	85% of Daily Avg. =	**630.05**

No permit limitations needed if:	**94**	**≤**	**518.86**		
Reporting needed if:	**94**	**>**	**518.86**	**but ≤**	**630.05**
Permit limits may be needed if:	**94**	**>**	**630.05**		

No permit limitations needed for TDS

Chloride

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	**223.71**
Calculate the LTA	LTA = WLA * 0.93	**208.05**
Calculate the daily average	Daily Avg. = LTA * 1.47	**305.83**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**647.03**
Calculate 70% of the daily average	70% of Daily Avg. =	**214.08**
Calculate 85% of the daily average	85% of Daily Avg. =	**259.96**

No permit limitations needed if:	**0**	**≤**	**214.08**		
Reporting needed if:	**0**	**>**	**214.08**	**but ≤**	**259.96**
Permit limits may be needed if:	**0**	**>**	**259.96**		

No permit limitations needed for chloride

Sulfate

Calculate the WLA	WLA= [CC(QE+QS) - (QS)(CA)]/QE	**110.30**
Calculate the LTA	LTA = WLA * 0.93	**102.58**
Calculate the daily average	Daily Avg. = LTA * 1.47	**150.79**
Calculate the daily maximum	Daily Max. = LTA * 3.11	**319.02**
Calculate 70% of the daily average	70% of Daily Avg. =	**105.55**
Calculate 85% of the daily average	85% of Daily Avg. =	**128.17**

No permit limitations needed if:	**4.24**	**≤**	**105.55**		
Reporting needed if:	**4.24**	**>**	**105.55**	**but ≤**	**128.17**
Permit limits may be needed if:	**4.24**	**>**	**128.17**		

No permit limitations needed for sulfate

Appendix 2

TEXTOX MENU #7 - INTERMITTENT STREAM WITH PERENNIAL POOLS

HUMAN HEALTH LIMITS HAVE BEEN MULTIPLIED BY 10 FOR INCIDENTAL FRESHWATER FISH TISSUE;

IF THIS DOES NOT APPLY TO THIS FACILITY, ADJUST THE FORMULAS ACCORDINGLY.

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

Table 1, 2010 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life

Table 2, 2010 Texas Surface Water Quality Standards for Human Health (except Mercury)

Table 3, 2000 Texas Surface Water Quality Standards for Human Health (Mercury)

"Procedures to Implement the Texas Surface Water Quality Standards," Texas Commission on Environmental Quality, January 2003.

"Procedures to Implement the Texas Surface Water Quality Standards," Appendix D, Texas Commission on Environmental Quality, Ju

PERMIT INFORMATION

Permittee Name:	XTO Energy, Inc. - Hawkins Gas Plant
TPDES Permit No.:	TX0067687
Outfall No.:	001
Prepared by:	Quang Nguyen
Date:	May 31, 2019

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	Rodgers Creek
Segment No.:	506
TSS (mg/L):	18
pH (Standard Units):	6.8
Hardness (mg/L as $CaCO_3$):	49
Chloride (mg/L):	32
Effluent Flow for Aquatic Life (MGD):	0.84
Critical Low Flow [7Q2] (cfs):	0
Percent Effluent for Mixing Zone:	96
Percent Effluent for Zone of Initial Dilution:	96
Effluent Flow for Human Health (MGD):	0.84
Harmonic Mean Flow (cfs):	0.1834
Percent Effluent for Human Health:	87.634

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*		*Effect Ratio (WER)*	
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	58029.80	0.49		1.00	Assumed
Cadmium	6.60	-1.13	151894.51	0.27		1.00	Assumed
Chromium (Total)	6.52	-0.93	225214.62	0.20		1.00	Assumed

Chromium (+3)	6.52	-0.93	225214.62	0.20		1.00	Assumed	
Chromium (+6)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed	
Copper	6.02	-0.74	123338.41	0.31		1.00	Assumed	
Lead	6.45	-0.80	279114.24	0.17		1.00	Assumed	
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed	
Nickel	5.69	-0.57	94296.30	0.37		1.00	Assumed	
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed	
Silver	6.38	-1.03	122199.47	0.31		1.00	Assumed	
Zinc	6.10	-0.70	166459.75	0.25		1.00	Assumed	

