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January 5, 2024

Louisiana Department of Environmental Quality  
Office of Environmental Services  
Post Office Box 4313  
Baton Rouge, LA 70821-4313  
Attn: Ms. Bliss Higgins  
Assistant Secretary

Re: Application for Minor Modification of the  
Part 70 Operating Permit and Prevention of Significant Deterioration Permit  
Commonwealth LNG, LLC  
AI No.: 221642

On behalf of Commonwealth LNG, LLC (Commonwealth), please find attached the application for a minor modification of the Part 70 Operating Permit and Prevention of Significant Deterioration (PSD) Permit for the natural gas liquefaction and export facility (LNG Facility) in Cameron Parish, Louisiana. Commonwealth was issued Part 70 Operating Permit Number 0560-00997-V0 and PSD Permit PSD-LA-841 by the Louisiana Department of Environmental Quality (LDEQ) on March 28, 2023, authorizing the construction and operation of the LNG Facility.

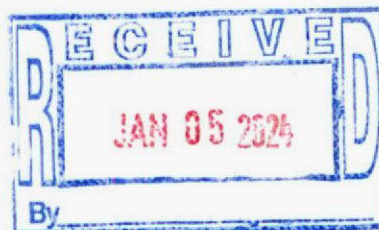
Commonwealth is submitting this application for a minor modification of Part 70 Operating Permit Number 0560-00997-V0 in accordance with Louisiana Administrative Code (LAC) 33:III.525 to address the proposed changes. Commonwealth also requests that the PSD Permit PSD-LA-841 be updated to reflect the proposed minor modification. Three copies of the application are included. An online payment (Transaction Number O25X1F9SQT, Receipt Number 55608) was made on January 4, 2024, for the processing fee associated with the application submittal (Fee Code 1712, Negotiated Fee for Part 70 Sources). A Request for Expedited Permit Processing has been included in accordance with LAC 33:I Chapter 18.

If you have any questions or need any additional information, please contact me at (225) 372-1115 or [choward@trccompanies.com](mailto:choward@trccompanies.com).

Sincerely,  
TRC Environmental Corporation

Chris Howard, PE<sup>LA</sup>  
Project Manager

cc: Mr. JD Morris, Commonwealth LNG, LLC  
Mr. Keith Suderman, PhD, TRC



2024 JAN -5 PM 3:13  
LDEQ RECEIPT

**Application for Minor Modification of the  
Part 70 (Title V) Operating Permit  
and Prevention of Significant Deterioration Permit**



**COMMONWEALTH  
LNG**

**Commonwealth LNG, LLC  
Agency Interest Number 221642**

*Cameron Parish, Louisiana*

**January 2024**



**Application for Minor Modification of the  
Part 70 (Title V) Operating Permit  
and Prevention of Significant Deterioration Permit**



**COMMONWEALTH  
LNG**

**Commonwealth LNG, LLC  
Agency Interest Number 221642**

*Cameron Parish, Louisiana*

Prepared By:



TRC Environmental Corporation  
4545 Sherwood Common Boulevard  
Building 3, Suite A  
Baton Rouge, Louisiana 70816

**January 2024**

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## Acronyms and Abbreviations

Acronym	Definition
BACT	Best Available Control Technology
Bcf	billion cubic feet
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
Commonwealth	Commonwealth LNG, LLC
EPA	United States Environmental Protection Agency
EPN	Emission Point Number
GHG	greenhouse gas
H <sub>2</sub> S	Hydrogen sulfide
HAP(s)	hazardous air pollutant(s)
LAC	Louisiana Administrative Code
LAC 33:III.Chapter X	Title 33, Part III, Chapter X of the Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
LNG	liquefied natural gas
LNG facility	natural gas liquefaction and export facility
m <sup>3</sup>	cubic meters
MTPA	million metric tonnes per annum



<b>Acronym</b>	<b>Definition</b>
NSR	New Source Review
NO <sub>x</sub>	Nitrogen oxide
NSPS	New Source Performance Standards
PAH	Polycyclic Aromatic Hydrocarbons
Pipeline	natural gas pipeline
PM	Particulate Matter
ppmv	parts per million by volume
PSD	Prevention of Significant Deterioration
SIC	Standard Industrial Classification
SO <sub>2</sub>	sulfur dioxide
TAPs	Toxic Air Pollutants
TPY	tons per year
VOC	Volatile Organic Compounds

## 1.0 Introduction

Commonwealth LNG, LLC (“Commonwealth”) was issued Part 70 (Title V) Operating Permit Number 0560-00997-V0 and Prevention of Significant Deterioration (“PSD”) Permit PSD-LA-841 by the Louisiana Department of Environmental Quality (“LDEQ”) on March 28, 2023, authorizing the construction and operations of a natural gas liquefaction and export facility (“LNG Facility”), which includes a natural gas pipeline (“Pipeline”), in Cameron Parish, Louisiana. The LNG Facility will be located on the west side of the Calcasieu Ship Channel, near its entrance to the Gulf of Mexico as shown on the Site Location Map (see Figure 1).

Commonwealth is submitting this minor modification application for Part 70 Operating Permit Number 0560-00997-V0 in accordance with Louisiana Administrative Code (“LAC”) 33:III.525 to address proposed changes associated with certain facility equipment. Commonwealth also requests that the PSD Permit PSD-LA-841 be updated to reflect the proposed minor modification.

### 1.1 PROCESS DESCRIPTION

Commonwealth is permitted to construct and operate the LNG Facility in Cameron Parish, Louisiana, on the west side of the Calcasieu Ship Channel at its entrance to the Gulf of Mexico.

The LNG Facility’s general process, as described in Commonwealth’s *Application for Initial Part 70 (Title V) Operating Permit and Prevention of Significant Deterioration Permit* (April 2021) and subsequent supplemental filings, has not changed. Proposed changes to the design are described in detail in Section 1.2.

The facility will consist of a natural gas liquefaction and export facility. The LNG Facility will consist of one liquefied natural gas (“LNG”) plant, including six gas liquefaction trains and appurtenant facilities. Each train will have a liquefaction design capacity of approximately 65.1 billion cubic feet (“Bcf”) of natural gas per year (equivalent to approximately 1.4 million metric tonnes per annum [“MTPA”] of LNG) for a total nominal liquefaction and production capacity of 390.3 Bcf per year (equivalent to approximately 8.4 MTPA of LNG). Under optimal operating conditions, the facility will have a peak capacity of up to 441.4 Bcf per year, approximately 9.5 MTPA of LNG. The facility will also include six LNG storage tanks, each with a capacity of 50,000 cubic meters (“m<sup>3</sup>”) [approximately 13,210,000 gallons], an electricity generating facility consisting of five natural gas-fired simple-cycle turbines, one marine loading berth capable of loading LNG carriers up to a capacity of 216,000 m<sup>3</sup> (approximately 57,000,000 gallons), and a 3.0-mile-long, 42-inch-diameter pipeline that will connect the LNG Facility with existing



intrastate and interstate pipelines for the purpose of supplying feed gas to the site. The pipeline will include interconnections with an existing interstate pipeline owned by Kinetica Partners, LLC, and two existing intrastate pipelines owned by EnLink Bridgeline Holdings LP.

The Facility Plot Plan, included as Figure 2, depicts the property boundary and identifies all emission sources and their locations at the site.

## **1.2 PROPOSED MINOR MODIFICATION**

Commonwealth is proposing changes to the facility design that constitute a minor modification in accordance with LAC 33:III.525.A. The turbine model originally identified for the six refrigeration turbines (GT-A1101/EQT 001, GT-B1101/EQT 002, GT-C1101/EQT 003, GT-D1101/EQT 004, GT-E1101/EQT 005, GT-F1101/EQT 006) and the three power generation turbines (Z-08101A/EQT 013, Z-08101B/EQT 014, Z-08101C/EQT 015) is no longer being manufactured. Commonwealth proposes to substitute newly available models that are more fuel efficient than those identified in the original design. The six refrigeration turbines in the original design will be replaced by six turbines of similar capacity and horsepower. The three larger generation turbines in the original design will be replaced by five smaller turbines while maintaining the overall total power generation load and total horsepower. With this proposed change, the total NO<sub>x</sub> and VOC emissions associated with the facility's turbines will decrease. Due to the combustion of natural gas, which is identified as a virgin fossil fuel under LAC 33:III.5013.A, potential emissions of propylene oxide from the turbines have been included. In addition, Commonwealth proposes the following changes: an increase in the operating time of the thermal oxidizers (TO-A/EQT 011, TO-B/EQT 012) to add redundancy of control of the emissions routed to the unit; an increase in the potential operating duration (hours) of vent gas emissions routed to the Marine Flare (FLR-MF/EQT 010); an increase in backup power capacity with two additional emergency generators, Essential Generator B (Z-08001B) and Essential Generator C (Z-08001C); and the addition of two tanks, Fresh Amine Tank (T-06401) and Slop Oil Tank (T-04201).

Commonwealth is also reconciling potential emission rates based on updated design parameters for the Wet Flare (FLR-WF/EQT 007), Dry Flare (FLR-DF/EQT 008), Spare Flare (FLR-SF/EQT 009), Essential Generator Engine A (Z-08001A/EQT 016), Fresh Water Fire Pump A (P-04402A/EQT 017), Fresh Water Fire Pump B (P-04402B/EQT 018), Brackish Water Fire Pump A (P-04405A/EQT 019), Brackish Water Fire Pump B (P-04405B/EQT 020), and Fugitive Emissions (FUG/FUG 001).



To reflect the proposed modification, Commonwealth is changing the source name and associated emission point numbers (“EPN”) for certain sources. Table 1-1 on the following page summarizes these changes.

**Table 1-1  
New and Revised Emission Source Numbers and Descriptions**

Permitted Emission Sources			New/Revised Emission Sources		
EQT	EPN	Description	EQT	EPN	Description
0007	FLR-WF	Wet Flare (L-4009)	0007	FLR-WF	Wet Flare (Z-05001)
0008	FLR-DF	Dry Flare (L-4010)	0008	FLR-DF	Dry Flare (Z-05001)
0009	FLR-SF	Spare Flare (L-4011)	0009	FLR-SF	Spare Flare (Z-05001)
0010	L-4012	Marine Flare	0010	FLR-MF	Marine Flare (Z-05101)
0011	TO-A	Thermal Oxidizer A	0011	TO-A	Thermal Oxidizer A (Z-07002A)
0012	TO-B	Thermal Oxidizer B	0012	TO-B	Thermal Oxidizer B (Z-07002B)
0013	GCT-A	Generator Turbine A	0013	Z-08101A	Generator Turbine A
0014	GCT-B	Generator Turbine B	0014	Z-08101B	Generator Turbine B
0015	GCT-C	Generator Turbine C	0015	Z-08101C	Generator Turbine C
--	--	--	TBD	Z-08101D	Generator Turbine D
--	--	--	TBD	Z-08101E	Generator Turbine E
0016	G-5901	Essential Generator	0016	Z-08001A	Essential Generator Engine A
--	--	--	TBD	Z-08001B	Essential Generator Engine B
--	--	--	TBD	Z-08001C	Essential Generator Engine C
0017	P-6003A	Main Firewater Pump Engine	0017	P-04402A	Fresh Water Fire Pump A
0018	P-6003B	Main Firewater Pump Engine	0018	P-04402B	Fresh Water Fire Pump B
0019	P-6003C	Main Firewater Pump Engine	0019	P-04405A	Brackish Water Fire Pump A
0020	P-6006	Canal Firewater Pump Engine	0020	P-04405B	Brackish Water Fire Pump B
--	--	--	TBD	T-04201	Slop Oil Tank
--	--	--	TBD	T-06401	Fresh Amine Tank

### 1.3 AIR EMISSIONS SUMMARY

Table 1-2 below shows the potential-to-emit in tons per year (“TPY”) for the proposed LNG Facility. The detailed calculations are included in **Appendix D**.

**Table 1-2**  
**Facility-Wide Potential Emission Rates**

Pollutant	Permitted Emissions (TPY)	Proposed Emissions (TPY)	Change in Emissions (TPY)
Particulate Matter <10 microns (PM <sub>10</sub> )	223.93	224.53	+ 0.60
Particulate Matter <2.5 microns (PM <sub>2.5</sub> )	223.93	224.53	+ 0.60
Sulfur Dioxide (SO <sub>2</sub> )	63.25	62.89	- 0.36
Nitrogen Oxides (NO <sub>x</sub> )	375.63	379.86	+ 4.23
Carbon Monoxide (CO)	917.40	850.77	-66.63
Volatile Organic Compounds (VOC)	151.91	164.11	+ 12.20
Hydrogen Sulfide	0.02	0.02	--
Lead	0.010	0.010	--
Greenhouse Gases (CO <sub>2</sub> e)	3,546,686	3,568,708	+ 22,022
1,3-Butadiene <sup>[1]</sup>	0.01	0.01	-
1,4-Dichlorobenzene	0.01	0.01	-
Acetaldehyde <sup>[1]</sup>	0.89	0.80	- 0.09
Acrolein <sup>[1]</sup>	0.14	0.13	- 0.01
Ammonia <sup>[1]</sup>	151.59	144.37	- 7.22
Arsenic	0.010	0.010	-
Barium	0.010	0.010	-
Benzene <sup>[1]</sup>	1.03	0.75	- 0.28
Beryllium	0.010	0.010	-
Cadmium	0.010	0.010	-
Chromium	0.010	0.010	-
Cobalt	0.010	0.010	-



**Table 1-2**  
**Facility-Wide Potential Emission Rates**

<b>Pollutant</b>	<b>Permitted Emissions (TPY)</b>	<b>Proposed Emissions (TPY)</b>	<b>Change in Emissions (TPY)</b>
Copper	0.010	0.010	-
Ethylbenzene <sup>[1]</sup>	0.71	0.64	- 0.07
Formaldehyde <sup>[1]</sup>	8.01	7.20	- 0.81
n-Hexane <sup>[1]</sup>	2.82	0.71	- 2.11
Manganese	0.010	0.010	-
Mercury	0.010	0.010	-
Naphthalene <sup>[1]</sup>	0.03	0.03	-
Nickel	0.010	0.010	-
Polynuclear Aromatic Hydrocarbons <sup>[1]</sup>	0.05	0.05	-
Propylene Oxide	-	0.58	0.58
Selenium	0.010	0.010	-
Toluene <sup>[1]</sup>	3.20	2.87	- 0.33
Xylene <sup>[1]</sup>	2.97	1.36	- 1.61
Zinc	0.010	0.010	-

<sup>[1]</sup> LAC 33:III Chapter 51 Toxic Air Pollutants ("TAPs") included in VOC total emissions.

#### **1.4 NEW SOURCE REVIEW**

The United States Environmental Protection Agency ("EPA") classifies the ambient air quality of an area or region based upon measured or predicted pollutant concentrations in that area or region. Cameron Parish is classified as attainment or the equivalent for all ambient air quality standard. Therefore, the proposed modification is subject to the PSD review.

The PSD regulations under 40 Code of Federal Regulations ("CFR") 52.21 and LAC 33:III.509 require a review of a proposed project/modification at a major stationary source on a pollutant-specific basis to determine if the project will be a major modification. A major modification is defined as "...any physical change in or change in the method of



operation of a major stationary source that results in a net emission increase of any NSR pollutant from the major stationary source above the significant thresholds based on the baseline actual emissions compared to the proposed project emissions". The definition of *Baseline Actual Emissions* under LAC 33:III.509.B for a new emissions unit states, "the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero, and thereafter, for all other purposes, shall equal the unit's potential to emit". As shown below in Table 1-3, a comparison of the facility's current permitted potential emission rates to the potential emissions rates after implementing the proposed changes to facility design demonstrate that the proposed changes do not cause a significant emissions increase of any NSR pollutant. Therefore, the project does not meet the definition of a PSD major modification and no PSD review is required.

**Table 1-3  
PSD Analysis**

<b>Pollutant</b>	<b>Permitted Potential Emissions (TPY)</b>	<b>Project Potential Emissions (TPY)</b>	<b>Change in Emissions (TPY)</b>	<b>PSD Significance Level (TPY)</b>	<b>PSD Major Modification (Yes/No)</b>
PM <sub>10</sub>	223.93	224.53	+ 0.60	15	No
PM <sub>2.5</sub>	223.93	224.53	+ 0.60	10	No
SO <sub>2</sub>	63.25	62.89	- 0.36	40	No
NO <sub>x</sub>	375.63	379.86	+ 4.23	40 <sup>(3)</sup>	No
CO	917.40	850.77	-66.63	100	No
VOC	151.91	164.11	+ 12.20	40	No
H <sub>2</sub> S	0.02	0.02	-	10	No
Lead	0.010	0.010	-	0.6	No
GHG <sup>(1), (2)</sup>	3,546,686	3,568,708	+ 22,022	75,000	No

(1) Regulated as carbon dioxide equivalent (CO<sub>2</sub>e) emissions.

(2) Subject only if another NSR pollutant is subject.

(3) Significance level for nitrogen dioxide

The potential emissions for the proposed facility are provided in **Appendix D**.

The new turbines and generator engines will comply with the Best Available Control Technology (“BACT”) determinations made for the PSD Permit PSD-LA-841 for similar units as summarized below.

**Table 1-4  
BACT Summary for New Sources**

<b>Pollutant</b>	<b>Generator Turbines (Generator Turbine D and Generator E)</b>	<b>Generator Engines (Essential Generator B and Essential Generator C) <sup>(1)</sup></b>
PM <sub>10</sub> /PM <sub>2.5</sub>	Low sulfur fuels and good combustion practices to limit PM <sub>10</sub> /PM <sub>2.5</sub> to $\leq 0.007$ lb/MMBtu	$\leq 0.067$ g/kW-hr
SO <sub>2</sub>	Use of low sulfur fuels in combination with good combustion practices to limit SO <sub>2</sub> to $\leq 0.00194$ lb/MMBtu	$\leq 0.00152$ lb/MMBtu
NO <sub>x</sub>	Combination of clean fuels and good combustion practices with dry low NO <sub>x</sub> (DLN) and selective catalytic reduction (SCR) to limit NO <sub>x</sub> to no more than 2.5 ppmvd (@ 15% O <sub>2</sub> )	$\leq 8.46$ g/kW-hr
CO	Combination of clean fuels and good combustion practices with catalytic oxidation (CO) to limit CO to no more than 1.7 ppmvd (@ 15% O <sub>2</sub> )	$\leq 1.21$ g/kW-hr
VOC	Combination of clean fuels and good combustion practices with catalytic oxidation (CO) to limit VOC to no more than 3.0 ppmvd (@ 15% O <sub>2</sub> )	$\leq 0.322$ g/kW-hr
GHG	$\leq 120$ lbs CO <sub>2</sub> e/MMBtu	$\leq 341$ TPY
	General BACT for Generator Engines:	provisions of 40 CFR Subpart IIII, operating in accordance with the engines manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.



## 1.5 FEE CALCULATION

The permit application fee is based on the Standard Industrial Classification (“SIC”) Code as listed in Table 1 of LAC 33:III.223. The SIC Code for an LNG facility is not listed in Table 1; therefore, in accordance with LAC 33:III.211.B.6, “If a process is not listed in the fee schedule and is not a source type exempted from fees by this regulation, then the department shall assign a fee using the negotiated fee set forth in fee number... 1712,” which is the Negotiated Fee for Part 70 Sources. The Minor Modification Permit Application Fee under Feed Number 1712 is based on the permitted total emissions of criteria pollutants excluding PM<sub>2.5</sub> (i.e., PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOC). The equation is \$291.00 + \$7.26/ton. The current permitted total emissions of criteria pollutants is 1,732.13 TPY.

In accordance with LAC 33:III.211.A, the application fee also includes a PSD Application Fee (50% surcharge), the New Source Performance Standards (“NSPS”) Maintenance Fee (25% surcharge), and the Air Toxics Permit Application Fee (10% surcharge). The NSPS fees may be waived when a PSD application fee is imposed (LAC 33:III.211.B.12). The total application fee is summarized below.

- Base Application Fee
  - = \$291.00 + ((\$7.26/ton) \* (1,732.12 tons))
  - = \$291.00 + \$12,575.26
  - = \$12,866.26

- Total Fee

Base Application Fee	\$12,866.26
PSD Application Fee (50% Surcharge)	\$6,433.13
NSPS Maintenance Fee (25% Surcharge)	Waived
Air Toxic Permit Application Fee (10% Surcharge)	\$1,286.63
<b>Total Application Fee</b>	<b>\$20,586.02</b>




## **1.6 EXPEDITED PERMIT PROCESSING REQUEST**

Pursuant to LAC 33:I.Chapter 18, Commonwealth respectively requests expedited processing of this application. Expedited permit processing is requested to facilitate the construction of the LNG Facility. As required, a completed Request for Expedited Permit Processing Form is included with the application.

## **2.0 Application for Approval of Emissions of Air Pollutants from Part 70 Sources**



Department of Environmental Quality Office of Environmental Services Air Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3417	<h1 style="margin: 0;">LOUISIANA</h1> <h2 style="margin: 5px 0 0 0;">Application for Approval of Emissions of Air Pollutants from Part 70 Sources</h2>	
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PLEASE TYPE OR PRINT

**1. Facility Information [LAC 33:III.517.D.1]**

<b>Facility Name or Process Unit Name (if any)</b> Commonwealth LNG		<input checked="" type="checkbox"/> All Process Units <input type="checkbox"/> Process Unit-specific Permit
<b>Agency Interest Number (A.I. Number)</b> 221642	<b>Currently Effective Permit Number(s)</b> 0560-00997-V0	
<b>Company - Name of Owner</b> Commonwealth LNG, LLC		
<b>Company - Name of Operator (if different from Owner)</b>		
<b>Parent Company (if Company – Name of Owner given above is a division)</b>		
<b>Federal Tax-ID</b> 45-4670562		

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> corporation, partnership, or sole proprietorship | <input type="checkbox"/> regulated utility  | <input type="checkbox"/> municipal government |
| <input type="checkbox"/> state government  | <input type="checkbox"/> federal government | <input type="checkbox"/> other, specify _____ |

**2. Physical Location and Process Description**  
**[LAC 33:III.517.D.18, unless otherwise stated]**

*What does this facility produce? Add more rows as necessary.*

Commonwealth LNG, LLC (Commonwealth) was issued Part 70 (Title V) Operating Permit 0560-00997-V0 for a LNG Facility in Cameron Parish, Louisiana, on the west side of the Calcasieu Ship Channel at its entrance to the Gulf of Mexico. The proposed facility will consist of a natural gas liquefaction and export facility. The LNG Facility will consist of one liquefied natural gas (LNG) plant, including six gas liquefaction trains and appurtenant facilities. Each train will have a liquefaction design capacity of approximately 65.1 billion cubic feet (Bcf) of natural gas per year (equivalent to approximately 1.4 million metric tonnes per annum [MTPA]) for a total nominal liquefaction and production capacity of 390.3 Bcf per year (equivalent to approximately 8.4 MTPA of LNG). Under optimal operating conditions, the facility will have a peak capacity of up to 441.4 Bcf per year, approximately 9.5 MTPA of LNG.

*What modifications/changes are proposed in this application? Add more rows as necessary.*

This application is for a minor modification to the current Part 70 (Title V) Operating Permit 0560-00997-V0. Commonwealth is proposing changes to the facility design through this minor modification application that meets the criteria of LAC 33:III.525.A. See Section 1.2 of the application for additional details.

**Nearest town (in the same parish as the facility):**  
Cameron

**Parish(es) where facility is located:**  
Cameron

<b>Distance To (mi):</b>	<u>31</u> Texas	<u>226</u> Arkansas	<u>227</u> Mississippi	<u>302</u> Alabama
<b>Latitude of Facility Front Gate:</b>	<u>29</u> Deg	<u>46</u> Min	<u>29</u> Sec	<u>96</u> Hundredths
<b>Longitude of Facility Front Gate:</b>	<u>-93</u> Deg	<u>21</u> Min	<u>30</u> Sec	<u>07</u> Hundredths
<b>Distance from nearest Class I Area:</b>	<u>404</u>	kilometers		

Add physical address and description of location of the facility below. If the facility has no address, provide driving directions. Add more rows as necessary.

500 Gulf Beach Highway, Cameron, LA 70631

- Map attached (required per LAC 33:III.517.D.1)
- Description of processes and products attached (required per LAC 33:III.517.D.2)
- Introduction/Description of the proposed project attached (required per LAC 33:III.517.D.5)

**3. Confidentiality [LAC 33.I.Chapter 5]**

Are you requesting confidentiality for any information except air pollutant emission rates?  Yes  No

If "yes," list the sections for which confidentiality is requested below. Add rows as necessary. Confidentiality requests require a submittal that is separate from this application. Information for which confidentiality is requested should not be submitted with this application. Consult instructions.

**4. Type of Application [LAC 33:III.517.D]**

Check all that apply.

<input type="checkbox"/> Renewal
Select one, if applicable:
<input type="checkbox"/> Entirely new facility
<input type="checkbox"/> Significant modification of existing facility (may also include reconciliations) [LAC 33:III.527]
<input checked="" type="checkbox"/> Minor modification of existing facility (may also include reconciliations) [LAC 33:III.525]
<input type="checkbox"/> Reconciliation only
NSR Analysis:
<input type="checkbox"/> Prevention of Significant Deterioration (PSD)
<input type="checkbox"/> Nonattainment New Source Review (NNSR)

Does this submittal update or replace an application currently under review?  Yes  No

If yes, provide date that the prior application was submitted: \_\_\_\_\_

Select one if this application is for an existing facility that does not have an air quality permit:

- Previously Grandfathered (LAC 33:III.501.B.6)
- Previously Exempted (e.g., Small Source Exemption; LAC 33:III.501.B.2.d)
- Previously Unpermitted



**5. Fee Information [LAC 33:III.517.D.17]**

**Fee Parameter:** If the fee code is based on an operational parameter (such as number of employees or capital cost), enter that parameter here. Total Potential Emissions of Criteria Pollutants, not included PM<sub>2.5</sub>

**Industrial Category:** Enter the Standard Industrial Classification (SIC) and North American Industry Classification (NAICS) Codes that apply to the facility.

**Primary SICC:** 4922      **NAICS Code:** 221210

**Secondary SICC(s):** \_\_\_\_\_

**Project Fee Calculation:** Enter fee code, permit type, production capacity/throughput, and fee amount pursuant to LAC 33:III.Chapter 2. Add rows to this table as needed. Include with the application the amount in the Grand Total blank as the permit application fee.

FEE CODE	TYPE	EXISTING CAPACITY	INCREMENTAL CAPACITY INCREASE	SURCHARGES				
				MULTIPLIER	NSPS	PSD	AIR TOXICS	TOTAL AMOUNT
1712	Minor	1,732.12 tpy	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$12,866.26
				50% surcharge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	\$6,433.13
				10% surcharge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$1,286.63
<b>GRAND TOTAL</b>								<b>\$20,586.02</b>

**\*\*Optional\*\* Fee Explanation:** Use the space provided to give an explanation of the fee determination displayed above. Using this area will help to avoid confusion.

See Section 1.5 of the Permit Application for a detailed explanation of how the application fee was determined.

**Electronic Fund Transfer (EFT):** If paying the permit application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the permit application fee using EFT, leave blank.

**EFT Transaction Number**      **Date of Submittal**      **Total Dollar Amount**  
O25X1F9SQT      January 4, 2024      \$21,488.41

**6. Key Dates**

*Estimated date construction will commence:* 2Q2024      *Estimated date operation will commence:* 4Q2028

**7. Pending Permit Applications – For Process Unit-Specific Permits Only**

**[LAC 33:III.517.D.18]**

List all other process units at this facility for which Part 70 permit applications have been submitted, but have not been acted upon by LDEQ as of the date of submittal of this application. If none, state "none" in the table. **\*\*It is not necessary to update this table during the permit review process, unless requested by LDEQ.\*\***

Process Unit Name	Permit Number	Date Submitted
None		

**8. LAC 33:I.1701 Requirements – Answer all below for new sources and permit renewals -  Yes  No**

*Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in Louisiana or other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)*

Yes  No

**If yes, list States:** \_\_\_\_\_

*Do you owe any outstanding fees or final penalties to the Department?  Yes  No*  
*If yes, explain below. Add rows if necessary.*

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*Is your company a corporation or limited liability company?  Yes  No*

**If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State. The appropriate certificate(s) should be attached to the end of this application as an appendix.**

**See Appendix A.**



**9. Permit Shield Request [LAC 33:III.517.E.7] -  Yes  No**

If yes, check the appropriate boxes to indicate the type of permit shield being sought. Include the specific regulatory citation(s) for which the shield is being requested. Give an explanation of the circumstances that will justify the permit shield request. Attach additional pages if necessary. If additional pages are used, attach them directly behind this page and enter "See Attached Pages" into the Explanation field.

**Type of Permit Shield request (check all that apply):**

<b>Non-applicability determination for:</b>	<b>Specific Citation(s)</b>	<b>Explanation</b>
<input type="checkbox"/> 40 CFR 60		
<input type="checkbox"/> 40 CFR 61		
<input type="checkbox"/> 40 CFR 63		
<input type="checkbox"/> Prevention of Significant Deterioration		
<input type="checkbox"/> Nonattainment New Source Review		

<b>Interpretation of monitoring, recordkeeping, and/or reporting requirements, and/or means of compliance for:</b>	<b>Specific Citation(s)</b>	<b>Explanation</b>
<input type="checkbox"/> 40 CFR 60		
<input type="checkbox"/> 40 CFR 61		
<input type="checkbox"/> 40 CFR 63		
<input type="checkbox"/> Prevention of Significant Deterioration		
<input type="checkbox"/> Nonattainment New Source Review		
<input type="checkbox"/> State Implementation Plan (SIP) Regulation(s) referenced in 40 CFR 52 Subpart T		

### 10. Certification of Compliance With Applicable Requirements

Based on information and belief, formed after reasonable inquiry, the company and facility referenced in this application is in compliance with and will continue to comply with all applicable requirements pertaining to the sources covered by the permit application, as outlined in Tables 1 and 2 in the permit application. For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

*For corporations only:* By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, (1) I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or (2) I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.\*

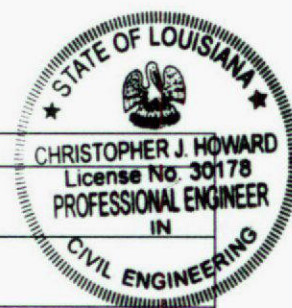
Per the requirements of LAC 33:III.525.B.2.b, I certify that the proposed modifications meet the criteria for a minor modification in LAC 33:III.525.A, and request that minor modification procedures be used for this application.

**CERTIFICATION:** I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions of Air Pollutants from Part 70 Sources, including all attachments thereto and the compliance statement above, are true, accurate, and complete.

**CERTIFICATION:** I certify that the engineering calculations, drawings, and design are true and accurate to the best of my knowledge.

a. Responsible Official		
Name JD Morris		
Title Vice President, Regulatory & Permitting		
Company Commonwealth LNG, LLC		
Suite, mail drop, or division Suite 500		
Street or P.O. Box One Riverway		
City Houston	State TX	Zip 77056
Business phone 346.352.4435		
Email Address jmorris@teamcpl.com		

b. Professional Engineer		
Name Christopher J. Howard, PE <sup>LA</sup>		
Title Project Manager		
Company TRC Environmental Corporation		
Suite, mail drop, or division Building 3, Suite A		
Street or P.O. Box 4545 Sherwood Common Boulevard		
City Baton Rouge	State LA	Zip 70816
Business phone 225.372.1115		
Email Address choward@TRCcompanies.com		



Signature of responsible official (See 40 CFR 70.2): <i>[Handwritten Signature]</i>		
Date: JAN. 4, 2024		

Signature of Professional Engineer: <i>[Handwritten Signature]</i>		
Date: 1/5/2024		
Louisiana Registration No. 30178		

\*Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form 7218) available on LDEQ's website at <http://deq.louisiana.gov/page/air-permit-applications>



**11. Personnel [LAC 33:III.517.D.1]**

<b>a. Manager of Facility who is located at plant site</b>		
<b>Name</b>	<input type="checkbox"/> Primary contact	
<b>Title</b>		
<b>Company</b>		
<b>Suite, mail drop, or division</b>		
<b>Street or P.O. Box</b>		
<b>City</b>	<b>State</b>	<b>Zip</b>
<b>Business phone</b>		
<b>Email address</b>		

<b>b. On-site contact regarding air pollution control</b>		
<b>Name</b>	<input type="checkbox"/> Primary contact	
<b>Title</b>		
<b>Company</b>		
<b>Suite, mail drop, or division</b>		
<b>Street or P.O. Box</b>		
<b>City</b>	<b>State</b>	<b>Zip</b>
<b>Business phone</b>		
<b>Email address</b>		

<b>c. Person to contact with written correspondence</b>		
<b>Name</b> JD Morris	<input checked="" type="checkbox"/> Primary contact	
<b>Title</b> Vice President, Regulatory & Permitting		
<b>Company</b> Commonwealth LNG, LLC		
<b>Suite, mail drop, or division</b> Suite 500		
<b>Street or P.O. Box</b> One Riverway		
<b>City</b> Houston	<b>State</b> TX	<b>Zip</b> 77056
<b>Business phone</b> 346.352.4435		
<b>Email address</b> jmorris@teamcpl.com		

<b>d. Person who prepared this report</b>		
<b>Name</b> Stephanie P. McKay, PE <sup>LA</sup>	<input type="checkbox"/> Primary contact	
<b>Title</b> Project Manager		
<b>Company</b> TRC Environmental Corporation		
<b>Suite, mail drop, or division</b> Building 3, Suite A		
<b>Street or P.O. Box</b> 4545 Sherwood Common Boulevard		
<b>City</b> Baton Rouge	<b>State</b> LA	<b>Zip</b> 70816
<b>Business phone</b> 225.372.1280		
<b>Email address</b> smckay@TRCcompanies.com		

<b>e. Person to contact about Annual Maintenance Fees</b>		<input type="checkbox"/> a <input type="checkbox"/> b <input checked="" type="checkbox"/> c <input type="checkbox"/> d <input type="checkbox"/> other (specify below)	
<b>Name</b>	<input type="checkbox"/> Primary contact	<b>Suite, mail drop, or division</b>	
<b>Title</b>		<b>Street or P.O. Box</b>	
<b>Company</b>		<b>City</b>	<b>State</b> <b>Zip</b>
<b>Business Phone</b>		<b>Email Address</b>	

**12. Proposed Project Emissions [LAC 33:III.517.D.3]**

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
Particulate Matter (PM <sub>2.5</sub> )	224.53
Particulate Matter (PM <sub>10</sub> )	224.53
Sulfur Dioxide (SO <sub>2</sub> )	62.89
Nitrogen Oxides (NO <sub>x</sub> )	379.86
Carbon Monoxide (CO)	850.77
Total VOC (including those listed below)	164.11
Greenhouse Gas (CO <sub>2e</sub> )	3,568,708
Hydrogen Sulfide (H <sub>2</sub> S)	0.02
Lead (Pb)	0.01
1,3-Butadiene	0.01
Acetaldehyde	0.80
Acrolein	0.13
Ammonia	144.37
Arsenic	0.01
Barium	0.01
Benzene	0.75
Beryllium	0.01
Cadmium	0.01
Chromium	0.01
Cobalt	0.01
Copper	0.01
Dichlorobenzene	0.01
Ethylbenzene	0.64
Formaldehyde	7.20
Hexane	0.71
Manganese	0.01
Mercury	0.01
Naphthalene	0.03
Nickel	0.01
PAH (Total)	0.05
Propylene Oxide	0.58
Selenium	0.01
Toluene	2.87
Xylenes	1.36
Zinc	0.01





**14.a. Enforcement Actions [LAC 33:III.517.D.18] -  Yes  No**

If yes, list all federal and state air quality enforcement actions, settlement agreements, and consent decrees received for this facility and/or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit. For each action, list the type of action (or its tracking number), the regulatory authority or authorities that issued the action, and the date that the action was issued. Summarize the conditions imposed by the enforcement action, settlement agreement, and consent decree in Section 22, Table 2. It is not necessary to submit a copy of the referenced action. Add rows to table as necessary.

Type of Action or Tracking Number	Issuing Authority	Date Action Issued	Summary of Conditions Included?
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

**14.b. Schedule for Compliance [LAC 33:III.517.E.4]  Yes  No**

If the facility or process unit for which application is being made is not in full compliance with all applicable regulations, give a description of how compliance will be achieved, including a schedule for compliance below. Add rows as necessary. See instructions.

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**15. Letters of Approval for Alternate Methods of Compliance -  Yes  No**

If yes, list all correspondence with LDEQ, EPA, or other regulatory bodies that provides for or supports a request for alternate methods of compliance with any applicable regulations for this facility or process unit (for process unit-specific permits). List the date of issuance of the letter and the regulation referenced by the letter. **Attach as an appendix a copy of all documents referenced in this table.** Letters that are not included may not be incorporated into a final permit. Add rows to table as necessary.

Date Letter Issued	Issuing Authority	Referenced Regulation(s)	Copy of Letter Attached?
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

**16. Initial Notifications and Performance Tests [LAC 33:III.517.D.18] -  Yes  No**

If yes, list any initial notifications that have been submitted or one-time performance tests that have been performed for this facility or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit in order to satisfy regulatory requirements. Any initial notification or one-time performance test requirements that have not been satisfied should be listed in Section 22, Table 2 of this application. Any notifications or performance tests that recur periodically should also be properly noted in Section 22, Table 2 of this application. Add rows to table as necessary.

Initial Notification or One-time Performance Test?	Regulatory Citation Satisfied	Applicable Source(s)	Date Completed/Approved



### 17. Existing Prevention of Significant Deterioration or Nonattainment New Source Review Limitations [LAC 33:III.517.D.18]

Do one or more emissions sources represented in this permit application currently operate under one or more NSR permits?

Yes  No

If "yes," summarize the limitations from such permit(s) in the following table. Add rows to table as necessary. Be sure to note any annual emissions limitations from such permit(s) in Section 13 of this application.

Permit Number	Date Issued	Emission Point ID No.	Pollutant	BACT/LAER Limit <sup>1</sup>	Averaging Period	Description of Control Technology/Work Practice Standards	
PSD-LA-841	2023/03/28	EQT 001 through EQT 006 Refrigeration Turbines & EQT 013 through EQT 015 Generator Turbines	PM10/2.5	≤ 0.0183 lb/MMBtu		Low sulfur fuels and good combustion practices	
			SO <sub>2</sub>	≤ 0.0134 lb/MMBtu		Low sulfur fuels and good combustion practices	
			NO <sub>x</sub>	≤ 2.5 ppmvd @ 15% O <sub>2</sub>		Clean fuel, good combustion practices, dry low NO <sub>x</sub> , and SCR	
			CO	≤ 1.7 ppmvd @ 15% O <sub>2</sub>		Clean fuel, good combustion practices, and catalytic oxidation	
			VOC	≤ 3.0 ppmvd @ 15% O <sub>2</sub>		Clean fuel, good combustion practices, and catalytic oxidation	
			GHG	≤ 120 lb/MMBtu CO <sub>2</sub> e		Thermally efficient equipment, low carbon fuels, and good combustion practices	
		EQT 007 through EQT 010 Flares					Good combustion practices (including work practices listed in 40 CFR 60.18), burner optimization, use of facility fuel gas for pilots and purge, and flare gas recovery.
			GHG	GRP 001: 296,090 TPY EQT 010: 226 TPY			
		EQT 011, EQT 012 Thermal Oxidizers	PM10/2.5				Clean fuel and good combustion practices
			SO <sub>2</sub>				Pretreating the acid gas stream in the H <sub>2</sub> S scavenger system in combination with clean fuel and good combustion practices.
			NO <sub>x</sub>	≤ 0.049 lb/MMBtu			Low NO <sub>x</sub> Burners in combination with clean fuel and good combustion practices
			CO	≤ 0.0824 lb/MMBtu			Clean fuel and good combustion practices
			VOC	99.9% DRE			Clean fuel and good combustion practices
			GHG	566,344TPY			

Permit Number	Date Issued	Emission Point ID No.	Pollutant	BACT/LAER Limit <sup>1</sup>	Averaging Period	Description of Control Technology/Work Practice Standards	
PSD-LA-841	2023/03/28	EQT 016 Generator Engine	PM	≤ 0.067 g/kW-hr			
			SO2	≤ 0.00152 lb/MMBtu			
			NOx	≤ 8.46 g/kW-hr			
			CO	≤ 1.21 g/kW-hr			
			VOC	≤ 0.322 g/kW-hr			
			GHG	341 TPY			
		EQT 017 through EQT 020 Firewater Pumps	PM	≤ 0.125 g/kW-hr			
			SO2	≤ 0.00152 lb/MMBtu			
			NOx	≤ 5.53 g/kW-hr			
			CO	≤ 0.55 g/kW-hr			
			VOC	≤ 0.40 g/kW-hr			
			GHG	54 TPY			
		EQT 021 Hot Oil Heater	PM10/2.5	≤ 0.00745 lb/MMBtu			Clean fuel, good combustion practices, and minimization of operating time
			SO2	≤ 0.0103 lb/MMBtu			Low sulfur fuels in combination with operating time minimization, and good combustion practices
			NOx	≤ 0.07 lb/MMBtu			Low NOx Burners, clean fuel, good combustion practices, and limiting operation
			CO	≤ 0.0824 lb/MMBtu			Clean fuel and good combustion practices, and limiting operation
			VOC	≤ 0.00539 lb/MMBtu			Clean fuel and good combustion practices, and limiting operation
			GHG	≤ 120 lb/MMBtu CO2e			Thermally efficient equipment, low carbon fuels, and good combustion practices



Permit Number	Date Issued	Emission Point ID No.	Pollutant	BACT/LAER Limit <sup>1</sup>	Averaging Period	Description of Control Technology/Work Practice Standards
PSD-LA-841	2023/03/28	EQT 022 IFR Storage Tank	VOC			Internal floating roof tank
		EQT 023 through EQT026 Fixed Roof Storage Tanks	VOC			Fixed roof tank
		FUG 001 Fugitive Emissions	VOC			<ul style="list-style-type: none"> <li>• Appropriate component selection, design, and installation</li> <li>• Utilizing proper piping design</li> <li>• Equipping all rotary pumps and compressors handling VOCs having a TVP ≥ 1.5 psia at handling conditions with mechanical seals or other equivalent equipment</li> <li>• Implementing a LDAR program that entails quarterly monitoring of accessible compressors, pumps, and valves containing more than 10 wt% of VOC or methane using Method 21 of 40 CFR 60, Appendix A. If the instrument reading exceeds 10,000 ppm, the component shall be repaired within 15 days. If the repair would require a unit shutdown, then the repair may be delayed until the next scheduled shutdown.</li> </ul>
			GHG	14,149 TPY		

<sup>1</sup>For example, lb/MM Btu, ppmvd @ 15% O<sub>2</sub>, lb/ton, lb/hr

**18. Air Quality Dispersion Modeling [LAC 33:III.517.D.15]**

Was Air Quality Dispersion Modeling as required by LAC 33:III performed in support of this permit application? (Air Quality Dispersion Modeling is only required when applying for PSD permits and as requested by LDEQ.)

Yes  No

Has Air Quality Dispersion Modeling completed in accordance with LAC 33:III ever been performed for this facility in support of an air permit application previously submitted for this facility or process unit (for process unit-specific permits) or as required by other regulations AND approved by LDEQ?

Yes  No

If yes, enter the date the most recent Air Quality Dispersion Modeling results as required by LAC 33:III were submitted:  
October 2021

If the answer to either question above is "yes," enter a summary of the most recent results in the following table. If the answer to both questions is "no," enter "none" in the table. Add rows to table as necessary.

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Toxic Air Pollutant Ambient Air Standard or (National Ambient Air Quality Standard {NAAQS})
NOx	1-hour	168 µg/m <sup>3</sup>	188 µg/m <sup>3</sup>
NOx	Annual	11.0 µg/m <sup>3</sup>	100 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour	65.2 µg/m <sup>3</sup>	196 µg/m <sup>3</sup>
	3-hour	10.4 µg/m <sup>3</sup>	25.0 µg/m <sup>3</sup>
	24-hour	2.7 µg/m <sup>3</sup>	5.0 µg/m <sup>3</sup>
	Annual	0.140 µg/m <sup>3</sup>	1.0 µg/m <sup>3</sup>
CO	1-Hour	449 µg/m <sup>3</sup>	2000 µg/m <sup>3</sup>
	8-Hour	280 µg/m <sup>3</sup>	500 µg/m <sup>3</sup>
PM10	24-Hour	2.76 µg/m <sup>3</sup>	5.0 µg/m <sup>3</sup>
	Annual	0.188 µg/m <sup>3</sup>	1.0 µg/m <sup>3</sup>
PM <sub>2.5</sub>	24-hour	22.0 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
	Annual	0.169 µg/m <sup>3</sup>	0.2 µg/m <sup>3</sup>

**19. General Condition XVII Activities-  Yes  No**

Enter all activities that qualify as Louisiana Air Emissions Permit General Condition XVII Activities.

- Expand this table as necessary to include all such activities.
- See instructions to determine what qualifies as a General Condition XVII Activity.
- Do not include emissions from General Condition XVII Activities in the proposed emissions totals for the permit application.