CONVERT TISSUE-BASED CRITERIA TO WATER COLUMN CRITERIA:

Parameter		*Fish Only Criterion (ug/kg)*	*BCF (l/kg)*		*Fish Only Criterion (ug/L)*			
4,4'-DDD		166.16	53600		0.0031			
4,4'-DDE		214.4	53600		0.004			
4,4'-DDT		209.04	53600		0.0039			
Dioxins/Furans		0.0004	5000		8.00E-08			
Mercury								
Polychlorinated Biphenyls (PCBs)		19.96	31200		6.40E-04			

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (ug/L)*	*FW Chronic Criterion (ug/L)*	*WLAa*	*WLAc*	*LTAa*	*LTAc*	*Daily Avg. (ug/L)*	*Daily Max. (ug/L)*
Aldrin	3	N/A	3.13	N/A	1.79	N/A	2.63	5.57
Aluminum	991	N/A	1032.2917	N/A	592	N/A	870	1840
Arsenic	340	150	724.10664	319.45881	414.913104	245.9833	361.5954	765.008
Cadmium	4.28715113	0.14977005	16.675683	0.5825589	9.55516647	0.44857	0.659398	1.395054
Carbaryl	2	N/A	2.08	N/A	1.19	N/A	1.75	3.71
Chlordane	2.4	0.004	2.50	0.0041667	1.43	0.003	0.005	0.010
Chlorpyrifos	0.083	0.041	0.086	0.043	0.050	0.033	0.048	0.102
Chromium (+3)	317.661947	41.3212929	1672.3125	217.5335	958.235054	167.5008	246.2262	520.9275
Chromium (+6)	15.7	10.6	16.4	11.0	9.37	8.50	12.5	26.4
Copper	7.25180998	5.14712574	24.32447	17.264808	13.9379211	13.2939	19.54204	41.34403
Cyanide	45.8	10.7	47.7	11.1	27.3	8.58	12.6	26.7
4,4'-DDT	1.1	0.001	1.15	0.0010417	0.657	0.001	0.001	0.002
Demeton	N/A	0.1	N/A	0.104	N/A	0.080	0.118	0.249
Diazinon	0.17	0.17	0.177	0.177	0.101	0.136	0.149	0.316
Dicofol	59.3	19.8	61.770833	20.625	35.4	15.9	23.3	49.4
Dieldrin	0.24	0.002	0.250	0.002	0.143	0.002	0.002	0.005

Diuron	210	70	218.75	72.9	125	56.14583	82.5	175
Endosulfan I (alpha)	0.22	0.056	0.229	0.058	0.131	0.045	0.066	0.140
Endosulfan II (beta)	0.22	0.056	0.229	0.058	0.131	0.045	0.066	0.140
Endosulfan sulfate	0.22	0.056	0.229	0.058	0.131	0.045	0.066	0.140
Endrin	0.086	0.002	0.090	0.002	0.051	0.002	0.002	0.005
Guthion	N/A	0.01	N/A	0.010	N/A	0.008	0.012	0.025
Heptachlor	0.52	0.004	0.542	0.004	0.310	0.003	0.005	0.010
Hexachlorocyclohexane (Lindane)	1.126	0.08	1.17	0.083	0.672	0.064	0.094	0.200
Lead	29.4676872	1.14831347	184.91147	7.2057344	105.95427	5.548415	8.156171	17.25557
Malathion	N/A	0.01	N/A	0.010	N/A	0.008	0.012	0.025
Mercury	2.4	1.3	2.50	1.35	1.43	1.04	1.53	3.24
Methoxychlor	N/A	0.03	N/A	0.031	N/A	0.024	0.035	0.075
Mirex	N/A	0.001	N/A	0.001	N/A	0.001	0.001	0.002
Nickel	256.076946	28.4422428	719.50512	79.914806	412.276436	61.5344	90.45557	191.372
Nonylphenol	28	6.6	29.166667	6.88	16.7	5.29	7.78	16.5
Parathion (ethyl)	0.065	0.013	0.068	0.014	0.039	0.010	0.015	0.032
Pentachlorophenol	7.135	5.474	7.432	5.702	4.259	4.391	6.260	13.244
Phenanthrene	30	30	31.3	31.3	17.9	24.1	26.3	55.7
Polychlorinated Biphenyls (PCBs)	2	0.014	2.08	0.015	1.19	0.011	0.017	0.035
Selenium	20	5	20.8	5.21	11.9	4.010417	5.90	12.5
Silver (free ion)	0.8	N/A	7.9837641	N/A	4.57469685	N/A	6.724804	14.22731
Toxaphene	0.78	0.0002	0.813	0.0002	0.466	0.0002	0.0002	0.0005
Tributyltin (TBT)	0.13	0.024	0.135	0.025	0.078	0.019	0.028	0.060
2,4,5 Trichlorophenol	136	64	142	66.7	81.2	51.3	75.5	160
Zinc	64.0262868	64.5500192	266.5278	268.70798	152.720428	206.9051	224.499	474.9605

HUMAN HEALTH (APPLIES FOR INCIDENTAL FRESHWATER FISH TISSUE)

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (ug/L)*	*WLAh*	*LTAh*	*Daily Avg. (ug/L)*	*Daily Max. (ug/L)*
Acrylonitrile	3.8	4.34	4.03	59.28	125.42
Aldrin	0.001	0.00	0.00	0.02	0.03
Anthracene	N/A	N/A	N/A	N/A	N/A
Antimony	1071	1222.13	1136.58	16707.77	35347.73
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	513	585.39	544.41	8002.88	16931.27
Benzidine	0.002	0.00	0.00	0.03	0.07
Benzo(a)anthracene	0.33	0.38	0.35	5.15	10.89
Benzo(a)pyrene	0.33	0.38	0.35	5.15	10.89
Bis(chloromethyl)ether	0.44	0.50	0.47	6.86	14.52

Bis(2-chloroethyl)ether	5.27	6.01	5.59	82.21	173.93			
Bis(2-ethylhexyl)phthalate	41	46.79	43.51	639.61	1353.18			
Bromodichloromethane	322	367.44	341.72	5023.25	10627.42			
Bromoform	2175	2481.92	2308.19	33930.34	71784.61			
Cadmium	N/A	N/A	N/A	N/A	N/A			
Carbon Tetrachloride	29	33.09	30.78	452.40	957.13			
Chlordane	0.0081	0.01	0.01	0.13	0.27			
Chlorobenzene	5201	5934.93	5519.48	81136.42	171655.97			
Chlorodibromomethane (Dibromochloromethar	239	272.73	253.64	3728.44	7888.06			
Chloroform	7143	8150.97	7580.40	111431.93	235750.55			
Chromium (+6)	502	572.84	532.74	7831.28	16568.22			
Chrysene	327	373.14	347.02	5101.25	10792.44			
Cresols	1981	2260.55	2102.31	30903.91	65381.75			
Cyanide	N/A	N/A	N/A	N/A	N/A			
4,4'-DDD	0.0031	0.00	0.00	0.05	0.10			
4,4'-DDE	0.004	0.00	0.00	0.06	0.13			
4,4'-DDT	0.0039	0.00	0.00	0.06	0.13			
2,4'-D	N/A	N/A	N/A	N/A	N/A			
Danitol	5.44	6.21	5.77	84.86	179.54			
1,2-Dibromoethane	2.13	2.43	2.26	33.23	70.30			
m-Dichlorobenzene	1445	1648.91	1533.48	22542.23	47691.38			
o-Dichlorobenzene	4336	4947.87	4601.52	67642.29	143107.15			
p-Dichlorobenzene	N/A	N/A	N/A	N/A	N/A			
3,3'-Dichlorobenzidine	0.44	0.50	0.47	6.86	14.52			
1,2-Dichloroethane	553	631.04	586.86	8626.89	18251.44			
1,1-Dichloroethylene	23916	27290.86	25380.50	373093.39	789333.64			
Dichloromethane	5926	6762.24	6288.88	92446.54	195584.18			
1,2-Dichloropropane	226	257.89	239.84	3525.64	7459.00			
1,3-Dichloropropene (1,3- Dichloropropylene)	211	240.77	223.92	3291.63	6963.93			
Dicofol	0.076	0.09	0.08	1.19	2.51			
Dieldrin	0.0005	0.00	0.00	0.01	0.02			
2,4-Dimethylphenol	571	651.58	605.97	8907.69	18845.52			
Di-n-Butyl Phthalate	3010	3434.75	3194.32	46956.48	99343.30			
Dioxins/Furans (TCDD Equivalents)	8.00E-08	9.13E-08	8.49E-08	1.25E-06	2.64E-06			
Endrin	0.2	0.23	0.21	3.12	6.60			
Ethylbenzene	7143	8150.97	7580.40	111431.93	235750.55			
Fluoride	N/A	N/A	N/A	N/A	N/A			
Heptachlor	0.0015	0.00	0.00	0.02	0.05			
Heptachlor Epoxide	0.00075	0.00	0.00	0.01	0.02			
Hexachlorobenzene	0.0045	0.01	0.00	0.07	0.15			
Hexachlorobutadiene	274	312.67	290.78	4274.44	9043.21			
Hexachlorocyclohexane (alpha)	0.093	0.11	0.10	1.45	3.07			