Work Activity	Schedule	Emission Rates – TPY					
		PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	Other



**20. Insignificant Activities [LAC 33:III.501.B.5]** -  Yes  No

Enter all activities that qualify as Insignificant Activities.

- Expand this table as necessary to include all such activities.
- For sources claimed to be insignificant based on size or emission rate (LAC 33:III.501.B.5.A), information must be supplied to verify each claim. This may include but is not limited to operating hours, volumes, and heat input ratings.
- If aggregate emissions from all similar pieces of equipment claimed to be insignificant are greater than 5 tons per year for any pollutant, then the activities can not be claimed as insignificant and must be represented as permitted emission sources. Aggregate emissions shall mean the total emissions from a particular insignificant activity or group of similar insignificant activities (e.g., A.1, A.2, etc.) within a permit per year.

Emission Point ID No.	Description	Physical/Operating Data	Citation
T-6003	Diesel Storage Tank	750 gallon	LAC 33:III.501.B.5.A.3
	Diesel Storage Tank	4,000 gallon	LAC 33:III.501.B.5.A.3

**21. Regulatory Applicability for Commonly Applicable Regulations – Answer all below [LAC 33:III.517.D.10]**

*Does this facility contain asbestos or asbestos containing materials?*  Yes  No

If “yes,” the facility or any portion thereof may be subject to 40 CFR 61, Subpart M, LAC 33:III.Chapter 27, and/or LAC 33:III.5151, and this application must address compliance as stated in Section 22 of this application

*Is the facility or process unit represented in this permit subject to 40 CFR 68, or is any other process unit located at the same facility as the process unit represented in this application subject to 40 CFR 68?*  Yes  No

If “yes,” the entire facility is subject to 40 CFR 68 and LAC 33:III.Chapter 59, and this application must address compliance as stated in Section 22 of this application.

*Is the facility listed in LAC 33:III.5611?*

Table 5  Yes  No

Table 6  Yes  No

Table 7  Yes  No

*Does the applicant own or operate commercial refrigeration equipment normally containing more than 50 pounds of refrigerant at this facility or process unit?*  Yes  No

If “yes,” the entire facility is subject to 40 CFR 82, Subpart F, and this application must address compliance as stated in Section 22 of this application.



## 22. Applicable Regulations, Air Pollution Control Measures, Monitoring, and Recordkeeping

Important points for Table 1 [LAC 33:III.517.D.10]:

- List in Table 1, by Emission Point ID Number and Descriptive Name of the Equipment, state and federal pollution abatement programs and note the applicability or non-applicability of the regulations to each source.
- Adjust the headings for the columns in Table 1 as necessary to reflect all applicable regulations, in addition to any regulations that do not apply but require an explanation to substantiate this fact.
- For each piece of equipment, enter “1” for each regulation that applies. Enter “2” for each regulation that applies to this type of source, but from which this source of emissions is exempt. Enter “3” for equipment that is subject to a regulation, but does not have any applicable requirements. Also, enter “3” for each regulation that has applicable requirements that apply to the particular emission source, but the regulations currently do not apply due to meeting a specific criterion, such as it has not been constructed, modified, or reconstructed since the regulations have been in place.
- Leave the spaces blank when the regulations clearly would not apply under any circumstances to the source. For example, LAC 33:III.2103 – Storage of Volatile Organic Compounds would never apply to a steam generating boiler, no matter the circumstances.
- Consult instructions.

Important points for Table 2 [LAC 33:III.517.D.4; LAC 33:III.517.D.7; LAC 33:III.517.D.10]:

- For each piece of equipment listed in Table 2, include all applicable limitations, recordkeeping, reporting, monitoring, and testing requirements. Also, include any one-time notification or one-time performance test requirements that have not been fulfilled.
- Each of these regulatory aspects (limitations, recordkeeping, reporting, etc.) should be addressed for each regulation that is applicable to each emissions source or emissions point.
- For each regulation that provides a choice regarding the method of compliance, indicate the method of compliance that will be employed. It is not sufficient to state that all compliance options will be employed, though multiple compliance options may be approved as alternative operating scenarios.
- Consult instructions.

Important points for Table 3 [LAC 33:III.517.D.16]:

- Each time a 2 or a 3 is used to describe applicability of a source in Table 1, an entry should be made in Table 3 that explains the exemption or non-applicability status of the regulation to that source.
- Fill in all requested information in the table.
- The exact regulatory citation that provides for the specific exemption or non-applicability determination should be entered into the “Citation Providing for Exemption or Non-applicability” column.
- Consult Instructions.

Important points for Table 4 [LAC 33:III.517.D.18]

- List any single emission source that routes its emissions to another point where these emissions are commingled with the emissions of other sources before being released to the atmosphere. Do not list any single emission source in this table that does not route its emissions in this manner.
- List any and all emission sources that are routed as described above. This includes emission sources that do not otherwise appear in this permit application.
- Consult instructions.

See Appendix B.
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### **23. Emissions Inventory Questionnaire (EIQ) Forms [LAC 33:III.517.D.3; 517.D.6]**

Complete one (1) EIQ for:

- Each emission source. If two emission sources have a common stack, the applicant may submit one EIQ sheet for the common emissions point. Note any emissions sources that route to this common point in Table 4 of the application.
- Each emissions CAP that is proposed, including each source that is part of the CAP.
- Each alternate operating scenario that a source may operate under. Some common scenarios are:
  1. Sources that combust multiple fuels
  2. Sources that have startup/shutdown max lb/hr emission rates higher than the max lb/hr for normal operating conditions would need a separate EIQ addressing the startup/shutdown emission rates
- Fugitive emissions releases. One (1) EIQ should be completed for each of the following types of fugitive emissions sources or emissions points:
  1. Equipment leaks.
  2. Non-equipment leaks (i.e., road dust, settling ponds, etc).

For each EIQ:

- Fill in all requested information.
- Speciate all Toxic Air Pollutants and Hazardous Air Pollutants emitted by the source.
- Use appropriate significant figures.
- Consult instructions.

The EIQ is in Microsoft Word Excel. Visit the following website to get to the EIQ form.  
<http://deq.louisiana.gov/page/air-permit-applications>

<b>See Appendix C.</b>
------------------------



**24. NSR Applicability Summary [LAC 33:III.504 and LAC 33:III.509]  N/A**

This section consists of seven subsections, A-G, and is applicable only to new and existing major stationary sources (as defined in LAC 33:III.504 or in LAC 33:III.509) proposing to permit a physical change or change in the method of operation. It would also apply to existing minor stationary sources proposing a physical change or change in the method of operation where the change would be a major source in and of itself. Add rows to each table as necessary. Provide a written explanation of the information summarized in these tables. Consult instructions.

**24.A. Project Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Emission Point ID</b>	<b>Description</b>	<b>New, Modified, Affected, or Unaffected*</b>	<b>Pre-Project Allowables (TPY)</b>	<b>Baseline Actual Emissions (over 24-month period)</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Post-Project Potential to Emit (TPY)</b>	<b>Change</b>
<b>PM<sub>2.5</sub></b>	<b>24-Month Period: NA</b>						
Z-08101A	Generator Turbine A	Modified	22.80			9.45	-13.35
Z-08101B	Generator Turbine B	Modified	22.80			9.45	-13.35
Z-08101C	Generator Turbine C	Modified	22.80			9.45	-13.35
Z-08101D	Generator Turbine D	New	0.00			9.45	+9.45
Z-08101E	Generator Turbine E	New	0.00			9.45	+9.45
GT-A1101	Refrigeration Turbine A	Modified	22.80			26.43	+3.63
GT-B1101	Refrigeration Turbine B	Modified	22.80			26.43	+3.63
GT-C1101	Refrigeration Turbine C	Modified	22.80			26.43	+3.63
GT-D1101	Refrigeration Turbine D	Modified	22.80			26.43	+3.63
GT-E1101	Refrigeration Turbine E	Modified	22.80			26.43	+3.63
GT-F1101	Refrigeration Turbine F	Modified	22.80			26.43	+3.63
THOX CAP	Thermal Oxidizer Cap	Modified	2.13			1.06	-1.07
FLR CAP	Flare Cap	Modified	16.07			17.03	+0.96
FLR-MF	Marine Flare	Modified	0.13			0.32	+0.19
Z-08001A	Essential Generator A	Modified	0.03			0.04	+0.01
Z-08001B	Essential Generator B	New	0.00			0.04	+0.04

**24.A. Project Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Emission Point ID</b>	<b>Description</b>	<b>New, Modified, Affected, or Unaffected*</b>	<b>Pre-Project Allowables (TPY)</b>	<b>Baseline Actual Emissions (over 24-month period)</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Post-Project Potential to Emit (TPY)</b>	<b>Change</b>
Z-08001C	Essential Generator C	New	0.00			0.04	+0.04
P-04402A	Fresh Water Firewater Pump A	Modified	0.01			0.01	0.00
P-04402B	Fresh Water Firewater Pump B	Modified	0.01			0.01	0.00
P-04405A	Brackish Water Firewater Pump A	Modified	0.01			0.01	0.00
P-04405B	Brackish Water Firewater Pump B	Modified	0.01			0.01	0.00
Z-06601	Hot Oil Heater	Modified	0.33			0.14	-0.19
						<b>PM<sub>2.5</sub> Change:</b>	<b>+0.60</b>

<b>PM<sub>10</sub></b>	<b>24-Month Period: NA</b>						
Z-08101A	Generator Turbine A	Modified	22.80			9.45	-13.35
Z-08101B	Generator Turbine B	Modified	22.80			9.45	-13.35
Z-08101C	Generator Turbine C	Modified	22.80			9.45	-13.35
Z-08101D	Generator Turbine D	New	0.00			9.45	+9.45
Z-08101E	Generator Turbine E	New	0.00			9.45	+9.45
GT-A1101	Refrigeration Turbine A	Modified	22.80			26.43	+3.63
GT-B1101	Refrigeration Turbine B	Modified	22.80			26.43	+3.63
GT-C1101	Refrigeration Turbine C	Modified	22.80			26.43	+3.63
GT-D1101	Refrigeration Turbine D	Modified	22.80			26.43	+3.63
GT-E1101	Refrigeration Turbine E	Modified	22.80			26.43	+3.63
GT-F1101	Refrigeration Turbine F	Modified	22.80			26.43	+3.63
THOX CAP	Thermal Oxidizer Cap	Modified	2.13			1.06	-1.07



24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	Description	New, Modified, Affected, or Unaffected*	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	Projected Actual Emissions (TPY)	Post-Project Potential to Emit (TPY)	Change
FLR CAP	Flare Cap	Modified	16.07			17.03	+0.96
FLR-MF	Marine Flare	Modified	0.13			0.32	+0.19
Z-08001A	Essential Generator A	Modified	0.03			0.04	+0.01
Z-08001B	Essential Generator B	New	0.00			0.04	+0.04
Z-08001C	Essential Generator C	New	0.00			0.04	+0.04
P-04402A	Fresh Water Firewater Pump A	Modified	0.01			0.01	0.00
P-04402B	Fresh Water Firewater Pump B	Modified	0.01			0.01	0.00
P-04405A	Brackish Water Firewater Pump A	Modified	0.01			0.01	0.00
P-04405B	Brackish Water Firewater Pump B	Modified	0.01			0.01	0.00
Z-06601	Hot Oil Heater	Modified	0.33			0.14	-0.19
						<b>PM<sub>10</sub> Change:</b>	+0.60

SO <sub>2</sub>	24-Month Period: NA						
Z-08101A	Generator Turbine A	Modified	3.04			2.62	-0.42
Z-08101B	Generator Turbine B	Modified	3.04			2.62	-0.42
Z-08101C	Generator Turbine C	Modified	3.04			2.62	-0.42
Z-08101D	Generator Turbine D	New	0.00			2.62	+2.62
Z-08101E	Generator Turbine E	New	0.00			2.62	+2.62
GT-A1101	Refrigeration Turbine A	Modified	3.04			2.38	-0.66
GT-B1101	Refrigeration Turbine B	Modified	3.04			2.38	-0.66
GT-C1101	Refrigeration Turbine C	Modified	3.04			2.38	-0.66

24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	Description	New, Modified, Affected, or Unaffected*	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	Projected Actual Emissions (TPY)	Post-Project Potential to Emit (TPY)	Change
GT-D1101	Refrigeration Turbine D	Modified	3.04			2.38	-0.66
GT-E1101	Refrigeration Turbine E	Modified	3.04			2.38	-0.66
GT-F1101	Refrigeration Turbine F	Modified	3.04			2.38	-0.66
THOX CAP	Thermal Oxidizer Cap	Modified	34.04			33.70	-0.34
FLR CAP	Flare Cap	Modified	1.75			1.77	+0.02
FLR-MF	Marine Flare	Modified	0.003			<0.01	0.00
Z-08001A	Essential Generator A	Modified	<0.01			0.003	0.00
Z-08001B	Essential Generator B	New	0.00			0.003	+0.003
Z-08001C	Essential Generator C	New	0.00			0.003	+0.003
P-04402A	Fresh Water Firewater Pump A	Modified	<0.01			<0.01	0.00
P-04402B	Fresh Water Firewater Pump B	Modified	<0.01			<0.01	0.00
P-04405A	Brackish Water Firewater Pump A	Modified	<0.01			<0.01	0.00
P-04405B	Brackish Water Firewater Pump B	Modified	<0.01			<0.01	0.00
Z-06601	Hot Oil Heater	Modified	0.05			0.01	-0.04
						<b>SO<sub>2</sub> Change:</b>	-0.36

NO <sub>x</sub>	24-Month Period: NA						
Z-08101A	Generator Turbine A	Modified	22.75			13.46	-9.29
Z-08101B	Generator Turbine B	Modified	22.75			13.46	-9.29
Z-08101C	Generator Turbine C	Modified	22.75			13.46	-9.29
Z-08101D	Generator Turbine D	New	0.00			13.46	+13.46



24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	Description	New, Modified, Affected, or Unaffected*	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	Projected Actual Emissions (TPY)	Post-Project Potential to Emit (TPY)	Change
Z-08101E	Generator Turbine E	New	0.00			13.46	+13.46
GT-A1101	Refrigeration Turbine A	Modified	22.75			21.29	-1.46
GT-B1101	Refrigeration Turbine B	Modified	22.75			21.29	-1.46
GT-C1101	Refrigeration Turbine C	Modified	22.75			21.29	-1.46
GT-D1101	Refrigeration Turbine D	Modified	22.75			21.29	-1.46
GT-E1101	Refrigeration Turbine E	Modified	22.75			21.29	-1.46
GT-F1101	Refrigeration Turbine F	Modified	22.75			21.29	-1.46
THOX CAP	Thermal Oxidizer Cap	Modified	14.04			6.97	-7.07
FLR CAP	Flare Cap	Modified	146.70			155.42	+8.72
FLR-MF	Marine Flare	Modified	1.18			2.93	+1.75
Z-08001A	Essential Generator A	Modified	4.00			5.37	+1.37
Z-08001B	Essential Generator B	New	0.00			5.37	+5.37
Z-08001C	Essential Generator C	New	0.00			5.37	+5.37
P-04402A	Fresh Water Firewater Pump A	Modified	0.46			0.23	-0.23
P-04402B	Fresh Water Firewater Pump B	Modified	0.46			0.23	-0.23
P-04405A	Brackish Water Firewater Pump A	Modified	0.46			0.23	-0.23
P-04405B	Brackish Water Firewater Pump B	Modified	0.50			0.23	-0.27
Z-06601	Hot Oil Heater	Modified	3.08			2.50	-0.58
						<b>NOx Change:</b>	+4.23

## 24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	Description	New, Modified, Affected, or Unaffected*	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	Projected Actual Emissions (TPY)	Post-Project Potential to Emit (TPY)	Change
<b>CO</b>	<b>24-Month Period: NA</b>						
Z-08101A	Generator Turbine A	Modified	9.42			7.80	-1.62
Z-08101B	Generator Turbine B	Modified	9.42			7.80	-1.62
Z-08101C	Generator Turbine C	Modified	9.42			7.80	-1.62
Z-08101D	Generator Turbine D	New	0.00			7.80	+7.80
Z-08101E	Generator Turbine E	New	0.00			7.80	+7.80
GT-A1101	Refrigeration Turbine A	Modified	9.42			12.34	+2.92
GT-B1101	Refrigeration Turbine B	Modified	9.42			12.34	+2.92
GT-C1101	Refrigeration Turbine C	Modified	9.42			12.34	+2.92
GT-D1101	Refrigeration Turbine D	Modified	9.42			12.34	+2.92
GT-E1101	Refrigeration Turbine E	Modified	9.42			12.34	+2.92
GT-F1101	Refrigeration Turbine F	Modified	9.42			12.34	+2.92
THOX CAP	Thermal Oxidizer Cap	Modified	23.59			11.72	-11.87
FLR CAP	Flare Cap	Modified	798.22			708.54	-89.68
FLR-MF	Marine Flare	Modified	6.41			13.36	+6.95
Z-08001A	Essential Generator A	Modified	0.57			0.77	+0.20
Z-08001B	Essential Generator B	New	0.00			0.77	+0.77
Z-08001C	Essential Generator C	New	0.00			0.77	+0.77
P-04402A	Fresh Water Firewater Pump A	Modified	0.05			0.08	+0.03
P-04402B	Fresh Water Firewater Pump B	Modified	0.05			0.08	+0.03
P-04405A	Brackish Water Firewater Pump A	Modified	0.05			0.08	+0.03



**24.A. Project Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Emission Point ID</b>	<b>Description</b>	<b>New, Modified, Affected, or Unaffected*</b>	<b>Pre-Project Allowables (TPY)</b>	<b>Baseline Actual Emissions (over 24-month period)</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Post-Project Potential to Emit (TPY)</b>	<b>Change</b>
P-04405B	Brackish Water Firewater Pump B	Modified	0.05			0.08	+0.03
Z-06601	Hot Oil Heater	Modified	3.63			1.50	-2.13
						<b>CO Change:</b>	<b>-66.63</b>

<b>VOC</b>	<b>24-Month Period: NA</b>						
Z-08101A	Generator Turbine A	Modified	9.52			5.63	-3.89
Z-08101B	Generator Turbine B	Modified	9.52			5.63	-3.89
Z-08101C	Generator Turbine C	Modified	9.52			5.63	-3.89
Z-08101D	Generator Turbine D	New	0.00			5.63	+5.63
Z-08101E	Generator Turbine E	New	0.00			5.63	+5.63
GT-A1101	Refrigeration Turbine A	Modified	9.52			8.91	-0.61
GT-B1101	Refrigeration Turbine B	Modified	9.52			8.91	-0.61
GT-C1101	Refrigeration Turbine C	Modified	9.52			8.91	-0.61
GT-D1101	Refrigeration Turbine D	Modified	9.52			8.91	-0.61
GT-E1101	Refrigeration Turbine E	Modified	9.52			8.91	-0.61
GT-F1101	Refrigeration Turbine F	Modified	9.52			8.91	-0.61
THOX CAP	Thermal Oxidizer Cap	Modified	1.88			5.04	+3.16
FLR CAP	Flare Cap	Modified	23.09			19.32	-3.77
FLR-MF	Marine Flare	Modified	0.01			0.01	0.00
Z-08001A	Essential Generator A	Modified	0.15			0.20	+0.05
Z-08001B	Essential Generator B	New	0.00			0.20	+0.20

**24.A. Project Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Emission Point ID</b>	<b>Description</b>	<b>New, Modified, Affected, or Unaffected*</b>	<b>Pre-Project Allowables (TPY)</b>	<b>Baseline Actual Emissions (over 24-month period)</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Post-Project Potential to Emit (TPY)</b>	<b>Change</b>
Z-08001C	Essential Generator C	New	0.00			0.20	+0.20
P-04402A	Fresh Water Firewater Pump A	Modified	0.03			0.01	-0.02
P-04402B	Fresh Water Firewater Pump B	Modified	0.03			0.01	-0.02
P-04405A	Brackish Water Firewater Pump A	Modified	0.03			0.01	-0.02
P-04405B	Brackish Water Firewater Pump B	Modified	0.04			0.01	-0.03
Z-06601	Hot Oil Heater	Modified	0.24			0.14	-0.10
T-04201	Slop Oil Tank	New	0.00			<0.01	+<0.01
T-06401	Fresh Amine Tank	New	0.00			<0.01	+<0.01
FUG	Fugitive Emissions	Modified	38.58			55.23	+16.65
						<b>VOC Change:</b>	+12.20

<b>CO<sub>2e</sub></b>	<b>24-Month Period: NA</b>						
Z-08101A	Generator Turbine A	Modified	296,003			173,420	-122,763
Z-08101B	Generator Turbine B	Modified	296,003			173,420	-122,763
Z-08101C	Generator Turbine C	Modified	296,003			173,420	-122,763
Z-08101D	Generator Turbine D	New	0			173,420	+173,420
Z-08101E	Generator Turbine E	New	0			173,420	+173,420
GT-A1101	Refrigeration Turbine A	Modified	296,003			273,466	-22,537
GT-B1101	Refrigeration Turbine B	Modified	296,003			273,466	-22,537
GT-C1101	Refrigeration Turbine C	Modified	296,003			273,466	-22,537
GT-D1101	Refrigeration Turbine D	Modified	296,003			273,466	-22,537



**24.A. Project Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Emission Point ID</b>	<b>Description</b>	<b>New, Modified, Affected, or Unaffected*</b>	<b>Pre-Project Allowables (TPY)</b>	<b>Baseline Actual Emissions (over 24-month period)</b>	<b>Projected Actual Emissions (TPY)</b>	<b>Post-Project Potential to Emit (TPY)</b>	<b>Change</b>
GT-E1101	Refrigeration Turbine E	Modified	296,003			273,466	-22,537
GT-F1101	Refrigeration Turbine F	Modified	296,003			273,466	-22,537
THOX CAP	Thermal Oxidizer Cap	Modified	566,344			742,181	175,837
FLR CAP	Flare Cap	Modified	296,090			306,640	10,550
FLR-MF	Marine Flare	Modified	226			5,785	5,559
Z-08001A	Essential Generator A	Modified	341			341	0
Z-08001B	Essential Generator B	New	0			341	341
Z-08001C	Essential Generator C	New	0			341	341
P-04402A	Fresh Water Firewater Pump A	Modified	54			51	-3
P-04402B	Fresh Water Firewater Pump B	Modified	54			51	-3
P-04405A	Brackish Water Firewater Pump A	Modified	54			51	-3
P-04405B	Brackish Water Firewater Pump B	Modified	54			51	-3
Z-06601	Hot Oil Heater	Modified	5,289			1,784	-3,505
FUG	Fugitive Emissions	Modified	14,149			3,188	-10,961
						<b>CO<sub>2</sub>e Change:</b>	<b>+22,022</b>

\* Unaffected emissions units are not required to be listed individually. By choosing not to list unaffected emissions units, the applicant asserts that all emissions units not listed in Table 24.A will not be modified or experience an increase in actual annual emissions as part of the proposed project.

**24.B. Creditable Contemporaneous Changes**

Contemporaneous Period: MM/DD/YYYY – MM/DD/YYYY							
Emission Point ID	Description	A Date of Modification	B Pre-Project Allowables (TPY)	C Baseline Actual Emissions (over 24-month period)	D 24-Month Period	E Post-Project Potential to Emit (TPY)	F Change
<b>PM<sub>2.5</sub></b>							
						<b>PM<sub>2.5</sub> Change:</b>	
<b>PM<sub>10</sub></b>							
						<b>PM<sub>10</sub> Change:</b>	
<b>SO<sub>2</sub></b>							
						<b>SO<sub>2</sub> Change:</b>	
<b>NO<sub>x</sub></b>							
						<b>NO<sub>x</sub> Change:</b>	
<b>CO</b>							



**24.B. Creditable Contemporaneous Changes**

							<b>CO Change:</b>		
<b>VOC</b>									
							<b>VOC Change:</b>		
<b>CO<sub>2e</sub></b>									
							<b>CO<sub>2e</sub> Change:</b>		

For each source identified as "New" or "Modified" in Section 24.A, complete the following table for each pollutant that will trigger NSR. If LAER is not required per LAC 33:III.504.D.3, indicate such.

**24.C. BACT/LAER Summary**

<b>Emission Point ID</b>	<b>Pollutant</b>	<b>BACT/LAER</b>	<b>Limitation</b>	<b>Averaging Period</b>	<b>Description of Control Technology/Work Practice Standard(s)</b>



**24.D. PSD Air Quality Analyses Summary**

		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>
Pollutant	Averaging Period	Preliminary Screening Concentration (µg/m <sup>3</sup> )	Level of Significant Impact (µg/m <sup>3</sup> )	Significant Monitoring Concentration (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Maximum Modeled Concentration (µg/m <sup>3</sup> )	Modeled + Background Concentration (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	Modeled PSD Increment Consumption (µg/m <sup>3</sup> )	Allowable Class II PSD Increment (µg/m <sup>3</sup> )
PM <sub>2.5</sub>	24-hour		-	-				35		9
	Annual		-	-				12		4
PM <sub>10</sub>	24-hour		5	10				150		30
	Annual		1	-				-		17
SO <sub>2</sub>	1-hour		7.8	-				195		-
	3-hour		25	-				1300		512
	24-hour		5	13				365		91
	Annual		1	-				80		20
NO <sub>x</sub>	1-hour		7.5	-				189		-
	Annual		1	14				100		25
CO	1-hour		2000	-				40,000	-	-
	8-hour		500	575				10,000	-	-
Lead	3-month		-	0.1				1.5	-	-

**24.E Nonattainment New Source Review Offsets [LAC 33:III.517.D.16, LAC 33:III.504.D.4 & 5]  N/A**

Complete this section only if the proposed project triggers Nonattainment New Source Review (NNSR).

This project triggers NNSR review for:  NO<sub>x</sub>  VOC  SO<sub>2</sub>

**NO<sub>x</sub>:**

Is the applicant proposing to use internal offsets?  Yes  No

If not, identify the source of the offsets. **Company:** \_\_\_\_\_

**Facility/Unit:** \_\_\_\_\_

**Permit No.:** \_\_\_\_\_

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?

Yes  No

If the ERC application has already been submitted, give the date: \_\_\_\_\_

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

**VOC:**

Is the applicant proposing to use internal offsets?  Yes  No

If not, identify the source of the offsets. **Company:** \_\_\_\_\_

**Facility/Unit:** \_\_\_\_\_

**Permit No.:** \_\_\_\_\_

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?

Yes  No

If the ERC application has already been submitted, give the date: \_\_\_\_\_

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

**SO<sub>2</sub>:**

Is the applicant proposing to use internal offsets?  Yes  No

If not, identify the source of the offsets. **Company:** \_\_\_\_\_

**Facility/Unit:** \_\_\_\_\_

**Permit No.:** \_\_\_\_\_

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?

Yes  No

If the ERC application has already been submitted, give the date: \_\_\_\_\_

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

In order to expedite processing, please be sure the ERC Bank Application is completed properly. In the case of NO<sub>x</sub>, the document should clearly differentiate between ozone season and non-ozone season actual emissions during the baseline period. Be sure to indicate if a portion of the reductions are no longer surplus (e.g., due to new or revised federal or state regulations, use in a netting analysis, etc.).

**24.F. Economic Impact**

Answer the following questions.

How many temporary jobs will be added as a result of this project?

How many permanent jobs will be added as a result of this project?



**24.G Notification of Federal Land Manager [LAC 33:III.504.E.1, LAC 33:III.509.P.1]**

Complete this section only if the proposed project triggers NNSR or PSD.

- a. Is the proposed facility or modification located within 100 kilometers of a Class I Area?  Yes  No  
 If Yes, determination of Q/d is not required; skip to the next question. If No, complete the Q/d equation below:

$$Q/d = \frac{PM_{10(NEI)} + SO_{2(NEI)} + NO_{X(NEI)} + H_2SO_{4(NEI)}}{\text{Class I km}}$$

where:

- PM<sub>10(NEI)</sub> = net emissions increase of PM<sub>10</sub><sup>1,2</sup>
- SO<sub>2(NEI)</sub> = net emissions increase of SO<sub>2</sub><sup>1,2</sup>
- NO<sub>X(NEI)</sub> = net emissions increase of NO<sub>X</sub><sup>1,2</sup>
- H<sub>2</sub>SO<sub>4(NEI)</sub> = net emissions increase of H<sub>2</sub>SO<sub>4</sub><sup>1,2</sup>
- Class I km = distance to nearest Class I Area<sup>3</sup>

Q/d = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Per Federal Land Manager guidance, Q values should reflect annual emissions (in tons per year, based on 24-hour maximum allowable emissions). If Q/d < 10, proceed to Section 25. If Q/d ≥ 10, complete the remainder of this Section.

- b. Has the applicant provided a copy of the application to the Federal Land Manager?  Yes  No
- c. Does the application contain modeling that demonstrates no adverse impact on Air Quality Related Values (AQRVs) in the Class I Area?  Yes  No
- d. If Yes, indicate the model used:  VISCREEN  PLUVUE II  CALPUFF  Other:<sup>4</sup> \_\_\_\_\_
- e. Has the Federal Land Manager concurred that the proposed project will not adversely impact any AQRVs?  
 Yes  No If Yes, please attach correspondence.

<sup>1</sup>If the net emissions increase of any pollutant is negative, enter "0."

<sup>2</sup>If the project did not trigger a netting analysis, use the project increase. In this case, the value will be less than the pollutant's significance level.

<sup>3</sup>In kilometers.

<sup>4</sup>Model must be approved by LDEQ and the Federal Land Manager.

**25. Environmental Assessment Statement (EAS or "IT" Question Responses)**

[La. R.S. 30:2018]  Yes  No

*\*\* This section is required when applying for new Part 70 operating permits and/or major modifications. Any applications for these permit types that do not include answers to these questions will not be considered to be administratively complete. \*\**

For new Part 70 operating permits and/or major modifications, answers to these questions must be provided by the applicant to the local governmental authority and the designated public library at no additional costs to these entities. Consult instructions to determine what is considered to be a "local governmental authority" and a "designated public library." Indicate the name and address of the local governmental authority and the designated public library to which the answers to these questions were sent:

Name of Local Governing Authority			Name of Designated Public Library		
Street or P.O. Box			Street or P.O. Box		
City	State	ZIP	City	State	ZIP

Answer the following five questions on separate pages using full and complete answers. Include as many pages as necessary in order to provide full and complete answers. This information is required per Louisiana Revised Statutes 30:2018 (La. R.S. 30:2018).

Question 1: **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

Question 2: **Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?**

Question 3: **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?**

Question 4: **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?**

Question 5: **Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?**



## PART 70 OPERATING PERMIT APPLICATION COMPLETENESS CHECKLIST

Instructions: Complete this checklist and submit with the completed air permit application.

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.A Timely Submittal	Was a Copy of the Application Also Submitted to EPA?	X			Transmittal Letter
517.B.1.2 Certification	Does the Application include a Certification by a Responsible Official?	X			Section 2.0
517.B.3 Certification	Does the Application Include Certification by a Professional Engineer or their Designee:	X			Section 2.0
517.D.1 Identifying Information	Does the Application Include:	X			
	1. Company Name, Physical and Mailing Address of Facility?	X			Section 2.0
	2. Map showing Location of the Facility?	X			Figure 1
	3. Owner and Operator Names and Agent?	X			Section 2.0
	4. Name and Telephone Number of Plant Manager or Contact?	X			Section 2.0
517.D.2 SIC Codes, Source Categories	Does the Application Include a Description of the Source's Processes and Products?	X			Section 1.0
	Does the Application Include the Source's SIC Code?	X			Section 2.0
	Does the Application Include EPA Source Category of HAPs if applicable?	X			Section 2.0
517.D.3.6 EIQ Sheets	Has an EIQ Sheet been Completed for each Emission Point whether an Area or Point Source?	X			Appendix C
517.D.4 Monitoring Devices	Does the Application Include Identification and Description of Compliance Monitoring Devices or Activities?	X			Appendix B
517.D.5 Revisions and Modifications Only	For Revisions or Modifications, Does the Application include a Description of the Proposed Change and any Resulting Change in Emissions?			X	
517.D.7 General Information	Does the Application Include Information Regarding Fuels, Fuel Use, Raw Materials, Production Rates, and Operating Schedules as necessary to substantiate emission rates?	X			Section 1.0 & Section 2.0
517 D.8 Operating Limitations	Has Information Regarding any Limitations on Source Operation or any Applicable Work Practice Standards been Identified?			X	
517.D.9 Calculations	Are Emission Calculations Provided?	X			Appendix D
517.D.10 Regulatory Review	Does the Application Include a Citation and Description of Applicable Louisiana and Federal Air Quality Requirements and Standards?	X			Appendix B



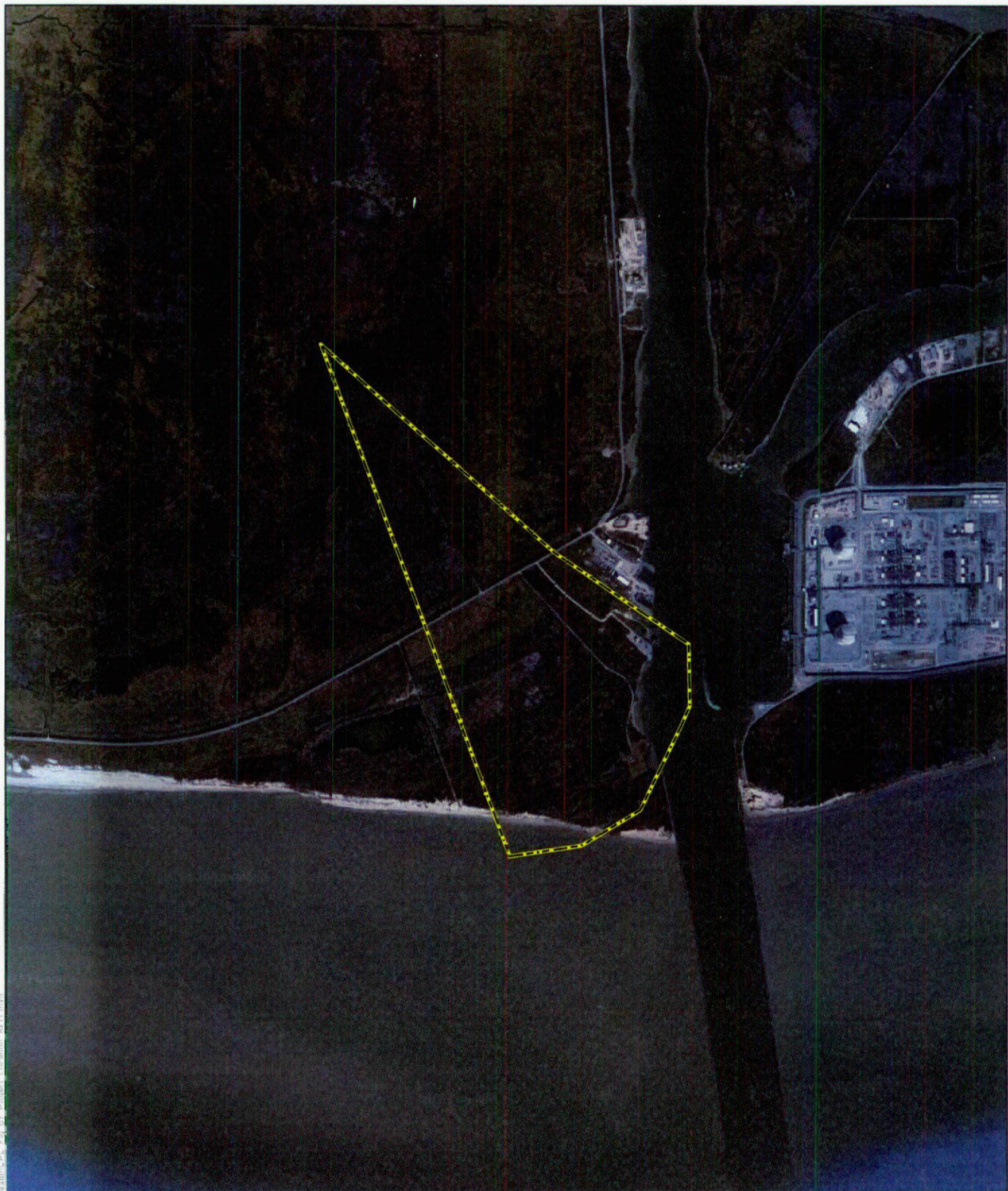
LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.D.11 Test Methods	Has a Description of or a Reference to Applicable Test Methods Used to Determine Compliance with Standards been Provided?	X			Appendix B
517.D.12 Major Sources of TAPs	Does the Application include Information Regarding the Compliance History of Sources Owned or Operated by the Applicant (per LAC 33.III.5111)?	X			Section 2.0
517.D.13 Major Sources of TAPs	Does the Application include a Demonstration to show that the Source Meets all Applicable MACT and Ambient Air Standard Requirements?	X			Section 2.0
517.D.14 PSD Sources Only	If Required by DEQ, Does the Application Include Information Regarding the Ambient Air Impact for Criteria Pollutants as Required for the Source Impact Analysis per LAC 33:III.509.K, L, and M?	X			Section 2.0
517 D.15 PSD Sources Only	If Required by DEQ, Does the Application Include a Detailed Ambient Air Analysis?	X			Section 2.0
517.D.16, 18	Has any Additional Information been Provided?	X			Section 1.0
517.D.17 Fees	Has the Fee Code been Identified?	X			Section 2.0
	Is the Applicable Fee Included with the Application?	X			Section 2.0
517.E.1 Additional Part 70 Requirements	Does the Certification Statement Include a Description of the Compliance Status of Each Emission Point in the Source with All Applicable Requirements?	X			Section 2.0
517E.2 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will continue to Comply with All Applicable Requirements with which the Source is in Compliance?	X			Section 2.0
517.E.3 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will, on a timely basis, meet All Applicable Requirements that will Become Effective During the Permit Term?	X			Section 2.0
517.E.4 Additional Part 70 Requirements	Are there Applicable Requirements for which the Source is not in Compliance at the Time of Submittal?		X		
	Does the Application include a Compliance Plan Schedule?			X	
	Does the Schedule Include Milestone Dates for which Significant Actions will occur?			X	
	Does the Schedule Include Submittal Dates for Certified Progress Reports?			X	
517.E.5 Additional Part 70 Requirements Acid Rain	Is this Source Covered by the Federal Acid Rain Program?		X		
	Are the Requirements of LAC 33.III.517.E 1-4 included in the Acid Rain Portion of the Compliance Plan?			X	




LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.E.6 Additional Part 70 Requirements	Have any Exemptions from any Applicable Requirements been Requested?		X		
	Is the List and explanations Provided?			X	
517.E.7 Additional Part 70 Requirements	Does the Application Include a Request for a Permit Shield?		X		
	Does the Request List those Federally Applicable Requirements for which the Shield is Requested along with the Corresponding Draft Permit Terms and conditions which are Proposed to Maintain Compliance?			X	
517.E.8 Additional Part 70 Requirements	Does the Application Identify and Reasonably Anticipated Alternative Operating Scenarios?		X		
	Does the Application include Sufficient Information to Develop permit Terms and Conditions for Each Scenario, Including Source Process and Emissions Data?			X	
517.F Confidentiality	Does the Application Include a Request for Non-Disclosure (Confidentiality)?		X		
525.B. Minor Permit Modifications	Does the Application Include a Listing of New Requirements Resulting for the Change?	X			Appendix B
	Does the Application Include Certification by the Responsible Official that the Proposed Action Fits the Definition of a Minor Modification as per LAC 33:III.525.A.	X			Section 2.0
	Does the Certification also Request that Minor Modification Procedures be Used?	X			Section 1.0 and Section 2.0
	Does the Application, for Part 70 Sources, Include the Owner's Suggested Draft Permit and Completed Forms for the Permitting Authority to Use to Notify Affected States?			X	
La. R.S. 30:2018 – PSD/NNSR only	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the local governing authority at no cost to the local governing authority?			X	
	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the designated public library at no cost to the designated public library?			X	

## Figures





**Legend**  
 LNG Facility Site Boundary




0 1,000 2,000  
 Feet

**Commonwealth LNG Project**

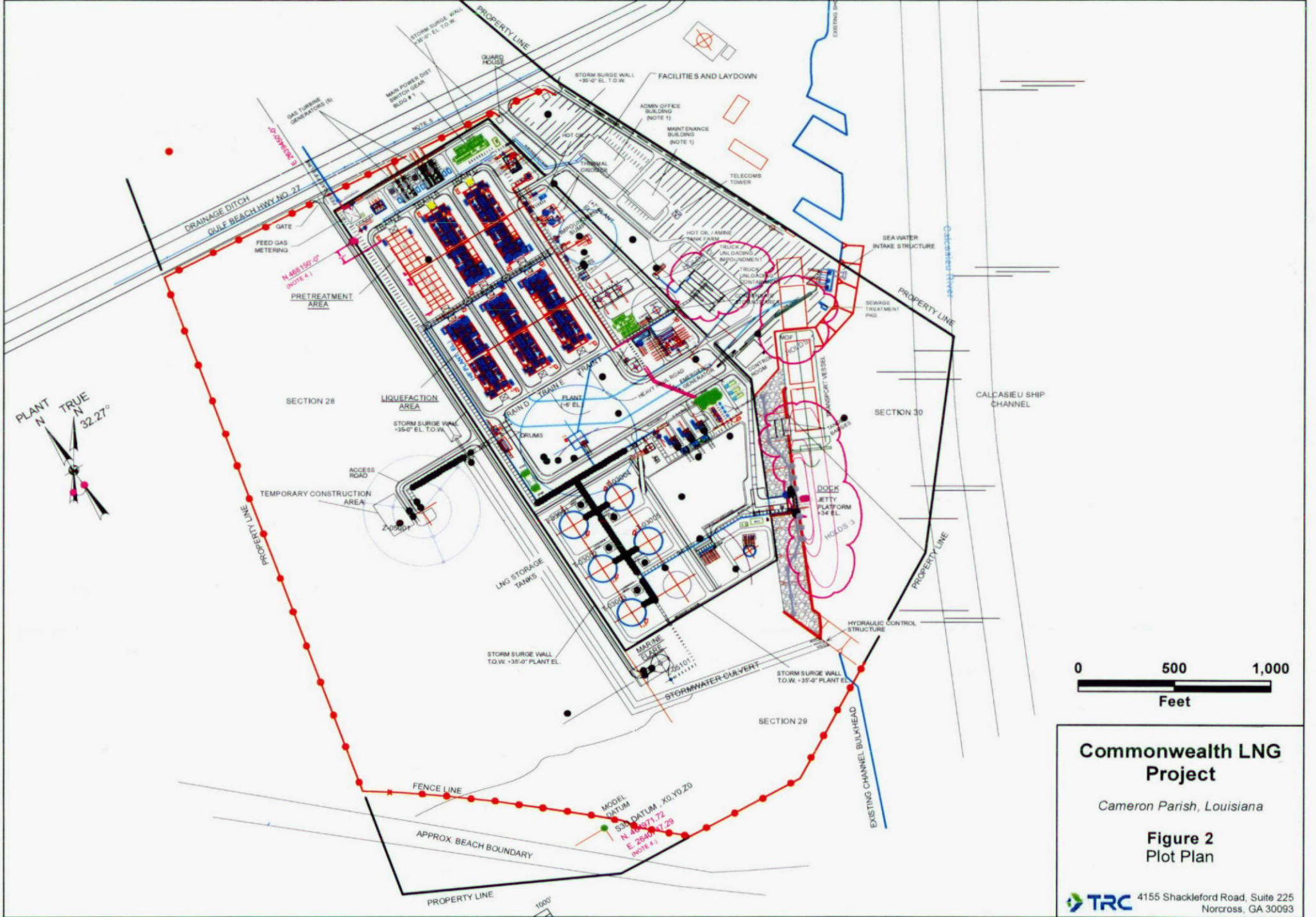
*Cameron Parish, Louisiana*

**Figure 1**  
 Project Location

 4155 Shackelford Road, Suite 225  
 Norcross, GA 30093



Path: \\emplyes\proj\arcgis\proj1-PROJECTS\Commonwealth\GP\_ Fig 02 Plot Plan\_8x11.mxd



**Commonwealth LNG Project**  
 Cameron Parish, Louisiana  
**Figure 2**  
 Plot Plan

**TRC** 4155 Shackelford Road, Suite 225  
 Norcross, GA 30093



**Appendix A**  
**Certificate of Good Standing**

**State of  
Louisiana  
Secretary of  
State**



**COMMERCIAL DIVISION**

**225.925.4704**

Fax Numbers

225.932.5317 (Admin. Services)

225.932.5314 (Corporations)

225.932.5318 (UCC)

<b>Name</b>	<b>Type</b>	<b>City</b>	<b>Status</b>
COMMONWEALTH LNG, LLC	Limited Liability Company (Non-Louisiana)	HOUSTON	Active

**Previous Names**

WALLER LNG SERVICES, LLC (Changed: 10/19/2018)

**Business:** COMMONWEALTH LNG, LLC

**Charter Number:** 40963682Q

**Registration Date:** 10/10/2012

**Domicile Address**

1 RIVERWAY  
SUITE 500  
HOUSTON, TX 77056

**Mailing Address**

1 RIVERWAY  
SUITE 500  
HOUSTON, TX 77056

**Principal Business Office**

1 RIVERWAY  
SUITE 500  
HOUSTON, TX 77056

**Registered Office in Louisiana**

450 LAUREL STREET, 8TH FLOOR  
BATON ROUGE, LA 70801

**Principal Business Establishment in Louisiana**

450 LAUREL STREET, 8TH FLOOR  
BATON ROUGE, LA 70801

**Status**

**Status:** Active

**Annual Report Status:** In Good Standing

**Qualified:** 10/10/2012

**Last Report Filed:** 9/15/2023

**Type:** Limited Liability Company (Non-Louisiana)

**Registered Agent(s)**

**Agent:** CORPORATION SERVICE COMPANY



**Address 1:** 450 LAUREL STREET, 8TH FLOOR  
**City, State, Zip:** BATON ROUGE, LA 70801  
**Appointment Date:** 10/19/2018

**Officer(s)**

**Additional Officers: No**

**Officer:** PAUL J. VALLERO  
**Title:** Manager  
**Address 1:** 1 RIVERWAY  
**Address 2:** SUITE 500  
**City, State, Zip:** HOUSTON, TX 77056

**Amendments on File (7)**

Description	Date
Revoked	3/21/2014
Reinstatement	4/7/2014
Revoked	3/15/2017
Reinstatement	10/19/2018
Name Change	10/19/2018
Foreign LLC Statement of Change	3/18/2019
Foreign LLC Statement of Change	9/1/2023

**Print**

## **Appendix B Regulatory Analysis Tables**



**TABLE 1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS**

Note: This table lists regulations that are commonly applicable to many sources, but is not intended to be an all inclusive list. Alter the headings of this table as necessary in order to address ALL potentially applicable requirements.