Hexachlorocyclohexane (beta)	0.33	0.38	0.35	5.15	10.89			
Hexachlorocyclohexane (gamma) (Lindane)	6.2	7.07	6.58	96.72	204.63			
Hexachlorocyclopentadiene	N/A	N/A	N/A	N/A	N/A			
Hexachloroethane	62	70.75	65.80	967.21	2046.27			
Hexachlorophene	0.008	0.01	0.01	0.12	0.26			
Lead	3.83	26.33	24.48	359.93	761.48			
Mercury	0.0122	0.01	0.01	0.19	0.40			
Methoxychlor	0.33	0.38	0.35	5.15	10.89			
Methyl Ethyl Ketone	1500000	1.71E+06	1.59E+06	2.34E+07	4.95E+07			
Nickel	1140	3508.88	3263.26	47969.87	101487.27			
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A			
Nitrobenzene	463	528.34	491.35	7222.87	15281.05			
N-Nitrosodiethylamine	2.1	2.40	2.23	32.76	69.31			
N-Nitroso-di-n-Butylamine	4.2	4.79	4.46	65.52	138.62			
Pentachlorobenzene	1	1.14	1.06	15.60	33.00			
Pentachlorophenol	57	65.04	60.49	889.21	1881.25			
Polychlorinated Biphenyls (PCBs)	6.40E-04	0.00	0.00	0.01	0.02			
Pyridine	2014	2298.20	2137.33	31418.72	66470.90			
Selenium	N/A	N/A	N/A	N/A	N/A			
1,2,4,5-Tetrachlorobenzene	0.71	0.81	0.75	11.08	23.43			
1,1,2,2-Tetrachloroethane	76	86.72	80.65	1185.61	2508.34			
Tetrachloroethylene	49	55.91	52.00	764.41	1617.22			
Thallium	1.5	1.71	1.59	23.40	49.51			
Toluene	N/A	N/A	N/A	N/A	N/A			
Toxaphene	0.0053	0.01	0.01	0.08	0.17			
2,4,5-TP (Silvex)	7.6	8.67	8.07	118.56	250.83			
1,1,1-Trichloroethane	956663	1091660.78	1015244.52	##########	31574104.66			
1,1,2-Trichloroethane	295	336.63	313.06	4602.05	9736.30			
Trichloroethylene	649	740.58	688.74	10124.50	21419.87			
2,4,5-Trichlorophenol	2435	2778.61	2584.11	37986.39	80365.76			
TTHM (Sum of Total Trihalomethanes)	N/A	N/A	N/A	N/A	N/A			
Vinyl Chloride	24	27.39	25.47	374.40	792.11			

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

Aquatic Life

Parameter	***70%***	***85%***
Aldrin	1.84	2.24
Aluminum	609	739
Arsenic	253.117	307.356
Cadmium	0.462	0.560
Carbaryl	1.23	1.49

		0.2

Chlordane	0.0033	0.0040						
Chlorpyrifos	0.034	0.041						
Chromium (+3)	172.358	209.292						
Chromium (+6)	8.75	10.6						
Copper	13.679	16.611	21.1					
Cyanide	8.83	10.7						
4,4'-DDT	0.0008	0.0010						
Demeton	0.083	0.100						
Diazinon	0.104	0.127						
Dicofol	16.3	19.8						
Dieldrin	0.0017	0.0020						
Diuron	57.8	70.2						
Endosulfan (alpha)	0.046	0.056						
Endosulfan (beta)	0.046	0.056						
Endosulfan sulfate	0.046	0.056						
Endrin	0.0017	0.0020						
Guthion	0.0083	0.0100						
Heptachlor	0.0033	0.0040						
Hexachlorocyclohexane (Lindane)	0.066	0.080						
Lead	5.709	6.933						
Malathion	0.0083	0.0100						
Mercury	1.07	1.30						
Methoxychlor	0.025	0.030						
Mirex	0.0008	0.0010						
Nickel	63.319	76.887						
Nonylphenol	5.45	6.61						
Parathion (ethyl)	0.011	0.013						
Pentachlorophenol	4.3822	5.3212						
Phenanthrene	18.4	22.4						
Polychlorinated Biphenyls (PCBs)	0.012	0.014						
Selenium	4.13	5.01	2.36					
Silver (free ion)	4.707	5.716						
Toxaphene	0.00017	0.00020						
Tributyltin (TBT)	0.020	0.024						
2,4,5 Trichlorophenol	52.8	64.1						
Zinc	157.149	190.824	24.2					
Human Health								
Parameter	***70%***	***85%***						
Acrylonitrile	41.496	50.389						
Aldrin	0.011	0.013						
Anthracene	N/A	N/A						

Antimony	11695.439	14201.604						
Arsenic	N/A	N/A						
Barium	N/A	N/A						
Benzene	5602.017	6802.449						
Benzidine	0.022	0.027						
Benzo(a)anthracene	3.604	4.376						
Benzo(a)pyrene	3.604	4.376						
Bis(chloromethyl)ether	4.805	5.834						
Bis(2-chloroethyl)ether	57.549	69.881						
Bis(2-ethylhexyl)phthalate	447.725	543.666						
Bromodichloromethane	3516.276	4269.763						
Bromoform	23751.241	28840.793						
Cadmium	N/A	N/A						
Carbon Tetrachloride	316.683	384.544						
Chlordane	0.088	0.107						
Chlorobenzene	56795.497	68965.961						
Chlorodibromomethane (Dibromochloromethar	2609.907	3169.172						
Chloroform	78002.353	94717.143						
Chromium (+6)	5481.896	6656.588						
Chrysene	3570.876	4336.064						
Cresols	21632.74	26268.33						
Cyanide	N/A	N/A						
4,4'-DDD	0.034	0.041						
4,4'-DDE	0.044	0.053						
4,4'-DDT	0.043	0.052						
2,4'-D	N/A	N/A						
Danitol	59.405	72.135						
1,2-Dibromoethane	23.260	28.244						
m-Dichlorobenzene	15779.560	19160.895						
o-Dichlorobenzene	47349.601	57495.944						
p-Dichlorobenzene	N/A	N/A						
3,3'-Dichlorobenzidine	4.805	5.834						
1,2-Dichloroethane	6038.821	7332.855						
1,1-Dichloroethylene	261165.374	317129.383						
Dichloromethane	64712.578	78579.559						
1,2-Dichloropropane	2467.945	2996.790						
1,3-Dichloropropene (1,3- Dichloropropylene)	2304.143	2797.888						
Dicofol	0.830	1.008						
Dieldrin	0.005	0.007						
2,4-Dimethylphenol	6235.383	7571.537						
Di-n-Butyl Phthalate	32869.534	39913.006						
Dioxins/Furans (TCDD Equivalents)	8.74E-07	1.06E-06						