Source ID No.:	Descriptive Name of the Source	LAC 33:III									LAC 33:III.Chapter								
		509	2103	2104	2107	2108	2111	2113	2115	2121	5	9	11	13	15	29	51	56	59
UNF 0001	Facility	1						1	3		1	1	1	1		1	1	1	3
EQT 0001	Refrigeration Turbine A, GT-A1101	1											3	1	3		2		
EQT 0002	Refrigeration Turbine B, GT-B1101	1											3	1	3		2		
EQT 0003	Refrigeration Turbine C, GT-C1101	1											3	1	3		2		
EQT 0004	Refrigeration Turbine D, GT-D1101	1											3	1	3		2		
EQT 0005	Refrigeration Turbine E, GT-E1101	1											3	1	3		2		
EQT 0006	Refrigeration Turbine F, GT-F1101	1											3	1	3		2		
EQT 0007	Wet Flare (Z-05001), FLR-WF	1											1	1	3		2		
EQT 0008	Dry Flare (Z-05001), FLR-DF	1											1	1	3		2		
EQT 0009	Spare Flare (Z-05001), FLR-SF	1											1	1	3		2		
EQT 0010	Marine Flare (Z-05101), FLR-MF	1											1	1	3		2		
GRP 0002	Thermal Oxidizer Cap, THOX CAP	1											3	1	1		2		
EQT 0011	Thermal Oxidizer A (Z-07002A), TO-A	1											3	1	1		2		
EQT 0012	Thermal Oxidizer B (Z-07002B), TO-B	1											3	1	1		2		
EQT 0013	Generator Turbine A, Z-08101A	1											3	1	3		2		
EQT 0014	Generator Turbine B, Z-08101B	1											3	1	3		2		
EQT 0015	Generator Turbine C, Z-08101C	1											3	1	3		2		
TBD	Generator Turbine D, Z-08101D	1											3	1	3		2		
TBD	Generator Turbine E, Z-08101E	1											3	1	3		2		
EQT 0016	Essential Generator Engine A, Z-08001A	1											1	1	3		2		

**TABLE 1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS**

Note: This table lists regulations that are commonly applicable to many sources, but is not intended to be an all inclusive list. Alter the headings of this table as necessary in order to address ALL potentially applicable requirements.

Source ID No.:	Descriptive Name of the Source	LAC 33:III									LAC 33:III.Chapter								
		509	2103	2104	2107	2108	2111	2113	2115	2121	5	9	11	13	15	29	51	56	59
TBD	Essential Generator Engine B, Z-08001B	1											1	1	3		2		
TBD	Essential Generator Engine C, Z-08001C	1											1	1	3		2		
EQT 0017	Fresh Water Fire Pump A, P-04402A	1											1	1	3		2		
EQT 0018	Fresh Water Fire Pump B, P-04402B	1											1	1	3		2		
EQT 0019	Brackish Water Fire Pump A, P-04405A	1											1	1	3		2		
EQT 0020	Brackish Water Fire Pump B, P-04405B	1											1	1	3		2		
EQT 0021	Hot Oil Heater, Z-06601	1											3	1	3		2		
EQT 0022	Condensate Tank, T-3000	1	1																
EQT 0023	Mixed Amine Tank, T-4013	1	3																
EQT 0024	Hot Oil Tank, T-4016	1	3																
EQT 0025	Propylene Glycol Tank, T-4029	1	3																
EQT 0026	Diesel 1 Tank, T-4031	1	3																
TBD	Slop Oil Tank, T-04201	1	3																
TBD	Fresh Amine Tank, T-06401	1	3																
FUG 0001	Fugitive Emissions, FUG	1							1		3								

**KEY TO MATRIX**

- 1 (Applicable) The regulations have applicable requirements that apply to this particular emissions source. This includes any monitoring, recordkeeping, or reporting requirements.
- 2 (Exempt) The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.
- 3 (Does Not Apply) The regulations do not apply to this emissions source. The regulations may have applicable requirements that could apply to this emissions source but the requirements do not currently apply to the source due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.

Blank – The regulations clearly do not apply to this type of emission source.



**TABLE 1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS**

Note: This table lists regulations that are commonly applicable to many sources, but is not intended to be an all inclusive list. Alter the headings of this table as necessary in order to address ALL potentially applicable requirements.

Source ID No.:	Descriptive Name of the Source	40 CFR 60 NSPS											40 CFR 63 NESHAP							40 CFR								
		A	D	Da	Db	Dc	Kb	GG	IIII	JJJJ	KKKK	TTTT	A	Y	HHH	EEEE	YYYY	ZZZZ	DDDD	D	MMMM	61	64	68	72	82		
UNF 0001	Facility	1											1	3	3	3				3						3		
EQT 0001	Refrigeration Turbine A, GT-A1101							2				1	3							3								
EQT 0002	Refrigeration Turbine B, GT-B1101							2				1	3							3								
EQT 0003	Refrigeration Turbine C, GT-C1101							2				1	3							3								
EQT 0004	Refrigeration Turbine D, GT-D1101							2				1	3							3								
EQT 0005	Refrigeration Turbine E, GT-E1101							2				1	3							3								
EQT 0006	Refrigeration Turbine F, GT-F1101							2				1	3							3								
EQT 0007	Wet Flare (Z-05001), FLR-WF																											
EQT 0008	Dry Flare (Z-05001), FLR-DF																											
EQT 0009	Spare Flare (Z-05001), FLR-SF																											
EQT 0010	Marine Flare (Z-05101), FLR-MF																											
GRP 0002	Thermal Oxidizer Cap, THOX CAP																									3		
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EQT 0013	Generator Turbine A, Z-08101A							2				1	3							3								
EQT 0014	Generator Turbine B, Z-08101B							2				1	3							3								
EQT 0015	Generator Turbine C, Z-08101C							2				1	3							3								
TBD	Generator Turbine D, Z-08101D							2				1	3							3								
TBD	Generator Turbine E, Z-08101E							2				1	3							3								
EQT 0016	Essential Generator Engine A, Z-08001A									1																		1
TBD	Essential Generator Engine B, Z-08001B									1																		1







**TABLE 2: STATE AND FEDERAL AIR QUALITY REQUIREMENTS**

For each Emission Point ID Number:

- List each regulation that applies.
- Arrange the requirements imposed by each regulation according to the headings provided below.
- Repeat this process for each regulation that applies to each source.
- State-only Requirements should be noted as such in the appropriate column.

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Permit Procedures (LAC 33:III.Chapter 5)	Submit a timely and complete permit application to the LDEQ Office of Environmental Services. Permit applications shall be submitted prior to construction, reconstruction, or modification unless otherwise provided.	LAC 33:III.501.C.1		
Facility UNF 001	Permit Procedures (LAC 33:III.Chapter 5)	Comply with the requirements of PSD-LA-841. This permit includes provisions of the Prevention of Significant Deterioration (PSD) review from Permit PSD-LA-841.	LAC 33:III.509		
Facility UNF 001	Permit Procedures (LAC 33:III.Chapter 5)	Demonstration of compliance with good combustion practices requires monitoring flue gas oxygen content, combustion air flow, fuel consumption, flue gas temperature, and any additional parameters as recommended by the manufacturer. These parameters shall be maintained within the operating range demonstrated to maintain compliance with applicable emission limitations based on the most recent performance test, or where performance testing has not been performed, within the manufacturer's recommended operating guidelines.	LAC 33:III.509		
Facility UNF 001	Permit Procedures (LAC 33:III.Chapter 5)	Shall comply with the following as BACT for GHG: Utilize thermally efficient equipment, low carbon fuels, and good combustion practices; recover exhaust heat from the refrigeration turbines; and limit operations of the hot oil heater and emergency engines.	LAC 33:III.509		
Facility UNF 001	Part 70 General Conditions (LAC 33:III.535)	Comply with the Part 70 General Conditions as set forth in LAC 33:III.535.	LAC 33:III.535		
Facility UNF 001	Louisiana General Conditions (LAC 33:III.537)	Comply with the Louisiana General Conditions as set forth in LAC 33:III.537.	LAC 33:III.537		

**TABLE 2: STATE AND FEDERAL AIR QUALITY REQUIREMENTS**

For each Emission Point ID Number:

- List each regulation that applies.
- Arrange the requirements imposed by each regulation according to the headings provided below.
- Repeat this process for each regulation that applies to each source.
- State-only Requirements should be noted as such in the appropriate column.

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	General Regulations on Control of Emissions and Emission Standards (LAC 33:III.Chapter 9)	Air pollution control facilities should be installed whenever practically, economically, and technologically feasible. When facilities have been installed on a property, they shall be used and diligently maintained in proper working order whenever any emissions are being made which can be controlled by the facilities, even though the ambient air quality standards in affected areas are not exceeded.	LAC 33:III.905.A		
Facility UNF 001	General Regulations on Control of Emissions and Emission Standards (LAC 33:III.Chapter 9)	Provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities, exclusive of instruments and sensing devices as may be necessary for proper determination of the emission of air contaminants.	LAC 33:III.913.A		
Facility UNF 001	Emissions Inventory (LAC 33:III.919)	Submit Emission Inventory (EI)/Annual Emissions Statement: Due annually, by the 30th of April to the Office of Environmental Services, for the reporting period of the previous calendar year that coincides with period of ownership or operatorship, until released from reporting, in writing, by DEQ. Submit both an emissions inventory and the certification statement required by LAC 33:III.919.F.1.c, separately for each AI, in a format specified by DEQ.	LAC 33:III.919		
Facility UNF 001	Emissions Inventory (LAC 33:III.919)	Include actual emissions in tons per year of ammonia (NH <sub>3</sub> ), CO, lead (Pb), NO <sub>x</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , and VOC.	LAC 33:III.919.F.1.a		
Facility UNF 001	Notifications Required (Unauthorized Discharges) (LAC 33:III.927)	The unauthorized discharge of any air pollutant into the atmosphere shall be reported in accordance with the provisions of LAC 33:I.Chapter 39, Notification Regulations and Procedures for Unauthorized Discharges. Written reports pursuant to LAC 33:I.3925 must be submitted to the department. Timely and appropriate follow-up reports should be submitted detailing methods and procedures to be used to prevent similar atmospheric releases.	LAC 33:III.927.A		



**TABLE 2: STATE AND FEDERAL AIR QUALITY REQUIREMENTS**

For each Emission Point ID Number:

- List each regulation that applies.
- Arrange the requirements imposed by each regulation according to the headings provided below.
- Repeat this process for each regulation that applies to each source.
- State-only Requirements should be noted as such in the appropriate column.

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Violation of Emission Regulations Cannot Be Authorized (LAC 33:III.929)	No person or group of persons shall allow particulate matter or gases to become airborne in amounts which cause the ambient air quality standards to be exceeded.	LAC 33:III.929.A		
Facility UNF 001	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	The emissions of smoke which passes onto or across a public road and creates a traffic hazard by impairment of visibility or intensifies an existing traffic hazard condition is prohibited.	LAC 33:III.1103.A		
Facility UNF 001	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	No person shall cause or allow the outdoor burning of waste material or other combustible material on any property owned by him or under his control except as provided in Subsections C and D of LAC 33:III.1109.	LAC 33:III.1109.B		
Facility UNF 001	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	The emissions which pass onto or across a public road and create a traffic hazard by impairment of visibility or intensify an existing traffic hazard condition are prohibited.	LAC 33:III.1303.B		
Facility UNF 001	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	All reasonable precautions shall be taken to prevent particulate matter from becoming airborne. These precautions shall include but shall not be limited to those listed in LAC 33:III.1305.A.1 through A.7.	LAC 33:III.1305.A		
Facility UNF 001	Control of Organic Compounds (LAC 33:III.Chapter 21)	Best practical housekeeping and maintenance practices must be maintained at the highest possible standards to reduce the quantity of organic compounds emissions. Emission of organic compounds must be reduced wherever feasible. Good housekeeping shall include, but not be limited to, the practices listed in LAC 33:III.2113.A.1 through A.5.	LAC 33:III.2113.A		
Facility UNF 001	Control of Organic Compounds (LAC 33:III.Chapter 21)	Develop a written plan for housekeeping and maintenance that places emphasis on the prevention or reduction of volatile organic compound emissions from the facility. This plan shall be submitted to the Office of Environmental Services upon request. A copy shall be kept at the facility, if practical, or at an alternate site approved by the department.	LAC 33:III.2113.A.4		

**TABLE 2: STATE AND FEDERAL AIR QUALITY REQUIREMENTS**

For each Emission Point ID Number:

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Odor Regulations (LAC 33:III.Chapter 29)	Do not discharge an odorous substance which causes a perceived odor intensity of six or greater on the specified eight-point butanol scale when determined by the department's test method. (Method 41).	LAC 33:III.2901.D		
Facility UNF 001	Odor Regulations (LAC 33:III.Chapter 29)	If requested to monitor for odor intensity, take and transport samples in a manner which minimizes alteration of the samples either by contamination or loss of material. Evaluate all samples as soon after collection as possible in accordance with the procedures set forth LAC 33:III.2901.G.	LAC 33:III.2901.F		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Shall not construct or modify any stationary source subject to such standard without first obtaining written authorization from the administrative authority in accordance with this Subchapter.	LAC 33:III.5105.A.1		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Shall not cause a violation of any ambient air standard listed in LAC 33:III.5112, Table 51.2, unless operating in accordance with LAC 33:III.5109.B.	LAC 33:III.5105.A.2		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Submit a completed annual emissions report to the Office of Environmental Services in a format specified by the department. Identify on the emissions report the quantity of emissions in the previous calendar year for any such toxic air pollutant emitted.	LAC 33:III.5107.A		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Submit a completed annual emissions report to the Office of Environmental Services on or before April 30 of each year, unless otherwise directed by the administrative authority, that shall identify the quantity of emissions of all toxic air pollutants listed in LAC 33:III.5112, Table 51.1 or 51.3, for the previous calendar year.	LAC 33:III.5107.A.1		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Annual emissions reports and revisions to any emissions report shall include a certification statement that attests that the information contained in the emissions report is true, accurate, and complete, and that is signed by a <i>responsible official</i> , as defined in LAC 33:III.502. The certification statement shall include the full name of the responsible official, his or her title and signature, the date of the signature, and the phone number of the responsible official.	LAC 33:III.5107.A.2		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Submit notification: Due to the Department of Public Safety 24-hour Louisiana Emergency Hazardous Materials Hotline in accordance with LAC 33:I.3915.A, after any discharge of a toxic air pollutant into the atmosphere that results or threatens to result in an emergency condition, as defined in LAC 33:I.3905.A.	LAC 33:III.5107.B.1		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Submit notification: Due to SPOC, except as provided in LAC 33:III.5107.B.4, immediately, but in no case later than 24 hours after any unauthorized discharge of a toxic air pollutant into the atmosphere that does not cause an emergency condition, the rate or quantity of which is in excess of that allowed by permit, compliance schedule, or variance, or for upset events that exceed the reportable quantity in LAC 33:I.3931. Submit notification in the manner provided in LAC 33:I.3923.	LAC 33:III.5107.B.2		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Submit written report: Due by certified mail to SPOC within seven calendar days of learning of any such discharge or equipment bypass as referred to in LAC 33:III.5107.B.1 and B.2. Include the information specified in LAC 33:III.5107.B.3.a.i through B.3.a.viii.	LAC 33:III.5107.B.3		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	A source that emits or is permitted to emit a Class I or Class II toxic air pollutant at a rate equal to or greater than the minimum emission rate listed for that pollutant in LAC 33:III.5112, Table 51.1, shall control emissions of that toxic air pollutant to a degree that constitutes Maximum Achievable Control Technology (MACT) as approved by the administrative authority.	LAC 33:III.5109.A.1		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Any major source that emits, or is permitted to emit, any toxic air pollutant at a rate equal to or greater than the minimum emission rate listed for that toxic air pollutant shall determine the status of compliance, beyond the source's property line, with applicable ambient air standards listed in LAC 33:III.5112, Table 51.2 (see LAC 33:III.5105.A.2).	LAC 33:III.5109.B		
Facility UNF 001	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Develop a standard operating procedure (SOP) within 120 days after achieving or demonstrating compliance with the standards specified in LAC 33:III.Chapter 51. Detail in the SOP all operating procedures or parameters established to ensure that compliance with the applicable standards is maintained and address operating procedures for any monitoring system in place, specifying procedures to ensure compliance with LAC 33:III.5113.C.5. Make a written copy of the SOP available on site or at an alternate approved location for inspection by DEQ. Provide a copy of the SOP within 30 days upon request by DEQ.	LAC 33:III.5109.C.2		
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	Prepare standby plans for the reduction of emissions during periods of Air Pollution Alert, Air Pollution Warning and Air Pollution Emergency. Design standby plans to reduce or eliminate emissions in accordance with the objectives as set forth in LAC 33:III.5611.Tables 5, 6, and 7	LAC 33:III.5609.A		
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	Activate the preplanned abatement strategy listed in LAC 33:III.5611.Table 5 when DEQ declares an Air Pollution Alert.	LAC 33:III.5609.A.1.b		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	Activate the preplanned strategy listed in LAC 33:III.5611.Table 6 when DEQ declares an Air Pollution Warning.	LAC 33:III.5609.A.2.b		
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	Activate the preplanned abatement strategy listed in LAC 33:III.5611.Table 7 when DEQ declares an Air Pollution Emergency.	LAC 33:III.5609.A.3.b		
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	When requested by the administrative authority, submit a standby plan for the reduction or elimination of emissions during an air pollution alert, air pollution warning or air pollution emergency.	LAC 33:III.5611.A		
Facility UNF 001	Prevention of Air Pollution Emergency Episodes (LAC 33:III.Chapter 56)	Standby plans shall be available to the administrative authority upon request. Any company asked to furnish a standby plan to the administrative authority shall have 30 days from the date of request to submit a plan.	LAC 33:III.5611.B		
Facility UNF 001	Standards of Performance for New Stationary Sources – General Provisions (NSPS Subpart A)	Comply with applicable provisions of 40 CFR part 60 Subpart A.	40 CFR 60.1		
Facility UNF 001	National Emissions Standards for Hazardous Air Pollutants – General Provisions (NESHAP Subpart A)	Comply with applicable provisions of 40 CFR part 63 Subpart A.	40 CFR 63.1		
Facility UNF 001	Protection of Stratospheric Ozone – Recycling and Emissions Reduction (40 CFR Part 82, Subpart F)	Starting January 1, 2019, the recordkeeping and reporting requirements in the leak repair provisions in §82.157(l) and (m) apply to owners and operators of appliances containing 50 or more pounds of class I or class II refrigerants or non-exempt substitutes.	40 CFR 82.166		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Permit Procedures (LAC 33:III.Chapter 5)	Conduct performance tests for formaldehyde emissions from the turbine within 180 days after initial startup. Unless otherwise agreed to in writing by the department, conduct each test run within 20% of the maximum permitted load or within 10% of the maximum achievable load. Per LAC 33:III.913.A, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission of air contaminants.  a. Submit notification to the Office of Environmental Services at least 30 days prior to a performance test in order to provide LDEQ with the opportunity to conduct a pretest meeting and/or observe the test.  b. Use the following stack test method from 40 CFR 63, Appendix A: Method 320 – Measurement of Vapor Phase Organic and Inorganic Emissions by Extractive Fourier Transform Infrared (FTIR) Spectroscopy. Alternate stack test methods may be used with the prior approval of the Office of Environmental Services.  c. Submit performance test results to the Office of Environmental Services within 60 days after completion of the test.  d. Repeat performance tests every 5 years (plus or minus 6 calendar months). With respect to identical units, the permittee may request that the department approve the testing of only a representative subset rather than each unit. Any such request shall be submitted no later than 90 days before the deadline to conduct the test.	LAC 33:III.501.C.6		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Prevention of Significant Deterioration (LAC 33:III.509)	Comply with the following BACT: PM10/PM2.5: Utilize clean fuel and good combustion practices to limit PM10/PM2.5 ≤ 0.012 lb/MMBtu SO2: Utilize low sulfur fuels and good combustion practices to limit SO2 ≤ 0.0134 lb/MMBtu NOx: Utilize Selective Catalytic Reduction (SCR) and Dry Low NOx (DLN) in combustion with clean fuel and good combustion practices to limit NOx ≤ 2.5 ppmv @ 15% O2 CO and VOC (=> 75%): Utilize oxidation catalyst in combustion with clean fuel and good combustion practices to limit CO ≤ 1.7 ppmv @ 15% O2 and VOC ≤ 3.0 ppmv @ 15% O2 GHG: Utilize thermally efficient equipment, low carbon fuels, and good combustion practices to limit GHG ≤ 120 lbs CO2e/MMBtu	LAC 33:III.509		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Prevention of Significant Deterioration (LAC 33:III.509)	Conduct performance tests for PM and VOC emissions from the turbines within 180 days after initial startup. Unless otherwise agreed to in writing by the department, conduct each test run within 20% of the maximum permitted load or within 10% of the maximum achievable load. Per LAC 33:III.913.A, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission of air contaminants. a. Submit notification to the Office of Environmental Services at least 30 days prior to a performance test in order to provide LDEQ with the opportunity to conduct a pretest meeting and/or observe the test. b. Use the following stack test method from 40 CFR 63, Appendix A: Method 5 – Determination of particulate matter emissions from stationary sources for PM; Method 202 – Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources (40 CFR 51, Appendix M) for condensable PM; and Method 25A – Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer for VOC.. Alternate stack test methods may be used with the prior approval of the Office of Environmental Services. c. Submit performance test results to the Office of Environmental Services within 60 days after completion of the test. d. Repeat performance tests every 5 years (plus or minus 6 calendar months). With respect to identical units, the permittee may request that the department approve the testing of only a representative subset rather than each unit. Any such request shall be submitted no later than 90 days before the deadline to conduct the test.	LAC 33:III.509		



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GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Prevention of Significant Deterioration (LAC 33:III.509)	Monitor and record NO <sub>x</sub> and CO emissions from the turbines using Continuous Emissions Monitoring Systems (CEMS) calibrated, operated, and maintained according to the manufacturer's specifications. a. NO <sub>x</sub> CEMS shall comply with 40 CFR 60, Appendix B, Performance Specification 2; b. CO CEMS shall comply with 40 CFR Part 60, Appendix B, Performance Specifications 4; c. CEMS shall be evaluated in accordance with Procedure 1 of 40 CFR 60, Appendix F; d. Data availability shall be stipulated by Part 70 General Condition V of LAC 33:III.535,A; and e. Determine the NO <sub>2</sub> /NO <sub>x</sub> in-stack ratio in conjunction with Performance Specification 2.	LAC 33:III.509		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	The emission of particulate matter shall be controlled so that the shade or appearance of the emission is not denser than 20% average opacity except the emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	NO <sub>x</sub> Emission Limit: 25 ppm at 15% O <sub>2</sub> or 1.2 lb/MWh (150 ng/J) of useful output	40 CFR 60.4320(a), Table 1		

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GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	SO <sub>2</sub> Emission Limit: 0.90 lbs/MWh (110 ng/J) or not burn fuel that contains total potential sulfur emissions in excess of 0.06 lb/MMBtu (26 ng/J)	40 CFR 60.4330(a)(1)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Operate and maintain the stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.	40 CFR 60.4333(a)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	If not using water or steam injection, to control NO <sub>x</sub> emissions, perform annual performance tests in accordance with §60.4400 to demonstrate continuous compliance.	40 CFR 60.4340		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Nitrogen oxides monitored by continuous emission monitor (CEM) continuously as described in 40 CFR 60.4335(b) and 40 CFR 60.4345.	40 CFR 60.4340(b)(1)		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Operate and maintain the CEMS as described in §60.4345(a) to (e).	40 CFR 60.4345		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Each NO <sub>x</sub> diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NO <sub>x</sub> diluent CEMS that is installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.	40 CFR 60.4345(a)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	As specified in § 60.13(e)(2), during each full unit operating hour, both the NO <sub>x</sub> monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NO <sub>x</sub> emission rate for the hour.	40 CFR 60.4345(b)		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Each fuel flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, with state approval, fuel flowmeters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.	40 CFR 60.4345(c)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions.	40 CFR 60.4345(d)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section I of appendix B to part 75 of this chapter.	40 CFR 60.4345(e)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	For purposes of identifying excess emissions, comply with the requirements of 40 CFR 4350(a), (b), (c), (e), and (f)(3).	40 CFR 60.4350		



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GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Demonstrate compliance with heat input limit for sulfur emissions of 0.06 lb SO <sub>2</sub> /MMBtu (26 ng SO <sub>2</sub> /J) with a: <ul style="list-style-type: none"> <li>• Valid purchase contract, tariff sheet or transportation contract for the fuel specifying the total sulfur content for natural gas is ≤ 20 grains of sulfur per 100 standard cubic feet; or</li> <li>• Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 0.060 lb SO<sub>2</sub>/MMBtu (26 ng SO<sub>2</sub>/J) heat input.</li> </ul>	40 CFR 60.4365(a), 40 CFR 60.4365(b)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Submit excess emissions reports and monitor downtime, in accordance with 40 CFR 60.7(c). Report excess emissions for all periods of unit operation, including start-up, shutdown, and malfunction. Subpart KKKK.	40 CFR 60.4375(a)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	All reports required under §60.7(c) must be postmarked by the 30th day following the end of each 6-month period.	40 CFR 60.4395		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Conduct an initial performance test, as required in §60.8. If using a NO <sub>x</sub> -diluent CEMS, conduct performance tests in accordance with §60.4405.	40 CFR 60.4400(a), 40 CFR 60.4405, 40 CFR 60.4415(a)		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Conduct an initial performance test for NO <sub>x</sub> , as required in 40 CFR 60.8. Use one of methodologies specified in 40 CFR 60.4400(a)(1)(i) and (a)(1)(ii). If using a NO <sub>x</sub> -diluent CEMS according to 40 CFR 60.4345, then the test may be performed as specified in 40 CFR 60.4405(a) through (d).	40 CFR 60.4400(a)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. You may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. You must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.	40 CFR 60.4400(b)		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	If monitoring combustion parameters or parameters indicative of proper operation of NO <sub>x</sub> emission controls in accordance with §60.4340: Continuously monitor and record the appropriate parameters during each run of the initial performance test to establish acceptable operating ranges, for purposes of the parameter monitoring plan specified in §60.4355.	40 CFR 60.4410		
GRP 001 Turbines Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006 Generation Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Combustion Turbines (NSPS Subpart KKKK)	Conduct performance tests for sulfur initially as required in 40 CFR 60.8 and annually thereafter. Use one of the methodologies specified in 40 CFR 60.4415(a)(1) through (a)(4).	40 CFR 60.4415		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
GRP 001 Flare Cap EQTs 007, 008, 009	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Opacity <= 20 percent, except for a combined total of six hours in any 10 consecutive day period, for burning in connection with pressure valve releases for control over process upsets. Determine opacity by using Method 9 of 40 CFR Part 60, Appendix A or by using a continuous opacity monitoring system (COMS) meeting the requirements outlined in 40 CFR 60.13(c) and (d).	LAC 33:III.1105		
GRP 001 Flare Cap EQTs 007, 008, 009	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Submit notification: Due to SPOC as soon as possible after the start of burning of pressure valve releases for control over process upsets. Notify in accordance with LAC 33:I.3923. Notification is required only if the upset cannot be controlled in six hours.	LAC 33:III.1105		
GRP 001 Flare Cap EQTs 007, 008, 009	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	Opacity <= 20 percent; except emissions may have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		
GRP 001 Flare Cap EQTs 007, 008, 009	Permit Procedures (LAC 33:III.Chapter 5)	Permittee shall not send the vent gas to the flare for more than 720 hours per calendar year.	LAC 33:III.501.C.6		
GRP 001 Flare Cap EQTs 007, 008, 009	Part 70 Operating Permits Program (LAC 33:III.507)	Date, time, and duration of vent gas sent to the flare shall be monitored and recorded. Records of gas vented to the flare shall be maintained on site for five years and available for LDEQ inspection.	LAC 33:III.507.H.1.a		
GRP 001 Flare Cap EQTs 007, 008, 009	Prevention of Significant Deterioration (LAC 33:III.509)	Utilize good combustion practices and work practices listed in 40 CFR 60.18, facility fuel gas for pilots and purge, flare gas recovery system, and burner optimization as BACT.	LAC 33:III.509		
Marine Flare EQT 010	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Opacity <= 20 percent, except for a combined total of six hours in any 10 consecutive day period, for burning in connection with pressure valve releases for control over process upsets. Determine opacity by using Method 9 of 40 CFR Part 60, Appendix A or by using a continuous opacity monitoring system (COMS) meeting the requirements outlined in 40 CFR 60.13(c) and (d).	LAC 33:III.1105		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Marine Flare EQT 010	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Submit notification: Due to SPOC as soon as possible after the start of burning of pressure valve releases for control over process upsets. Notify in accordance with LAC 33:I.3923. Notification is required only if the upset cannot be controlled in six hours.	LAC 33:III.1105		
Marine Flare EQT 010	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	Opacity <= 20 percent; except emissions may have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		
Marine Flare EQT 010	Permit Procedures (LAC 33:III.Chapter 5)	Permittee shall not send the vent gas to the flare for more than 120 hours per calendar year.	LAC 33:III.501.C.6		
Marine Flare EQT 010	Part 70 Operating Permits Program (LAC 33:III.507)	Date, time, and duration of vent gas sent to the flare shall be monitored and recorded. Records of gas vented to the flare shall be maintained on site for five years and available for LDEQ inspection.	LAC 33:III.507.H.1.a		
Marine Flare EQT 010	Prevention of Significant Deterioration (LAC 33:III.509)	Utilize good combustion practices and work practices listed in 40 CFR 60.18, facility fuel gas for pilots and purge, flare gas recovery system, and burner optimization as BACT.	LAC 33:III.509		
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	The emission of smoke generated by the burning of fuel shall be controlled so that the shade or appearance of the emission is not darker than 20% average opacity, except that such emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1101.B		
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	Opacity <= 20 percent; except emissions may have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		



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Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Any emissions unit that is not subject to the emissions limitations of this Chapter shall record and retain at the site sufficient data to show annual potential sulfur dioxide emissions from the emissions unit.	LAC 33:III.1513.C		
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Permit Procedures (LAC 33:III.Chapter 5)	Total heat input to two thermal oxidizers shall be limited to no more than 65.4 MMBtu/hr.	LAC 33:III.501.C.6		
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Part 70 Operating Permits Program (LAC 33:III.507)	Total heat input to the thermal oxidizers shall be monitored and recorded continuously. These records shall be maintained on site for five years and available for LDEQ inspection.	LAC 33:III.507.H.1.a		
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Prevention of Significant Deterioration (LAC 33:III.509)	Comply with the following BACT: PM10/PM2.5: Utilize good combustion practices to limit PM10/PM2.5 ≤ 0.00745 MMBtu/hr. SO2: Utilize H2S scavenger gas in combination with good combustion practices. NOx: Utilize Low NOx burners in combustion with clean fuel and good combustion practices to limit NOx ≤ 0.049 lb/MMBtu CO and VOC: Utilize good combustion practices to limit CO ≤ 0.0824 lb/MMBtu and VOCs => 99.9% DRE	LAC 33:III.509		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Prevention of Significant Deterioration (LAC 33:III.509)	Generator Engines (EQT 016, TBD, TBD): BACT is clean fuel/low sulfur fuel, good combustion practices, limited hours of operation, and compliance with the following limits: NO <sub>x</sub> ≤ 8.46 g/kW-hr; CO ≤ 1.21 g/kW-hr; PM ≤ 0.067 g/kW-hr; VOC ≤ 0.322 g/kW-hr; SO <sub>2</sub> ≤ 0.00152 lb/MMBtu.	LAC 33:III.509		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Prevention of Significant Deterioration (LAC 33:III.509)	Firewater Pump Engines (EQT 017, 018, 019, 020): BACT is clean fuel/low sulfur fuel, good combustion practices, limited hours of operation, and compliance with the following limits: NO <sub>x</sub> ≤ 3.61 g/kW-hr; CO ≤ 1.22 g/kW-hr; PM ≤ 0.115 g/kW-hr; VOC ≤ 0.068 g/kW-hr; SO <sub>2</sub> ≤ 0.00152 lb/MMBtu.	LAC 33:III.509		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	The emission of smoke generated by the burning of fuel shall be controlled so that the shade or appearance of the emission is not darker than 20% average opacity, except that such emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1101.B		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	The emission of particulate matter shall be controlled so that the shade or appearance of the emission is not denser than 20% average opacity except the emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Generator Engines (EQT 016, TBD, TBD): Comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power.	40 CFR 60.4205(b)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Firewater Pump Engines (EQT 017, 018, 019, 020): PM10 ≤ 0.15 g/BHP-hr and NMHC + NOx ≤ 4.8 g/HP-hr.	40 CFR 60.4205(c)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 over the entire life of the engine.	40 CFR 60.4206		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Use diesel fuel that meets the requirements of 40 CFR 1090.305 (ultra-low diesel standards) for nonroad diesel fuel, which includes a maximum sulfur content of 15 ppm.	40 CFR 60.4207(b)		

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CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines must be equipped with a non-resettable hour meter prior to startup of the engine.	40 CFR 60.4209(a)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions.	40 CFR 60.4211(a)(1)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Change only those emission-related settings that are permitted by the manufacturer.	40 CFR 60.4211(a)(2)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as applicable, except as permitted in 40 CFR 60.4211(g).	40 CFR 60.4211(a)(3)		



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CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Ensure engine is certified to the emission standards specified in 40 CFR 60.4204(b) or 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. Install and configure according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g).	40 CFR 60.4211(c)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Operate the emergency stationary ICE according to the requirements in §60.4211(f)(1) through (3). Any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in §60.4211(f)(1) through (3), is prohibited.	40 CFR 60.4211(f)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	There is no time limit on the use of emergency stationary ICE in emergency situations.	40 CFR 60.4211(f)(1)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Emergency stationary ICE may be operated for maintenance checks and readiness testing for a maximum of 100 hours per year, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.	40 CFR 60.4211(f)(2)(i)		

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CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in §60.4211(f)(2).	40 CFR 60.4211(f)(3)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Operating time recordkeeping by electronic or hard copy upon occurrence of event. If the emergency engine meets the standards applicable to emergency engines in the applicable model year, keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. Record the time of operation of the engine and the reason the engine was in operation during that time.	40 CFR 60.4214(b)		
CRG 002 IC Engines Essential Generator Engines EQTs 016, TBD, TBD Fire Water Pumps EQTs 017, 018, 019, 020	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (NESHAP Subpart ZZZZ)	New or reconstructed stationary RICE located at an area source of HAP emissions will comply with this Subpart by meeting the requirements of 40 CFR 60 Subpart IIII.	40 CFR 63.6590(c)		
Hot Oil Heater EQT 021	Emissions Standards for Particulate Matter (LAC 33:III.Chapter 13)	Emission of particulate matter from any fuel burning equipment shall be in excess of 0.6 lb/MMBtu of heat input.	LAC 33:III.1313.C		
Hot Oil Heater EQT 021	Permit Procedures (LAC 33:III.Chapter 5)	Limit time to no more than 720 hours per calendar year.	LAC 33:III.501.C.6		
Hot Oil Heater EQT 021	Part 70 Operating Permits Program (LAC 33:III.507)	Operating time: Monitored and recorded continuously. These records shall be kept on site for 5 years and available for LDEQ inspection.	LAC 33:III.507.H.1.a		



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Hot Oil Heater EQT 021	Prevention of Significant Deterioration (LAC 33:III.509)	Comply with the following BACT: PM10/PM2.5: Utilize clean fuel in combination with good combustion practices and limiting operation; PM10/PM2.5 $\leq$ 0.00745 lb/MMBtu SO2: Utilize low sulfur fuel in combination with good combustion practices and limiting operation; SO2 $\leq$ 0.00074 lb/MMBtu NOx: Utilize low NOx burners in combination with clean fuel, good combustion practices, and limiting operation; NOx $\leq$ 0.14 lb/MMBtu CO and VOC ( $\Rightarrow$ 75%): Utilize clean fuel, good combustion practices. And limiting operation to limit CO $\leq$ 0.0824 lb/MMBtu and VOC $\leq$ 0.00539 lb/MMBtu GHG: Utilize thermally efficient equipment, low carbon fuels, and good combustion practices to limit GHG $\leq$ 120 lbs CO2e/MMBtu	LAC 33:III.509		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests.	40 CFR 60.44b(j)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Nitrogen Oxides (NOx) $\leq$ 0.20 lb/MMBtu heat input (expressed as NO2), except as provided in 40 CFR 60.44b(k). The NOx standards apply at all times, including periods of startup, shutdown, or malfunction.	40 CFR 60.44b(l)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Determine compliance with the NOx standards in 40 CFR 60.44b through performance testing under 40 CFR 60.46b(g).	40 CFR 60.46b(c)		

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Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Submit notification of the date of initial startup, as provided by §60.7.	40 CFR 60.49b(a)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Submit the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility to DEQ.	40 CFR 60.49b(b)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Fuel rate recordkeeping by electronic or hard copy daily. Record the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. Determine the annual capacity factor on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. If the facility is not required to continuously monitor any emissions (excluding opacity) or parameters indicative of emissions, the facility may record the amount of each fuel combusted during each calendar month. .	40 CFR 60.49b(d)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Submit excess emissions report: Due by the 30th day following the end of each six-month period. Report any excess emissions which occurred during the reporting period.	40 CFR 60.49b(h)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Records shall be maintained for a period of 2 years following the date of such record.	40 CFR 60.49b(o)		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Maintain records for each operating day of: <ul style="list-style-type: none"> <li>• Calendar date,</li> <li>• Hours of operation, and</li> <li>• Hourly steam load</li> </ul>	40 CFR 60.49b(p)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Submit a report to DEQ containing the annual capacity factor over the previous 12 months, the average fuel nitrogen content during the reporting period if residual oil was fired, and all other applicable information per 40 CFR 60.49b(q)(1) through (q)(3).	40 CFR 60.49b(q)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the gaseous fuel meets the definition of natural gas as defined in §60.41b and the applicable sulfur limit.	40 CFR 60.49b(r)(1)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Reports shall be submitted to the Administrator certifying that only natural gas and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period.	40 CFR 60.49b(r)(1)		
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	The reporting period for the reports required under NSPS Subpart Db is each 6-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.	40 CFR 60.49b(w)		
Condensate Tank T-3000	Prevention of Significant Deterioration (LAC 33:III.509)	Equip with internal floating roof with white or light grey exterior paint and conduct proper maintenance and inspections is BACT for VOC.	LAC 33:III.509		
Condensate Tank T-3000	Control of Emission of Organic Compounds (LAC 33:III.2103)	Equip with a submerged fill pipe.	LAC 33:III.2103.B		

**TABLE 2: STATE AND FEDERAL AIR QUALITY REQUIREMENTS**

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Control of Emission of Organic Compounds (LAC 33:III.2103)	Internal Floating Roof. An internal floating roof consists of a pontoon type roof, double deck type roof, or internal floating cover which will rest or float on the surface of the liquid contents and is equipped with a closure seal to close the space between the roof edge and tank wall. All tank gauging and sampling devices shall be gas tight except when gauging or sampling is taking place.	LAC 33:III.2103.C		
Condensate Tank T-3000	Control of Emission of Organic Compounds (LAC 33:III.2103)	Determine VOC maximum true vapor pressure using the methods in LAC 33:III.2103.H.3.a-e.	LAC 33:III.2103.H.3		
Condensate Tank T-3000	Control of Emission of Organic Compounds (LAC 33:III.2103)	Maintain records to verify compliance with or exemption from LAC 33:III.2103.	LAC 33:III.2103.I		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. Equip each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains with a cover or lid and maintain in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Equip the cover or lid with a gasket. Bolt covers on each access hatch and automatic gauge float well except when they are in use. Equip automatic bleeder vents with a gasket and close at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Equip rim space vents with a gasket and set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.	40 CFR 60.112b(a)(1)		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Equip with a fixed roof in combination with an internal floating roof. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.	40 CFR 60.112b(a)(1)(i)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Equip internal floating roof with a liquid mounted seal consisting of a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.	40 CFR 60.112b(a)(1)(ii)(A)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Equip internal floating roof with two seals mounted secondary above the primary so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The primary seal may be vapor-mounted, but both must be continuous.	40 CFR 60.112b(a)(1)(ii)(B)		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Equip internal floating roof with a mechanical shoe seal consisting of a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.	40 CFR 60.112b(a)(1)(ii)(C)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Tank roof and seals monitored by visual inspection/determination at the regulation's specified frequency. Inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, repair the items before filling the storage vessel.	40 CFR 60.113b(a)(1)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, repair the items or empty and remove the storage vessel from service within 45 days.	40 CFR 60.113b(a)(2)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If a failure is detected during inspections required in this paragraph initiate repair provisions.	40 CFR 60.113b(a)(2)		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Tank roof and seals monitored by visual inspection/determination once every five years as specified in 40 CFR 60.113b(a)(4).	40 CFR 60.113b(a)(3)(i)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Tank roof and seals monitored by visual inspection/determination annually as specified in 40 CFR 60.113b(a)(2).	40 CFR 60.113b(a)(3)(ii)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10% open area, repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL.	40 CFR 60.113b(a)(4)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Tank roof and seals monitored by visual inspection/determination at the regulation's specified frequency. Inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If a failure is detected during inspections required in this paragraph initiate repair provisions.	40 CFR 60.113b(a)(4)		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Submit notification in writing: Due at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by 40 CFR 60.113b(a)(1) and (a)(4) to afford DEQ an opportunity to have an observer present. If the inspection required by paragraph 40 CFR 60.113b(a)(4) is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, notify DEQ at least 7 days prior to the refilling of the storage vessel. Notify by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, submit notification in writing including the written documentation and send by express mail so that it is received by DEQ at least 7 days prior to the refilling.	40 CFR 60.113b(a)(5)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Keep copies of all reports and records required by §60.115b for at least 2 years.	40 CFR 60.115b		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Submit a report: Due to DEQ as an attachment to the notification required by 40 CFR 60.7(a)(3). This report shall describe the control equipment and certify that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 60.113b(a)(1). Keep copies of all reports for at least two years.	40 CFR 60.115b(a)(1)		

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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Inspection records recordkeeping by electronic or hard copy upon each occurrence of inspection, per 40 CFR 60.113b(a)(1) through (4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). Keep copies of all records for at least two years.	40 CFR 60.115b(a)(2)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Submit a report: Due to DEQ within 30 days of the annual visual inspection required by 40 CFR 60.113b(a)(2) that detects any of the conditions described in 40 CFR 60.113b(a)(2). Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. Keep copies of all reports for at least two years.	40 CFR 60.115b(a)(3)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Submit a report: Due to DEQ within 30 days of each inspection required by 40 CFR 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR 60.113b(a)(3)(ii). The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR 61.112b(a)(1) or 40 CFR. 60.113b(a)(3) and list each repair made. Keep copies of all reports for at least two years.	40 CFR 60.115b(a)(4)		
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.	40 CFR 60.116b(b)		



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Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
Condensate Tank T-3000	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	VOL storage data recordkeeping by electronic or hard copy at the approved frequency. Records consist of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. Keep copies of all records for at least two years.	40 CFR 60.116b(c)		
CRG 003 Low Vapor Pressure Tanks EQTs 023, 024, 025, 026, TBD, TBD	Prevention of Significant Deterioration (LAC 33:III.509)	White or light grey exterior paint and proper maintenance and inspections is BACT for VOC.	LAC 33:III.509		
FUG 0001 Fugitive Emissions	Pumps and Compressors (LAC 33:III.2111)	Equip all rotary pumps and compressors handling volatile organic compounds having a true vapor pressure of 1.5 psia or greater at handling conditions with mechanical seals or other equivalent equipment.	LAC 33:III.2111		
FUG 0001 Fugitive Emissions	Prevention of Significant Deterioration (LAC 33:III.509)	Comply with the following BACT: a) appropriate component selection, design and installation b) utilizing proper piping design c) equipping all rotary pumps and compressors handling VOCs having a true vapor pressure of 1.5 psia or greater at handling conditions with mechanical seals or other equivalent equipment d) implementing a LDAR that entails quarterly monitoring of accessible compressors, pumps, and valves containing more than 10% by weight of VOC or methane using Method 21 of 40 CFR Appendix A. If the instrument reading exceeds 10,000 ppm, the component shall be repaired within 15 days. If the repair would require a unit shutdown; then the repair may be delayed until the next scheduled shutdown.	LAC 33:III.509		

**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Facility UNF 001	Crude Oil and Condensate (LAC 33:III.2104)	Does Not Apply	The regulation applies to any oil and gas production facility (SIC Code 1311), natural gas processing plant (SIC Code 1321), or natural gas transmission facility (SIC Code 4922) that has a potential to emit 100 TPY or more of flash gas to the atmosphere.  The facility operations do not fall under the listed SIC Codes.	LAC 33:III.2104.A
Facility UNF 001	Volatile Organic Compounds— Loading (LAC 33:III.2107)	Exempt	Condensate Truck Loading Operation: Condensate loading facilities are exempt from the standard.	LAC 33:III.2107.F
Facility UNF 001	Marine Vapor Recovery (LAC 33:III.2108)	Does Not Apply	The marine loading operation at the facility does not meet the criteria of an affected facility in the regulation, which is any marine loading operation serving ships and/or barges loading crude oil, gasoline, or volatile organic compounds (VOC) with an uncontrolled emission of $\geq 100$ TPY.	LAC 33:III.2108.A
Facility UNF 001	Waste Gas Disposal (LAC 33:III.2115)	Does Not Apply	The facility does not have the potential to emit $\geq 100$ TPY of VOCs from waste gas streams.	LAC 33:III.2115.A
Facility UNF 001	Chemical Accident Prevention and Minimization of Consequences (LAC 33:III.Chapter 59)	Does Not Apply	The Chemical Accident Prevention Provisions of 40 CFR Part 68 are incorporated by reference into this LDEQ regulation.	LAC 33:III.5901
Facility UNF 001	National Emission Standards for Marine Tank Vessel Loading Operations (NESHAP Subpart Y)	Does Not Apply	The provisions of NESHAP Subpart Y pertaining to RACT standards in §63.562(c) and (d) are applicable to sources with throughput of 10 M barrels or 200 M barrels, as that term is defined in §63.561, except The terminal does not meet the definition of <i>Source(s) with throughput of 10 M barrels or 200 M barrels</i> under §63.561 as specified in §63.560(d).	40 CFR 63.560(b)
Facility UNF 001	National Emission Standards for Marine Tank Vessel Loading Operations (NESHAP Subpart Y)	Does Not Apply	The provisions of NESHAP Subpart Y pertaining to the MACT standards in §63.562(b) and (d) do not apply to marine tank vessel loading operations at loading berths that only transfer liquids containing organic HAP as impurities, as that term is defined in §63.561. The HAPs present in the LNG are limited to impurities.	40 CFR 63.560(d)(5)
Facility UNF 001	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities (NESHAP Subpart HHH)	Does Not Apply	The facility is not a major source of HAP emissions.	40 CFR 63.1270(a)



**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Facility UNF 001	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) (NESHAP Subpart EEEE)	Does Not Apply	An Organic Liquid Distribution (OLD) operation is subject to NESHAP Subpart EEEE if it is located at, or is part of, a major source of HAP emissions. An OLD operation may occupy an entire plant site or be collocated with other industrial (e.g., manufacturing) operations at the same plant site. The facility is an area source of HAPs.	40 CFR 63.2334(a)
Facility UNF 001	Chemical Accident Prevention Provisions (40 CFR Part 68)	Does Not Apply	The term <i>stationary source</i> under Chemical Accidental Release Prevention does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of the standard. Transportation includes, but is not limited to, transportation subject to oversight or regulation under 49 CFR Parts 192, 193, or 195. The proposed LNG Facility is regulated by 49 CFR Part 193; therefore, the standard does not apply to the project.  Also, the ammonia utilized at the facility for emissions control will be < 20% concentration, which is below the applicability threshold for the substance.	40 CFR 68.3 40 CFR 68.130, Table 1
Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Does Not Apply	The opacity standards do not apply when combusting only natural gas.	LAC 33:III.1107.B.1
Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3
Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006	Standards of Performance for Stationary Gas Turbines (NSPS Subpart GG)	Exempt	Stationary combustion turbines regulated under NSPS Subpart KKKK are exempt from the requirements of NSPS Subpart GG.	40 CFR 60.4035(b)
Refrigeration Turbines EQTs 001, 002, 003, 004, 005, 006	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units (NSPS Subpart TTTT)	Does Not Apply	The turbine does not serve a generator or generators capable of selling greater than 25 MW of electricity to a utility power distribution system.	40 CFR 60.5509(a)
GRP 001 Flare Cap EQTs 007, 008, 009	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3

**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
GRP 001 Flare Cap EQTs 007, 008, 009	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Marine Flare EQT 010	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3
Marine Flare EQT 010	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Exempt	Single point sources that emit or have the potential to emit less than 250 tons per year of sulfur compounds measured as sulfur dioxide may be exempted from the 2,000 ppm(v) limitation by the administrative authority.	LAC 33:III.1503.C
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	Continuous monitoring is not required for sources that emit less than 100 tons per year of sulfur dioxide.	LAC 33:III.1511.D
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a



**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Thermal Oxidizer Cap GRP 002  Thermal Oxidizer A EQT 011 Thermal Oxidizer B EQT 012	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NESHAP Subpart JJJJJ)	Does Not Apply	Units do not meet the definition of a boiler.	40 CFR 63.11237
Generator Turbines EQTs 013, 014, 015, TBD, TBD	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Does Not Apply	The opacity standards do not apply when combusting only natural gas.	LAC 33:III.1107.B.1
Generator Turbines EQTs 013, 014, 015, TBD, TBD	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to a single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3
Generator Turbines EQTs 013, 014, 015, TBD, TBD	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Generator Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Stationary Gas Turbines (NSPS Subpart GG)	Exempt	Stationary combustion turbines regulated under NSPS Subpart KKKK are exempt from the requirements of NSPS Subpart GG.	40 CFR 60.4035(b)
Generator Turbines EQTs 013, 014, 015, TBD, TBD	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units (NSPS Subpart TTTT)	Does Not Apply	The turbine does not serve a generator or generators capable of selling greater than 25 MW of electricity to a utility power distribution system.	40 CFR 60.5509(a)
Essential Generator Engines EQTs 016, TBD, TBD	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3
Essential Generator Engines EQTs 016, TBD, TBD	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Essential Generator Engines EQTs 016, TBD, TBD	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Exempt	An initial notification is not required for an emergency stationary internal combustion engine.	40 CFR 60.4214(b)
Fire Water Pumps EQTs 017, 108, 109, 020	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to a single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3



**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Fire Water Pumps EQTs 017, 108, 109, 020	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Fire Water Pumps EQTs 017, 108, 109, 020	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII)	Exempt	An initial notification is not required for an emergency stationary internal combustion engine.	40 CFR 60.4214(b)
Hot Oil Heater EQT 021	Control of Emissions of Smoke (LAC 33:III.Chapter 11)	Does Not Apply	The opacity standards do not apply when combusting only natural gas.	LAC 33:III.1107.B.1
Hot Oil Heater EQT 021	Emissions Standards for Sulfur Dioxide (LAC 33:III.Chapter 15)	Does Not Apply	The standard does not apply to single point sources that emit or have the potential to emit less than 5 tons per year of sulfur dioxide.	LAC 33:III.1502.A.3
Hot Oil Heater EQT 021	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Exempt	Emissions from the combustion of Group 1 virgin fossil fuels are exempt from the provisions of LAC 33:III.Chapter 51, Subchapter A.	LAC 33:III.5105.B.3.a
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Exempt	A unit that commences construction, reconstruction, or modification after February 28, 2005 and fires gaseous fuel# with a potential SO <sub>2</sub> emission rate of 0.32 lb/MMBtu heat input or less is exempt from the SO <sub>2</sub> emissions limit under 40 CFR 60.42b(k)(1).	40 CFR 60.42b(k)(2)
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Exempt	Affected facilities that meet the criteria described in §60.44b(j)(1), (2), and (3), and that have a heat input capacity of ≤ 73 MW (250 MMBtu/hr), are not subject to the NO <sub>x</sub> emission limits under this section.	40 CFR 60.44b(k)
Hot Oil Heater EQT 021	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS Subpart Db)	Exempt	Unit that combusts only natural gas is not subject to the SO <sub>2</sub> compliance and performance testing requirements of 40 CFR 60.45b with fuel receipt documentation under §60.49b(r).	40 CFR 60.45b(j)
Hot Oil Heater EQT 021	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NESHAP Subpart JJJJJ)	Does Not Apply	Units do not meet the definition of a boiler.	40 CFR 63.11237
Mixed Amine Tank EQT 023	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia.	LAC 33:III.2103



**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Mixed Amine Tank EQT 023	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b
Hot Oil Tank EQT 024	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia.	LAC 33:III.2103
Hot Oil Tank EQT 024	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b
Propylene Glycol Tank EQT 025	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia	LAC 33:III.2103
Propylene Glycol Tank EQT 025	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b
Diesel I Tank EQT 026	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia	LAC 33:III.2103
Diesel I Tank EQT 026	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b

**TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE**

Emission Point ID No:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
Slop Oil Tank EQT TBD	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia	LAC 33:III.2103
Slop Oil Tank EQT TBD	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b
Fresh Amine Tank EQT TBD	Control of Emission of Organic Compounds (LAC 33:III.2103)	Does Not Apply	Vapor pressure < 1.5 psia	LAC 33:III.2103
Fresh Amine Tank EQT TBD	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (NSPS Subpart Kb)	Does Not Apply	Vapor pressure < 0.51 psia.	40 CFR 60.110b
FUG 001 Fugitive Emissions	Fugitive Emission Control	Does Not Apply	Facility is not a natural gas processing plant.	LAC 33:III.2121.A

The above table provides explanation for either the exemption status or non-applicability of a source cited by 2 or 3 in the matrix presented in Table 1 of this application.





**Appendix C**  
**Emission Inventory Questionnaire for Air Pollutants**



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) Z-08101A		Descriptive Name of the Emissions Source (Alt. Name) Generator Turbine A			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0013					Method 18, "Interpolation - Map"		Datum NAD83				
					UTM Zone 15	Horizontal 465743 mE	Vertical 3293647 mN				
					Latitude 29°	46'	21"	57 hundredths			
					Longitude 93°	21'	15"	77 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  12 ft	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  70.8 ft/sec	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)  480,524 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  940 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter			Description				
a	Natural Gas	308		Normal Operating Rate/Throughput			308 MMBTU/Hr				
b				Maximum Operating Rate/Throughput			339 MMBTU/Hr				
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered			Engine Model Year				
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) Z-08101A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.60	0.66	2.62	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		3.07	3.41	13.46	22.75	C		ppm by vol	
Carbon monoxide	065	90%		1.78	1.98	7.80	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		1.29	1.43	5.63	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.01	0.01	0.05	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.002	0.002	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	2.28	2.52	9.96	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.004	0.004	0.02	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.01	0.01	0.04	0.08	C		ppm by vol	

Emission Point ID No. (Designation) Z-08101A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.11	0.12	0.49	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.003	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.009	0.01	0.04	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.04	0.04	0.18	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.02	0.02	0.09	0.16	C		ppm by vol
CO2e	000	0%	0	39,594	43,868	173,420	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation) Z-08101B		Descriptive Name of the Emissions Source (Alt. Name)  Generator Turbine B				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No.  EQT 0014						Method 18, "Interpolation - Map"		Datum NAD83				
						UTM Zone 15		Horizontal 465750 mE		Vertical 3293652 mN		
						Latitude 29°		46'		21" 73 hundredths		
						Longitude 93°		21'		15" 51 hundredths		
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  12 ft	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  70.8 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  480,524 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  940 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
								25%	25%	25%	25%	
								proposed				
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
		Type of Fuel	Heat Input (MMBTU/hr)					Parameter	Description			
	a	Natural Gas	308					Normal Operating Rate/Throughput	308 MMBTU/Hr			
	b							Maximum Operating Rate/Throughput	339 MMBTU/Hr			
c							Design Capacity/Volume/Cylinder Displacement					
Notes												
The stack parameters shown are those used for the air dispersion modeling.												
			Shell Height (ft)									
			Tank Diameter (ft)									
			Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal									
			Date Engine Ordered				Engine Model Year					
			Date Engine Was Built by Manufacturer									
			SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke									
Emission Point ID No. (Designation) Z-08101B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>		
Sulfur dioxide	000	0%		0.60	0.66	2.62	3.04	C		ppm by vol		
Nitrogen oxides	065	90%		3.07	3.41	13.46	22.75	C		ppm by vol		
Carbon monoxide	065	90%		1.78	1.98	7.80	9.42	C		ppm by vol		
Total VOC (including those listed below)	065	40%		1.29	1.43	5.63	9.52	C		ppm by vol		
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol		
Acetaldehyde	000	0%	00075-07-0	0.01	0.01	0.05	0.10	C		ppm by vol		
Acrolein	000	0%	00107-02-8	0.002	0.002	0.01	0.02	C		ppm by vol		
Ammonia	000	0%	07664-41-7	2.28	2.52	9.96	16.84	C		ppm by vol		
Benzene	000	0%	00071-43-2	0.004	0.004	0.02	0.03	C		ppm by vol		
Ethyl benzene	000	0%	00100-41-4	0.01	0.01	0.04	0.08	C		ppm by vol		

Emission Point ID No. (Designation) Z-08101B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Pollutant										
Formaldehyde	000	0%	00050-00-0	0.11	0.12	0.49	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.003	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.009	0.01	0.04	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.04	0.04	0.18	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.02	0.02	0.09	0.16	C		ppm by vol
CO2e	000	0%	0	39,594	43,868	173,420	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) Z-08101C		Descriptive Name of the Emissions Source (Alt. Name) <b>Generator Turbine C</b>			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0015					Method	18, "Interpolation - Map"		Datum NAD83			
					UTM Zone	15	Horizontal	465777 mE	Vertical	3293670 mN	
					Latitude	29 °	46'	22"	32 hundredths		
					Longitude	93 °	21'	14"	51 hundredths		
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  12 ft	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  70.8 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  480,524 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  940 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter			Description				
a	Natural Gas	308		Normal Operating Rate/Throughput			308 MMBTU/Hr				
b				Maximum Operating Rate/Throughput			339 MMBTU/Hr				
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered			Engine Model Year				
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) Z-08101C	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		2.16	2.38	9.45	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.60	0.66	2.62	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		3.07	3.41	13.46	22.75	C		ppm by vol	
Carbon monoxide	065	90%		1.78	1.98	7.80	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		1.29	1.43	5.63	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.01	0.01	0.05	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.002	0.002	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	2.28	2.52	9.96	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.004	0.004	0.02	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.01	0.01	0.04	0.08	C		ppm by vol	

Emission Point ID No. (Designation) Z-08101C	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.11	0.12	0.49	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.003	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.009	0.01	0.04	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.04	0.04	0.18	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.02	0.02	0.09	0.16	C		ppm by vol
CO2e	000	0%	0	39,594	43,868	173,420	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)				Approximate Location of Stack or Vent (see instructions)						
Z-08101D		Generator Turbine D				Method 18,"Interpolation - Map"		Datum NAD83				
Tempo Subject Item ID No.						UTM Zone 15		Horizontal 465784 mE		Vertical 3293674 mN		
						Latitude 29 °		46 ' 22 "		45 hundredths		
						Longitude 93 °		21 ' 14 "		25 hundredths		
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
yes	12 ft	175 ft	70.8 ft/sec	480,524 ft <sup>3</sup> /min	940 °F	8760 hr/yr	2023	25%	25%	25%	25%	
						proposed						
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
	Type of Fuel		Heat Input (MMBTU/hr)	Parameter				Description				
	a	Natural Gas	308	Normal Operating Rate/Throughput				308 MMBTU/Hr				
	b			Maximum Operating Rate/Throughput				339 MMBTU/Hr				
c			Design Capacity/Volume/Cylinder Displacement									
Notes												
The stack parameters shown are those used for the air dispersion modeling.												
			Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal				Date Engine Ordered		Engine Model Year			
			SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke				Date Engine Was Built by Manufacturer					
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )	000	0%		2.16	2.38	9.45		A		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )	000	0%		2.16	2.38	9.45		A		gr/std ft <sup>3</sup>		
Sulfur dioxide	000	0%		0.60	0.66	2.62		A		ppm by vol		
Nitrogen oxides	065	90%		3.07	3.41	13.46		A		ppm by vol		
Carbon monoxide	065	90%		1.78	1.98	7.80		A		ppm by vol		
Total VOC (including those listed below)	065	40%		1.29	1.43	5.63		A		ppm by vol		
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01		A		ppm by vol		
Acetaldehyde	000	0%	00075-07-0	0.01	0.01	0.05		A		ppm by vol		
Acrolein	000	0%	00107-02-8	0.002	0.002	0.01		A		ppm by vol		
Ammonia	000	0%	07664-41-7	2.28	2.52	9.96		A		ppm by vol		
Benzene	000	0%	00071-43-2	0.004	0.004	0.02		A		ppm by vol		
Ethyl benzene	000	0%	00100-41-4	0.01	0.01	0.04		A		ppm by vol		

Emission Point ID No. (Designation) Z-08101D	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Pollutant										
Formaldehyde	000	0%	00050-00-0	0.11	0.12	0.49		A		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	<0.001	<0.001	<0.01		A		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.003		A		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.009	0.01	0.04		A		ppm by vol
Toluene	000	0%	00108-88-3	0.04	0.04	0.18		A		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.02	0.02	0.09		A		ppm by vol
CO2e	000	0%	0	39,594	43,868	173,420		A		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)			Approximate Location of Stack or Vent (see instructions)						
Z-08101E		Generator Turbine E			Method <u>18, "Interpolation - Map"</u> Datum <u>NAD83</u>						
Tempo Subject Item ID No.					UTM Zone <u>15</u>	Horizontal <u>465791</u> mE		Vertical <u>3293678</u> mN			
					Latitude <u>29</u> °	<u>46</u> ' <u>22</u> "	<u>58</u> hundredths				
					Longitude <u>93</u> °	<u>21</u> ' <u>13</u> "	<u>99</u> hundredths				
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes	12 ft	175 ft	70.8 ft/sec	480,524 ft <sup>3</sup> /min	940 °F	8760 hr/yr	2023	25%	25%	25%	25%
							proposed				
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description			
a	Natural Gas	308		308 MMBTU/Hr		339 MMBTU/Hr					
b				Design Capacity/Volume/Cylinder Displacement							
c				Shell Height (ft)							
Notes				Tank Diameter (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		2.16	2.38	9.45		A		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		2.16	2.38	9.45		A		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.60	0.66	2.62		A		ppm by vol	
Nitrogen oxides	065	90%		3.07	3.41	13.46		A		ppm by vol	
Carbon monoxide	065	90%		1.78	1.98	7.80		A		ppm by vol	
Total VOC (including those listed below)	065	40%		1.29	1.43	5.63		A		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01		A		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.01	0.01	0.05		A		ppm by vol	
Acrolein	000	0%	00107-02-8	0.002	0.002	0.01		A		ppm by vol	
Ammonia	000	0%	07664-41-7	2.28	2.52	9.96		A		ppm by vol	
Benzene	000	0%	00071-43-2	0.004	0.004	0.02		A		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.01	0.01	0.04		A		ppm by vol	

Emission Point ID No. (Designation) Z-08101E	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Pollutant										
Formaldehyde	000	0%	00050-00-0	0.11	0.12	0.49		A		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	<0.001	<0.001	<0.01		A		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.003		A		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.009	0.01	0.04		A		ppm by vol
Toluene	000	0%	00108-88-3	0.04	0.04	0.18		A		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.02	0.02	0.09		A		ppm by vol
CO2e	000	0%	0	39,594	43,868	173,420		A		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)				Approximate Location of Stack or Vent (see instructions)						
GT-A1101		Refrigeration Turbine A				Method		18,"Interpolation - Map"		Datum		NAD83
Tempo Subject Item ID No.						UTM Zone		15	Horizontal		465812	mE
EQT 0001		Latitude		29 °	Longitude		93 °	46'		15"		99 hundredths
Longitude		21'		13"		18 hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
yes	13.08 ft	175 ft	78.3 ft/sec	631,520 ft <sup>3</sup> /min	632 °F	8760 hr/yr	2023	25%	25%	25%	25%	
						proposed						
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description				
a	Natural Gas	503		503 MMBTU/Hr		588 MMBTU/Hr						
b				Design Capacity/Volume/Cylinder Displacement								
c				Shell Height (ft)								
Notes				Tank Diameter (ft)								
The stack parameters shown are those used for the air dispersion modeling.				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal								
				Date Engine Ordered		Engine Model Year						
				Date Engine Was Built by Manufacturer								
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke								
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
GT-A1101												
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>		
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol		
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol		
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol		
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol		
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol		
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol		
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol		
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol		
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol		
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol		

Emission Point ID No. (Designation) GT-A1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C		ppm by vol
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) GT-B1101		Descriptive Name of the Emissions Source (Alt. Name) Refrigeration Turbine B			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0002					Method 18,"Interpolation - Map" Datum NAD83						
					UTM Zone 15 Horizontal 465873 mE Vertical 3293512 mN						
					Latitude 29 ° 46 ' 17 " 19 hundredths						
					Longitude 93 ° 21 ' 10 " 92 hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> ) 13.08 ft	Height of Stack Above Grade (ft) 175 ft	Stack Gas Exit Velocity 78.3 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min) 631,520 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F) 632 °F	Normal Operating Time (hours per year) 8760 hr/yr	Date of Construction or Modification 2023 proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar 25%	Apr-Jun 25%	Jul-Sep 25%	Oct-Dec 25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter		Description					
a	Natural Gas	503		Normal Operating Rate/Throughput		503 MMBTU/Hr					
b				Maximum Operating Rate/Throughput		588 MMBTU/Hr					
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) GT-B1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol	
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol	

Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
GT-B1101										
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C	ppm by vol	
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C	ppm by vol	
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C	ppm by vol	
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A	ppm by vol	
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C	ppm by vol	
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C	ppm by vol	
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C	ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)				Approximate Location of Stack or Vent (see instructions)					
GT-C1101		Refrigeration Turbine C				Method 18, "Interpolation - Map"					
Tempo Subject Item ID No.						UTM Zone 15		Horizontal 465934 mE		Vertical 3293551 mN	
EQT 0003						Latitude 29°		46'		18" 47 hundredths	
						Longitude 93°		21'		8" 65 hundredths	
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes	13.08 ft	175 ft	78.3 ft/sec	631,520 ft <sup>3</sup> /min	632 °F	8760 hr/yr	2023	25%	25%	25%	25%
							proposed				
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)							
Fuel	Type of Fuel	Heat Input (MMBTU/hr)		Parameter				Description			
a	Natural Gas	503		Normal Operating Rate/Throughput				503 MMBTU/Hr			
b				Maximum Operating Rate/Throughput				588 MMBTU/Hr			
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered				Engine Model Year			
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol	
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol	

Emission Point ID No. (Designation) GT-C1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C	ppm by vol	
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C	ppm by vol	
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C	ppm by vol	
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A	ppm by vol	
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C	ppm by vol	
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C	ppm by vol	
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C	ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) GT-D1101		Descriptive Name of the Emissions Source (Alt. Name) Refrigeration Turbine D			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0004					Method	18, "Interpolation - Map"		Datum NAD83			
					UTM Zone	15	Horizontal	465837 mE	Vertical	3293390 mN	
					Latitude	29 °	46'	13"	23 hundredths		
					Longitude	93 °	21'	12"	24 hundredths		
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  13.08 ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  78.3 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  631,520 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  632 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
								25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
		Type of Fuel	Heat Input (MMBTU/hr)	Normal Operating Rate/Throughput		Parameter		Description			
a	Natural Gas	503	503 MMBTU/Hr		588 MMBTU/Hr						
b			Design Capacity/Volume/Cylinder Displacement								
c			Shell Height (ft)								
Notes			Tank Diameter (ft)								
The stack parameters shown are those used for the air dispersion modeling.			Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal								
			Date Engine Ordered		Engine Model Year						
			Date Engine Was Built by Manufacturer								
			SI Engines: <input checked="" type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke								
Emission Point ID No. (Designation) GT-D1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol	
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol	

Emission Point ID No. (Designation) GT-D1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C		ppm by vol
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) GT-E1101		Descriptive Name of the Emissions Source (Alt. Name) Refrigeration Turbine E			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0005					Method 18, "Interpolation - Map" Datum NAD83						
					UTM Zone 15 Horizontal 465897 mE Vertical 3293429 mN						
					Latitude 29 ° 46 ' 14 " 50 hundredths						
					Longitude 93 ° 21 ' 10 " 1 hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  13.08 ft	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  78.3 ft/sec	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)  631,520 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  632 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar 25%	Apr-Jun 25%	Jul-Sep 25%	Oct-Dec 25%
					proposed						
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
		Type of Fuel	Heat Input (MMBTU/hr)			Parameter	Description				
	a	Natural Gas	503	Normal Operating Rate/Throughput		503 MMBTU/Hr					
	b			Maximum Operating Rate/Throughput		588 MMBTU/Hr					
c			Design Capacity/Volume/Cylinder Displacement								
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) GT-E1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol	
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol	
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol	
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol	
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol	
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol	
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol	
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol	
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol	

Emission Point ID No. (Designation) GT-E1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C		ppm by vol
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal				
								Jan	2024			
Emission Point ID No. (Designation) GT-F1101		Descriptive Name of the Emissions Source (Alt. Name) Refrigeration Turbine F			Approximate Location of Stack or Vent (see instructions)							
Tempo Subject Item ID No. EQT 0006					Method 18, "Interpolation - Map"		Datum NAD83					
					UTM Zone 15	Horizontal 465957 mE	Vertical 3293468 mN					
					Latitude 29° 46' 15"	77 hundredths						
					Longitude 93° 21' 7"	78 hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  13.08 ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  175 ft	Stack Gas Exit Velocity  78.3 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  631,520 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  632 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
								25%	25%	25%	25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
		Type of Fuel	Heat Input (MMBTU/hr)					Parameter	Description			
	a	Natural Gas	503	Normal Operating Rate/Throughput				503 MMBTU/Hr				
	b			Maximum Operating Rate/Throughput				588 MMBTU/Hr				
c			Design Capacity/Volume/Cylinder Displacement									
Notes												
The stack parameters shown are those used for the air dispersion modeling.												
			Shell Height (ft)									
			Tank Diameter (ft)									
			Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal									
			Date Engine Ordered				Engine Model Year					
			Date Engine Was Built by Manufacturer									
			SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke									
Emission Point ID No. (Designation) GT-F1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )	000	0%		6.03	7.05	26.43	22.80	C		gr/std ft <sup>3</sup>		
Sulfur dioxide	000	0%		0.54	0.64	2.38	3.04	C		ppm by vol		
Nitrogen oxides	065	90%		4.86	5.67	21.29	22.75	C		ppm by vol		
Carbon monoxide	065	90%		2.82	3.29	12.34	9.42	C		ppm by vol		
Total VOC (including those listed below)	065	40%		2.03	2.37	8.91	9.52	C		ppm by vol		
1,3-Butadiene	000	0%	00106-99-0	<0.001	<0.001	<0.01	0.001	C		ppm by vol		
Acetaldehyde	000	0%	00075-07-0	0.02	0.02	0.09	0.10	C		ppm by vol		
Acrolein	000	0%	00107-02-8	0.003	0.004	0.01	0.02	C		ppm by vol		
Ammonia	000	0%	07664-41-7	3.60	4.20	15.76	16.84	C		ppm by vol		
Benzene	000	0%	00071-43-2	0.006	0.007	0.03	0.03	C		ppm by vol		
Ethyl benzene	000	0%	00100-41-4	0.02	0.02	0.07	0.08	C		ppm by vol		

Emission Point ID No. (Designation) GT-F1101	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.18	0.21	0.79	0.89	C		ppm by vol
Naphthalene (and Methyl naphthalenes)	000	0%	0	0.001	0.001	0.003	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.001	0.001	0.005	0.01	C		ppm by vol
Propylene oxide	000	0%	00075-56-9	0.015	0.017	0.06	-	A		ppm by vol
Toluene	000	0%	00108-88-3	0.07	0.08	0.29	0.32	C		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.03	0.04	0.14	0.16	C		ppm by vol
CO2e	000	0%	0	62,435	72,898	273,466	296,003	C		ppm by vol



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024			
Emission Point ID No. (Designation) FLR CAP		Descriptive Name of the Emissions Source (Alt. Name)  Flare Cap				Approximate Location of Stack or Vent (see instructions)							
Tempo Subject Item ID No.  GRP 0001						Method _____ Datum _____		UTM Zone _____ Horizontal _____ mE Vertical _____ mN		Latitude _____ " _____ hundredths		Longitude _____ " _____ hundredths	
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point					
								no _____	NA ft _____ ft <sup>2</sup>	NA ft	NA ft/sec	NA ft <sup>3</sup> /min	NA °F
								proposed	25%	25%	25%	25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)									
	Type of Fuel		Heat Input (MMBTU/hr)	Normal Operating Rate/Throughput				Parameter		Description			
	a												
	b												
c													
Notes													
The Wet Flare, Dry Flare, and Spare Flare are included in the FLR CAP.													
							Shell Height (ft)						
							Tank Diameter (ft)						
							Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal						
							Date Engine Ordered		Engine Model Year				
							Date Engine Was Built by Manufacturer						
							SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke						
Emission Point ID No. (Designation) FLR CAP		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)					Annual (tons/yr)	Annual (tons/yr)
Particulate matter (PM <sub>10</sub> )		000	0%	00071-43-2	3.89	17.03	16.07	C		gr/std ft <sup>3</sup>			
Particulate matter (PM <sub>2.5</sub> )		000	0%	00110-54-3	3.89	17.03	16.07	C		gr/std ft <sup>3</sup>			
Sulfur dioxide		000	0%	00108-88-3	0.40	1.77	1.75	C		ppm by vol			
Nitrogen oxides		000	0%	01330-20-7	35.48	155.42	146.70	C		ppm by vol			
Carbon monoxide		000	0%	07783-06-4	161.77	708.54	798.22	C		ppm by vol			
Total VOC (including those listed below)		023	98%	0	4.41	19.32	23.09	C		ppm by vol			
Benzene		023	98%	00071-43-2	0.03	0.14	0.61	C		ppm by vol			
n-Hexane		023	98%	00110-54-3	0.15	0.66	2.71	C		ppm by vol			
Toluene		023	98%	00108-88-3	0.02	0.08	0.31	C		ppm by vol			
Xylene (mixed isomers)		023	98%	01330-20-7	0.01	0.03	1.55	C		ppm by vol			
Hydrogen sulfide		023	98%	07783-06-4	0.002	0.01	0.01	C		ppm by vol			
CO <sub>2</sub> e		000	0%	0	70,009	306,640	296,090	C		ppm by vol			



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation) FLR-WF		Descriptive Name of the Emissions Source (Alt. Name) Wet Flare (Z-05001)				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0007						Method 18, "Interpolation - Map"		Datum NAD83				
						UTM Zone 15		Horizontal 465787.75 mE		Vertical 3293105.25 mN		
						Latitude 29° 46' 3"				96 hundredths		
						Longitude 93° 21' 14"				7 hundredths		
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
yes	0.23 ft	350 ft	65.6 ft/sec	2,310 ft <sup>3</sup> /min	1,832 °F	8760 hr/yr	2023	25%	25%	25%	25%	
							proposed					
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description				
	a	Pilot + Purge 0.72		0.72 MMBTU/hr		0.72 MMBTU/hr						
b					Maximum Operating Rate/Throughput		0.72 MMBTU/hr					
c					Design Capacity/Volume/Cylinder Displacement							
Notes												
The stack parameters shown are those used for the air dispersion modeling.												
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)						Annual (tons/yr)
FLR-WF												
Pollutant												
Particulate matter (PM <sub>10</sub> )	000	0%			32.25		-	C			gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%			32.25		-	C			gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%			4.20		-	C			ppm by vol	
Nitrogen oxides	000	0%			294.39		-	C			ppm by vol	
Carbon monoxide	000	0%			1,341.86		-	C			ppm by vol	
Total VOC (including those listed below)	023	98%			36.81		-	C			ppm by vol	
Benzene	023	98%	00071-43-2		0.25		-	C			ppm by vol	
n-Hexane	023	98%	00110-54-3		1.12		-	C			ppm by vol	
Toluene	023	98%	00108-88-3		0.13		-	C			ppm by vol	
Xylene (mixed isomers)	023	98%	01330-20-7		0.04		-	C			ppm by vol	
Hydrogen sulfide	023	98%	07783-06-4		0.021		-	C			ppm by vol	
CO <sub>2</sub> e	000	0%	0		513,719		-	C			ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) FLR-DF		Descriptive Name of the Emissions Source (Alt. Name) Dry Flare (Z-05001)			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0008					Method 18, "Interpolation - Map"		Datum NAD83				
					UTM Zone 15	Horizontal 465787.75 mE	Vertical 3293105.25 mN				
					Latitude 29°	46'	3"	96 hundredths			
					Longitude 93°	21'	14"	7 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  0.2 ft	Height of Stack Above Grade (ft)  350 ft	Stack Gas Exit Velocity  66.0 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  2,310 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  1,832 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter			Description				
a	Pilot + Purge	0.57		Normal Operating Rate/Throughput			0.57 MMBTU/hr				
b				Maximum Operating Rate/Throughput			0.57 MMBTU/hr				
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
The stack parameters shown are those used for the air dispersion modeling.				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered			Engine Model Year				
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) FLR-DF	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%			29.01		-	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%			29.01		-	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%			2.20		-	C		ppm by vol	
Nitrogen oxides	000	0%			264.74		-	C		ppm by vol	
Carbon monoxide	000	0%			1206.92		-	C		ppm by vol	
Total VOC (including those listed below)	023	98%			32.96		-	C		ppm by vol	
Benzene	023	98%	00071-43-2		0.21		-	C		ppm by vol	
n-Hexane	023	98%	00110-54-3		0.98		-	C		ppm by vol	
Toluene	023	98%	00108-88-3		0.11		-	C		ppm by vol	
Xylene (mixed isomers)	023	98%	01330-20-7		0.04		-	C		ppm by vol	
Hydrogen sulfide	023	98%	07783-06-4		0.006		-	C		ppm by vol	
CO <sub>2</sub> e	000	0%	0		462,057		-	C		ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal			
										Jan	2024		
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)				Approximate Location of Stack or Vent (see instructions)							
FLR-SF		Spare Flare (Z-05001)				Method <u>18, "Interpolation - Map"</u> Datum <u>NAD83</u>							
Tempo Subject Item ID No.		Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )		Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
EQT 0009		0.23 ft ft <sup>2</sup>		350 ft	65.6 ft/sec	2,310 ft <sup>3</sup> /min	1,832 °F	8760 hr/yr	2023 proposed	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes										25%	25%	25%	25%
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)									
Fuel	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description					
a	Pilot + Purge	0.72		0.72 MMBTU/hr		0.72 MMBTU/hr							
b				Maximum Operating Rate/Throughput		0.72 MMBTU/hr							
c				Design Capacity/Volume/Cylinder Displacement									
<b>Notes</b>				Shell Height (ft)		Tank Diameter (ft)							
The Spare Flare can receive streams that would be directed to either the Wet Flare or the Dry Flare. The maximum hourly emissions represents the worst-case scenario from both the Wet Flare and the Dry Flare.				<b>Tanks:</b> <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal		Date Engine Ordered		Engine Model Year					
The stack parameters shown are those used for the air dispersion modeling.				Date Engine Was Built by Manufacturer		SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation)		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
FLR-SF					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)						
Pollutant													
Particulate matter (PM <sub>10</sub> )		000	0%			32.25	-	-	C	gr/std ft <sup>3</sup>			
Particulate matter (PM <sub>2.5</sub> )		000	0%			32.25	-	-	C	gr/std ft <sup>3</sup>			
Sulfur dioxide		000	0%			4.20	-	-	C	ppm by vol			
Nitrogen oxides		000	0%			294.39	-	-	C	ppm by vol			
Carbon monoxide		000	0%			1,341.86	-	-	C	ppm by vol			
Total VOC (including those listed below)		023	98%			36.81	-	-	C	ppm by vol			
Benzene		023	98%	00071-43-2		0.25	-	-	C	ppm by vol			
n-Hexane		023	98%	00110-54-3		1.12	-	-	C	ppm by vol			
Toluene		023	98%	00108-88-3		0.13	-	-	C	ppm by vol			
Xylene (mixed isomers)		023	98%	01330-20-7		0.04	-	-	C	ppm by vol			
Hydrogen sulfide		023	98%	07783-06-4		0.021	-	-	C	ppm by vol			
CO <sub>2</sub> e		000	0%	0		513,719	-	-	C	ppm by vol			



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal Jan   2024			
Emission Point ID No. (Designation) FLR MF		Descriptive Name of the Emissions Source (Alt. Name)  Marine Flare (Z-05101)			Approximate Location of Stack or Vent (see instructions) Method <u>18, "Interpolation - Map"</u> Datum <u>NAD83</u> UTM Zone <u>15</u> Horizontal <u>466183.5</u> mE Vertical <u>3292832</u> mN Latitude <u>29°</u> <u>45'</u> <u>55"</u> <u>13</u> hundredths Longitude <u>93°</u> <u>20'</u> <u>59"</u> <u>29</u> hundredths						
Tempo Subject Item ID No.  EQT 0010											
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  0.25 ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  200 ft	Stack Gas Exit Velocity  65.6 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  193 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  1,832 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar 25%	Apr-Jun 25%	Jul-Sep 25%	Oct-Dec 25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)									
a	Pilot + Purge		0.88								
b											
c											
Notes											
The stack parameters shown are those used for the air dispersion modeling.											
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal Date Engine Ordered _____ Engine Model Year _____ Date Engine Was Built by Manufacturer _____ SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) FLR MF	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		0.07	6.34	0.32	0.13	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		0.07	6.34	0.32	0.13	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		<0.001	<0.001	<0.01	0.003	C		ppm by vol	
Nitrogen oxides	000	0%		0.67	57.87	2.93	1.18	C		ppm by vol	
Carbon monoxide	000	0%		3.05	263.80	13.36	6.41	C		ppm by vol	
Total VOC (including those listed below)	023	98%		<0.001	<0.001	<0.01	0.00	C		ppm by vol	
Hydrogen sulfide	023	98%	07783-06-4	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
CO <sub>2e</sub>	000	0%	0	1320.78	101,008	5,785	226	C		ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024						
Emission Point ID No. (Designation) THOX CAP		Descriptive Name of the Emissions Source (Alt. Name)  Thermal Oxidizer Cap				Approximate Location of Stack or Vent (see instructions) Method _____ Datum _____ UTM Zone _____ Horizontal _____ mE Vertical _____ mN Latitude _____ " _____ hundredths Longitude _____ " _____ hundredths										
Tempo Subject Item ID No.  GRP 0002		Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  NA ft _____ ft <sup>2</sup>		Height of Stack Above Grade (ft)  NA ft	Stack Gas Exit Velocity  NA ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  NA ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  NA °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023 proposed	Percent of Annual Throughput Through This Emission Point						
Stack and Discharge Physical Characteristics Change? (yes or no)  no										Jan-Mar 25%	Apr-Jun 25%	Jul-Sep 25%	Oct-Dec 25%			
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)												
Fuel	Type of Fuel		Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput			Parameter		Description						
	Natural Gas				Maximum Operating Rate/Throughput											
					Design Capacity/Volume/Cylinder Displacement											
					Shell Height (ft)											
Notes The Thermal Oxidizer Cap includes Thermal Oxidizer A and Thermal Oxidizer B.													Tank Diameter (ft)			
													Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal			
													Date Engine Ordered		Engine Model Year	
													Date Engine Was Built by Manufacturer			
													SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke			
Emission Point ID No. (Designation) THOX CAP		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack					
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)								
Particulate matter (PM <sub>10</sub> )					0.24		1.06	2.13	C		gr/std ft <sup>3</sup>					
Particulate matter (PM <sub>2.5</sub> )					0.24		1.06	2.13	C		gr/std ft <sup>3</sup>					
Sulfur dioxide					7.70		33.70	34.04	C		ppm by vol					
Nitrogen oxides					1.59		6.97	14.04	C		ppm by vol					
Carbon monoxide					2.67		11.72	23.59	C		ppm by vol					
Total VOC (including those listed below)		021	99.9%		1.15		5.04	1.88	C		ppm by vol					
Lead					<0.001		<0.01	<0.01	C		ppm by vol					
Arsenic (and compounds)				0	<0.001		<0.01	<0.01	C		ppm by vol					
Barium (and compounds)				0	<0.001		<0.01	<0.01	C		ppm by vol					
Benzene				00071-43-2	0.082		0.36	0.06	C		ppm by vol					



Emission Point ID No. (Designation) THOX CAP	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)				
Pollutant							Annual (tons/yr)			
Beryllium (Table 51.1)			0	<0.001		<0.01	<0.01	C		ppm by vol
Cadmium (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Chromium VI (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Cobalt compounds			0	<0.001		<0.01	<0.01	C		ppm by vol
Copper (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
1,4-Dichlorobenzene			00106-46-7	<0.001		<0.01	0.001	C		ppm by vol
Formaldehyde			00050-00-0	0.002		0.01	0.021	C		ppm by vol
Hydrogen sulfide			07783-06-4	<0.001		0.01	0.01	C		ppm by vol
Manganese (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Mercury (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Naphthalene			00091-20-3	<0.001		<0.01	<0.01	C		ppm by vol
n-Hexane			00110-54-3	0.004		0.02	0.04	C		ppm by vol
Nickel (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0	<0.001		<0.01	<0.01	C		ppm by vol
Selenium (and compounds)			0	<0.001		<0.01	<0.01	C		ppm by vol
Toluene			00108-88-3	0.044		0.19	0.004	C		ppm by vol
Xylene (mixed isomers)			01330-20-7	0.012		0.05	<0.01	C		ppm by vol
Zinc (and compounds)			0	0.001		0.004	<0.01	C		ppm by vol
CO2e			0	169,448		742,181	566,344	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation) TO-A		Descriptive Name of the Emissions Source (Alt. Name) Thermal Oxidizer A (Z-07002A)				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0011						Method 18, "Interpolation - Map"		Datum NAD83				
						UTM Zone 15		Horizontal 465983.5 mE		Vertical 3293608.5 mN		
						Latitude 29° 46' 20"		32 hundredths				
						Longitude 93° 21' 6"		83 hundredths				
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  33.2 ft <sup>2</sup>	Height of Stack Above Grade (ft)  85 ft	Stack Gas Exit Velocity  62.3 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  124,098 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  1,500 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
								25%	25%	25%	25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
		Type of Fuel	Heat Input (MMBTU/hr)					Parameter	Description			
	a	Natural Gas	26					Normal Operating Rate/Throughput	26.0 MMBTU/hr			
	b							Maximum Operating Rate/Throughput	26.0 MMBTU/hr			
c							Design Capacity/Volume/Cylinder Displacement					
Notes								Shell Height (ft)				
								Tank Diameter (ft)				
								Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal				
								Date Engine Ordered	Engine Model Year			
								Date Engine Was Built by Manufacturer				
								SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke				
Emission Point ID No. (Designation) TO-A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )					0.25		-	C		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )					0.25		-	C		gr/std ft <sup>3</sup>		
Sulfur dioxide					9.92		-	C		ppm by vol		
Nitrogen oxides					1.65		-	C		ppm by vol		
Carbon monoxide					2.77		-	C		ppm by vol		
Total VOC (including those listed below)	021	99.9%			1.14		-	C		ppm by vol		
Lead					<0.001		-	C		ppm by vol		
Arsenic (and compounds)			0		<0.001		-	C		ppm by vol		
Barium (and compounds)			0		<0.001		-	C		ppm by vol		
Benzene			00071-43-2		0.081		-	C		ppm by vol		