Endrin	2.184	2.652						
Ethylbenzene	78002.353	94717.143						
Fluoride	N/A	N/A						
Heptachlor	0.016	0.020						
Heptachlor Epoxide	0.008	0.010						
Hexachlorobenzene	0.049	0.060						
Hexachlorobutadiene	2992.110	3633.277						
Hexachlorocyclohexane (alpha)	1.016	1.233						
Hexachlorocyclohexane (beta)	3.604	4.376						
Hexachlorocyclohexane (gamma) (Lindane)	67.705	82.213						
Hexachlorocyclopentadiene	N/A	N/A						
Hexachloroethane	677.047	822.128						
Hexachlorophene	0.087	0.106						
Lead	251.950	305.940						
Mercury	0.133	0.162	0.00426					
Methoxychlor	3.604	4.376						
Methyl Ethyl Ketone	1.64E+07	1.99E+07						
Nickel	33578.906	40774.386						
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A						
Nitrobenzene	5056.011	6139.442						
N-Nitrosodiethylamine	22.932	27.846						
N-Nitroso-di-n-Butylamine	45.864	55.693						
Pentachlorobenzene	10.920	13.260						
Pentachlorophenol	622.446	755.828						
Polychlorinated Biphenyls (PCBs)	0.007	0.008						
Pyridine	21993.104	26705.911						
Selenium	N/A	N/A						
1,2,4,5-Tetrachlorobenzene	7.753	9.415						
1,1,2,2-Tetrachloroethane	829.928	1007.770						
Tetrachloroethylene	535.085	649.747						
Thallium	16.380	19.890						
Toluene	N/A	N/A						
Toxaphene	0.058	0.070						
2,4,5-TP (Silvex)	82.993	100.777						
1,1,1-Trichloroethane	###########	###########						
1,1,2-Trichloroethane	3221.433	3911.740						
Trichloroethylene	7087.152	8605.827						
2,4,5-Trichlorophenol	26590.470	32288.428						
TTHM (Sum of Total Trihalomethanes)	N/A	N/A						
Vinyl Chloride	262.083	318.243						

Appendix 3

Facility Name	XTO Hawkins Gas Plant							
NPDES Permit Number	TX0067687					Outfall Number	001	
Proposed Critical Dilution*	96	%						
		*Critical Dilution in draft permit, do not use % sign.						
		Enter data in yellow shaded cells only. Fifty percent should be entered as 50, not 50%.						
Test Data								
		VERTEBRATE				INVERTEBRATE		
Date (mm/yyyy)	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU
Sep-16	100	100	1.00	1.00	100	56	1.00	1.79
Dec-16	100	100	1.00	1.00	100	31	1.00	3.23
Mar-17	100	100	1.00	1.00	100	100	1.00	1.00
Jun-17	100	100	1.00	1.00	100	31	1.00	3.23
Sep-17	42	31	2.38	3.23	100	32	1.00	3.13
Dec-17	100	56	1.00	1.79	100		1.00	
Mar-18	100	100	1.00	1.00	100	100	1.00	1.00
Jun-18	100	100	1.00	1.00	100	100	1.00	1.00
Sep-18	100	100	1.00	1.00	100	100	1.00	1.00
Dec-18	42	42	2.38	2.38	100	100	1.00	1.00
	42	31	2.38	3.23	100	31	1.00	3.23
Count			10	10			10	9
Mean			1.276	1.439			1.000	1.818
Std. Dev.			0.582	0.785			0.000	1.062
CV			0.5	0.5			0	0.6
RPMF			1.6	1.6			0	1.8
		1.042	Reasonable Potential Acceptance Criteria					
Vertebrate Lethal		3.657	Reasonable Potential exists, Permit requires WET monitoring and WET limit.					
Vertebrate Sublethal		4.955	Reasonable Potential exists, Permit requires WET monitoring and WET limit.					
Invertebrate Lethal		0.000	No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.					
Invertebrate Sublethal		5.574193548	Reasonable Potential exists, Permit requires WET monitoring and WET limit.					