Emission Point ID No. (Designation) TO-A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)				
Pollutant										
Beryllium (Table 51.1)			0		<0.001		-	C		ppm by vol
Cadmium (and compounds)			0		<0.001		-	C		ppm by vol
Chromium VI (and compounds)			0		<0.001		-	C		ppm by vol
Cobalt compounds			0		<0.001		-	C		ppm by vol
Copper (and compounds)			0		<0.001		-	C		ppm by vol
1,4-Dichlorobenzene			00106-46-7		<0.001		-	C		ppm by vol
Formaldehyde			00050-00-0		0.002		-	C		ppm by vol
Hydrogen sulfide			07783-06-4		0.002		-	C		ppm by vol
Manganese (and compounds)			0		<0.001		-	C		ppm by vol
Mercury (and compounds)			0		<0.001		-	C		ppm by vol
Naphthalene			00091-20-3		<0.001		-	C		ppm by vol
n-Hexane			00110-54-3		0.004		-	C		ppm by vol
Nickel (and compounds)			0		<0.001		-	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0		<0.001		-	C		ppm by vol
Selenium (and compounds)			0		<0.001		-	C		ppm by vol
Toluene			00108-88-3		0.044		-	C		ppm by vol
Xylene (mixed isomers)			01330-20-7		0.012		-	C		ppm by vol
Zinc (and compounds)			0		0.001		-	C		ppm by vol
CO2e			0		167,589		-	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024	
Emission Point ID No. (Designation) TO-B		Descriptive Name of the Emissions Source (Alt. Name) Thermal Oxidizer B (Z-07002B)				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No. EQT 0012						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 465993 mE		Vertical 3293594 mN					
		Latitude 29°		6' 19"		87 hundredths					
		Longitude 93°		21'		6"		46 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes	ft 33.2 ft <sup>2</sup>	85 ft	15.6 ft/sec	31,025 ft <sup>3</sup> /min	1,500 °F	8760 hr/yr	2023 proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter		Description					
a	Natural Gas	6.5		Normal Operating Rate/Throughput		6.5 MMBTU/hr					
b				Maximum Operating Rate/Throughput		6.5 MMBTU/hr					
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )					0.25		-	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )					0.25		-	C		gr/std ft <sup>3</sup>	
Sulfur dioxide					9.92		-	C		ppm by vol	
Nitrogen oxides					1.65		-	C		ppm by vol	
Carbon monoxide					2.77		-	C		ppm by vol	
Total VOC (including those listed below)	021	99.9%			1.14		-	C		ppm by vol	
Lead					<0.001		-	C		ppm by vol	
Arsenic (and compounds)			0		<0.001		-	C		ppm by vol	
Barium (and compounds)			0		<0.001		-	C		ppm by vol	
Benzene			00071-43-2		0.081		-	C		ppm by vol	



Emission Point ID No. (Designation) TO-B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Pollutant										
Beryllium (Table 51.1)			0		<0.001		-	C		ppm by vol
Cadmium (and compounds)			0		<0.001		-	C		ppm by vol
Chromium VI (and compounds)			0		<0.001		-	C		ppm by vol
Cobalt compounds			0		<0.001		-	C		ppm by vol
Copper (and compounds)			0		<0.001		-	C		ppm by vol
1,4-Dichlorobenzene			00106-46-7		<0.001		-	C		ppm by vol
Formaldehyde			00050-00-0		0.002		-	C		ppm by vol
Hydrogen sulfide			07783-06-4		0.002		-	C		ppm by vol
Manganese (and compounds)			0		<0.001		-	C		ppm by vol
Mercury (and compounds)			0		<0.001		-	C		ppm by vol
Naphthalene			00091-20-3		<0.001		-	C		ppm by vol
n-Hexane			00110-54-3		0.004		-	C		ppm by vol
Nickel (and compounds)			0		<0.001		-	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0		<0.001		-	C		ppm by vol
Selenium (and compounds)			0		<0.001		-	C		ppm by vol
Toluene			00108-88-3		0.044		-	C		ppm by vol
Xylene (mixed isomers)			01330-20-7		0.012		-	C		ppm by vol
Zinc (and compounds)			0		0.001		-	C		ppm by vol
CO2e			0		167,589		-	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation) Z-08001A		Descriptive Name of the Emissions Source (Alt. Name)  Essential Generator A				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No.  EQT 0016						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 466262.5 mE		Vertical 3293316.5 mN					
		Latitude 29°		46'		10"		86 hundredths			
		Longitude 93°		20'		56"		41 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  1.17 ft	Height of Stack Above Grade (ft)  20 ft	Stack Gas Exit Velocity  119.1 ft/sec	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)  30,730 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  895 °F	Normal Operating Time (hours per year)  100 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter				Description			
a	ULSD	41.7		Normal Operating Rate/Throughput				3900 kWe			
b				Maximum Operating Rate/Throughput				3900 kWe			
c				Design Capacity/Volume/Cylinder Displacement							
Notes											
Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal Date Engine Ordered _____ Engine Model Year _____ Date Engine Was Built by Manufacturer _____ SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke											
Emission Point ID No. (Designation) Z-08001A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )	000	0%		0.85	0.98	0.04	0.03	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )	000	0%		0.85	0.98	0.04	0.03	C		gr/std ft <sup>3</sup>	
Sulfur dioxide	000	0%		0.063	0.073	0.003	0.003	U		ppm by vol	
Nitrogen oxides	000	0%		107.32	123.42	5.37	4.00	C		ppm by vol	
Carbon monoxide	000	0%		15.31	17.60	0.77	0.57	C		ppm by vol	
Total VOC (including those listed below)	000	0%		4.08	4.69	0.20	0.15	C		ppm by vol	
Acetaldehyde	000	0%	00075-07-0	0.001	0.001	<0.01	<0.01	U		ppm by vol	
Acrolein	000	0%	00107-02-8	<0.001	<0.001	<0.01	<0.01	U		ppm by vol	
Benzene	000	0%	00071-43-2	0.032	0.037	0.002	0.002	U		ppm by vol	



Emission Point ID No. (Designation) Z-08001A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.003	0.004	<0.01	<0.01	U		ppm by vol
Naphthalene	000	0%	00091-20-3	0.005	0.006	<0.01	<0.01	U		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.009	0.010	<0.01	<0.01	U		ppm by vol
Toluene	000	0%	00108-88-3	0.012	0.014	<0.01	<0.01	U		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.008	0.009	<0.01	<0.01	U		ppm by vol
CO2e	000	0%	0	6,818	7,840	341	341	U		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal			
										Jan	2024		
Emission Point ID No. (Designation) Z-08001B		Descriptive Name of the Emissions Source (Alt. Name)  Essential Generator B				Approximate Location of Stack or Vent (see instructions)							
Tempo Subject Item ID No.						Method 18, "Interpolation - Map"		Datum NAD83					
						UTM Zone 15		Horizontal 466269.25 mE		Vertical 3293306 mN			
						Latitude 29 °		46 "		10 "			
						Longitude 93 °		20 "		56 "			
Stack and Discharge Physical Characteristics Change? (yes or no)		Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )		Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
yes		1.17 ft		20 ft	119.1 ft/sec	30,730 ft <sup>3</sup> /min	895 °F	100 hr/yr	2023	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
		ft <sup>2</sup>							proposed	25%	25%	25%	25%
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)									
Fuel	Type of Fuel		Heat Input (MMBTU/hr)				Parameter	Description					
a	ULSD		41.7				Normal Operating Rate/Throughput	3900 kWe					
b							Maximum Operating Rate/Throughput	3900 kWe					
c							Design Capacity/Volume/Cylinder Displacement						
Notes													
							Shell Height (ft)						
							Tank Diameter (ft)						
							Tanks: <input type="checkbox"/> Fixed Roof	<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External	<input type="checkbox"/> Internal			
							Date Engine Ordered		Engine Model Year				
							Date Engine Was Built by Manufacturer						
							SI Engines: <input type="checkbox"/> Rich Burn	<input type="checkbox"/> Lean Burn	<input type="checkbox"/> 2 Stroke	<input type="checkbox"/> 4 Stroke			
Emission Point ID No. (Designation) Z-08001B		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )		000	0%		0.85	0.98	0.04		A		gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )		000	0%		0.85	0.98	0.04		A		gr/std ft <sup>3</sup>		
Sulfur dioxide		000	0%		0.063	0.073	0.003		A		ppm by vol		
Nitrogen oxides		000	0%		107.32	123.42	5.37		A		ppm by vol		
Carbon monoxide		000	0%		15.31	17.60	0.77		A		ppm by vol		
Total VOC (including those listed below)		000	0%		4.08	4.69	0.20		A		ppm by vol		
Acetaldehyde		000	0%	00075-07-0	0.001	0.001	<0.01		A		ppm by vol		
Acrolein		000	0%	00107-02-8	<0.001	<0.001	<0.01		A		ppm by vol		
Benzene		000	0%	00071-43-2	0.032	0.037	0.002		A		ppm by vol		



Emission Point ID No. (Designation) Z-08001B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)				
Pollutant										
Formaldehyde	000	0%	00050-00-0	0.003	0.004	<0.01		A		ppm by vol
Naphthalene	000	0%	00091-20-3	0.005	0.006	<0.01		A		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.009	0.010	<0.01		A		ppm by vol
Toluene	000	0%	00108-88-3	0.012	0.014	<0.01		A		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.008	0.009	<0.01		A		ppm by vol
CO2e	000	0%	0	6,818	7,840	341		A		ppm by vol





Emission Point ID No. (Designation) Z-08001C	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde	000	0%	00050-00-0	0.003	0.004	<0.01		A		ppm by vol
Naphthalene	000	0%	00091-20-3	0.005	0.006	<0.01		A		ppm by vol
Polynuclear Aromatic Hydrocarbons	000	0%	0	0.009	0.010	<0.01		A		ppm by vol
Toluene	000	0%	00108-88-3	0.012	0.014	<0.01		A		ppm by vol
Xylene (mixed isomers)	000	0%	01330-20-7	0.008	0.009	<0.01		A		ppm by vol
CO2e	000	0%	0	6,818	7,840	341		A		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation) P-04402A		Descriptive Name of the Emissions Source (Alt. Name) Fresh Water Firewater Pump Engine A				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No. EQT 0017						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 466305 mE		Vertical 3293069 mN					
		Latitude 29°		46'		2"		84 hundredths			
		Longitude 93°		20'		54"		78 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  1 ft	Height of Stack Above Grade (ft)  20 ft	Stack Gas Exit Velocity  85.8 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  4,043 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  980 °F	Normal Operating Time (hours per year)  100 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
								25%	25%	25%	25%
								proposed			
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Parameter				Description			
a	ULSD	6.2		Normal Operating Rate/Throughput				574 kW			
b				Maximum Operating Rate/Throughput				574 kW			
c				Design Capacity/Volume/Cylinder Displacement							
Notes				Shell Height (ft)							
				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered				Engine Model Year			
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation) P-04402A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )				0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )				0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>	
Sulfur dioxide				0.01	0.01	<0.01	<0.01	C		ppm by vol	
Nitrogen oxides				4.57	5.25	0.23	0.46	C		ppm by vol	
Carbon monoxide				1.54	1.78	0.08	0.05	C		ppm by vol	
Total VOC (including those listed below)	000	0%		0.09	0.10	<0.01	0.03	C		ppm by vol	
Lead										ppm by vol	
Acetaldehyde			00075-07-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Acrolein			00107-02-8	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Benzene			00071-43-2	0.005	0.006	<0.01	<0.01	C		ppm by vol	



Emission Point ID No. (Designation) P-04402A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde			00050-00-0	<0.001	<0.001	<0.01	<0.01	C	ppm by vol	
Naphthalene			00091-20-3	0.001	0.001	<0.01	<0.01	C	ppm by vol	
Polynuclear Aromatic Hydrocarbons			0	0.001	0.002	<0.01	<0.01	C	ppm by vol	
Toluene			00108-88-3	0.002	0.002	<0.01	<0.01	C	ppm by vol	
Xylene (mixed isomers)			01330-20-7	0.001	0.001	<0.01	<0.01	C	ppm by vol	
CO2e	000	0%	0	1,018	1,171	51	54	C	ppm by vol	

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation)		Descriptive Name of the Emissions Source (Alt. Name)				Approximate Location of Stack or Vent (see instructions)					
P-04402B		Fresh Water Firewater Pump Engine B				Method 18, "Interpolation - Map" Datum NAD83					
Tempo Subject Item ID No.						UTM Zone 15		Horizontal 466309 mE		Vertical 3293069.5 mN	
EQT 0018						Latitude 29° 46' 2"		Longitude 93° 20' 54"		84 hundredths 63 hundredths	
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes	1 ft	20 ft	85.8 ft/sec	4,043 ft <sup>3</sup> /min	980 °F	100 hr/yr	2023	25%	25%	25%	25%
						proposed					
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description			
a	ULSD	6.2		574 kW		574 kW					
b				Design Capacity/Volume/Cylinder Displacement							
c				Shell Height (ft)							
Notes				Tank Diameter (ft)							
				Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal							
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke							
Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )				0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )				0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>	
Sulfur dioxide				0.01	0.01	<0.01	0.00	C		ppm by vol	
Nitrogen oxides				4.57	5.25	0.23	0.46	C		ppm by vol	
Carbon monoxide				1.54	1.78	0.08	0.05	C		ppm by vol	
Total VOC (including those listed below)	000	0%		0.09	0.10	<0.01	0.03	C		ppm by vol	
Lead										ppm by vol	
Acetaldehyde			00075-07-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Acrolein			00107-02-8	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Benzene			00071-43-2	0.005	0.006	<0.01	<0.01	C		ppm by vol	



Emission Point ID No. (Designation) P-04402B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde			00050-00-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Naphthalene			00091-20-3	0.001	0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0	0.001	0.002	<0.01	<0.01	C		ppm by vol
Toluene			00108-88-3	0.002	0.002	<0.01	<0.01	C		ppm by vol
Xylene (mixed isomers)			01330-20-7	0.001	0.001	<0.01	<0.01	C		ppm by vol
CO2e	000	0%	0	1,018	1,171	51	54	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024							
Emission Point ID No. (Designation) P-04405A		Descriptive Name of the Emissions Source (Alt. Name)  Brackish Water Firewater Pump Engine A				Approximate Location of Stack or Vent (see instructions) Method <u>18, "Interpolation - Map"</u> Datum <u>NAD83</u> Latitude <u>29</u> ° <u>15</u> ' Horizontal <u>466294</u> mE Vertical <u>3293068</u> mN Longitude <u>93</u> ° <u>20</u> ' <u>55</u> " <u>81</u> hundredths <u>19</u> hundredths											
Tempo Subject Item ID No.  EQT 0019		Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  <u>1</u> ft  ft <sup>2</sup>		Height of Stack Above Grade (ft)  <u>20</u> ft		Stack Gas Exit Velocity  <u>85.8</u> ft/sec		Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  <u>4,043</u> ft <sup>3</sup> /min		Stack Gas Exit Temperature (°F)  <u>980</u> °F		Normal Operating Time (hours per year)  <u>100</u> hr/yr		Date of Construction or Modification    2023  proposed		Percent of Annual Throughput Through This Emission Point	
Stack and Discharge Physical Characteristics Change? (yes or no)  <u>yes</u>		Jan-Mar		Apr-Jun		Jul-Sep		Oct-Dec		25%		25%		25%		25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)												
	Type of Fuel		Heat Input (MMBTU/hr)		Parameter				Description								
a	ULSD		6.2		Normal Operating Rate/Throughput				574 kW								
b					Maximum Operating Rate/Throughput				574 kW								
c					Design Capacity/Volume/Cylinder Displacement												
Notes					Shell Height (ft)												
					Tank Diameter (ft)												
					Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal												
					Date Engine Ordered				Engine Model Year								
					Date Engine Was Built by Manufacturer												
					SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke												
Emission Point ID No. (Designation) P-04405A		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack						
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)									
Particulate matter (PM <sub>10</sub> )					0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>						
Particulate matter (PM <sub>2.5</sub> )					0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>						
Sulfur dioxide					0.01	0.01	<0.01	<0.01	C		ppm by vol						
Nitrogen oxides					4.57	5.25	0.23	0.46	C		ppm by vol						
Carbon monoxide					1.54	1.78	0.08	0.05	C		ppm by vol						
Total VOC (including those listed below)		000	0%		0.09	0.10	<0.01	0.03	C		ppm by vol						
Lead											ppm by vol						
Acetaldehyde				00075-07-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol						
Acrolein				00107-02-8	<0.001	<0.001	<0.01	<0.01	C		ppm by vol						
Benzene				00071-43-2	0.005	0.006	<0.01	<0.01	C		ppm by vol						



Emission Point ID No. (Designation) P-04405A	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde			00050-00-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Naphthalene			00091-20-3	0.001	0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0	0.001	0.002	<0.01	<0.01	C		ppm by vol
Toluene			00108-88-3	0.002	0.002	<0.01	<0.01	C		ppm by vol
Xylene (mixed isomers)			01330-20-7	0.001	0.001	<0.01	<0.01	C		ppm by vol
CO2e	000	0%	0	1,018	1,171	51	54	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024	
Emission Point ID No. (Designation) P-04405B		Descriptive Name of the Emissions Source (Alt. Name)  Brackish Water Firewater Pump Engine B				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No.  EQT 0020						Method <u>18,"Interpolation - Map"</u>		Datum <u>NAD83</u>			
		UTM Zone <u>15</u>		Horizontal <u>466298</u> mE		Vertical <u>3293068 5</u> mN					
		Latitude <u>29 °</u>		<u>46</u> ' <u>2</u> "		<u>81</u> hundredths					
		Longitude <u>93 °</u>		<u>20</u> ' <u>55</u> "		<u>4</u> hundredths					
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  1 ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  20 ft	Stack Gas Exit Velocity  85.8 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  4,043 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  980 °F	Normal Operating Time (hours per year)  100 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan- Mar 25%	Apr- Jun 25%	Jul-Sep 25%	Oct- Dec 25%
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)							
Fuel	Type of Fuel		Heat Input (MMBTU/hr)					Parameter		Description	
	a	ULSD		6.2					574 kW		
	b								574 kW		
	c										
Notes							Design Capacity/Volume/Cylinder Displacement				
							Shell Height (ft)				
							Tank Diameter (ft)				
							Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal				
							Date Engine Ordered		Engine Model Year		
							Date Engine Was Built by Manufacturer				
							SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke				
Emission Point ID No. (Designation) P-04405B		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)  Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )					0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>
Particulate matter (PM <sub>2.5</sub> )					0.15	0.17	0.01	0.01	C		gr/std ft <sup>3</sup>
Sulfur dioxide					0.01	0.01	<0.01	0.00	C		ppm by vol
Nitrogen oxides					4.57	5.25	0.23	0.50	C		ppm by vol
Carbon monoxide					1.54	1.78	0.08	0.05	C		ppm by vol
Total VOC (including those listed below)					0.09	0.10	<0.01	0.04	C		ppm by vol
Lead											ppm by vol
Acetaldehyde				00075-07-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Acrolein				00107-02-8	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Benzene				00071-43-2	0.005	0.006	<0.01	<0.01	C		ppm by vol



Emission Point ID No. (Designation) P-04405B	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Formaldehyde			00050-00-0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Naphthalene			00091-20-3	0.001	0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0	0.001	0.002	<0.01	<0.01	C		ppm by vol
Toluene			00108-88-3	0.002	0.002	<0.01	<0.01	C		ppm by vol
Xylene (mixed isomers)			01330-20-7	0.001	0.001	<0.01	<0.01	C		ppm by vol
CO2e			0	1,018	1,171	51	58	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation) Z-06601		Descriptive Name of the Emissions Source (Alt. Name)  Hot Oil Heater				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No. EQT 0021						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 465969.5 mE		Vertical 3293625 mN					
		Latitude 29°		46'		20"		87 hundredths			
		Longitude 93°		21'		7"		35 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  17.78 ft <sup>2</sup>	Height of Stack Above Grade (ft)  114 ft	Stack Gas Exit Velocity  25 ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  56,566 ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  631 °F	Normal Operating Time (hours per year)  720 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
								25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
		Type of Fuel	Heat Input (MMBTU/hr)	Normal Operating Rate/Throughput		Parameter		Description			
a	Natural Gas	50.64	50.64 MMBTU/hr		50.64 MMBTU/hr						
b			Maximum Operating Rate/Throughput		50.64 MMBTU/hr						
c			Design Capacity/Volume/Cylinder Displacement								
Notes				Shell Height (ft)							
				Tank Diameter (ft)							
				Tanks: <input checked="" type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal	
				Date Engine Ordered				Engine Model Year			
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke		<input type="checkbox"/> 4 Stroke	
Emission Point ID No. (Designation) Z-06601	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )				0.38	0.43	0.14	0.33	C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )				0.38	0.43	0.14	0.33	C		gr/std ft <sup>3</sup>	
Sulfur dioxide				0.04	0.06	0.01	0.05	C		ppm by vol	
Nitrogen oxides				6.95	7.99	2.50	3.08	C		ppm by vol	
Carbon monoxide				4.17	4.80	1.50	3.63	C		ppm by vol	
Total VOC (including those listed below)	000	0%		0.39	0.44	0.14	0.24	C		ppm by vol	
Lead				<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Arsenic (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Barium (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol	
Benzene			00071-43-2	<0.001	<0.001	<0.01	0.09	C		ppm by vol	



Emission Point ID No. (Designation) Z-06601	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
				Average (lb/hr)	Maximum (lb/hr)	Annual (tons/yr)	Annual (tons/yr)			
Beryllium (Table 51.1)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Cadmium (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Chromium VI (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Cobalt compounds			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Copper (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
1,4-Dichlorobenzene			00106-46-7	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Formaldehyde			00050-00-0	0.004	0.004	0.001	0.003	C		ppm by vol
Hydrogen sulfide			07783-06-4	0.000	0.000	0.00	<0.01	C		ppm by vol
Manganese (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Mercury (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Naphthalene			00091-20-3	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
n-Hexane			00110-54-3	0.089	0.103	0.03	0.08	C		ppm by vol
Nickel (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Polynuclear Aromatic Hydrocarbons			0	<0.001	0.001	<0.01	<0.01	C		ppm by vol
Selenium (and compounds)			0	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Toluene			00108-88-3	<0.001	<0.001	<0.01	<0.01	C		ppm by vol
Zinc (and compounds)			0	0.001	0.002	<0.01	<0.01	C		ppm by vol
CO2e			0	4,986	5,733	1,795	5,289	C		ppm by vol

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants								Date of submittal			
								Jan	2024		
Emission Point ID No. (Designation) FUG		Descriptive Name of the Emissions Source (Alt. Name)  Fugitive Emissions			Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No.  FUG 0001					Method	18, "Interpolation - Map"		Datum NAD83			
					UTM Zone	15	Horizontal	465870	mE Vertical	3293560	mN
					Latitude	29 °		46	18 "	74	hundredths
					Longitude	93 °		21	11 "	5	hundredths
Stack and Discharge Physical Characteristics Change? (yes or no)  no	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
								25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
		Type of Fuel	Heat Input (MMBTU/hr)	Normal Operating Rate/Throughput		Parameter		Description			
a				Maximum Operating Rate/Throughput		N/A					
b				Design Capacity/Volume/Cylinder Displacement							
c				Shell Height (ft)							
Notes			Tank Diameter (ft)								
			Tanks: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal								
			Date Engine Ordered		Engine Model Year						
			Date Engine Was Built by Manufacturer								
			SI Engines: <input type="checkbox"/> Rich Burn <input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke								
Emission Point ID No. (Designation) FUG	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )								C		gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )								C		gr/std ft <sup>3</sup>	
Sulfur dioxide								C		ppm by vol	
Nitrogen oxides								C		ppm by vol	
Carbon monoxide								C		ppm by vol	
Total VOC (including those listed below)	000	0%		12.61	12.61	55.23	38.58	C		ppm by vol	
Lead								C		ppm by vol	
CO <sub>2e</sub>			0	728	728	3,188	14,149	C		ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024	
Emission Point ID No. (Designation) T-4013		Descriptive Name of the Emissions Source (Alt. Name)  Mixed Amine Tank				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No.  EQT 0023						Method <u>18, "Interpolation - Map"</u>		Datum <u>NAD83</u>			
		UTM Zone <u>15</u>		Horizontal <u>466082</u> mE		Vertical <u>3293474</u> mN					
		Latitude <u>29 °</u>		<u>46</u> ' <u>15</u> "		<u>98</u> hundredths					
		Longitude <u>93 °</u>		<u>21</u> ' <u>3</u> "		<u>13</u> hundredths					
Stack and Discharge Physical Characteristics Change? (yes or no)  no	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft  ft <sup>2</sup>	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023  proposed	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar 25%	Apr-Jun 25%	Jul-Sep 25%	Oct-Dec 25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description			
a				Maximum Operating Rate/Throughput		2,115,072 gallons/yr					
b				Design Capacity/Volume/Cylinder Displacement		58,752 gallons					
c				Shell Height (ft)		18					
Notes				Tank Diameter (ft)		25					
				Tanks: <input checked="" type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal	
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke		<input type="checkbox"/> 4 Stroke	
Emission Point ID No. (Designation) T-4013		Control Equipment Code 000	Control Equipment Efficiency 0%	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current) Annual (tons/yr) <0.01	Add, Change, Delete, or Unchanged U	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )										gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )										ppm by vol	
Sulfur dioxide										ppm by vol	
Nitrogen oxides										ppm by vol	
Carbon monoxide										ppm by vol	
Total VOC (including those listed below)					<0.001	<0.001	<0.01	<0.01	U	ppm by vol	
Lead										ppm by vol	
										ppm by vol	

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation) T-4016		Descriptive Name of the Emissions Source (Alt. Name)  Hot Oil Tank				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No.  EQT 0024						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 466064 mE		Vertical 3293462 mN					
		Latitude 29 °		46 ' 15 "		59 hundredths					
		Longitude 93 °		21 ' 3 "		80 hundredths					
Stack and Discharge Physical Characteristics Change? (yes or no)  no	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)							
	Type of Fuel	Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description			
a				3,392,156 gallons/yr							
b				Maximum Operating Rate/Throughput							
c				Design Capacity/Volume/Cylinder Displacement		94,227 gallons					
Notes				Shell Height (ft)		24					
				Tank Diameter (ft)		27					
				Tanks: <input checked="" type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal	
				Date Engine Ordered		Engine Model Year					
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke		<input type="checkbox"/> 4 Stroke	
Emission Point ID No. (Designation) T-4016	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )										gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )										gr/std ft <sup>3</sup>	
Sulfur dioxide										ppm by vol	
Nitrogen oxides										ppm by vol	
Carbon monoxide										ppm by vol	
Total VOC (including those listed below)	000	0%		0.002		0.01	0.01	U		ppm by vol	
Lead										ppm by vol	
										ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation) T-4029		Descriptive Name of the Emissions Source (Alt. Name) Propylene Glycol Tank				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. EQT 0025						Method 18, "Interpolation - Map"		Datum NAD83				
		UTM Zone 15		Horizontal 466073 mE		Vertical 3293468 mN						
		Latitude 29°		46'		15"		78 hundredths				
		Longitude 93°		21'		3"		46 hundredths				
Stack and Discharge Physical Characteristics Change? (yes or no)  no	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
							proposed	25%	25%	25%	25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
		Type of Fuel	Heat Input (MMBTU/hr)					Parameter	Description			
	a							Normal Operating Rate/Throughput	4,187,847 gallons/yr			
	b							Maximum Operating Rate/Throughput				
c							Design Capacity/Volume/Cylinder Displacement	116,329 gallons				
Notes				Shell Height (ft)				24				
				Tank Diameter (ft)				30				
				Tanks: <input checked="" type="checkbox"/> Fixed Roof				<input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal				
				Date Engine Ordered				Engine Model Year				
				Date Engine Was Built by Manufacturer								
				SI Engines: <input type="checkbox"/> Rich Burn				<input type="checkbox"/> Lean Burn <input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke				
Emission Point ID No. (Designation) T-4029	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )										gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )										gr/std ft <sup>3</sup>		
Sulfur dioxide										ppm by vol		
Nitrogen oxides										ppm by vol		
Carbon monoxide										ppm by vol		
Total VOC (including those listed below)	000	0%		0.001		0.01	0.01	U		ppm by vol		
Lead										ppm by vol		
										ppm by vol		

State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal	
										Jan	2024
Emission Point ID No. (Designation) T-4031		Descriptive Name of the Emissions Source (Alt. Name) Diesel 1 Tank				Approximate Location of Stack or Vent (see instructions)					
Tempo Subject Item ID No. EQT 0026						Method 18, "Interpolation - Map"		Datum NAD83			
		UTM Zone 15		Horizontal 466086 mE		Vertical 3293482 mN					
		Latitude 29 °		46 ' 16 "		24 hundredths					
		Longitude 93 °		21 ' 2 "		98 hundredths					
Stack and Discharge Physical Characteristics Change? (yes or no)  no	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, not at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
							proposed	25%	25%	25%	25%
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)							
Fuel	Type of Fuel		Heat Input (MMBTU/hr)		Normal Operating Rate/Throughput		Parameter		Description		
	a				548,227 gallons/yr						
	b				Maximum Operating Rate/Throughput						
	c				Design Capacity/Volume/Cylinder Displacement		15,229 gallons				
Notes				Shell Height (ft)		20					
				Tank Diameter (ft)		12					
				Tanks: <input checked="" type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal	
				Date Engine Ordered				Engine Model Year			
				Date Engine Was Built by Manufacturer							
				SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke		<input type="checkbox"/> 4 Stroke	
Emission Point ID No. (Designation) T-4031	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )										gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )										gr/std ft <sup>3</sup>	
Sulfur dioxide										ppm by vol	
Nitrogen oxides										ppm by vol	
Carbon monoxide										ppm by vol	
Total VOC (including those listed below)	000	0%		0.002		0.01	0.01	U		ppm by vol	
Lead										ppm by vol	
										ppm by vol	





State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal Jan   2024		
Emission Point ID No. (Designation) T-04201		Descriptive Name of the Emissions Source (Alt. Name)  Slop Oil Tank				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No.  TBD						Method <u>18, "Interpolation - Map"</u>		Datum <u>NAD83</u>				
		UTM Zone <u>15</u>		Horizontal <u>466064</u> mE		Vertical <u>3293462</u> mN						
		Latitude <u>29 °</u>		<u>46</u> ' <u>15</u> "		<u>59</u> hundredths						
		Longitude <u>93 °</u>		<u>21</u> ' <u>3</u> "		<u>80</u> hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point				
<u>yes</u>	<u>N/A</u> ft  <u>        </u> ft <sup>2</sup>	<u>N/A</u> ft	<u>N/A</u> ft/sec	<u>N/A</u> ft <sup>3</sup> /min	<u>70</u> °F	<u>8760</u> hr/yr	<u>        </u>   <u>        </u>   2023  proposed	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
								25%	25%	25%	25%	
Type of Fuel Used and Heat Input (see instructions)				Operating Parameters (include units)								
Fuel	Type of Fuel		Heat Input (MMBTU/hr)					Parameter		Description		
a					Normal Operating Rate/Throughput			348,852 gallons/yr				
b					Maximum Operating Rate/Throughput							
c					Design Capacity/Volume/Cylinder Displacement			29,072 gallons				
Notes				Shell Height (ft)			20					
				Tank Diameter (ft)			20					
				Tanks: <input checked="" type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal		
				Date Engine Ordered				Engine Model Year				
				Date Engine Was Built by Manufacturer								
				SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke		<input type="checkbox"/> 4 Stroke		
Emission Point ID No. (Designation) T-04201		Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack	
Pollutant					Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)				
Particulate matter (PM <sub>10</sub> )											gr/std ft <sup>3</sup>	
Particulate matter (PM <sub>2.5</sub> )											gr/std ft <sup>3</sup>	
Sulfur dioxide											ppm by vol	
Nitrogen oxides											ppm by vol	
Carbon monoxide											ppm by vol	
Total VOC (including those listed below)		000	95%		<0.001		<0.01		A		ppm by vol	
Lead											ppm by vol	
											ppm by vol	



State of Louisiana Emissions Inventory Questionnaire (EIQ) for Air Pollutants										Date of submittal		
										Jan	2024	
Emission Point ID No. (Designation) T-06401		Descriptive Name of the Emissions Source (Alt. Name) Fresh Amine Tank				Approximate Location of Stack or Vent (see instructions)						
Tempo Subject Item ID No. TBD						Method 18, "Interpolation - Map"		Datum NAD83				
		UTM Zone 15		Horizontal 466082 mE		Vertical 3293474 mN						
		Latitude 29 °		46 ' 15 "		98 hundredths						
		Longitude 93 °		21 ' 3 "		13 hundredths						
Stack and Discharge Physical Characteristics Change? (yes or no)  yes	Diameter (ft) or Stack Discharge Area (ft <sup>2</sup> )  N/A ft	Height of Stack Above Grade (ft)  N/A ft	Stack Gas Exit Velocity  N/A ft/sec	Stack Gas Flow at Conditions, <u>not</u> at Standard (ft <sup>3</sup> /min)  N/A ft <sup>3</sup> /min	Stack Gas Exit Temperature (°F)  70 °F	Normal Operating Time (hours per year)  8760 hr/yr	Date of Construction or Modification  2023	Percent of Annual Throughput Through This Emission Point				
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
							proposed	25%	25%	25%	25%	
Fuel	Type of Fuel Used and Heat Input (see instructions)			Operating Parameters (include units)								
		Type of Fuel	Heat Input (MMBTU/hr)					Parameter	Description			
	a							Normal Operating Rate/Throughput	5,208 gallons/yr			
	b							Maximum Operating Rate/Throughput				
c							Design Capacity/Volume/Cylinder Displacement	27,339 gallons				
Notes							Shell Height (ft)	18				
							Tank Diameter (ft)	18				
							Tanks: <input checked="" type="checkbox"/> Fixed Roof	<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal
							Date Engine Ordered			Engine Model Year		
							Date Engine Was Built by Manufacturer					
							SI Engines: <input type="checkbox"/> Rich Burn		<input type="checkbox"/> Lean Burn		<input type="checkbox"/> 2 Stroke <input type="checkbox"/> 4 Stroke	
Emission Point ID No. (Designation) T-06401	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack		
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)					
Particulate matter (PM <sub>10</sub> )										gr/std ft <sup>3</sup>		
Particulate matter (PM <sub>2.5</sub> )										gr/std ft <sup>3</sup>		
Sulfur dioxide										ppm by vol		
Nitrogen oxides										ppm by vol		
Carbon monoxide										ppm by vol		
Total VOC (including those listed below)	000	0%		<0.001		<0.01		A		ppm by vol		
Lead										ppm by vol		
										ppm by vol		

## **Appendix D Emission Calculations**







**Table 2: Emissions for Refrigeration Turbines  
(GT-A1101, GT-B1101, GT-C1101, GT-D1101, GT-E1101, GT-F1101)**

Stack Height (ft)	175	Exhaust Flowrate (acfm)	
Stack Exit Diameter (ft)	13.08	Maximum Hourly <sup>[1]</sup>	741,033
Stack Exit Velocity (ft/s)		Annual Average <sup>[2]</sup>	631,520
Maximum Hourly <sup>[1]</sup>	91.87	Operation (hr/yr)	8,760
Annual Average <sup>[2]</sup>	78.29	Fuel Usage (MMBtu/hr)	
Exhaust Temperature (°F)		Maximum Hourly <sup>[1]</sup>	588
Maximum Hourly <sup>[1]</sup>	667	Annual Average <sup>[2]</sup>	503
Annual Average <sup>[2]</sup>	632		

Pollutant	Emission Factor (lbs/MMBtu)		Ref.	Steady State Emission Rates		
	Uncontrolled	Controlled		Average (lb/hr)	Maximum (lb/hr)	Annual (ton/yr)
<b>Criteria Pollutants</b>						
PM	0.0120	0.0120	3	6.03	7.05	26.43
PM <sub>10</sub>	0.0120	0.0120	3	6.03	7.05	26.43
PM <sub>2.5</sub>	0.0120	0.0120	3	6.03	7.05	26.43
SO <sub>2</sub>			3	0.54	0.64	2.38
NO <sub>x</sub>			3, 4	4.86	5.67	21.29
CO			3	2.82	3.29	12.34
VOC			3	2.03	2.37	8.91
<b>Green House Gases</b>						
CO <sub>2</sub>			3	62,144	72,559	272,192
CH <sub>4</sub>			3	10.17	11.87	44.54
N <sub>2</sub> O			3	0.12	0.14	0.54
CO <sub>2</sub> e			5	62,435	72,898	273,466
<b>HAPs/TAPs</b>						
1,3 Butadiene	< 4.30E-07	< 4.30E-07	6	< 2.16E-04	< 2.53E-04	< 9.47E-04
Acetaldehyde	4.00E-05	4.00E-05	6	2.01E-02	2.35E-02	8.81E-02
Acrolein	6.40E-06	6.40E-06	6	3.22E-03	3.76E-03	1.41E-02
Benzene	1.20E-05	1.20E-05	6	6.03E-03	7.05E-03	2.64E-02
Ethylbenzene	3.20E-05	3.20E-05	6	1.61E-02	1.88E-02	7.05E-02
Formaldehyde	7.10E-04	3.60E-04	6, 7	1.81E-01	2.12E-01	7.93E-01
Naphthalene	1.30E-06	1.30E-06	6	6.54E-04	7.64E-04	2.86E-03
Total PAH	2.20E-06	2.20E-06	6	1.11E-03 <sup>(8)</sup>	1.29E-03 <sup>(8)</sup>	4.85E-03 <sup>(8)</sup>
Propylene Oxide	< 2.90E-05	< 2.90E-05	6	1.46E-02	1.70E-02	6.39E-02
Toluene	1.30E-04	1.30E-04	6	6.54E-02	7.64E-02	2.86E-01
Xylenes	6.40E-05	6.40E-05	6	3.22E-02	3.76E-02	1.41E-01
Total HAP				0.34	0.40	1.49
<b>TAPs</b>						
Ammonia			3	3.60	4.20	15.76

1. Corresponds to the maximum hourly emission rate, 100% load
2. Corresponds to the average annual emission rate, 100% load
3. Vendor (Baker Hughes LM9000)
4. 2.5 ppmvd @ 15% O<sub>2</sub>
5. CO<sub>2</sub>e emissions were calculated using the Global Warming Potentials found in Table A-1 to 40 CFR Part 98 (CO<sub>2</sub> = 1, CH<sub>4</sub> = 25, N<sub>2</sub>O = 298).
6. AP-42, 5<sup>th</sup> Edition Table 3.1-3
7. Emission Factor Documentation For AP-42 Section 3.1 Stationary Gas Turbines, Alpha-Gamma Technologies, Inc., April 2000, Table 3.4-1 (All Loads, Control Method: CO Catalyst)
8. Includes Naphthalene



Table 3: Emissions for Wet Flare - Pilot + Purge  
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Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	330	Feed Rate (lb/hr)	32.4
Equiv. Diameter, $d_{equiv}$ (ft) <sup>1</sup>	0.23	Feed Rate (scf/hr)	743
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	0.72
Gas Exit Velocity (ft/sec) <sup>2</sup>	65.6	HHV (Btu/scf)	970
Net Heat Release, c (cal/s)	4.54E+04	Schedule (hr/yr)	8,760

Table 3A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>3</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>3</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%		2.22E+00				2.22E+00			
CO <sub>2</sub>	44.01	0.0005%		4.02E-04				4.02E-04			
H <sub>2</sub> S	34.08	0.0000%	6,537	6.33E-06		1.880	98.0%	1.27E-07		1.17E-05	
Methane	16.04	95.7785%	23,875	3.01E+01	2.743		98.0%	6.02E-01	8.09E+01		
Ethane	30.07	0.1739%	22,323	1.02E-01	2.927		98.0%	2.05E-03	2.94E-01		
Propane	44.10	0.0029%	19,937	2.51E-03	2.994		98.0%	5.02E-05	7.36E-03		VOC
i-Butane	58.12	0.0002%	19,629	2.62E-04	3.029		98.0%	5.25E-06	7.79E-04		VOC
n-Butane	58.12	0.0001%	19,679	8.71E-05	3.029		98.0%	1.74E-06	2.59E-04		VOC
i-Pentane	72.15	0.0000%	19,459	1.02E-05	3.050		98.0%	2.05E-07	3.06E-05		VOC
n-Pentane	72.15	0.0000%	19,507	1.75E-06	3.050		98.0%	3.51E-08	5.24E-06		VOC
M-cyclopentane	84.16		20,607 <sup>2</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657		3.050		98.0%				VOC
Hexane	86.18	0.0000%	19,415	2.79E-06	3.064		98.0%	5.58E-08	8.38E-06		VOC
Benzene	78.11	0.0000%	17,451	2.82E-07	3.380		98.0%	5.64E-09	9.34E-07		VOC
Toluene	92.14	0.0000%	18,501	4.60E-08	3.343		98.0%	9.20E-10	1.51E-07		VOC
Xylenes	106.16		18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0000%	20,199	1.41E-07	3.316		98.0%	2.81E-09	4.57E-07		VOC
Helium	4.00										
n-Octane	114.23	0.0000%	21,078 <sup>3</sup>	1.28E-08	3.082 <sup>2</sup>		98.0%	2.55E-10	3.85E-08		VOC
Oxygen	32.00	0.0038%		2.36E-03				2.36E-03			
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.0000%	7,262	1.62E-06	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	3.23E-08	1.45E-06	2.11E-06	VOC
H <sub>2</sub> O	18.02										
n-Heptane	100.21	0.0000%	16,280	8.64E-08	3.074		98.0%	1.73E-09	2.60E-07		VOC
n-Nonane	128.20	0.0000%	20,700	4.06E-10	3.090		98.0%	8.12E-12	1.23E-09		VOC
n-Decane	142.29	0.0000%	20,640	7.94E-11	3.093		98.0%	1.59E-12	2.41E-10		VOC
Sulfur Dioxide	64.07					1.000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22.235</b>	<b>32.4</b>					<b>81.2</b>	<b>1.38E-05</b>	

Table 3B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>3</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>3</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	0.5008%									
CO <sub>2</sub>	44.01	1.5284%				1.000					
H <sub>2</sub> S	34.08	0.0003%	6,537			1.880	98.0%				
Methane	16.04	95.8612%	23,875		2.743		98.0%				
Ethane	30.07	1.7599%	22,323		2.927		98.0%				
Propane	44.10	0.2084%	19,937		2.994		98.0%				VOC
i-Butane	58.12	0.0567%	19,629		3.029		98.0%				VOC
n-Butane	58.12	0.0284%	19,679		3.029		98.0%				VOC
i-Pentane	72.15	0.0113%	19,459		3.050		98.0%				VOC
n-Pentane	72.15	0.0038%	19,507		3.050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>2</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.316 <sup>2</sup>		98.0%				VOC
Hexane	86.18	0.0082%	19,415		3.064		98.0%				VOC
Benzene	78.11	0.0016%	17,451		3.380		98.0%				VOC
Toluene	92.14	0.0007%	18,501		3.343		98.0%				VOC
Xylenes	106.16		18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0009%	20,199 <sup>2</sup>		3.316		98.0%				VOC
Helium	4.00										
n-Octane	114.23	0.0014%	21,078 <sup>3</sup>		3.082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.0010%									
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.0003%	7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02	0.0255%									
n-Heptane	100.21	0.0023%	16,280		3.074		98.0%				VOC
n-Nonane	128.20	0.0002%	20,700 <sup>2</sup>		3.090		98.0%				VOC
n-Decane	142.29	0.0002%	20,640 <sup>2</sup>		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.890</b>	<b>100.00%</b>	<b>22.629</b>								

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)

Table 3: Emissions for Wet Flare - Pilot + Purge  
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Table 3C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
PM <sub>10</sub>	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
PM <sub>2.5</sub>	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
SO <sub>2</sub>	Tables 3A & 3B		1.38E-05	1.79E-05	6.03E-05				1.38E-05	1.79E-05	6.03E-05
NOx	6.80E-02	2	4.90E-02	6.37E-02	0.21				4.90E-02	6.37E-02	0.21
CO	3.10E-01	3	0.22	0.29	0.98				0.22	0.29	0.98
VOC	Tables 3A & 3B		5.75E-05	1.15E-04	2.52E-04				5.75E-05	1.15E-04	2.52E-04
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 3A & 3B		81.18	105.54	355.58				81.18	105.54	355.58
CH <sub>4</sub>	Tables 3A & 3B		0.60	1.20	2.64				0.60	1.20	2.64
N <sub>2</sub> O	2.16E-03	1	1.55E-03	3.11E-03	6.81E-03				1.55E-03	3.11E-03	6.81E-03
CO <sub>2</sub> e		4	96.69	193.38	423.51				96.69	193.38	423.51
<b>HAPs</b>											
Ethylbenzene	Tables 3A & 3B										
Hexane	Tables 3A & 3B		5.58E-08	6.42E-08	2.45E-07				5.58E-08	6.42E-08	2.45E-07
Benzene	Tables 3A & 3B		5.64E-09	6.49E-09	2.47E-08				5.64E-09	6.49E-09	2.47E-08
Toluene	Tables 3A & 3B		9.20E-10	1.06E-09	4.03E-09				9.20E-10	1.06E-09	4.03E-09
Xylenes	Tables 3A & 3B										
Total HAP			6.24E-08	7.18E-08	2.73E-07				6.24E-08	7.18E-08	2.73E-07
<b>TAPs</b>											
Hydrogen sulfide	Tables 3A & 3B		1.27E-07	2.53E-07	5.55E-07				1.27E-07	2.53E-07	5.55E-07

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1



Table 4: Emissions for Wet Flare - Startup  
Z-05001

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	330	Feed Rate (lb/hr)	1.47E+05
Equiv. Diameter, $d_{equiv}$ (ft) <sup>2</sup>	15.67	Feed Rate (scf/hr)	3.31E+06
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	3,330
Gas Exit Velocity (ft/sec) <sup>2</sup>	65.6	HHV (Btu/scf)	1,008
Net Heat Release, $q$ (cal/s)	2.10E+08	Schedule (hr/yr)	720

Table 4A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%									
CO2	44.01	0.0005%									
H2S	34.08	0.0000%	6,537			1.880	98.0%				
Methane	16.04	95.7785%	23,875		2,743		98.0%				
Ethane	30.07	0.1739%	22,323		2,927		98.0%				
Propane	44.10		19,937		2,994		98.0%				VOC
i-Butane	58.12	0.0029%	19,629		3,029		98.0%				VOC
n-Butane	58.12	0.0002%	19,679		3,029		98.0%				VOC
i-Pentane	72.15	0.0001%	19,459		3,050		98.0%				VOC
n-Pentane	72.15	0.0000%	19,507		3,050		98.0%				VOC
M-cyclopentane	84.16	0.0000%	20,607 <sup>3</sup>		3,138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17	0.0000%	18,657		3,050		98.0%				VOC
Hexane	86.18	0.0000%	19,415		3,064		98.0%				VOC
Benzene	78.11		17,451		3,380		98.0%				VOC
Toluene	92.14	0.0000%	18,501		3,343		98.0%				VOC
Xylenes	106.16		18,633		3,316		98.0%				VOC
Cyclohexane	84.16		20,199		3,316		98.0%				VOC
Helium	4.00	0.0000%									
n-Octane	114.23	0.0000%	21,078 <sup>3</sup>		3,082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00										
Hydrogen	2.02	0.0038%	61,095 <sup>3</sup>								
M-Mercaptan	48.11	0.0000%	7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H2O	18.02						98.0%				
n-Heptane	100.21	0.0000%	16,280		3,074		98.0%				VOC
n-Nonane	128.20	0.0000%	20,700		3,090		98.0%				VOC
n-Decane	142.29	0.0000%	20,640		3,093		98.0%				VOC
Sulfur Dioxide	64.07	0.0000%				1.000	98.0%				
<b>Total</b>	<b>16.549</b>	<b>100.00%</b>	<b>22,237</b>								

Table 4B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	0.5008%		1.22E+03				1.22E+03			
CO <sub>2</sub>	44.01	1.5284%		5.86E+03		1.000		5.86E+03			
H <sub>2</sub> S	34.08	0.0003%	6,537	9.21E-01		1.880	98.0%	1.84E-02		1.70E+00	
Methane	16.04	95.8612%	23,875	1.34E+05	2,743		98.0%	2.68E+03	3.60E+05		
Ethane	30.07	1.7599%	22,323	4.61E+03	2,927		98.0%	9.22E+01	1.32E+04		
Propane	44.10	0.2084%	19,937	8.01E+02	2,994		98.0%	1.60E+01	2.35E+03		VOC
i-Butane	58.12	0.0567%	19,629	2.87E+02	3,029		98.0%	5.74E+00	8.52E+02		VOC
n-Butane	58.12	0.0284%	19,679	1.44E+02	3,029		98.0%	2.88E+00	4.27E+02		VOC
i-Pentane	72.15	0.0113%	19,459	7.10E+01	3,050		98.0%	1.42E+00	2.12E+02		VOC
n-Pentane	72.15	0.0038%	19,507	2.39E+01	3,050		98.0%	4.78E-01	7.14E+01		VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3,138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3,316 <sup>2</sup>		98.0%				VOC
Hexane	86.18	0.0065%	19,415	4.88E+01	3,064		98.0%	9.76E-01	1.47E+02		VOC
Benzene	78.11	0.0016%	17,451	1.09E+01	3,380		98.0%	2.18E-01	3.61E+01		VOC
Toluene	92.14	0.0007%	18,501	5.62E+00	3,343		98.0%	1.12E-01	1.84E+01		VOC
Xylenes	106.16	0.0002%	18,633	1.85E+00	3,316		98.0%	3.70E-02	6.01E+00		VOC
Cyclohexane	84.16	0.0009%	20,199 <sup>2</sup>	6.60E+00	3,316		98.0%	1.32E-01	2.14E+01		VOC
Helium	4.00										
n-Octane	114.23	0.0014%	21,078 <sup>3</sup>	1.39E+01	3,082 <sup>2</sup>		98.0%	2.79E-01	4.21E+01		VOC
Oxygen	32.00	0.0010%		2.79E+00				2.79E-00			
Hydrogen	2.02		61,095 <sup>3</sup>								
M-Mercaptan	48.11	0.0003%	7,262	1.17E+00	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	2.35E-02	1.05E+00	1.53E+00	VOC
H <sub>2</sub> O	18.02	0.0255%		4.00E+01				4.00E+01			
n-Heptane	100.21	0.0023%	16,280		3,074		98.0%				VOC
n-Nonane	128.20	0.0002%	20,700 <sup>2</sup>		3,090		98.0%				VOC
n-Decane	142.29	0.0002%	20,640 <sup>2</sup>		3,093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.889</b>	<b>100.00%</b>	<b>22,630</b>	<b>147138.4</b>					<b>3.78E+05</b>	<b>3.23E+00</b>	

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)

Table 4: Emissions for Wet Flare - Startup  
Z-05001

Table 4C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1				24.81	32.25	8.93	24.81	32.25	8.93
PM <sub>10</sub>	7.45E-03	1				24.81	32.25	8.93	24.81	32.25	8.93
PM <sub>2.5</sub>	7.45E-03	1				24.81	32.25	8.93	24.81	32.25	8.93
SO <sub>2</sub>	Tables 4A & 4B					3.23	4.20	1.16	3.23	4.20	1.16
NOx	6.80E-02	2				226.42	294.34	81.51	226.42	294.34	81.51
CO	3.10E-01	3				1.03E+03	1.34E+03	371.59	1.03E+03	1.34E+03	371.59
VOC	Tables 4A & 4B					28.31	36.81	10.19	28.31	36.81	10.19
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 4A & 4B					3.78E+05	4.34E+05	1.36E+05	3.78E+05	4.34E+05	1.36E+05
CH <sub>4</sub>	Tables 4A & 4B					2.68E+03	3.08E+03	964.69	2.68E+03	3.08E+03	964.69
N <sub>2</sub> O	2.16E-03	1				7.18	8.26	2.59	7.18	8.26	2.59
CO <sub>2</sub> e		4				4.47E+05	5.14E+05	1.61E+05	4.47E+05	5.14E+05	1.61E+05
<b>HAPs</b>											
Ethylbenzene	Tables 4A & 4B										
Hexane	Tables 4A & 4B					0.98	1.12	0.35	0.98	1.12	0.35
Benzene	Tables 4A & 4B					0.22	0.25	0.08	0.22	0.25	7.84E-02
Toluene	Tables 4A & 4B					0.11	0.13	0.04	0.11	0.13	4.05E-02
Xylenes	Tables 4A & 4B					3.70E-02	0.04	0.01	3.70E-02	4.26E-02	1.33E-02
Total HAP						1.34	1.54	0.48	1.34	1.54	0.48
<b>TAPs</b>											
Hydrogen sulfide	Tables 4A & 4B					1.84E-02	2.12E-02	6.63E-03	1.84E-02	2.12E-02	6.63E-03

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1



Table 5: Emissions for Dry Flare - Pilot + Purge  
Z-05001

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	330	Feed Rate (lb/hr)	25.4
Equiv. Diameter, $d_{equiv}$ (ft) <sup>3</sup>	0.20	Feed Rate (scf/hr)	583
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	0.57
Gas Exit Velocity (ft/sec) <sup>4</sup>	65.6	HHV (Btu/scf)	970
Net Heat Release, $q$ (cal/s)	3.56E+04	Schedule (hr/yr)	8,760
			1,023

Table 5A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%		1.74E+00				1.74E+00			
CO2	44.01	0.0005%		3.15E-04				3.15E-04			
H2S	34.08	0.0000%	6.537	4.97E-06		1.880	98.0%	9.94E-08		9.15E-06	
Methane	16.04	95.7785%	23.875	2.36E+01	2.743		98.0%	4.72E-01	6.35E+01		
Ethane	30.07	0.1739%	22.323	8.04E-02	2.927		98.0%	1.61E-03	2.31E-01		
Propane	44.10	0.0029%	19.937	1.97E-03	2.994		98.0%	3.94E-05	5.78E-03		VOC
i-Butane	58.12	0.0002%	19,629	2.06E-04	3.029		98.0%	4.12E-06	6.11E-04		VOC
n-Butane	58.12	0.0001%	19,679	6.84E-05	3.029		98.0%	1.37E-06	2.03E-04		VOC
i-Pentane	72.15	0.0000%	19,459	8.03E-06	3.050		98.0%	1.61E-07	2.40E-05		VOC
n-Pentane	72.15	0.0000%	19,507	1.38E-06	3.050		98.0%	2.75E-08	4.11E-06		VOC
M-cyclopentane	84.16		20,607 <sup>1</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657		3.050		98.0%				VOC
Hexane	86.18	0.0000%	19,415	2.19E-06	3.064		98.0%	4.38E-08	6.58E-06		VOC
Benzene	78.11	0.0000%	17,451	2.21E-07	3.380		98.0%	4.43E-09	7.33E-07		VOC
Toluene	92.14	0.0000%	18,501	3.61E-08	3.343		98.0%	7.22E-10	1.18E-07		VOC
Xylenes	106.16		18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0000%	20,199	1.10E-07	3.316		98.0%	2.21E-09	3.58E-07		VOC
Helium	4.00										
n-Octane	114.23	0.0000%	21,078 <sup>3</sup>	1.00E-08	3.082 <sup>2</sup>		98.0%	2.00E-10	3.02E-08		VOC
Oxygen	32.00	0.0038%		1.86E-03				1.86E-03			
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.0000%	7,262	1.27E-06	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	2.54E-08	1.14E-06	1.66E-06	VOC
H2O	18.02						98.0%				
n-Heptane	100.21	0.0000%	16,280	6.78E-08	3.074		98.0%	1.36E-09	2.04E-07		VOC
n-Nonane	128.20	0.0000%	20,700	3.19E-10	3.090		98.0%	6.37E-12	9.65E-10		VOC
n-Decane	142.29	0.0000%	20,640	6.23E-11	3.093		98.0%	1.25E-12	1.89E-10		VOC
Sulfur Dioxide	64.07					1.000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22.235</b>	<b>25.4</b>					<b>63.7</b>	<b>1.08E-05</b>	

Table 5B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	0.509%									
CO <sub>2</sub>	44.01	0.000%				1.000					
H <sub>2</sub> S	34.08	0.000%	6.537			1.880	98.0%				
Methane	16.04	97.376%	23.875		2.743		98.0%				
Ethane	30.07	1.7873%	22.323		2.927		98.0%				
Propane	44.10	0.2117%	19,937		2.994		98.0%				VOC
i-Butane	58.12	0.0576%	19,629		3.029		98.0%				VOC
n-Butane	58.12	0.0289%	19,679		3.029		98.0%				VOC
i-Pentane	72.15	0.0113%	19,459		3.050		98.0%				VOC
n-Pentane	72.15	0.0039%	19,507		3.050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>1</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.316 <sup>2</sup>		98.0%				VOC
Hexane	86.18	0.0064%	19,415		3.064		98.0%				VOC
Benzene	78.11	0.0015%	17,451		3.380		98.0%				VOC
Toluene	92.14	0.0007%	18,501		3.343		98.0%				VOC
Xylenes	106.16	0.0002%	18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0009%	20,199 <sup>2</sup>		3.316		98.0%				VOC
Helium	4.00										
n-Octane	114.23	0.001%	21,078 <sup>3</sup>		3.082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.001%									
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.000%	7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02										
n-Heptane	100.21	0.002%	16,280		3.074		98.0%				VOC
n-Nonane	128.20	0.000%	20,700 <sup>2</sup>		3.090		98.0%				VOC
n-Decane	142.29	0.000%	20,640 <sup>2</sup>		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.466</b>	<b>100.00%</b>	<b>23.575</b>								

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.energycyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)

Table 5: Emissions for Dry Flare - Pilot + Purge  
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Table 5C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1	4.21E-03	5.48E-03	1.85E-02				4.21E-03	5.48E-03	1.85E-02
PM <sub>10</sub>	7.45E-03	1	4.21E-03	5.48E-03	1.85E-02				4.21E-03	5.48E-03	1.85E-02
PM <sub>2.5</sub>	7.45E-03	1	4.21E-03	5.48E-03	1.85E-02				4.21E-03	5.48E-03	1.85E-02
SO <sub>2</sub>	Tables 5A & 5B		1.08E-05	1.41E-05	4.74E-05				1.08E-05	1.41E-05	4.74E-05
NOx	6.80E-02	2	3.85E-02	5.00E-02	0.17				3.85E-02	5.00E-02	0.17
CO	3.10E-01	3	0.18	0.23	0.77				0.18	0.23	0.77
VOC	Tables 5A & 5B		4.51E-05	9.03E-05	1.98E-04				4.51E-05	9.03E-05	1.98E-04
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 5A & 5B		63.70	82.82	279.03				63.70	82.82	279.03
CH <sub>4</sub>	Tables 5A & 5B		0.47	0.94	2.07				0.47	0.94	2.07
N <sub>2</sub> O	2.16E-03	1	1.22E-03	2.44E-03	5.34E-03				1.22E-03	2.44E-03	5.34E-03
CO <sub>2</sub> e		4	75.87	151.75	332.32				75.87	151.75	332.32
<b>HAPs</b>											
Ethylbenzene	Tables 5A & 5B										
Hexane	Tables 5A & 5B		4.38E-08	5.04E-08	1.92E-07				4.38E-08	5.04E-08	1.92E-07
Benzene	Tables 5A & 5B		4.43E-09	5.09E-09	1.94E-08				4.43E-09	5.09E-09	1.94E-08
Toluene	Tables 5A & 5B		7.22E-10	8.30E-10	3.16E-09				7.22E-10	8.30E-10	3.16E-09
Xylenes	Tables 5A & 5B										
Total HAP			4.90E-08	5.63E-08	2.14E-07				4.90E-08	5.63E-08	2.14E-07
<b>TAPs</b>											
Hydrogen sulfide	Tables 5A & 5B		9.94E-08	1.99E-07	4.35E-07				9.94E-08	1.99E-07	4.35E-07

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1.



Table 6: Emissions for Dry Flare - Startup  
Z-05001

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	Feed Rate (lb/hr)		1.27E+05
Equiv. Diameter, $d_{equiv}$ (ft) <sup>4</sup>	Feed Rate (scf/hr)		2.93E+06
Gas Exit Temperature (°F) <sup>4</sup>	Feed Rate (MBtu/hr)		2.995
Gas Exit Velocity (ft/sec) <sup>5</sup>	HHV (Btu/scf)	970	1.023
Net Heat Release, q (cal/s)	Schedule (hr/yr)		720

Table 6A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>1</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%									
CO <sub>2</sub>	44.01	0.0005%									
H <sub>2</sub> S	34.08	0.0000%	6,537			1.880	98.0%				
Methane	16.04	95.7785%	23,875		2.743		98.0%				
Ethane	30.07	0.1739%	22,323		2.927		98.0%				
Propane	44.10	0.0029%	19,937		2.994		98.0%				VOC
i-Butane	58.12	0.0002%	19,629		3.029		98.0%				VOC
n-Butane	58.12	0.0001%	19,679		3.029		98.0%				VOC
i-Pentane	72.15	0.0000%	19,459		3.050		98.0%				VOC
n-Pentane	72.15	0.0000%	19,507		3.050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>3</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657		3.050		98.0%				VOC
Hexane	86.18	0.0000%	19,415		3.064		98.0%				VOC
Benzene	78.11	0.0000%	17,451		3.380		98.0%				VOC
Toluene	92.14	0.0000%	18,501		3.343		98.0%				VOC
Xylenes	106.16		18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0000%	20,199		3.316		98.0%				VOC
Helium	4.00										
n-Octane	114.23	0.0000%	21,078 <sup>4</sup>		3.082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.0038%									
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.0000%	7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02						98.0%				
n-Heptane	100.21	0.0000%	16,280		3.074		98.0%				VOC
n-Nonane	128.20	0.0000%	20,700		3.090		98.0%				VOC
n-Decane	142.29	0.0000%	20,640		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22,235</b>								

Table 6B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>1</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	0.509%		1.10E+03				1.10E+05			
CO <sub>2</sub>	44.01	0.000%		6.79E-01	1.000			6.79E-01			
H <sub>2</sub> S	34.08	0.000%	6,537	2.63E-01		1.880	98.0%	5.26E-03		4.84E-01	
Methane	16.04	97.376%	23,875	1.21E+05	2.743		98.0%	2.41E+05	3.24E+05		
Ethane	30.07	1.7873%	22,323	4.15E+03	2.927		98.0%	8.29E+01	1.19E+04		
Propane	44.10	0.2117%	19,937	7.20E+02	2.994		98.0%	1.44E+01	2.11E+03		VOC
i-Butane	58.12	0.0576%	19,629	2.58E+02	3.029		98.0%	5.17E+00	7.67E+02		VOC
n-Butane	58.12	0.0289%	19,679	1.30E+02	3.029		98.0%	2.59E+00	3.85E+02		VOC
i-Pentane	72.15	0.0113%	19,459	6.29E+01	3.050		98.0%	1.26E+00	1.88E+02		VOC
n-Pentane	72.15	0.0039%	19,507	2.17E+01	3.050		98.0%	4.34E-01	6.49E+01		VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>3</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>3</sup>		3.316 <sup>2</sup>		98.0%				VOC
Hexane	86.18	0.0064%	19,415	4.26E+01	3.064		98.0%	8.51E-01	1.28E+02		VOC
Benzene	78.11	0.0015%	17,451	9.04E+00	3.380		98.0%	1.81E-01	2.99E+01		VOC
Toluene	92.14	0.0007%	18,501	4.98E+00	3.343		98.0%	9.95E-02	1.63E+01		VOC
Xylenes	106.16	0.0002%	18,633	1.64E+00	3.316		98.0%	3.28E-02	5.32E+00		VOC
Cyclohexane	84.16	0.0009%	20,199 <sup>2</sup>	5.84E+00	3.316		98.0%	1.17E-01	1.90E+01		VOC
Helium	4.00										
n-Octane	114.23	0.001%	21,078 <sup>4</sup>	9.70E+00	3.082 <sup>2</sup>		98.0%	1.94E-01	2.93E+01		VOC
Oxygen	32.00	0.001%		2.47E+00				2.47E+00			
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.000%	7,262	9.28E-01	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	1.86E-02	8.32E-01	1.21E+00	VOC
H <sub>2</sub> O	18.02										
n-Heptane	100.21	0.002%	16,280		3.074		98.0%				VOC
n-Nonane	128.20	0.000%	20,700 <sup>2</sup>		3.090		98.0%				VOC
n-Decane	142.29	0.000%	20,640 <sup>2</sup>		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.466</b>	<b>100.00%</b>	<b>23,575</b>	<b>127033.8</b>					<b>3.40E+05</b>	<b>1.70E+00</b>	

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)

Table 6: Emissions for Dry Flare - Startup  
Z-05001

Table 6C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1				22.31	29.01	8.03	22.31	29.01	8.03
PM <sub>10</sub>	7.45E-03	1				22.31	29.01	8.03	22.31	29.01	8.03
PM <sub>2.5</sub>	7.45E-03	1				22.31	29.01	8.03	22.31	29.01	8.03
SO <sub>2</sub>	Tables 6A & 6B					1.70	2.20	0.61	1.70	2.20	0.61
NOx	6.80E-02	2				203.65	264.74	73.31	203.65	264.74	73.31
CO	3.10E-01	3				928.40	1.21E+03	334.22	928.40	1.21E+03	334.22
VOC	Tables 6A & 6B					25.35	32.96	9.13	25.35	32.96	9.13
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 6A & 6B					3.40E+05	3.91E+05	1.22E+05	3.40E+05	3.91E+05	1.22E+05
CH <sub>4</sub>	Tables 6A & 6B					2.41E+03	2.77E+03	867.72	2.41E+03	2.77E+03	867.72
N <sub>2</sub> O	2.16E-03	1				6.46	7.43	2.33	6.46	7.43	2.33
CO <sub>2</sub> e		4				4.02E+05	4.62E+05	1.45E+05	4.02E+05	4.62E+05	1.45E+05
<b>HAPs</b>											
Ethylbenzene	Tables 6A & 6B										
Hexane	Tables 6A & 6B					0.85	0.98	0.31	0.85	0.98	0.31
Benzene	Tables 6A & 6B					0.18	0.21	0.07	0.18	0.21	0.07
Toluene	Tables 6A & 6B					0.10	0.11	0.04	0.10	0.11	0.04
Xylenes	Tables 6A & 6B					0.03	0.04	0.01	0.03	0.04	0.01
Total HAP						1.16	1.34	0.42	1.16	1.34	0.42
<b>TAPs</b>											
Hydrogen sulfide	Tables 6A & 6B					5.26E-03	6.05E-03	0.002	5.26E-03	6.05E-03	1.89E-03

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1



Table 7: Emissions for Spare Flare - Pilot + Purge  
Z-05001

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	330	Feed Rate (lb/hr)	32.4
Equiv. Diameter, $d_{equiv}$ (ft) <sup>1</sup>	0.23	Feed Rate (scf/hr)	743
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	0.72
Gas Exit Velocity (ft/sec) <sup>1</sup>	65.6	HHV (Btu/scf)	970
Net Heat Release, $q$ (cal/s)	4.54E+04	Schedule (hr/yr)	8,760
			1,308

Table 7A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%		2.22E+00				2.22E+00			
CO2	44.01	0.0005%		4.02E-04				4.02E-04			
H2S	34.08	0.0000%	6,537	6.33E-06		1.880	98.0%	1.27E-07		1.17E-05	
Methane	16.04	95.7785%	23,875	3.01E+01	2.743		98.0%	6.02E-01	8.09E+01		
Ethane	30.07	0.1739%	22,323	1.02E-01	2.927		98.0%	2.05E-03	2.94E-01		
Propane	44.10	0.0029%	19,937	2.51E-03	2.994		98.0%	5.02E-05	7.36E-03		VOC
i-Butane	58.12	0.0002%	19,629	2.62E-04	3.029		98.0%	5.25E-06	7.79E-04		VOC
n-Butane	58.12	0.0001%	19,679	8.71E-05	3.029		98.0%	1.74E-06	2.59E-04		VOC
i-Pentane	72.15	0.0000%	19,459	1.02E-05	3.050		98.0%	2.05E-07	3.06E-05		VOC
n-Pentane	72.15	0.0000%	19,507	1.75E-06	3.050		98.0%	3.51E-08	5.24E-06		VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.050		98.0%				VOC
Hexane	86.18	0.0000%	19,415	9.26E-07	3.064		98.0%	1.85E-08	2.78E-06		VOC
Benzene	78.11	0.0000%	17,451	2.82E-07	3.380		98.0%	5.64E-09	9.34E-07		VOC
Toluene	92.14	0.0000%	18,501	4.60E-08	3.343		98.0%	9.20E-10	1.51E-07		VOC
Xylenes	106.16	0.0000%	18,633	2.25E-09	3.316		98.0%	4.50E-11	7.31E-09		VOC
Cyclohexane	84.16	0.0000%	20,199	1.41E-07	3.316		98.0%	2.81E-09	4.57E-07		VOC
Helium	4.00										
n-Octane	114.23	0.0000%	21,078 <sup>3</sup>	1.28E-08	3.082 <sup>2</sup>		98.0%	2.55E-10	3.85E-08		VOC
Oxygen	32.00	0.0038%		2.36E-03				2.36E-03			
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.0000%	7,262	1.62E-06	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	3.23E-08	1.45E-06	2.11E-06	VOC
H2O	18.02						98.0%				
n-Heptane	100.21	0.0000%	16,280	8.64E-08	3.074		98.0%	1.73E-09	2.60E-07		VOC
n-Nonane	128.20	0.0000%	20,700	4.06E-10	3.090		98.0%	8.12E-12	1.23E-09		VOC
n-Decane	142.29	0.0000%	20,640	7.94E-11	3.093		98.0%	1.59E-12	2.41E-10		VOC
Sulfur Dioxide	64.07					1.000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22.235</b>	<b>32.4</b>					<b>81.2</b>	<b>1.38E-05</b>	

Table 7B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	0.501%									
CO <sub>2</sub>	44.01	1.528%				1.000					
H <sub>2</sub> S	34.08	0.000%	6,537			1.880	98.0%				
Methane	16.04	95.861%	23,875		2.743		98.0%				
Ethane	30.07	1.7599%	22,323		2.927		98.0%				
Propane	44.10	0.2084%	19,937		2.994		98.0%				VOC
i-Butane	58.12	0.0567%	19,629		3.029		98.0%				VOC
n-Butane	58.12	0.0284%	19,679		3.029		98.0%				VOC
i-Pentane	72.15	0.0113%	19,459		3.050		98.0%				VOC
n-Pentane	72.15	0.0038%	19,507		3.050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.316 <sup>2</sup>		98.0%				VOC
Hexane	86.18	0.0065%	19,415		3.064		98.0%				VOC
Benzene	78.11	0.0016%	17,451		3.380		98.0%				VOC
Toluene	92.14	0.0007%	18,501		3.343		98.0%				VOC
Xylenes	106.16	0.0002%	18,633		3.316		98.0%				VOC
Cyclohexane	84.16	0.0009%	20,199 <sup>2</sup>		3.316		98.0%				VOC
Helium	4.00										
n-Octane	114.23	0.001%	21,078 <sup>3</sup>		3.082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.001%									
Hydrogen	2.02		61,095 <sup>1</sup>								
M-Mercaptan	48.11	0.000%	7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02	0.026%									
n-Heptane	100.21	0.002%	16,280		3.074		98.0%				VOC
n-Nonane	128.20	0.000%	20,700 <sup>2</sup>		3.090		98.0%				VOC
n-Decane	142.25	0.000%	20,640 <sup>2</sup>		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.885</b>	<b>100.00%</b>	<b>22.630</b>								

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)

Table 7: Emissions for Spare Flare - Pilot + Purge  
Z-05001

Table 7C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
PM <sub>10</sub>	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
PM <sub>2.5</sub>	7.45E-03	1	5.37E-03	6.98E-03	2.35E-02				5.37E-03	6.98E-03	2.35E-02
SO <sub>2</sub>	Tables 7A & 7B		1.38E-05	1.79E-05	6.03E-05				1.38E-05	1.79E-05	6.03E-05
NOx	6.80E-02	2	4.90E-02	6.37E-02	0.21				4.90E-02	6.37E-02	0.21
CO	3.10E-01	3	0.22	0.29	0.98				0.22	0.29	0.98
VOC	Tables 7A & 7B		5.75E-05	1.15E-04	2.52E-04				5.75E-05	1.15E-04	2.52E-04
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 7A & 7B		81.18	105.54	355.58				81.18	105.54	355.58
CH <sub>4</sub>	Tables 7A & 7B		0.60	1.20	2.64				0.60	1.20	2.64
N <sub>2</sub> O	2.16E-03	1	1.55E-03	3.11E-03	6.81E-03				1.55E-03	3.11E-03	6.81E-03
CO <sub>2</sub> e		4	96.69	193.38	423.51				96.69	193.38	423.51
<b>HAPs</b>											
Ethylbenzene	Tables 7A & 7B										
Hexane	Tables 7A & 7B		1.85E-08	2.13E-08	8.11E-08				1.85E-08	2.13E-08	8.11E-08
Benzene	Tables 7A & 7B		5.64E-09	6.49E-09	2.47E-08				5.64E-09	6.49E-09	2.47E-08
Toluene	Tables 7A & 7B		9.20E-10	1.06E-09	4.03E-09				9.20E-10	1.06E-09	4.03E-09
Xylenes	Tables 7A & 7B		4.50E-11	5.17E-11	1.97E-10				4.50E-11	5.17E-11	1.97E-10
Total HAP			2.51E-08	2.89E-08	1.10E-07				2.51E-08	2.89E-08	1.10E-07
<b>TAPs</b>											
Hydrogen sulfide	Tables 7A & 7B		1.27E-07	2.53E-07	5.55E-07				1.27E-07	2.53E-07	5.55E-07

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1



**Table 8: Flare Cap Emissions  
Z-05001 Cap**

	Total Emissions	
	Annual Average (lb/hr)	Annual Total (tpy)
<b>Criteria Pollutants</b>		
PM	3.89	17.03
PM <sub>10</sub>	3.89	17.03
PM <sub>2.5</sub>	3.89	17.03
SO <sub>2</sub>	0.40	1.77
NOx	35.48	155.42
CO	161.77	708.54
VOC	4.41	19.32
<b>Greenhouse Gases</b>		
CO <sub>2</sub>	5.92E+04	2.59E+05
CH <sub>4</sub>	420.03	1.84E+03
N <sub>2</sub> O	1.13	4.93
CO <sub>2</sub> e	7.00E+04	3.07E+05
<b>HAPs</b>		
Ethylbenzene		
Hexane	0.15	0.66
Benzene	3.28E-02	0.14
Toluene	1.74E-02	7.63E-02
Xylenes	5.73E-03	2.51E-02
Total HAP	0.21	0.90
<b>TAPs</b>		
Hydrogen sulfide	1.95E-03	8.52E-03

Table 9: Marine Flare Pilot + Purge  
Z-05101

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	200	Feed Rate (lb/hr)	39.4
Equiv. Diameter, $d_{equiv}$ (ft) <sup>3</sup>	0.25	Feed Rate (scf/hr)	903
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	0.88
Gas Exit Velocity (ft/sec) <sup>4</sup>	65.6	HHV (Btu/scf)	970
Net Heat Release, $q$ (cal/s)	5.52E+04	Schedule (hr/yr)	8,760

Table 9A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.0401%		2.69E+00				2.69E+00			
CO2	44.01	0.0005%		4.88E-04				4.88E-04			
H2S	34.08	0.0000%	6.537	7.70E-06		1.880	98.0%	1.54E-07		1.42E-05	
Methane	16.04	95.7785%	23.875	3.66E+01	2.743		98.0%	7.31E-01	9.83E+01		
Ethane	30.07	0.1739%	22.323	1.24E-01	2.927		98.0%	2.49E-03	3.57E-01		
Propane	44.10	0.0029%	19.937	3.05E-03	2.994		98.0%	6.10E-05	8.95E-03		VOC
i-Butane	58.12	0.0002%	19.629	3.19E-04	3.029		98.0%	6.37E-06	9.46E-04		VOC
n-Butane	58.12	0.0001%	19.679	1.06E-04	3.029		98.0%	2.12E-06	3.14E-04		VOC
i-Pentane	72.15	0.0000%	19.459	1.24E-05	3.050		98.0%	2.49E-07	3.72E-05		VOC
n-Pentane	72.15	0.0000%	19.507	2.13E-06	3.050		98.0%	4.26E-08	6.37E-06		VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>3</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.050		98.0%				VOC
Hexane	86.18	0.0000%	19,415	1.13E-06	3.064		98.0%	2.25E-08	3.38E-06		VOC
Benzene	78.11	0.0000%	17,451	3.43E-07	3.380		98.0%	6.86E-09	1.14E-06		VOC
Toluene	92.14	0.0000%	18,501	5.59E-08	3.343		98.0%	1.12E-09	1.83E-07		VOC
Xylenes	106.16	0.0000%	18,633	2.73E-09	3.316		98.0%	5.47E-11	8.88E-09		VOC
Cyclohexane	84.16	0.0000%	20,199	1.71E-07	3.316		98.0%	3.42E-09	5.55E-07		VOC
Helium	4.00										
n-Octane	114.23	0.0000%	21,078 <sup>3</sup>	1.55E-08	3.082 <sup>2</sup>		98.0%	3.10E-10	4.68E-08		VOC
Oxygen	32.00	0.0038%		2.87E-03				2.87E-03			
Hydrogen	2.02		61,095 <sup>3</sup>								
M-Mercaptan	48.11	0.0000%	7,262	1.97E-06	0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%	3.93E-08	1.76E-06	2.56E-06	VOC
H2O	18.02						98.0%				
n-Heptane	100.21	0.0000%	16,280	1.05E-07	3.074		98.0%	2.10E-09	3.16E-07		VOC
n-Nonane	128.20	0.0000%	20,700	4.93E-10	3.090		98.0%	9.87E-12	1.49E-09		VOC
n-Decane	142.29	0.0000%	20,640	9.65E-11	3.093		98.0%	1.93E-12	2.93E-10		VOC
Sulfur Dioxide	64.07					1.000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22.235</b>	<b>39.4</b>					<b>98.7</b>	<b>1.67E-05</b>	

Table 9B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.423%									
CO <sub>2</sub>	44.01					1.000					
H <sub>2</sub> S	34.08		6.537			1.880	98.0%				
Methane	16.04	95.569%	23.875		2.743		98.0%				
Ethane	30.07	0.0038%	22.323		2.927		98.0%				
Propane	44.10		19,937		2.994		98.0%				VOC
i-Butane	58.12		19,629		3.029		98.0%				VOC
n-Butane	58.12		19,679		3.029		98.0%				VOC
i-Pentane	72.15		19,459		3.050		98.0%				VOC
n-Pentane	72.15		19,507		3.050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3.138 <sup>3</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3.316 <sup>2</sup>		98.0%				VOC
Hexane	86.18		19,415		3.064		98.0%				VOC
Benzene	78.11		17,451		3.380		98.0%				VOC
Toluene	92.14		18,501		3.343		98.0%				VOC
Xylenes	106.16		18,633		3.316		98.0%				VOC
Cyclohexane	84.16		20,199 <sup>2</sup>		3.316		98.0%				VOC
Helium	4.00										
n-Octane	114.23		21,078 <sup>3</sup>		3.082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.004%									
Hydrogen	2.02		61,095 <sup>3</sup>								
M-Mercaptan	48.11		7,262		0.915 <sup>2</sup>	1.332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02										
n-Heptane	100.21		16,280		3.074		98.0%				VOC
n-Nonane	128.20		20,700 <sup>2</sup>		3.090		98.0%				VOC
n-Decane	142.29		20,640 <sup>2</sup>		3.093		98.0%				VOC
Sulfur Dioxide	64.07					1.000					
<b>Total</b>	<b>16.571</b>	<b>100.00%</b>	<b>22.088</b>								

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.  
 2. Mass balance  
 3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020  
 4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)



Table 9: Marine Flare Pilot + Purge  
Z-05101

Table 9C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1	6.53E-03	8.48E-03	2.86E-02				6.53E-03	8.48E-03	2.86E-02
PM <sub>10</sub>	7.45E-03	1	6.53E-03	8.48E-03	2.86E-02				6.53E-03	8.48E-03	2.86E-02
PM <sub>2.5</sub>	7.45E-03	1	6.53E-03	8.48E-03	2.86E-02				6.53E-03	8.48E-03	2.86E-02
SO <sub>2</sub>	Tables 9A & 9B		1.67E-05	2.18E-05	7.33E-05				1.67E-05	2.18E-05	7.33E-05
NOx	6.80E-02	2	5.96E-02	7.74E-02	0.26				5.96E-02	7.74E-02	0.26
CO	3.10E-01	3	0.27	0.35	1.19				0.27	0.35	1.19
VOC	Tables 9A & 9B		6.98E-05	1.40E-04	3.06E-04				6.98E-05	1.40E-04	3.06E-04
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 9A & 9B		98.66	128.26	432.14				98.66	128.26	432.14
CH <sub>4</sub>	Tables 9A & 9B		0.73	1.46	3.20				0.73	1.46	3.20
N <sub>2</sub> O	2.16E-03	1	1.89E-03	3.78E-03	8.27E-03				1.89E-03	3.78E-03	8.27E-03
CO <sub>2</sub> e		4	117.51	235.02	514.69				117.51	235.02	514.69
<b>HAPs</b>											
Ethylbenzene	Tables 9A & 9B										
Hexane	Tables 9A & 9B		2.25E-08	2.59E-08	9.86E-08				2.25E-08	2.59E-08	9.86E-08
Benzene	Tables 9A & 9B		6.86E-09	7.88E-09	3.00E-08				6.86E-09	7.88E-09	3.00E-08
Toluene	Tables 9A & 9B		1.12E-09	1.29E-09	4.90E-09				1.12E-09	1.29E-09	4.90E-09
Xylenes	Tables 9A & 9B		5.47E-11	6.29E-11	2.39E-10				5.47E-11	6.29E-11	2.39E-10
Total HAP			3.05E-08	3.51E-08	1.34E-07				3.05E-08	3.51E-08	1.34E-07
<b>TAPs</b>											
Hydrogen sulfide	Tables 9A & 9B		1.54E-07	3.08E-07	6.74E-07				1.54E-07	3.08E-07	6.74E-07

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1

Table 10: Marine Flare - Flaring BOG from an Inert Ship  
Z-05101

Stack Parameter	Parameter	Fuel Gas	Flare Gas
Height (ft)	200	Feed Rate (lb/hr)	2.96E+04
Equiv. Diameter, $d_{equiv}$ (ft) <sup>1</sup>	6.95	Feed Rate (scf/hr)	6.78E+05
Gas Exit Temperature (°F) <sup>4</sup>	1,832	Feed Rate (MBtu/hr)	555
Gas Exit Velocity (ft/sec) <sup>4</sup>	65.6	HHV (Btu/scf)	970
Net Heat Release, $q$ (cal/s)	4.12E+07	Schedule (hr/yr)	120

Table 10A: Fuel Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.04%									
CO <sub>2</sub>	44.01	0.00%									
H <sub>2</sub> S	34.08	0.00%	6,537			1,880	98.0%				
Methane	16.04	95.78%	23,875		2,743		98.0%				
Ethane	30.07	0.17%	22,323		2,927		98.0%				
Propane	44.10	0.00291%	19,937		2,994		98.0%				VOC
i-Butane	58.12	0.00023%	19,629		3,029		98.0%				VOC
n-Butane	58.12	0.00008%	19,679		3,029		98.0%				VOC
i-Pentane	72.15	0.00001%	19,459		3,050		98.0%				VOC
n-Pentane	72.15	0.00000%	19,507		3,050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3,138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657		3,050		98.0%				VOC
Hexane	86.18	0.00000%	19,415		3,064		98.0%				VOC
Benzene	78.11	0.00000%	17,451		3,380		98.0%				VOC
Toluene	92.14	0.00000%	18,501		3,343		98.0%				VOC
Xylenes	106.16	0.00000%	18,633		3,316		98.0%				VOC
Cyclohexane	84.16	0.00000%	20,199		3,316		98.0%				VOC
Helium	4.00										
n-Octane	114.23	0.00000%	21,078 <sup>3</sup>		3,082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.00377%									
Hydrogen	2.02		61,095 <sup>3</sup>								
M-Mercaptan	48.11	0.00000%	7,262		0.915 <sup>2</sup>	1,332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02						98.0%				
n-Heptane	100.21	0.00000%	16,280		3,074		98.0%				VOC
n-Nonane	128.20	0.00000%	20,700		3,090		98.0%				VOC
n-Decane	142.29	0.00000%	20,640		3,093		98.0%				VOC
Sulfur Dioxide	64.07					1,000	98.0%				
<b>Total</b>	<b>16.550</b>	<b>100.00%</b>	<b>22,235</b>								

Table 10B: Flare Gas

Component	MW (lb/lb-mole)	Mole Percent	Higher Heating Value (Btu/lb) <sup>2</sup>	Feed Rate (lb/hr)	Combustion Products (lb/lb <sup>1</sup> )		DRE	Not Destroyed (lb/hr)	Combustion Products (lb/hr)		Note
					CO <sub>2</sub>	SO <sub>2</sub>			CO <sub>2</sub>	SO <sub>2</sub>	
Nitrogen	28.01	4.423%		2.22E+03				2.22E+03			
CO <sub>2</sub>	44.01					1,000					
H <sub>2</sub> S	34.08		6,537			1,880	98.0%				
Methane	16.04	95.569%	23,875	2.74E+04	2,743		98.0%	5.48E+02	7.37E+04		
Ethane	30.07	0.0038%	22,323	2.04E+00	2,927		98.0%	4.09E-02	5.86E+00		
Propane	44.10		19,937		2,994		98.0%				VOC
i-Butane	58.12		19,629		3,029		98.0%				VOC
n-Butane	58.12		19,679		3,029		98.0%				VOC
i-Pentane	72.15		19,459		3,050		98.0%				VOC
n-Pentane	72.15		19,507		3,050		98.0%				VOC
M-cyclopentane	84.16		20,607 <sup>3</sup>		3,138 <sup>2</sup>		98.0%				VOC
Ethylbenzene	106.17		18,657 <sup>2</sup>		3,316 <sup>2</sup>		98.0%				VOC
Hexane	86.18		19,415		3,064		98.0%				VOC
Benzene	78.11		17,451		3,380		98.0%				VOC
Toluene	92.14		18,501		3,343		98.0%				VOC
Xylenes	106.16		18,633		3,316		98.0%				VOC
Cyclohexane	84.16		20,199 <sup>2</sup>		3,316		98.0%				VOC
Helium	4.00										
n-Octane	114.23		21,078 <sup>3</sup>		3,082 <sup>2</sup>		98.0%				VOC
Oxygen	32.00	0.004%		2.35E+00				2.35E-00			
Hydrogen	2.02		61,095 <sup>3</sup>								
M-Mercaptan	48.11		7,262		0.915 <sup>2</sup>	1,332 <sup>2</sup>	98.0%				VOC
H <sub>2</sub> O	18.02										
n-Heptane	100.21		16,280		3,074		98.0%				VOC
n-Nonane	128.20		20,700 <sup>2</sup>		3,090		98.0%				VOC
n-Decane	142.29		20,640 <sup>2</sup>		3,093		98.0%				VOC
Sulfur Dioxide	64.07					1,000					
<b>Total</b>	<b>16.571</b>	<b>100.00%</b>	<b>22,088</b>	<b>29636.0</b>					<b>7.37E+04</b>	<b>0.00E+00</b>	

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted. Assumes complete combustion.

2. Mass balance

3. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>, accessed March 2020

4. [https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss\\_calc\\_flares.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss_calc_flares.pdf)



Table 10: Marine Flare - Flaring BOG from an Inert Ship  
Z-05101

Table 10C: Flare Emissions

	Emission Factor (lb/MMBtu)	Reference	Fuel Gas Proposed Emission Rates			Flare Gas Proposed Emission Rates			Total Proposed Emission Rates		
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)
<b>Criteria Pollutants</b>											
PM	7.45E-03	1				4.88	6.34	0.29	4.88	6.34	0.29
PM <sub>2.5</sub>	7.45E-03	1				4.88	6.34	0.29	4.88	6.34	0.29
PM <sub>10</sub>	7.45E-03	1				4.88	6.34	0.29	4.88	6.34	0.29
SO <sub>2</sub>	Tables 10A & 10B										
NOx	6.80E-02	2				44.51	57.87	2.67	44.51	57.87	2.67
CO	3.10E-01	3				202.93	263.80	12.18	202.93	263.80	12.18
VOC	Tables 10A & 10B										
<b>Greenhouse Gases</b>											
CO <sub>2</sub>	Tables 10A & 10B					7.37E+04	8.48E+04	4.42E+03	7.37E+04	8.48E+04	4.42E+03
CH <sub>4</sub>	Tables 10A & 10B					548.32	630.57	32.90	548.32	630.57	32.90
N <sub>2</sub> O	2.16E-03	1				1.41	1.62	8.47E-02	1.41	1.62	8.47E-02
CO <sub>2</sub> e		4				8.78E+04	1.01E+05	5.27E+03	8.78E+04	1.01E+05	5.27E+03
<b>HAPs</b>											
Ethylbenzene	Tables 10A & 10B										
Hexane	Tables 10A & 10B										
Benzene	Tables 10A & 10B										
Toluene	Tables 10A & 10B										
Xylenes	Tables 10A & 10B										
Total HAP											
<b>TAPs</b>											
Hydrogen sulfide	Tables 10A & 10B										

Reference:

1. AP 42 Table 1.4-2
2. AP 42 Table 13.5-1
3. AP 42 Table 13.5-2
4. 40 CFR 98 Subpart A, Table A-1

**Table 11: Emissions for Essential Generator  
Z-08001 A/B/C**

Annual Operating Schedule (hr)	100	Fuel	ULSD	Number of Generators	3
Fuel Consumption (MMBtu/hr)	41.7 <sup>1,2</sup>	Stack Height (ft)	20	Exhaust Flow Rate (acfm)	30,730 <sup>1</sup>
Generator Rated Output (kWe)	3,900 <sup>1</sup>	Stack Discharge Area (ft <sup>2</sup> )	4.3	Exhaust Temperature (F)	895 <sup>1</sup>
Engine Rated Output (bkW)	5,753 <sup>1,3</sup>	Stack Diameter (ft)	1.17	Exhaust Velocity (fps)	119.1

	CAS No.	Emission Factor		Reference	Proposed Emission Rates (1 engine)		
		(lb/MMBtu)	(g/kW-h)		Average	Maximum	Annual
<b>Criteria Pollutants</b>							
PM			0.067	1	0.85	0.98	0.043
PM <sub>10</sub>			0.067	1	0.85	0.98	0.043
PM <sub>2.5</sub>			0.067	1	0.85	0.98	0.043
SO <sub>2</sub>	74446-09-5	1.52E-03		4	0.063	0.073	0.003
NO <sub>x</sub>			8.46	1	107.32	123.42	5.37
CO	630-08-0		1.21	1	15.31	17.60	0.77
VOC			0.322	1	4.08	4.69	0.20
<b>Greenhouse Gases</b>							
CO <sub>2</sub>	124-38-9	163.05		5	6,794	7,813	340
CH <sub>4</sub>	74-82-8	6.61E-03		6	2.76E-01	3.17E-01	1.38E-02
N <sub>2</sub> O	10024-97-2	1.32E-03		6	5.51E-02	6.34E-02	2.76E-03
CO <sub>2</sub> e		163.61		7	6,818	7,840	341
<b>HAPs/TAPs</b>							
Acetaldehyde	75-07-0	2.52E-05		8	1.05E-03	1.21E-03	5.25E-05
Acrolein	107-02-8	7.88E-06		8	3.28E-04	3.78E-04	1.64E-05
Benzene	71-43-2	7.76E-04		8	3.23E-02	3.72E-02	1.62E-03
Formaldehyde	50-00-0	7.89E-05		8	3.29E-03	3.78E-03	1.64E-04
Total PAH		2.12E-04		9	8.81E-03	1.01E-02	4.41E-04
Acenaphthene	83-32-9	4.68E-06		9	1.95E-04	2.24E-04	9.75E-06
Acenaphthylene	208-96-8	9.23E-06		9	3.85E-04	4.42E-04	1.92E-05
Anthracene	120-12-7	1.23E-06		9	5.13E-05	5.89E-05	2.56E-06
Benzo(a)anthracene	56-55-3	6.22E-07		9	2.59E-05	2.98E-05	1.30E-06
Benzo(b)fluoranthene	205-99-2	1.11E-06		9	4.63E-05	5.32E-05	2.31E-06
Benzo(g,h,i)perylene	191-24-2	5.56E-07		9	2.32E-05	2.66E-05	1.16E-06
Benzo(k)fluoranthene	207-08-9	2.18E-07		9	9.08E-06	1.04E-05	4.54E-07
Benzo(a)pyrene	50-32-8	2.57E-07		9	1.07E-05	1.23E-05	5.35E-07
Chrysene	218-01-9	1.53E-06		9	6.38E-05	7.33E-05	3.19E-06
Dibenz(a,h)anthracene	53-70-3	3.46E-07		9	1.44E-05	1.66E-05	7.21E-07
Fluoranthene	206-44-0	4.03E-06		9	1.68E-04	1.93E-04	8.40E-06
Fluorene	86-73-7	1.28E-05		9	5.33E-04	6.13E-04	2.67E-05
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07		9	1.73E-05	1.98E-05	8.63E-07
Naphthalene	91-20-3	1.30E-04		9	5.42E-03	6.23E-03	2.71E-04
Phenanthrene	85-01-8	4.08E-05		9	1.70E-03	1.96E-03	8.50E-05
Pyrene	129-00-0	3.71E-06		9	1.55E-04	1.78E-04	7.73E-06
Toluene	108-88-3	2.81E-04		8	1.17E-02	1.35E-02	5.85E-04
Xylenes	1330-20-7	1.93E-04		8	8.04E-03	9.25E-03	4.02E-04
Total HAP					6.56E-02	7.54E-02	3.28E-03

**Reference:**

1. Vendor data (Caterpillar C175-20 Standby)  
<https://s7d2.scene7.com/is/content/Caterpillar/CM20190430-aca82-c4a9f>
2. Includes 10% margin
3. Includes 10% to account for generator losses, parasitic loads, and variation among engines
4. Mass balance. Assume fuel HHV = 0.138 MMBtu/gal; fuel density = 7.0 lb/gal; 15 ppmw sulfur diesel fuel
5. 40 CFR 98 Subpart C Table C-1
6. 40 CFR 98 Subpart C Table C-2
7. 40 CFR 98 Subpart A, Table A-1
8. AP 42 Table 3.4-3
9. AP 42 Table 3.4-4



**Table 12: Fresh Water Firewater Pump Engines  
P-04402 A&B**

Annual Operating Schedule (hr)	100	Fuel	ULSD	Number of Engines	2
Fuel Consumption (MMBtu/hr)	6.2 <sup>1,2</sup>	Stack Height (ft)	20	Exhaust Flow Rate (acfm)	4,043 <sup>1</sup>
Engine Rated Output (kW)	574 <sup>1,2</sup>	Stack Discharge Area (ft <sup>2</sup> )	0.79	Exhaust Temperature (F)	980 <sup>1</sup>
		Stack Diameter (ft)	1.00	Exhaust Velocity (fps)	85.8

	CAS No.	Emission Factor		Reference	Proposed Emission Rates (1 engine)		
		(lb/MMBtu)	(g/kW-h)		Average	Maximum	Annual
<b>Criteria Pollutants</b>							
PM			0.115	1	0.15	0.17	7.28E-03
PM <sub>10</sub>			0.115	1	0.15	0.17	7.28E-03
PM <sub>2.5</sub>			0.115	1	0.15	0.17	7.28E-03
SO <sub>2</sub>	74446-09-5	1.52E-03		3, 4	9.47E-03	1.09E-02	4.74E-04
NO <sub>x</sub>			3.607	1	4.57	5.25	2.28E-01
CO	630-08-0		1.220	1	1.54	1.78	7.72E-02
VOC			0.068	1	0.09	0.10	4.30E-03
<b>Greenhouse Gases</b>							
CO <sub>2</sub>	124-38-9	163.05		5	1,015	1,167	51
CH <sub>4</sub>	74-82-8	6.61E-03		6	4.11E-02	4.73E-02	2.06E-03
N <sub>2</sub> O	10024-97-2	1.32E-03		6	8.23E-03	9.46E-03	4.11E-04
CO <sub>2</sub> e		163.61		7	1,018	1,171	51
<b>HAPs/TAPs</b>							
Acetaldehyde	75-07-0	2.52E-05		8	1.57E-04	1.80E-04	7.84E-06
Acrolein	107-02-8	7.88E-06		8	4.90E-05	5.64E-05	2.45E-06
Benzene	71-43-2	7.76E-04		8	4.83E-03	5.55E-03	2.41E-04
Formaldehyde	50-00-0	7.89E-05		8	4.91E-04	5.65E-04	2.46E-05
Total PAH		2.12E-04		9	1.32E-03	1.51E-03	6.58E-05
Acenaphthene	83-32-9	4.68E-06		9	2.91E-05	3.35E-05	1.46E-06
Acenaphthylene	208-96-8	9.23E-06		9	5.74E-05	6.61E-05	2.87E-06
Anthracene	120-12-7	1.23E-06		9	7.66E-06	8.80E-06	3.83E-07
Benzo(a)anthracene	56-55-3	6.22E-07		9	3.87E-06	4.45E-06	1.94E-07
Benzo(b)fluoranthene	205-99-2	1.11E-06		9	6.91E-06	7.94E-06	3.45E-07
Benzo(g,h,i)perylene	191-24-2	5.56E-07		9	3.46E-06	3.98E-06	1.73E-07
Benzo(k)fluoranthene	207-08-9	2.18E-07		9	1.36E-06	1.56E-06	6.78E-08
Benzo(a)pyrene	50-32-8	2.57E-07		9	1.60E-06	1.84E-06	8.00E-08
Chrysene	218-01-9	1.53E-06		9	9.52E-06	1.10E-05	4.76E-07
Dibenz(a,h)anthracene	53-70-3	3.46E-07		9	2.15E-06	2.48E-06	1.08E-07
Fluoranthene	206-44-0	4.03E-06		9	2.51E-05	2.88E-05	1.25E-06
Fluorene	86-73-7	1.28E-05		9	7.97E-05	9.16E-05	3.98E-06
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07		9	2.58E-06	2.96E-06	1.29E-07
Naphthalene	91-20-3	1.30E-04		9	8.09E-04	9.30E-04	4.05E-05
Phenanthrene	85-01-8	4.08E-05		9	2.54E-04	2.92E-04	1.27E-05
Pyrene	129-00-0	3.71E-06		9	2.31E-05	2.66E-05	1.15E-06
Toluene	108-88-3	2.81E-04		8	1.75E-03	2.01E-03	8.74E-05
Xylenes	1330-20-7	1.93E-04		8	1.20E-03	1.38E-03	6.01E-05
Total HAP					9.79E-03	1.13E-02	4.90E-04

**Reference:**

1. Vendor data (Clarke C18HO-UHAD78)
2. Includes 10% margin
3. Mass balance
4. Assume fuel HHV = 0.138 MMBtu/gal; fuel density = 7.0 lb/gal; 15 ppmw sulfur diesel fuel
5. 40 CFR 98 Subpart C Table C-1
6. 40 CFR 98 Subpart C Table C-2
7. 40 CFR 98 Subpart A, Table A-1
8. AP 42 Table 3.4-3
9. AP 42 Table 3.4-4



**Table 13: Brackish Water Firewater Pump Engine  
P-04405 A&B**

Annual Operating Schedule (hr)	100	Fuel	ULSD	Number of Engines	2
Fuel Consumption (MMBtu/hr)	6.2 <sup>1,2</sup>	Stack Height (ft)	20	Exhaust Flow Rate (acfm)	4,043 <sup>1</sup>
Engine Rated Output (kW)	574 <sup>1,2</sup>	Stack Discharge Area (ft <sup>2</sup> )	0.79	Exhaust Temperature (F)	980 <sup>1</sup>
		Stack Diameter (ft)	1.00	Exhaust Velocity (fps)	85.8

	CAS No.	Emission Factor		Reference	Proposed Emission Rates (1 engine)		
		(lb/MMBtu)	(g/kW-h)		Average	Maximum	Annual
<b>Criteria Pollutants</b>							
PM			0.115	1,2	0.15	0.17	7.28E-03
PM <sub>10</sub>			0.115	1,2	0.15	0.17	7.28E-03
PM <sub>2.5</sub>			0.115	1,2	0.15	0.17	7.28E-03
SO <sub>2</sub>	74446-09-5	1.52E-03		3, 4	0.01	0.01	4.74E-04
NO <sub>x</sub>			3.607	1,2	4.57	5.25	2.28E-01
CO	630-08-0		1.220	1,2	1.54	1.78	7.72E-02
VOC			0.068	1,2	0.09	0.10	4.30E-03
<b>Greenhouse Gases</b>							
CO <sub>2</sub>	124-38-9	163.05		5	1,015	1,167	51
CH <sub>4</sub>	74-82-8	6.61E-03		6	4.11E-02	4.73E-02	2.06E-03
N <sub>2</sub> O	10024-97-2	1.32E-03		6	8.23E-03	9.46E-03	4.11E-04
CO <sub>2</sub> e		163.61		7	1,018	1,171	51
<b>HAPs/TAPs</b>							
Acetaldehyde	75-07-0	2.52E-05		8	1.57E-04	1.80E-04	7.84E-06
Acrolein	107-02-8	7.88E-06		8	4.90E-05	5.64E-05	2.45E-06
Benzene	71-43-2	7.76E-04		8	4.83E-03	5.55E-03	2.41E-04
Formaldehyde	50-00-0	7.89E-05		8	4.91E-04	5.65E-04	2.46E-05
Total PAH		2.12E-04		9	1.32E-03	1.51E-03	6.58E-05
Acenaphthene	83-32-9	4.68E-06		9	2.91E-05	3.35E-05	1.46E-06
Acenaphthylene	208-96-8	9.23E-06		9	5.74E-05	6.61E-05	2.87E-06
Anthracene	120-12-7	1.23E-06		9	7.66E-06	8.80E-06	3.83E-07
Benzo(a)anthracene	56-55-3	6.22E-07		9	3.87E-06	4.45E-06	1.94E-07
Benzo(b)fluoranthene	205-99-2	1.11E-06		9	6.91E-06	7.94E-06	3.45E-07
Benzo(g,h,i)perylene	191-24-2	5.56E-07		9	3.46E-06	3.98E-06	1.73E-07
Benzo(k)fluoranthene	207-08-9	2.18E-07		9	1.36E-06	1.56E-06	6.78E-08
Benzo(a)pyrene	50-32-8	2.57E-07		9	1.60E-06	1.84E-06	8.00E-08
Chrysene	218-01-9	1.53E-06		9	9.52E-06	1.10E-05	4.76E-07
Dibenz(a,h)anthracene	53-70-3	3.46E-07		9	2.15E-06	2.48E-06	1.08E-07
Fluoranthene	206-44-0	4.03E-06		9	2.51E-05	2.88E-05	1.25E-06
Fluorene	86-73-7	1.28E-05		9	7.97E-05	9.16E-05	3.98E-06
Indeno(1,2,3-cd)pyrene	193-39-5	4.14E-07		9	2.58E-06	2.96E-06	1.29E-07
Naphthalene	91-20-3	1.30E-04		9	8.09E-04	9.30E-04	4.05E-05
Phenanthrene	85-01-8	4.08E-05		9	2.54E-04	2.92E-04	1.27E-05
Pyrene	129-00-0	3.71E-06		9	2.31E-05	2.66E-05	1.15E-06
Toluene	108-88-3	2.81E-04		8	1.75E-03	2.01E-03	8.74E-05
Xylenes	1330-20-7	1.93E-04		8	1.20E-03	1.38E-03	6.01E-05
Total HAP					9.79E-03	1.13E-02	4.90E-04

**Reference:**

1. Vendor data (Clarke C18HO-UJFAD78)
2. Includes 10% margin
3. Mass balance
4. Assume fuel HHV = 0.138 MMBtu/gal; fuel density = 7.0 lb/gal; 15 ppmw sulfur diesel fuel
5. 40 CFR 98 Subpart C Table C-1
6. 40 CFR 98 Subpart C Table C-2
7. 40 CFR 98 Subpart A, Table A-1
8. AP 42 Table 3.4-3
9. AP 42 Table 3.4-4



**Table 14: Heat Transfer Oil Heater  
Z-06601**

Stack Height (ft)	114	Operating Schedule (hr/yr)	720
Stack Discharge Area (ft <sup>2</sup> )	17.78	Firing Rate (MMBtu/hr)	50.64
Stack Gas Exit Temperature (°F)	631		
Stack Gas Exit Velocity (ft/sec)	25.0		

	Emission Factor (lb/MMBtu)	Reference	Proposed Emission Rates			Note
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	
<b>Criteria Pollutants</b>						
PM	7.45E-03	1	0.38	0.43	0.14	
PM <sub>10</sub>	7.45E-03	1	0.38	0.43	0.14	
PM <sub>2.5</sub>	7.45E-03	1	0.38	0.43	0.14	
SO <sub>2</sub>	7.38E-04	2	0.037	0.056	0.013	
NO <sub>x</sub>	1.37E-01	3	6.95	7.99	2.50	
CO	8.24E-02	4	4.17	4.80	1.50	
VOC	5.39E-03	2	0.39	0.44	0.14	
Pb	4.90E-07	1	2.48E-05	2.85E-05	8.94E-06	
<b>Greenhouse Gases</b>						
CO <sub>2</sub>		2	4,233	4,868	1,524	
CH <sub>4</sub>		2	29.97	34.46	10.8	
N <sub>2</sub> O	2.20E-04	5	1.12E-02	1.28E-02	4.02E-03	
CO <sub>2</sub> e		6	4,986	5,733	1,795	
<b>HAPs/TAPs</b>						
2-Methylnaphthalene	2.35E-08	7	1.19E-06	1.37E-06	4.29E-07	PAH
3-Methylcholanthrene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
7,12-Dimethylbenz(a) anthracene	1.57E-08	7	7.94E-07	9.14E-07	2.86E-07	PAH
Acenaphthene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Acenaphthylene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Anthracene	2.35E-09	7	1.19E-07	1.37E-07	4.29E-08	PAH
Arsenic	1.96E-07	8	9.93E-06	1.14E-05	3.57E-06	
Barium	4.31E-06	8	2.18E-04	2.51E-04	7.86E-05	
Benz(a)anthracene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Benzene	2.06E-06	7	1.04E-04	1.20E-04	3.75E-05	
Benzo(a)pyrene	1.18E-09	7	5.96E-08	6.85E-08	2.14E-08	PAH
Benzo(b)fluoranthene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Benzo(g,h,i)perylene	1.18E-09	7	5.96E-08	6.85E-08	2.14E-08	PAH
Benzo(k)fluoranthene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Beryllium	1.18E-08	8	5.96E-07	6.85E-07	2.14E-07	
Cadmium	1.08E-06	8	5.46E-05	6.28E-05	1.97E-05	
Chromium	1.37E-06	8	6.95E-05	7.99E-05	2.50E-05	
Chrysene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Cobalt	8.24E-08	8	4.17E-06	4.80E-06	1.50E-06	
Copper	8.33E-07	8	4.22E-05	4.85E-05	1.52E-05	
Dibenzo(a,h)anthracene	1.18E-09	7	5.96E-08	6.85E-08	2.14E-08	PAH
Dichlorobenzene	1.18E-06	7	5.96E-05	6.85E-05	2.14E-05	
Fluoranthene	2.94E-09	7	1.49E-07	1.71E-07	5.36E-08	PAH
Fluorene	2.75E-09	7	1.39E-07	1.60E-07	5.00E-08	PAH
Formaldehyde	7.35E-05	7	3.72E-03	4.28E-03	1.34E-03	
Hexane	1.76E-03	7	8.94E-02	1.03E-01	0.03	
Indeno(1,2,3-cc)pyrene	1.76E-09	7	8.94E-08	1.03E-07	3.22E-08	PAH
Lead	4.90E-07	1	2.48E-05	2.85E-05	8.94E-06	

Table 14: Heat Transfer Oil Heater

Z-06601

Stack Height (ft)	114	Operating Schedule (hr/yr)	720
Stack Discharge Area (ft <sup>2</sup> )	17.78	Firing Rate (MMBtu/hr)	50.64
Stack Gas Exit Temperature (°F)	631		
Stack Gas Exit Velocity (ft/sec)	25.0		

	Emission Factor (lb/MMBtu)	Reference	Proposed Emission Rates			Note
			Average (lb/hr)	Maximum (lb/hr)	Annual (tpy)	
Manganese	3.73E-07	8	1.89E-05	2.17E-05	6.79E-06	
Mercury	2.55E-07	8	1.29E-05	1.48E-05	4.65E-06	
Naphthalene	5.98E-07	7	3.03E-05	3.48E-05	1.09E-05	PAH
Nickel	2.06E-06	8	1.04E-04	1.20E-04	3.75E-05	
Phenanthrene	1.67E-08	7	8.44E-07	9.71E-07	3.04E-07	PAH
Pyrene	4.90E-09	7	2.48E-07	2.85E-07	8.94E-08	PAH
Selenium	2.35E-08	8	1.19E-06	1.37E-06	4.29E-07	
Toluene	3.33E-06	7	1.69E-04	1.94E-04	6.08E-05	
Zinc	2.84E-05	8	1.44E-03	1.66E-03	5.18E-04	
Total PAH	6.85E-07		3.47E-05	3.99E-05	1.25E-05	
Total HAP	1.86E-03		0.09	0.11	0.03	
<b>Toxic Air Pollutants</b>						
Hydrogen sulfide	1.42E-05		7.19E-04	8.27E-04	2.589E-04	

**Reference:**

1. AP 42 table 1.4-2
2. Mass balance
3. BACT
4. AP 42 table 1.4-1
5. 40 CFR 98 Subpart C, Table C-2
6. 40 CFR 98 Subpart A, Table A-1
7. AP-42 Table 1.4-3
8. AP-42 Table 1.4-4
9. Technip Energies (Startup on pipeline natural gas)



**Table 15: Thermal Oxidizer A & B - Hourly Emissions for Each Unit Z-07002 A&B**

Stack Height (ft)	85	Exhaust Flow (acfm)	133,326
Stack Discharge Area (ft <sup>2</sup> )	33.2	Exhaust Temp (°F)	1,500
Load	100%	Exhaust Velocity (fps)	47.0

**Table 15A: Gas and Fuel Gas Throughputs**

Parameter (Two thermal oxidizers)	Acid Gas	Low Pressure Gas	Low Pressure Fuel Gas
Throughput (lb/hr)	137,993	1,423	3,245
Throughput (scf/hr)	1,207,815	29,506	29,310

**Table 15B: Acid Gas and Low Pressure Gas Composition, Heating Value, and Destruction**

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction		Throughput (lb/hr)		DRE	Not Destroyed (lb/hr)
			Acid Gas	Low Pressure Gas	Acid Gas	Low Pressure Gas		
Nitrogen	28.01		0.0003%	0.1956%	0.27	4.26		4.53
CO <sub>2</sub>	44.01		96.7872%	3.0190%	1.36E+05	103.36		1.36E+05
Hydrogen sulfide	34.08	6,537	0.0010%	0.0007%	1.09	1.86E-02	99.9%	1.10E-03
Methane	16.04	23,875	0.4721%	89.3592%	241.13	1,114.99	99.9%	1.36
Ethane	30.07	22,323	0.0433%	4.6445%	41.46	108.64	99.9%	0.15
Propane	44.10	19,937	0.0110%	1.1806%	15.45	40.50	99.9%	5.59E-02
i-Butane	58.12	19,629	0.0043%	0.3168%	7.96	14.32	99.9%	2.23E-02
n-Butane	58.12	19,679	0.0019%	0.1872%	3.52	8.46	99.9%	1.20E-02
i-Pentane	72.15	19,459	0.0908%	0.2441%	208.61	13.70	99.9%	0.22
n-Pentane	72.15	19,507	0.0005%	0.0442%	1.15	2.48	99.9%	3.63E-03
M-cyclopentane	84.16	20,607 <sup>3</sup>	0.0000%	0.0000%	-	-		-
i-Hexane	86.18	19,415	0.0651%	0.0538%				
n-Hexane	86.18	19,415	0.0001%	0.0102%	0.27	0.68	99.9%	9.58E-04
n-Heptane	100.21	16,280	0.0706%	0.0241%				
Benzene	78.11	17,451	0.0278%	0.0173%	69.15	1.05	99.9%	7.02E-02
Toluene	92.14	18,501	0.0127%	0.0068%	37.26	0.49	99.9%	3.77E-02
m-Xylene	106.17	18,633			-	-	99.9%	-
Xylenes	106.17	18,633	0.0031%	0.0016%	10.48	0.13	99.9%	1.06E-02
Helium	4.00		0.0000%	0.0000%	-	-		-
n-Octane	114.23	19,550 <sup>2</sup>	0.1080%	0.0101%	392.85		99.9%	0.39
Oxygen	32.00		0.0000%	0.0007%	-	1.74E-02	99.9%	1.74E-05
Hydrogen	2.02	61,095 <sup>2</sup>	0.0000%	0.0000%	-	-		-
M-Mercaptan	48.11	7,262	0.0022%	0.0012%	3.37	4.49E-02	99.9%	3.42E-03
H <sub>2</sub> O	18.02		2.2975%	0.6754%	1,318.34	9.47		1,328
Cyclohexane	84.16	20,199 <sup>2</sup>	0.0005%	0.0069%	1.34	0.45	99.9%	1.79E-03
Ethylbenzene	106.17	18,657 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Nonane	128.20	20,700 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Decane	142.29	20,640 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
VOC								0.83
<b>Total</b>			100.0000%	100.0000%	137,993	1,423		

Acid Gas MW = 43.46 lb/lb-mole

Acid Gas HHV = 22.6 Btu/scf

Acid Gas HHV = 197 Btu/lb

LP Gas MW = 18.38 lb/lb-mole

LP Gas HHV = 1,104 Btu/scf

LP Gas HHV = 22,786 Btu/lb

1. *Steam, Its Generation and Use*, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.

2. <https://www.enggcylopedia.com/2011/09/heating-values-natural-gas/>



**Table 15: Thermal Oxidizer A & B - Hourly Emissions for Each Unit  
Z-07002 A&B**

**Table 15C: Acid Gas and Low Pressure Gas Oxidation Products  
(Each Thermal Oxidizers)**

	lb/lb <sup>1</sup>		Acid Gas (lb/hr)		LP Gas (lb/hr)		Total Gas (lb/hr)	
	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen			-	-	-	-	-	-
CO <sub>2</sub>			1.36E+05	-	103.36	-	1.36E+05	-
Hydrogen sulfide		1.880	-	2.04	-	3.49E-02	-	2.07
Methane	2.743		660.77	-	3,055.36	-	3,716.13	-
Ethane	2.927		121.23	-	317.68	-	438.91	-
Propane	2.994		46.20	-	121.14	-	167.34	-
i-Butane	3.029		24.08	-	43.34	-	67.42	-
n-Butane	3.029		10.64	-	25.61	-	36.25	-
i-Pentane	3.050		635.63	-	41.74	-	677.38	-
n-Pentane	3.050		3.50	-	7.56	-	11.06	-
M-cyclopentane	3.138 <sup>2</sup>		-	-	-	-	-	-
n-Hexane	3.064		0.84	-	2.09	-	2.93	-
Benzene	3.380		233.48	-	3.55	-	237.03	-
Toluene	3.343		124.44	-	1.63	-	126.07	-
Xylenes	3.316		34.72	-	0.44	-	35.16	-
M-Mercaptan	0.915 <sup>2</sup>	1.332 <sup>2</sup>	3.08	4.48	4.10E-02	5.97E-02	3.12	4.54
Cyclohexane	3.527 <sup>2</sup>		4.72	-	1.59	-	6.31	-
n-Nonane	3.090 <sup>2</sup>		-	-	-	-	-	-
n-Decane	3.093 <sup>2</sup>		-	-	-	-	-	-
<b>Total</b>			<b>138,753</b>	<b>6.52</b>	<b>3,725</b>	<b>0.09</b>	<b>142,478</b>	<b>6.62</b>

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. Mass balance

**Table 15D: LP Fuel Gas Composition and Properties**

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction	Through put (lb/hr)	lb/lb <sup>1</sup>		lb/hr	
					CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen	28.01		4.5581%	98.66				
CO <sub>2</sub>	44.01		0.0001%	0.00				
Hydrogen sulfide	34.08	6,537				1.880		
Methane	16.04	23,875	95.4294%	1,183	2.743		3,244.48	
Ethane	30.07	22,323	0.0082%	0.19	2.927		0.56	
Propane	44.10	19,937			2.994			
i-Butane	58.12	19,629			3.029			
n-Butane	58.12	19,679			3.029			
i-Pentane	72.15	19,459			3.050			
n-Pentane	72.15	19,507			3.050			
M-cyclopentane	84.16	20,607			3.138			
i-Hexane	86.18	19,415			3.064			
n-Hexane	86.18	19,415			3.064			
n-Heptane	100.21	16,280			3.074			
Benzene	78.11	17,451			3.380			
Toluene	92.14	18,501			3.343			
m-Xylene	106.17	18,633			3.316			
Xylenes	106.17	18,633			3.316			
Helium	4.00							
n-Octane	114.23	19,550 <sup>2</sup>			3.082			
Oxygen	32.00		0.0042%	0.10				
Hydrogen	2.02	61,095 <sup>2</sup>						
M-Mercaptan	48.11	7,262			0.915	1.332		
H <sub>2</sub> O	18.02							
Cyclohexane	84.16	20,199 <sup>2</sup>			3.138			
Ethylbenzene	106.17	18,657 <sup>2</sup>			3.316			
n-Nonane	128.20	20,700 <sup>2</sup>			3.090			
n-Decane	142.29	20,640 <sup>2</sup>			3.093			
<b>Total</b>			<b>100.0000%</b>	<b>1,282</b>		<b>3.21</b>	<b>3,245</b>	

LP Fuel Gas MW = 16.59 lb/lb-mole

LP Fuel Gas HHV = 996 Btu/scf

LP Fuel Gas HHV = 22,786 Btu/lb

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. <https://www.enggcyclopedia.com/2011/09/heating-values-natural-gas/>



**Table 15: Thermal Oxidizer A & B - Hourly Emissions for Each Unit  
Z-07002 A&B**

Table 15E: LP Fuel Gas Combustion Emissions		Annual Operating Schedule (hr)	8,760	Fuel Gas Combustion (MMBtu/hr)	29.2	
	Emission Factor lb/MMBtu	Ref	Proposed Emission Rates			Note
			Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)	
<b>Criteria Pollutants</b>						
PM	7.45E-03	1		0.25		
PM <sub>10</sub>	7.45E-03	1		0.25		
PM <sub>2.5</sub>	7.45E-03	1		0.25		
SO <sub>2</sub>		Table 15D:		0.00E+00		
NOx	4.90E-02	2		1.65		
CO	8.24E-02	2		2.77		
VOC	5.39E-03	1		0.18		
Pb	4.90E-07	1		1.65E-05		
<b>Greenhouse Gases</b>						
CO <sub>2</sub>		Table 15D:		3,732		
CH <sub>4</sub>	2.25E-03	1		0.08		
N <sub>2</sub> O	6.27E-04	1		2.11E-02		
CO <sub>2</sub> e		3		3,740		
<b>HAPs/TAPs</b>						
2-Methylnaphthalene	2.35E-08	4		7.90E-07		PAH
3-Methylchloranthrene	1.76E-09	4		5.93E-08		PAH
7,12-Dimethylbenz(a) anthracene	1.57E-08	4		5.27E-07		PAH
Acenaphthene	1.76E-09	4		5.93E-08		PAH
Acenaphthylene	1.76E-09	4		5.93E-08		PAH
Anthracene	2.35E-09	4		7.90E-08		PAH
Arsenic	1.96E-07	5		6.59E-06		
Benz(a)anthracene	1.76E-09	4		5.93E-08		PAH
Benzene	2.06E-06	4		6.91E-05		
Benzo(a)pyrene	1.18E-09	4		3.95E-08		PAH
Benzo(b)fluoranthene	1.76E-09	4		5.93E-08		PAH
Benzo(g,h,i)perylene	1.18E-09	4		3.95E-08		PAH
Benzo(k)fluoranthene	1.76E-09	4		5.93E-08		PAH
Beryllium	1.18E-08	5		3.95E-07		
Cadmium	1.08E-06	5		3.62E-05		
Chromium	1.37E-06	5		4.61E-05		
Chrysene	1.76E-09	4		5.93E-08		PAH
Cobalt	8.24E-08	5		2.77E-06		
Dibenzo(a,h)anthracene	1.18E-09	4		3.95E-08		PAH
Dichlorobenzene	2.06E-06	4		6.91E-05		
Fluoranthene	2.94E-09	4		9.88E-08		PAH
Fluorene	2.75E-09	4		9.22E-08		PAH
Formaldehyde	7.35E-05	4		2.47E-03		
Hexane	1.23E-04	4		4.12E-03		
Indeno(1,2,3-cd)pyrene	1.76E-09	4		5.93E-08		PAH
Lead	4.90E-07	1		1.65E-05		
Manganese	3.73E-07	5		1.25E-05		
Mercury	2.55E-07	5		8.56E-06		
Naphthalene	5.98E-07	4		2.01E-05		PAH
Nickel	2.06E-06	5		6.91E-05		
Phenanthrene	1.67E-08	4		5.60E-07		PAH
Pyrene	4.90E-09	4		1.65E-07		PAH
Selenium	2.35E-08	5		7.90E-07		
Toluene	3.33E-06	4		1.12E-04		
Xylenes	0.00E+00			0.00E+00		
Total PAH	6.85E-07			2.30E-05		
Total HAP	2.03E-04			7.06E-03		
<b>TAPs</b>						
Barium	4.31E-06	5		1.45E-04		
Copper	8.33E-07	5		2.80E-05		
Zinc	2.84E-05	5		9.55E-04		

**Reference:**

1. AP 42 Table 1.4-2
2. AP 42 Table 1.4-1
3. 40 CFR 98 Subpart A, Table A-1.
4. AP-42 Table 1.4-3
5. AP-42 Table 1.4-4

**Table 15: Thermal Oxidizer A & B - Hourly Emissions for Each Unit  
Z-07002 A&B**

**Table 15F: Thermal Oxidizer Total Emissions**

Annual Operating Schedule (hr) 8,760

	Proposed Emission Rates		
	Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)
<b>Criteria Pollutants</b>			
PM		0.25	
PM <sub>10</sub>		0.25	
PM <sub>2.5</sub>		0.25	
SO <sub>2</sub>		9.92	
NOx		1.65	
CO		2.77	
VOC		1.14	
Pb		1.65E-05	
<b>Greenhouse Gases</b>			
CO <sub>2</sub>		167,581	
CH <sub>4</sub>		0.08	
N <sub>2</sub> O		2.11E-02	
CO <sub>2</sub> e		167,589	
<b>Hazardous Air Pollutants</b>			
2-Methylnaphthalene		7.90E-07	
3-Methylchloranthrene		5.93E-08	
7,12-Dimethylbenz(a) anthracene		5.27E-07	
Acenaphthene		5.93E-08	
Acenaphthylene		5.93E-08	
Anthracene		7.90E-08	
Arsenic		6.59E-06	
Benz(a)anthracene		5.93E-08	
Benzene		8.08E-02	
Benzo(a)pyrene		3.95E-08	
Benzo(b)fluoranthene		5.93E-08	
Benzo(g,h,i)perylene		3.95E-08	
Benzo(k)fluoranthene		5.93E-08	
Beryllium		3.95E-07	
Cadmium		3.62E-05	
Chromium		4.61E-05	
Chrysene		5.93E-08	
Cobalt		2.77E-06	
Dibenzo(a,h)anthracene		3.95E-08	
Dichlorobenzene		6.91E-05	
Fluoranthene		9.88E-08	
Fluorene		9.22E-08	
Formaldehyde		2.47E-03	
Hexane		4.12E-03	
Indeno(1,2,3-cd)pyrene		5.93E-08	
Lead		1.65E-05	
Manganese		1.25E-05	
Mercury		8.56E-06	
Naphthalene		2.01E-05	
Nickel		6.91E-05	
Phenanthrene		5.60E-07	
Pyrene		1.65E-07	
Selenium		7.90E-07	
Toluene		4.35E-02	
Xylenes		1.22E-02	
Total PAH		2.30E-05	
Total HAP		1.43E-01	
<b>Toxic Air Pollutants</b>			
Barium		1.45E-04	
Copper		2.80E-05	
Zinc		9.55E-04	
Hydrogen sulfide		1.66E-03	



**Table 16: Thermal Oxidizer A - Annual Emissions  
Z-07002 A**

Stack Height (ft)	85	Exhaust Flow (acfm)	124,098
Stack Discharge Area (ft <sup>2</sup> )	33.2	Exhaust Temp (°F)	1,500
Load	100%	Exhaust Velocity (fps)	62.3

**Table 16A: Gas and Fuel Gas Throughputs**

Parameter (Two thermal oxidizers)	Acid Gas	Low Pressure Gas	Low Pressure Fuel Gas
Throughput (lb/hr)	128,276	1,407	2,887
Throughput (scf/hr)	1,122,762	29,170	26,078

**Table 16B: Acid Gas and Low Pressure Gas Composition, Heating Value, and Destruction**

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction		Throughput (lb/hr)		DRE	Not Destroyed (lb/hr)
			Acid Gas	Low Pressure Gas	Acid Gas	Low Pressure Gas		
Nitrogen	28.01		0.0003%	0.1956%	0.25	4.21		4.46
CO <sub>2</sub>	44.01		96.7872%	3.0190%	1.26E+05	102.18		1.26E+05
Hydrogen sulfide	34.08	6,537	0.0010%	0.0007%	1.01	1.83E-02	99.9%	1.03E-03
Methane	16.04	23,875	0.4721%	89.3592%	224.15	1,102.29	99.9%	1.33
Ethane	30.07	22,323	0.0433%	4.6445%	38.54	107.41	99.9%	0.15
Propane	44.10	19,937	0.0110%	1.1806%	14.36	40.04	99.9%	5.44E-02
i-Butane	58.12	19,629	0.0043%	0.3168%	7.40	14.16	99.9%	2.16E-02
n-Butane	58.12	19,679	0.0019%	0.1872%	3.27	8.37	99.9%	1.16E-02
i-Pentane	72.15	19,459	0.0908%	0.2441%	193.92	13.54	99.9%	0.21
n-Pentane	72.15	19,507	0.0005%	0.0442%	1.07	2.45	99.9%	3.52E-03
M-cyclopentane	84.16	20,607 <sup>3</sup>	0.0000%	0.0000%	-	-		-
i-Hexane	86.18	19,415	0.0651%	0.0538%				
n-Hexane	86.18	19,415	0.0001%	0.0102%	0.26	0.68	99.9%	9.31E-04
n-Heptane	100.21	16,280	0.0706%	0.0241%				
Benzene	78.11	17,451	0.0278%	0.0173%	64.28	1.04	99.9%	6.53E-02
Toluene	92.14	18,501	0.0127%	0.0068%	34.64	0.48	99.9%	3.51E-02
m-Xylene	106.17	18,633			-	-	99.9%	-
Xylenes	106.17	18,633	0.0031%	0.0016%	9.74	0.13	99.9%	9.87E-03
Helium	4.00		0.0000%	0.0000%	-	-		-
n-Octane	114.23	19,550 <sup>2</sup>	0.1080%	0.0101%	365.18		99.9%	0.37
Oxygen	32.00		0.0000%	0.0007%	-	1.72E-02	99.9%	1.72E-05
Hydrogen	2.02	61,095 <sup>2</sup>	0.0000%	0.0000%	-	-		-
M-Mercaptan	48.11	7,262	0.0022%	0.0012%	3.13	4.44E-02	99.9%	3.18E-03
H <sub>2</sub> O	18.02		2.2975%	0.6754%	1,225.51	9.36		1,235
Cyclohexane	84.16	20,199 <sup>2</sup>	0.0005%	0.0069%	1.25	0.45	99.9%	1.69E-03
Ethylbenzene	106.17	18,657 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Nonane	128.20	20,700 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Decane	142.29	20,640 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
VOC								0.78
<b>Total</b>			100.0000%	100.0000%	128,276	1,407		

Acid Gas MW = 43.46 lb/lb-mole      LP Gas MW = 18.38 lb/lb-mole  
 Acid Gas HHV = 22.6 Btu/scf      LP Gas HHV = 1,104 Btu/scf  
 Acid Gas HHV = 197 Btu/lb      LP Gas HHV = 22,786 Btu/lb

1. *Steam, Its Generation and Use*, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>

Table 16: Thermal Oxidizer A - Annual Emissions

Z-07002 A

Table 16C: Acid Gas and Low Pressure Gas Oxidation Products  
(One Thermal Oxidizer)

	lb/lb <sup>1</sup>		Acid Gas (lb/hr)		LP Gas (lb/hr)		Total Gas (lb/hr)	
	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen			-	-	-	-	-	-
CO <sub>2</sub>			1.26E+05	-	102.18	-	1.26E+05	-
Hydrogen sulfide		1.880	-	1.89	-	3.45E-02	-	1.93
Methane	2.743		614.23	-	3,020.57	-	3,634.80	-
Ethane	2.927		112.70	-	314.06	-	426.76	-
Propane	2.994		42.95	-	119.76	-	162.71	-
i-Butane	3.029		22.39	-	42.85	-	65.23	-
n-Butane	3.029		9.89	-	25.32	-	35.21	-
i-Pentane	3.050		590.87	-	41.27	-	632.14	-
n-Pentane	3.050		3.25	-	7.47	-	10.73	-
M-cyclopentane	3.138 <sup>2</sup>		-	-	-	-	-	-
n-Hexane	3.064		0.78	-	2.07	-	2.85	-
Benzene	3.380		217.04	-	3.51	-	220.55	-
Toluene	3.343		115.68	-	1.61	-	117.29	-
m-Xylene	3.316		-	-	-	-	-	-
Xylenes	3.316		32.27	-	0.43	-	32.71	-
Helium			-	-	-	-	-	-
n-Octane	3.082 <sup>2</sup>		1,124.44	-	-	-	1,124.44	-
Oxygen			-	-	-	-	-	-
Hydrogen			-	-	-	-	-	-
M-Mercaptan	0.915 <sup>2</sup>	1.332 <sup>2</sup>	2.86	4.17	4.06E-02	5.91E-02	2.90	4.23
H <sub>2</sub> O			-	-	-	-	-	-
Cyclohexane	3.527 <sup>2</sup>		4.39	-	1.57	-	5.96	-
Ethylbenzene	3.138 <sup>2</sup>		-	-	-	-	-	-
n-Nonane	3.090 <sup>2</sup>		-	-	-	-	-	-
n-Decane	3.093 <sup>2</sup>		-	-	-	-	-	-
<b>Total</b>			<b>128,982</b>	<b>6.06</b>	<b>3,683</b>	<b>0.09</b>	<b>132,665</b>	<b>6.16</b>

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. Mass balance

Table 16D: LP Fuel Gas Composition and Properties

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction	Through put (lb/hr)	lb/lb <sup>1</sup>		lb/hr	
					CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen	28.01		4.5581%	87.78				
CO <sub>2</sub>	44.01		0.0001%	0.00				
Hydrogen sulfide	34.08	6,537				1.880		
Methane	16.04	23,875	95.4294%	1,052	2.743		2,886.71	
Ethane	30.07	22,323	0.0082%	0.17	2.927		0.50	
Propane	44.10	19,937			2.994			
i-Butane	58.12	19,629			3.029			
n-Butane	58.12	19,679			3.029			
i-Pentane	72.15	19,459			3.050			
n-Pentane	72.15	19,507			3.050			
M-cyclopentane	84.16	20,607			3.138			
i-Hexane	86.18	19,415			3.064			
n-Hexane	86.18	19,415			3.064			
n-Heptane	100.21	16,280			3.074			
Benzene	78.11	17,451			3.380			
Toluene	92.14	18,501			3.343			
m-Xylene	106.17	18,633			3.316			
Xylenes	106.17	18,633			3.316			
Helium	4.00							
n-Octane	114.23	19,550 <sup>2</sup>			3.082			
Oxygen	32.00		0.0042%	0.09				
Hydrogen	2.02	61,095 <sup>2</sup>						
M-Mercaptan	48.11	7,262			0.915	1.332		
H <sub>2</sub> O	18.02							
Cyclohexane	84.16	20,199 <sup>2</sup>			3.138			
Ethylbenzene	106.17	18,657 <sup>2</sup>			3.316			
n-Nonane	128.20	20,700 <sup>2</sup>			3.090			
n-Decane	142.29	20,640 <sup>2</sup>			3.093			
<b>Total</b>			<b>100.0000%</b>	<b>1,140</b>		<b>3.21</b>	<b>2,887</b>	

LP Fuel Gas MW = 16.59 lb/lb-mole

LP Fuel Gas HHV = 996 Btu/scf

LP Fuel Gas HHV = 22,786 Btu/lb

1. Steam, Its Generation and Use, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>



**Table 16: Thermal Oxidizer A - Annual Emissions  
Z-07002 A**

**Table 16E: LP Fuel Gas Combustion Emissions**

Annual Operating Schedule (hr) 8,760 Fuel Gas Combustion (MMBtu/hr) 26.0

	Emission Factor lb/MMBtu	Ref	Proposed Emission Rates			Note
			Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)	
<b>Criteria Pollutants</b>						
PM	7.45E-03	1	0.19		0.85	
PM <sub>10</sub>	7.45E-03	1	0.19		0.85	
PM <sub>2.5</sub>	7.45E-03	1	0.19		0.85	
SO <sub>2</sub>		Table 16D:	0.00E+00		-	
NOx	4.90E-02	2	1.27		5.58	
CO	8.24E-02	2	2.14		9.37	
VOC	5.39E-03	1	0.14		0.61	
Pb	4.90E-07	5	1.27E-05		8.21E-04	
<b>Greenhouse Gases</b>						
CO <sub>2</sub>		Table 16D:	2,887		12,646	
CH <sub>4</sub>	2.25E-03	2	0.06		0.26	
N <sub>2</sub> O	6.27E-04	2	1.63E-02		0.07	
CO <sub>2</sub> e		3	2,894		12,674	
<b>HAPs/TAPs</b>						
2-Methylnaphthalene	2.35E-08	4	6.11E-07		2.68E-06	PAH
3-Methylchloranthrene	1.76E-09	4	4.59E-08		2.01E-07	PAH
7,12-Dimethylbenz(a) anthracene	1.57E-08	4	4.08E-07		1.79E-06	PAH
Acenaphthene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Acenaphthylene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Anthracene	2.35E-09	4	6.11E-08		2.68E-07	PAH
Arsenic	1.96E-07	5	5.10E-06		2.23E-05	
Benz(a)anthracene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Benzene	2.06E-06	4	5.35E-05		2.34E-04	
Benzo(a)pyrene	1.18E-09	4	3.06E-08		1.34E-07	PAH
Benzo(b)fluoranthene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Benzo(g,h,i)perylene	1.18E-09	4	3.06E-08		1.34E-07	PAH
Benzo(k)fluoranthene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Beryllium	1.18E-08	5	3.06E-07		1.34E-06	
Cadmium	1.08E-06	5	2.80E-05		1.23E-04	
Chromium	1.37E-06	5	3.57E-05		1.56E-04	
Chrysene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Cobalt	8.24E-08	5	2.14E-06		9.37E-06	
Dibenzo(a,h)anthracene	1.18E-09	4	3.06E-08		1.34E-07	PAH
Dichlorobenzene	2.06E-06	4	5.35E-05		2.34E-04	
Fluoranthene	2.94E-09	4	7.64E-08		3.35E-07	PAH
Fluorene	2.75E-09	4	7.13E-08		3.12E-07	PAH
Formaldehyde	7.35E-05	4	1.91E-03		8.37E-03	
Hexane	1.23E-04	4	3.18E-03		1.39E-02	
Indeno(1,2,3-cd)pyrene	1.76E-09	4	4.59E-08		2.01E-07	PAH
Lead	4.90E-07	5	1.27E-05		5.58E-05	
Manganese	3.73E-07	5	9.68E-06		4.24E-05	
Mercury	2.55E-07	5	6.62E-06		2.90E-05	
Naphthalene	5.98E-07	4	1.55E-05		6.81E-05	PAH
Nickel	2.06E-06	5	5.35E-05		2.34E-04	
Phenanthrene	1.67E-08	4	4.33E-07		1.90E-06	PAH
Pyrene	4.90E-09	4	1.27E-07		5.58E-07	PAH
Selenium	2.35E-08	5	6.11E-07		2.68E-06	
Toluene	3.33E-06	4	8.66E-05		3.79E-04	
Vanadium	2.25E-06	5	5.86E-05		2.57E-04	
Xylenes	0.00E+00		0.00E+00		0.00E+00	
Total PAH	6.85E-07		1.78E-05		7.79E-05	
Total HAP	2.03E-04		5.52E-03		2.42E-02	
<b>TAPs</b>						
Barium	4.31E-06	5	1.12E-04		4.91E-04	
Copper	8.33E-07	5	2.17E-05		9.48E-05	
Zinc	2.84E-05	5	7.39E-04		3.24E-03	

**Reference:**

1. AP 42 Table 1.4-2
2. AP 42 Table 1.4-1
3. 40 CFR 98 Subpart A, Table A-1.
4. AP-42 Table 1.4-3
5. AP-42 Table 1.4-4

**Table 16: Thermal Oxidizer A - Annual Emissions**  
**Z-07002 A**

**Table 16F: Thermal Oxidizer Total Emissions**  
Annual Operating Schedule (hr) 8,760

	Proposed Emission Rates		
	Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)
<b>Criteria Pollutants</b>			
PM	0.19		0.85
PM <sub>10</sub>	0.19		0.85
PM <sub>2.5</sub>	0.19		0.85
SO <sub>2</sub>	6.16		26.96
NOx	1.27		5.58
CO	2.14		9.37
VOC	0.92		4.03
Pb	1.27E-05		5.58E-05
<b>Greenhouse Gases</b>			
CO <sub>2</sub>	135,552		593,717
CH <sub>4</sub>	0.06		0.26
N <sub>2</sub> O	1.63E-02		0.07
CO <sub>2</sub> e	135,558		593,745
<b>Hazardous Air Pollutants</b>			
2-Methylnaphthalene	6.11E-07		2.68E-06
3-Methylchloranthrene	4.59E-08		2.01E-07
7,12-Dimethylbenz(a) anthracene	4.08E-07		1.79E-06
Acenaphthene	4.59E-08		2.01E-07
Acenaphthylene	4.59E-08		2.01E-07
Anthracene	6.11E-08		2.68E-07
Arsenic	5.10E-06		2.23E-05
Benz(a)anthracene	4.59E-08		2.01E-07
Benzene	6.54E-02		2.86E-01
Benzo(a)pyrene	3.06E-08		1.34E-07
Benzo(b)fluoranthene	4.59E-08		2.01E-07
Benzo(g,h,i)perylene	3.06E-08		1.34E-07
Benzo(k)fluoranthene	4.59E-08		2.01E-07
Beryllium	3.06E-07		1.34E-06
Cadmium	2.80E-05		1.23E-04
Chromium	3.57E-05		1.56E-04
Chrysene	4.59E-08		2.01E-07
Cobalt	2.14E-06		9.37E-06
Dibenzo(a,h)anthracene	3.06E-08		1.34E-07
Dichlorobenzene	5.35E-05		2.34E-04
Fluoranthene	7.64E-08		3.35E-07
Fluorene	7.13E-08		3.12E-07
Formaldehyde	1.91E-03		8.37E-03
Hexane	3.18E-03		1.39E-02
Indeno(1,2,3-cd)pyrene	4.59E-08		2.01E-07
Lead	1.27E-05		5.58E-05
Manganese	9.68E-06		4.24E-05
Mercury	6.62E-06		2.90E-05
Naphthalene	1.55E-05		6.81E-05
Nickel	5.35E-05		2.34E-04
Phenanthrene	4.33E-07		1.90E-06
Pyrene	1.27E-07		5.58E-07
Selenium	6.11E-07		2.68E-06
Toluene	3.52E-02		1.54E-01
Xylenes	9.87E-03		4.32E-02
Total PAH	1.78E-05		7.79E-05
Total HAP	1.16E-01		5.07E-01
<b>Toxic Air Pollutants</b>			
Barium	1.12E-04		5.65E-04
Copper	2.17E-05		1.09E-04
Zinc	7.39E-04		3.72E-03
Hydrogen sulfide	1.03E-03		6.75E-03



**Table 17: Thermal Oxidizer B - Annual Emissions  
Z-07002 B**

Stack Height (ft)	85	Exhaust Flow (acfm)	31,025
Stack Discharge Area (ft <sup>2</sup> )	33.2	Exhaust Temp (°F)	1,500
Load	25%	Exhaust Velocity (fps)	15.6

**Table 17A: Gas and Fuel Gas Throughputs**

Parameter (Two thermal oxidizers)	Acid Gas	Low Pressure Gas	Low Pressure Fuel Gas
Throughput (lb/hr)	32,069	352	722
Throughput (scf/hr)	280,691	7,293	6,520

**Table 17B: Acid Gas and Low Pressure Gas Composition, Heating Value, and Destruction**

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction		Throughput (lb/hr)		DRE	Not Destroyed (lb/hr)
			Acid Gas	Low Pressure Gas	Acid Gas	Low Pressure Gas		
Nitrogen	28.01		0.0003%	0.1956%	6.22E-02	1.05		1.12
CO <sub>2</sub>	44.01		96.7872%	3.0190%	3.15E+04	25.55		3.15E+04
Hydrogen sulfide	34.08	6,537	0.0010%	0.0007%	0.25	4.59E-03	99.9%	2.57E-04
Methane	16.04	23,875	0.4721%	89.3592%	56.04	275.57	99.9%	0.33
Ethane	30.07	22,323	0.0433%	4.6445%	9.64	26.85	99.9%	3.65E-02
Propane	44.10	19,937	0.0110%	1.1806%	3.59	10.01	99.9%	1.36E-02
i-Butane	58.12	19,629	0.0043%	0.3168%	1.85	3.54	99.9%	5.39E-03
n-Butane	58.12	19,679	0.0019%	0.1872%	0.82	2.09	99.9%	2.91E-03
i-Pentane	72.15	19,459	0.0908%	0.2441%	48.48	3.39	99.9%	5.19E-02
n-Pentane	72.15	19,507	0.0005%	0.0442%	0.27	0.61	99.9%	8.80E-04
M-cyclopentane	84.16	20,607 <sup>3</sup>	0.0000%	0.0000%	-	-		-
i-Hexane	86.18	19,415	0.0651%	0.0538%				
n-Hexane	86.18	19,415	0.0001%	0.0102%	6.38E-02	0.17	99.9%	2.33E-04
n-Heptane	100.21	16,280	0.0706%	0.0241%				
Benzene	78.11	17,451	0.0278%	0.0173%	16.07	0.26	99.9%	1.63E-02
Toluene	92.14	18,501	0.0127%	0.0068%	8.66	0.12	99.9%	8.78E-03
m-Xylene	106.17	18,633			-	-	99.9%	-
Xylenes	106.17	18,633	0.0031%	0.0016%	2.44	3.27E-02	99.9%	2.47E-03
Helium	4.00		0.0000%	0.0000%	-	-		-
n-Octane	114.23	19,550 <sup>2</sup>	0.1080%	0.0101%	91.30		99.9%	9.13E-02
Oxygen	32.00		0.0000%	0.0007%	-	4.31E-03	99.9%	4.31E-06
Hydrogen	2.02	61,095 <sup>2</sup>	0.0000%	0.0000%	-	-		-
M-Mercaptan	48.11	7,262	0.0022%	0.0012%	0.78	1.11E-02	99.9%	7.94E-04
H <sub>2</sub> O	18.02		2.2975%	0.6754%	306.38	2.34		309
Cyclohexane	84.16	20,199 <sup>2</sup>	0.0005%	0.0069%	0.31	0.11	99.9%	4.23E-04
Ethylbenzene	106.17	18,657 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Nonane	128.20	20,700 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
n-Decane	142.29	20,640 <sup>2</sup>	0.0000%	0.0000%	-	-	99.9%	-
VOC								0.19
<b>Total</b>			100.0000%	100.0000%	32,069	3.517E+2		

Acid Gas MW = 43.46 lb/lb-mole

Acid Gas HHV = 22.6 Btu/scf

Acid Gas HHV = 197 Btu/lb

LP Gas MW = 18.38 lb/lb-mole

LP Gas HHV = 1,104 Btu/scf

LP Gas HHV = 22,786 Btu/lb

1. *Steam, Its Generation and Use*, 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.

2. <https://www.enggcyclopedia.com/2011/09/heating-values-natural-gas/>



**Table 17: Thermal Oxidizer B - Annual Emissions**

**Z-07002 B**

**Table 17C: Acid Gas and Low Pressure Gas Oxidation Products  
(One Thermal Oxidizer)**

	lb/lb <sup>1</sup>		Acid Gas (lb/hr)		LP Gas (lb/hr)		Total Gas (lb/hr)	
	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen			-	-	-	-	-	-
CO <sub>2</sub>			3.15E+04	-	25.55	-	3.15E+04	-
Hydrogen sulfide		1.880	-	0.47	-	8.61E-03	-	0.48
Methane	2.743		153.56	-	755.14	-	908.70	-
Ethane	2.927		28.17	-	78.52	-	106.69	-
Propane	2.994		10.74	-	29.94	-	40.68	-
i-Butane	3.029		5.60	-	10.71	-	16.31	-
n-Butane	3.029		2.47	-	6.33	-	8.80	-
i-Pentane	3.050		147.72	-	10.32	-	158.03	-
n-Pentane	3.050		0.81	-	1.87	-	2.68	-
M-cyclopentane	3.138 <sup>2</sup>		-	-	-	-	-	-
n-Hexane	3.064		0.20	-	0.52	-	0.71	-
Benzene	3.380		54.26	-	0.88	-	55.14	-
Toluene	3.343		28.92	-	0.40	-	29.32	-
Xylenes	3.316		8.07	-	0.11	-	8.18	-
M-Mercaptan	0.915 <sup>2</sup>	1.332 <sup>2</sup>	0.72	1.04	1.01E-02	1.48E-02	0.73	1.06
Cyclohexane	3.527 <sup>2</sup>		1.10	-	0.39	-	1.49	-
n-Nonane	3.090 <sup>2</sup>		-	-	-	-	-	-
n-Decane	3.093 <sup>2</sup>		-	-	-	-	-	-
<b>Total</b>			<b>32,245</b>	<b>1.52</b>	<b>921</b>	<b>0.02</b>	<b>33,166</b>	<b>1.54</b>

1. Steam, Its Generation and Use , 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. Mass balance

**Table 17D: LP Fuel Gas Composition and Properties**

Component	MW (lb/lb-mole)	Higher Heating Value (Btu/lb) <sup>1</sup>	Mole Fraction	Through put (lb/hr)	lb/lb <sup>1</sup>		lb/hr	
					CO <sub>2</sub>	SO <sub>2</sub>	CO <sub>2</sub>	SO <sub>2</sub>
Nitrogen	28.01		4.5581%	21.94				
CO <sub>2</sub>	44.01		0.0001%	0.00				
Hydrogen sulfide	34.08	6,537				1.880		
Methane	16.04	23,875	95.4294%	263.10	2.743		721.68	
Ethane	30.07	22,323	0.0082%	0.04	2.927		0.12	
Propane	44.10	19,937			2.994			
i-Butane	58.12	19,629			3.029			
n-Butane	58.12	19,679			3.029			
i-Pentane	72.15	19,459			3.050			
n-Pentane	72.15	19,507			3.050			
M-cyclopentane	84.16	20,607			3.138			
i-Hexane	86.18	19,415			3.064			
n-Hexane	86.18	19,415			3.064			
n-Heptane	100.21	16,280			3.074			
Benzene	78.11	17,451			3.380			
Toluene	92.14	18,501			3.343			
m-Xylene	106.17	18,633			3.316			
Xylenes	106.17	18,633			3.316			
Helium	4.00							
n-Octane	114.23	19,550 <sup>2</sup>			3.082			
Oxygen	32.00		0.0042%	0.02				
Hydrogen	2.02	61,095 <sup>2</sup>						
M-Mercaptan	48.11	7,262			0.915	1.332		
H <sub>2</sub> O	18.02							
Cyclohexane	84.16	20,199 <sup>2</sup>			3.138			
Ethylbenzene	106.17	18,657 <sup>2</sup>			3.316			
n-Nonane	128.20	20,700 <sup>2</sup>			3.090			
n-Decane	142.29	20,640 <sup>2</sup>			3.093			
<b>Total</b>			<b>100.0000%</b>	<b>285</b>		<b>3.21</b>	<b>722</b>	

LP Fuel Gas MW = 16.59 lb/lb-mole

LP Fuel Gas HHV = 996 Btu/scf

LP Fuel Gas HHV = 22,786 Btu/lb

1. Steam, Its Generation and Use , 40<sup>th</sup> Edition, Babcock & Wilcox, page 9-2, except as noted.
2. <https://www.encyclopedia.com/2011/09/heating-values-natural-gas/>



**Table 17: Thermal Oxidizer B - Annual Emissions  
Z-07002 B**

Table 17E: LP Fuel Gas Combustion Emissions						
Annual Operating Schedule (hr)		8,760	Fuel Gas Combustion (MMBtu/hr)		6.5	
	Emission Factor lb/MMBtu	Ref	Proposed Emission Rates			Note
			Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)	
<b>Criteria Pollutants</b>						
PM	7.45E-03	1	0.05		0.21	
PM <sub>10</sub>	7.45E-03	1	0.05		0.21	
PM <sub>2.5</sub>	7.45E-03	1	0.05		0.21	
SO <sub>2</sub>		Table 17D:	0.00E+00		-	
NOx	4.90E-02	2	0.32		1.39	
CO	8.24E-02	2	0.53		2.34	
VOC	5.39E-03	1	0.04		0.15	
Pb	4.90E-07	5	3.18E-06		5.13E-05	
<b>Greenhouse Gases</b>						
CO <sub>2</sub>		Table 17D:	722		3,161	
CH <sub>4</sub>	2.25E-03	2	0.01		0.06	
N <sub>2</sub> O	6.27E-04	2	4.08E-03		0.02	
CO <sub>2</sub> e		3	723		3,168	
<b>HAPs/TAPs</b>						
2-Methylnaphthalene	2.35E-08	4	1.53E-07		6.70E-07	PAH
3-Methylchloranthrene	1.76E-09	4	1.15E-08		5.02E-08	PAH
7,12-Dimethylbenz(a) anthracene	1.57E-08	4	1.02E-07		4.46E-07	PAH
Acenaphthene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Acenaphthylene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Anthracene	2.35E-09	4	1.53E-08		6.70E-08	PAH
Arsenic	1.96E-07	5	1.27E-06		5.58E-06	
Benz(a)anthracene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Benzene	2.06E-06	4	1.34E-05		5.86E-05	
Benzo(a)pyrene	1.18E-09	4	7.64E-09		3.35E-08	PAH
Benzo(b)fluoranthene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Benzo(g,h,i)perylene	1.18E-09	4	7.64E-09		3.35E-08	PAH
Benzo(k)fluoranthene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Beryllium	1.18E-08	5	7.64E-08		3.35E-07	
Cadmium	1.08E-06	5	7.01E-06		3.07E-05	
Chromium	1.37E-06	5	8.92E-06		3.91E-05	
Chrysene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Cobalt	8.24E-08	5	5.35E-07		2.34E-06	
Dibenzo(a,h)anthracene	1.18E-09	4	7.64E-09		3.35E-08	PAH
Dichlorobenzene	2.06E-06	4	1.34E-05		5.86E-05	
Fluoranthene	2.94E-09	4	1.91E-08		8.37E-08	PAH
Fluorene	2.75E-09	4	1.78E-08		7.81E-08	PAH
Formaldehyde	7.35E-05	4	4.78E-04		2.09E-03	
Hexane	1.23E-04	4	7.96E-04		3.49E-03	
Indeno(1,2,3-cd)pyrene	1.76E-09	4	1.15E-08		5.02E-08	PAH
Lead	4.90E-07	5	3.18E-06		1.39E-05	
Manganese	3.73E-07	5	2.42E-06		1.06E-05	
Mercury	2.55E-07	5	1.66E-06		7.25E-06	
Naphthalene	5.98E-07	4	3.89E-06		1.70E-05	PAH
Nickel	2.06E-06	5	1.34E-05		5.86E-05	
Phenanathrene	1.67E-08	4	1.08E-07		4.74E-07	PAH
Pyrene	4.90E-09	4	3.18E-08		1.39E-07	PAH
Selenium	2.35E-08	5	1.53E-07		6.70E-07	
Toluene	3.33E-06	4	2.17E-05		9.48E-05	
Vanadium	2.25E-06	5	1.46E-05		6.42E-05	
Xylenes	0.00E+00		0.00E+00		0.00E+00	
Total PAH	6.85E-07		4.45E-06		1.95E-05	
Total HAP	2.03E-04		1.38E-03		6.04E-03	
<b>TAPs</b>						
Barium	4.31E-06	5	2.80E-05		1.23E-04	
Copper	8.33E-07	5	5.41E-06		2.37E-05	
Zinc	8.33E-07	5	5.41E-06		2.37E-05	

**Reference:**

1. AP 42 Table 1.4-2
2. AP 42 Table 1.4-1
3. 40 CFR 98 Subpart A, Table A-1.
4. AP-42 Table 1.4-3
5. AP-42 Table 1.4-4

**Table 17: Thermal Oxidizer B - Annual Emissions**  
**Z-07002 B**

**Table 17F: Thermal Oxidizer Total Emissions**

Annual Operating Schedule (hr) 8,760

	Proposed Emission Rates		
	Hourly Average (lb/hr)	Hourly Maximum (lb/hr)	Annual Total (ton/yr)
<b>Criteria Pollutants</b>			
PM	0.05		0.21
PM <sub>10</sub>	0.05		0.21
PM <sub>2.5</sub>	0.05		0.21
SO <sub>2</sub>	1.54		6.74
NOx	0.32		1.39
CO	0.53		2.34
VOC	0.23		1.01
Pb	3.18E-06		1.39E-05
<b>Greenhouse Gases</b>			
CO <sub>2</sub>	33,888		148,429
CH <sub>4</sub>	0.01		0.06
N <sub>2</sub> O	4.08E-03		0.02
CO <sub>2</sub> e	33,890		148,436
<b>Hazardous Air Pollutants</b>			
2-Methylnaphthalene	1.53E-07		6.70E-07
3-Methylchloranthrene	1.15E-08		5.02E-08
7,12-Dimethylbenz(a) anthracene	1.02E-07		4.46E-07
Acenaphthene	1.15E-08		5.02E-08
Acenaphthylene	1.15E-08		5.02E-08
Anthracene	1.53E-08		6.70E-08
Arsenic	1.27E-06		5.58E-06
Benz(a)anthracene	1.15E-08		5.02E-08
Benzene	1.63E-02		7.16E-02
Benzo(a)pyrene	7.64E-09		3.35E-08
Benzo(b)fluoranthene	1.15E-08		5.02E-08
Benzo(g,h,i)perylene	7.64E-09		3.35E-08
Benzo(k)fluoranthene	1.15E-08		5.02E-08
Beryllium	7.64E-08		3.35E-07
Cadmium	7.01E-06		3.07E-05
Chromium	8.92E-06		3.91E-05
Chrysene	1.15E-08		5.02E-08
Cobalt	5.35E-07		2.34E-06
Dibenzo(a,h)anthracene	7.64E-09		3.35E-08
Dichlorobenzene	1.34E-05		5.86E-05
Fluoranthene	1.91E-08		8.37E-08
Fluorene	1.78E-08		7.81E-08
Formaldehyde	4.78E-04		2.09E-03
Hexane	7.96E-04		3.49E-03
Indeno(1,2,3-cd)pyrene	1.15E-08		5.02E-08
Lead	3.18E-06		1.39E-05
Manganese	2.42E-06		1.06E-05
Mercury	1.66E-06		7.25E-06
Naphthalene	3.89E-06		1.70E-05
Nickel	1.34E-05		5.86E-05
Phenanthrene	1.08E-07		4.74E-07
Pyrene	3.18E-08		1.39E-07
Selenium	1.53E-07		6.70E-07
Toluene	8.80E-03		3.86E-02
Xylenes	2.47E-03		1.08E-02
Total PAH	4.45E-06		1.95E-05
Total HAP	2.89E-02		1.27E-01
<b>Toxic Air Pollutants</b>			
Barium	2.80E-05		1.41E-04
Copper	5.41E-06		2.73E-05
Zinc	5.41E-06		2.73E-05
Hydrogen sulfide	2.57E-04		1.69E-03



**Table 18: Thermal Oxidizer Annual Cap  
Z-07002 A&B**

	Proposed Emission Rates	
	Annual Average (lb/hr)	Annual Total (ton/yr)
<b>Criteria Pollutants</b>		
PM	0.24	1.06
PM <sub>10</sub>	0.24	1.06
PM <sub>2.5</sub>	0.24	1.06
SO <sub>2</sub>	7.70	33.70
NOx	1.59	6.97
CO	2.67	11.72
VOC	1.15	5.04
Pb	1.59E-05	6.97E-05
<b>Greenhouse Gases</b>		
CO <sub>2</sub>	169,439.73	742,146
CH <sub>4</sub>	0.07	0.32
N <sub>2</sub> O	0.02	0.09
CO <sub>2</sub> e	169,447.64	742,181
<b>HAPs/TAPs</b>		
2-Methylnaphthalene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
3-Methylchloranthrene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
7,12-Dimethylbenz(a) anthracene	5.10E-07 <sup>(1)</sup>	2.23E-06 <sup>(1)</sup>
Acenaphthene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Acenaphthylene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Anthracene	7.64E-08 <sup>(1)</sup>	3.35E-07 <sup>(1)</sup>
Arsenic	6.37E-06	2.79E-05
Benz(a)anthracene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Benzene	8.17E-02	3.58E-01
Benzo(a)pyrene	3.82E-08 <sup>(1)</sup>	1.67E-07 <sup>(1)</sup>
Benzo(b)fluoranthene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Benzo(g,h,i)perylene	3.82E-08 <sup>(1)</sup>	1.67E-07 <sup>(1)</sup>
Benzo(k)fluoranthene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Beryllium	3.82E-07	1.57E-06
Cadmium	3.50E-05	1.53E-04
Chromium	4.46E-05	1.95E-04
Chrysene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Cobalt	2.67E-06	1.17E-05
Dibenzo(a,h)anthracene	3.82E-08 <sup>(1)</sup>	1.67E-07 <sup>(1)</sup>
Dichlorobenzene	6.69E-05	2.93E-04
Fluoranthene	9.55E-08 <sup>(1)</sup>	4.18E-07 <sup>(1)</sup>
Fluorene	8.92E-08 <sup>(1)</sup>	3.91E-07 <sup>(1)</sup>
Formaldehyde	2.39E-03	1.05E-02
Hexane	3.98E-03	1.74E-02
Indeno(1,2,3-cd)pyrene	5.73E-08 <sup>(1)</sup>	2.51E-07 <sup>(1)</sup>
Lead	1.59E-05	6.97E-05
Manganese	1.21E-05	5.30E-05
Mercury	8.28E-06	3.53E-05
Naphthalene	1.94E-05 <sup>(1)</sup>	8.51E-05 <sup>(1)</sup>
Nickel	6.69E-05	2.93E-04
Phenanathrene	5.41E-07 <sup>(1)</sup>	2.37E-06 <sup>(1)</sup>
Pyrene	1.59E-07 <sup>(1)</sup>	6.97E-07 <sup>(1)</sup>
Selenium	7.64E-07	3.35E-06
Toluene	4.40E-02	1.93E-01
Xylenes	1.23E-02	5.41E-02
Total PAH	2.22E-05	9.74E-05
Total HAP	1.45E-01	6.34E-01
<b>TAPs</b>		
Barium	1.61E-04	7.06E-04
Copper	3.11E-05	1.36E-04
Zinc	8.56E-04	3.75E-03
Hydrogen sulfide	1.93E-03	8.44E-03

1. Included in Total HAP

Table 19: Equipment Leaks

Service	Component	Component Count	TOC Emission Factor (kg/hr/source)	VOC Content (wt. percent)	CH <sub>4</sub> Content (wt. percent)	Hourly VOC Emissions (lb/hr)	Hourly CH <sub>4</sub> Emission Rate (lb/hr)	Annual VOC Emissions (ton/yr)	Annual CH <sub>4</sub> Emission Rate (ton/yr)
Gas	Valves	1,220	4.50E-3 <sup>(a)</sup>	0%	95%		11.49		50.32
		188	4.50E-3 <sup>(a)</sup>	55%	10%	1.02	0.19	4.49	0.82
		60	4.50E-3 <sup>(a)</sup>	100%	0%	0.59		2.60	
	Compressor / Pump Seals	-	2.28E-1 <sup>(b)</sup>						
	Other	26	8.80E-7 <sup>(a)</sup>	0%	95%		4.79		20.97
		8	8.80E-2 <sup>(a)</sup>	55%	13%	0.85	0.20	3.74	0.88
	Connectors	-	2.00E-4 <sup>(a)</sup>						
	Flanges	12,523	3.90E-4 <sup>(a)</sup>	0%	95%		10.22		44.76
		1,560	3.90E-4 <sup>(a)</sup>	55%	10%	0.74	0.13	3.23	0.59
		609	3.90E-4 <sup>(a)</sup>	100%	0%	0.52		2.29	
Open-ended Lines	-	2.00E-3 <sup>(a)</sup>							
Subtotal	16,194				3.73	27.02	16.35	118.34	
Light Liquid	Valves	196	4.03E-3 <sup>(b)</sup>	1%	95%	1.74E-2	1.65	7.62E-2	7.24
		73	4.03E-3 <sup>(b)</sup>	100%	0%	0.65		2.84	
		135	4.03E-3 <sup>(b)</sup>	85%	15%	1.02	0.18	4.46	0.79
		120	4.03E-3 <sup>(b)</sup>	90%	1%	0.96	1.07E-2	4.20	4.67E-2
	Compressor / Pump Seals	-	1.99E-2 <sup>(b)</sup>						
	Other	-	7.50E-3 <sup>(a)</sup>						
	Connectors	-	1.83E-3 <sup>(b)</sup>						
	Flanges	-	1.10E-4 <sup>(b)</sup>						
	Open-ended Lines	-	1.70E-3 <sup>(b)</sup>						
Subtotal	524				2.64	1.84	11.57	8.07	
Light Oil	Valves	333	2.50E-3 <sup>(a)</sup>	100%	0%	1.83		8.03	
	Compressor / Pump Seals	76	1.30E-2 <sup>(a)</sup>	100%	0%	2.18		9.53	
	Other	-	7.50E-3 <sup>(a)</sup>						
	Connectors	-	2.10E-4 <sup>(a)</sup>						
	Flanges	688	1.10E-4 <sup>(a)</sup>	1%	95%	1.67E-3	0.16	7.30E-3	0.69
		780	1.10E-4 <sup>(a)</sup>	90%	1%	0.17	1.89E-3	0.74	8.28E-3
		2,648	1.10E-4 <sup>(a)</sup>	85%	15%	0.55	9.62E-2	2.39	0.42
		1,476	1.10E-4 <sup>(a)</sup>	100%	0%	0.36		1.57	
		4,746	1.10E-4 <sup>(a)</sup>	100%	0%	1.15		5.04	
	Open-ended Lines	-	1.40E-3 <sup>(a)</sup>						
Subtotal	10,747				6.23	0.26	27.31	1.12	
Total	27,465				12.61	29.12	55.23	127.53	
							CH <sub>4</sub> GWP 25 CO <sub>2</sub> e emissions (tpy) 3,188		

a. Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, United States Environmental Protection Agency, November 1995, Table 2-4

b. Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, United States Environmental Protection Agency, November 1995, Table 2-1



Table 20: Fixed Roof Tanks Emissions Calculation Summary

TANK IDENTIFICATION NUMBER: Material: Emission Point Number: Facility Identification Number:	Mixed Amine Mixed Amine T-4013	Hot Oil Therminol 59 T-4016	Propylene Glycol Propylene Glycol T-4029	Diesel 1 Diesel T-4031	Diesel 3 Diesel T-6003	Diesel Diesel 0.00%	Slop Oil Tank Slop Oil T-04201
<b>I. EMISSIONS SUMMARY</b>							
TOTAL ANNUAL EMISSIONS (TPY):	0.00001	0.009	0.006	0.009	0.0004	0.002	0.000
VOC EMISSIONS (TPY):	0.00001	0.009	0.006	0.009	0.0004	0.002	0.000
NON-VOC EMISSIONS (TPY):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MAXIMUM HOURLY EMISSIONS (lb/hr):	1.26E-04	2.32E-02	2.56E-02	2.70E-01	4.06E-02	2.20E-01	2.13E-03
VOC EMISSIONS (lb/hr):	1.26E-04	2.32E-02	2.56E-02	2.70E-01	4.06E-02	2.20E-01	2.13E-03
NON-VOC EMISSIONS (lb/hr):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
AP-42 Annual Breathing Losses (lb/yr):	3.38E-03	2.46E+00	0.00E+00	2.76E+00	1.23E-01	7.58E-01	1.26E-01
AP-42 Annual Working Losses (lb/yr):	0.02	15.61	11.63	14.44	0.75	4.05	0.16
<b>II. TANK PROPERTIES</b>							
Vapor Control Efficiency (%):	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.0%
Nominal Tank Capacity (gal):	58752.00	94227.00	116329.00	15229.00	752.00	4077.00	29072.00
Tank Diameter (ft):	25.00	27.00	30.00	12.00	4.00	6.50	20.00
Shell Length/Height (ft):	18.00	24.00	24.00	20.00	8.00	18.30	20.00
Tank Shell Color:	White	White	White	White	White	White	White
Tank Roof Color:	White	White	White	White	White	White	White
Paint Condition:	New	New	New	New	New	New	New
Tank Orientation:	Vertical	Vertical	Vertical	Vertical	Horizontal	Horizontal	Vertical
Tank Insulation:	Not Insulated	Not Insulated	Not Insulated	Not Insulated	Not Insulated	Not Insulated	Not Insulated
Tank Pressure Vent Setting (psig):	0.07	0.08	0.51	0.03	0.03	0.03	0.03
Tank Vacuum Vent Setting (psig):	-0.07	-0.04	-0.07	-0.03	-0.03	-0.03	-0.03
<b>III. MATERIAL PROPERTIES</b>							
Vapor Pressure @ Avg. Daily Liquid Temp. (psia):	0.00	0.00	0.00	0.01	0.01	0.01	0.00
Vapor Pressure @ Avg. Daily Max. Surface Liq. Temp. (psia):	0.00	0.00	0.00	0.01	0.01	0.01	0.00
Vapor Pressure @ Avg. Daily Min. Surface Liq. Temp. (psia):	0.00	0.00	0.00	0.01	0.01	0.01	0.00
Vapor Molecular Weight@Avg Surface Temperature (lb/lb-mole):	119.16	207.00	76.11	130.00	130.00	130.00	190.00
Vapor Pressure @ Max. Storage Temp. (psia):	0.00	0.00	0.00	0.02	0.02	0.02	0.00
Vapor Molecular Weight@ Max Storage Temperature (lb/lb-mole):	119.16	207	76.11	130	130	130	190
<b>IV. OPERATING CONDITIONS</b>							
Location:	Lake Charles, LA	Lake Charles, LA	Lake Charles, LA	Lake Charles, LA	Lake Charles, LA	Lake Charles, LA	Lake Charles, LA
Average Daily Max. Ambient Temp (°F):	77.60	77.60	77.60	77.60	77.60	77.60	77.60
Average Daily Min. Ambient Temp (°F):	59.70	59.70	59.70	59.70	59.70	59.70	59.70
Average Liquid Surface Temperature (°F):	70.17	70.13	70.15	70.01	69.98	69.93	70.11
Maximum Liquid Surface Temperature (°F):	74.69	74.71	74.70	74.78	74.80	74.83	74.73
Minimum Liquid Surface Temperature (°F):	65.66	65.55	65.60	65.24	65.16	65.02	65.49
Maximum Storage Temperature (°F):	95.00	95.00	95.00	95.00	95.00	95.00	95.00
Average Liquid Height (ft):	9.00	12.00	12.00	10.00	3.00	4.00	9.50
Maximum Liquid Height (ft):	16	22	22	18	7	16	19
Annual Throughput (gal/yr):	2115072.00	3392156.00	4187847.00	548227.00	27072.00	146772.00	348852.00
Number of Turnovers per Year:	38	38	38	38	16	10	8
Maximum Filling Rate (gal/hr):	5000	5000	5000	5000	752	4077	5000
<b>V. AP-42, CHAPTER 7 FACTORS</b>							
Tank Roof Paint Solar Absorptance Factor:	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Tank Shell Paint Solar Absorptance Factor:	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Avg Daily Total Solar Insolation Factor:	1443.00	1443.00	1443.00	1443.00	1443.00	1443.00	1443.00
Annual Tank Turnover Factor (Kn):	0.96	0.95	0.95	0.95	1.00	1.00	1.00
Vented Vapor Saturation Factor (Ks):	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Vapor Space Expansion Factor (Ke):	0.02	0.03	0.00	0.03	0.03	0.03	0.03
Vent Setting Correction Factor (Kb):	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Working Loss Product Factor (Kp):	1.00	1.00	1.00	1.00	1.00	1.00	1.00

TANK IDENTIFICATION NUMBER:	Fresh Amine
Material:	Fresh Amine
Emission Point Number:	T-06401
Facility Identification Number:	
<b>I. EMISSIONS SUMMARY</b>	
TOTAL ANNUAL EMISSIONS (TPY):	0.000
VOC EMISSIONS (TPY):	0.000
NON VOC EMISSIONS (TPY):	0.00E+00
MAXIMUM HOURLY EMISSIONS (lb/hr):	1.26E-04
VOC EMISSIONS (lb/hr):	1.26E-04
NON-VOC EMISSIONS (lb/hr):	0.00E+00
AP-42 Annual Breathing Losses (lb/yr):	2.30E-03
AP-42 Annual Working Losses (lb/yr):	0.00
<b>II. TANK PROPERTIES</b>	
Vapor Control Efficiency (%):	0.0%
Nominal Tank Capacity (gal):	27339.00
Tank Diameter (ft):	18.00
Shell Length/Height (ft):	18.00
Tank Shell Color:	White
Tank Roof Color:	White
Paint Condition:	New
Tank Orientation:	Vertical
Tank Insulation:	Not Insulated
Tank Pressure Vent Setting (psig):	0.03
Tank Vacuum Vent Setting (psig):	-0.03
<b>III. MATERIAL PROPERTIES</b>	
Vapor Pressure @ Avg. Daily Liquid Temp. (psia):	0.00
Vapor Pressure @ Avg. Daily Max. Surface Liq. Temp. (psia):	0.00
Vapor Pressure @ Avg. Daily Min. Surface Liq. Temp. (psia):	0.00
Vapor Molecular Weight@Avg Surface Temperature (lb/lb-mole):	119.16
Vapor Pressure @ Max. Storage Temp. (psia):	0.00
Vapor Molecular Weight@ Max Storage Temperature (lb/lb-mole):	119.16
<b>IV. OPERATING CONDITIONS</b>	
Location:	Lake Charles, LA
Average Daily Max. Ambient Temp (°F):	77.60
Average Daily Min. Ambient Temp (°F):	59.70
Average Liquid Surface Temperature (°F):	70.11
Maximum Liquid Surface Temperature (°F):	74.73
Minimum Liquid Surface Temperature (°F):	65.49
Maximum Storage Temperature (°F):	95.00
Average Liquid Height (ft):	8.50
Maximum Liquid Height (ft):	17
Annual Throughput (gal/yr):	5208.00
Number of Turnovers per Year:	0
Maximum Filling Rate (gal/hr):	5000
<b>V. AP-42, CHAPTER 7 FACTORS</b>	
Tank Roof Paint Solar Absorptance Factor:	0.17
Tank Shell Paint Solar Absorptance Factor:	0.17
Avg Daily Total Solar Insolation Factor:	1443.00
Annual Tank Turnover Factor (Kn):	1.00
Vented Vapor Saturation Factor (Ks):	1.00
Vapor Space Expansion Factor (Ke):	0.03
Vent Setting Correction Factor (Kb):	1.00
Working Loss Product Factor (Kp):	1.00



Table 21: Floating Roof Tanks Emissions Calculation Summary

TANK IDENTIFICATION NUMBER:	Condensate Tank
Material:	Condensate
Emission Point Number:	T-3000
Facility Identification Number:	
<b>I. EMISSIONS SUMMARY</b>	
TOTAL ANNUAL EMISSIONS (TPY):	2.11
VOC EMISSIONS (TPY):	2.11
NON-VOC EMISSIONS (TPY):	0.00
MAXIMUM HOURLY EMISSIONS (lb/hr):	1.67
VOC EMISSIONS (lb/hr):	1.67
NON-VOC EMISSIONS (lb/hr):	0.00
AP-42 Rim Seal Loss (lb/yr):	1646.42
AP-42 Withdrawal Losses (lb/yr):	171.78
AP-42 Roof/Deck Fitting Losses (lb/yr):	2159.87
AP-42 Deck Seam Losses (lb/yr):	248.39
<b>II. TANK PROPERTIES</b>	
Roof Type:	IFR
Vapor Control Efficiency (%):	0.00%
Nominal Tank Capacity (bbl):	9,065
Tank Diameter (ft):	36
Shell Length/Height (ft):	-
Tank Roof Color:	White
Tank Shell Color:	White
Paint Condition:	Average
Tank Construction:	Welded
Deck Type:	0
Deck Construction:	Bolted
Panel Type:	Continuous Sheet - 5 ft wide
Primary Seal:	Vapor Mounted Seal
Secondary Seal:	Primary Only
Seal Category:	Average
Shell Condition:	Light Rust
Number of Columns:	1
Effective Column Diameter:	1
<b>III. MATERIAL PROPERTIES</b>	
Liquid Density (lb/gal):	
Vapor Pressure @ Avg. Temp (psi):	4.46
Vapor Pressure @ Max Temp. (psi):	4.97
Liquid Density (lb/gal):	5.67
Vapor Molecular Weight@Avg Temperature (lb/lb-mole):	75.34
Vapor Molecular Weight@ Max Temperature (lb/lb-mole):	75.41
<b>IV. OPERATING CONDITIONS</b>	
Location:	Lake Charles, LA
Average Daily Max. Ambient Temp (°F):	77.60
Average Daily Min. Ambient Temp (°F):	59.70
Average Liquid Surface Temperature (°F):	70.89
Bulk Temperature (°F):	69.73
Maximum Storage Temperature (°F):	95
Annual Throughput (bbl/yr):	752359
Average Wind Speed (mph):	0
Maximum Filling Rate (bbl/hr):	5,000
<b>V. AP-42, CHAPTER 7 FACTORS</b>	
Tank Roof Paint Solar Absorptance Factor:	0.25
Tank Shell Paint Solar Absorptance Factor:	0.25
Deck Fitting Factor (FF):	317.30
Average Vapor Pressure Function (P*):	0.09
Maximum Vapor Pressure Function (P*):	0.10
Zero wind speed rim seal loss factor (Kra):	6.70
Wind Speed dependent rim seal loss factor (krb):	0.20
Seal-related wind speed exponent (n):	3.00
Shell Clingage (Cs):	0.0015
Product Factor (Kc):	1.00
Deck Seam Loss per Unit Seam Length Factor (Kd):	0.14
Deck Seam Length Factor (Sd):	0.20

**Table 22: Total Annual Emissions  
Summary  
(Criteria Pollutants & GHG)**

Source ID	Source Name	Annual Emissions (Ton per Year)								
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	CO <sub>2</sub> e	Total HAP	Pb
Z-08101A	Generator Turbine A	9.45	9.45	2.62	13.46	7.80	5.63	173420	0.91	-
Z-08101B	Generator Turbine B	9.45	9.45	2.62	13.46	7.80	5.63	173420	0.91	-
Z-08101C	Generator Turbine C	9.45	9.45	2.62	13.46	7.80	5.63	173420	0.91	-
Z-08101D	Generator Turbine D	9.45	9.45	2.62	13.46	7.80	5.63	173420	0.91	-
Z-08101E	Generator Turbine E	9.45	9.45	2.62	13.46	7.80	5.63	173420	0.91	-
GT-A1101	Refrig Turbine A	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
GT-B1101	Refrig Turbine B	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
GT-C1101	Refrig Turbine C	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
GT-D1101	Refrig Turbine D	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
GT-E1101	Refrig Turbine E	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
GT-F1101	Refrig Turbine F	26.43	26.43	2.38	21.29	12.34	8.91	273466	1.49	-
Z-08001A	Essential Generator Engine A	4.25E-02	4.25E-02	3.17E-03	5.37	0.77	0.20	340.88	3.28E-03	-
Z-08001B	Essential Generator Engine B	4.25E-02	4.25E-02	3.17E-03	5.37	0.77	0.20	340.88	3.28E-03	-
Z-08001C	Essential Generator Engine C	4.25E-02	4.25E-02	3.17E-03	5.37	0.77	0.20	340.88	3.28E-03	-
Z-05001	Flare Cap	17.03	17.03	1.77	155.42	708.54	19.32	306640	0.90	-
Z-05001	Wet Flare Pilot + Purge	2.35E-02	2.35E-02	6.03E-05	0.21	0.98	2.52E-04	423.51	2.73E-07	-
Z-05001	Wet Flare SU	8.93	8.93	1.16	81.51	371.59	10.19	160816	0.48	-
Z-05001	Dry Flare Pilot + Purge	1.85E-02	1.85E-02	4.74E-05	0.17	0.77	1.98E-04	332.32	2.14E-07	-
Z-05001	Dry Flare SU	8.03	8.03	0.61	73.31	334.22	9.13	144644	0.42	-
Z-05001	Spare Flare Pilot + Purge	2.35E-02	2.35E-02	6.03E-05	0.21	0.98	2.52E-04	423.51	1.10E-07	-
Z-05101	Marine Flare Pilot + Purge	2.86E-02	2.86E-02	7.33E-05	0.26	1.19	3.06E-04	514.69	1.34E-07	-
Z-05101	Marine Flare Warm Ship	0.29	0.29	-	2.67	12.18	-	5,269.96	-	-
P-04402A	Fresh Water Fire Pump A	7.28E-03	7.28E-03	4.74E-04	0.23	7.72E-02	4.30E-03	50.91	4.90E-04	-
P-04402B	Fresh Water Fire Pump B	7.28E-03	7.28E-03	4.74E-04	0.23	7.72E-02	4.30E-03	50.91	4.90E-04	-
P-04405A	Brackish Water Fire Pump A	7.28E-03	7.28E-03	4.74E-04	0.23	7.72E-02	4.30E-03	50.91	4.90E-04	-
P-04405B	Brackish Water Fire Pump B	7.28E-03	7.28E-03	4.74E-04	0.23	7.72E-02	4.30E-03	50.91	4.90E-04	-
Z-06601	Hot Oil Heater	0.14	0.14	1.35E-02	2.50	1.50	0.14	1,794.82	3.38E-02	8.94E-06
Z-07002A & Z-07002B	Thermal Oxidizer Cap	1.06	1.06	33.70	6.97	11.72	5.04	742181	0.63	6.97E-05
Z-07002A	Thermal Oxidizer A	0.85	0.85	26.96	5.58	9.37	4.03	593745	0.51	5.58E-05
Z-07002B	Thermal Oxidizer B	0.21	0.21	6.74	1.39	2.34	1.01	148436	0.13	1.39E-05
	Component Fugitives						55.23	3,188.31		
	Tanks						2.14			



**Table 22: Total Annual Emissions  
Summary  
(Criteria Pollutants & GHG)**

Source ID	Source Name	Maximum Hourly Emissions (Pound per Hour)								
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	CO <sub>2</sub> e	Total HAP	Pb
Z-08101A	Generator Turbine A	2.38	2.38	0.66	3.41	1.98	1.43	4.39E+04	0.23	-
Z-08101B	Generator Turbine B	2.38	2.38	0.66	3.41	1.98	1.43	4.39E+04	0.23	-
Z-08101C	Generator Turbine C	2.38	2.38	0.66	3.41	1.98	1.43	4.39E+04	0.23	-
Z-08101D	Generator Turbine D	2.38	2.38	0.66	3.41	1.98	1.43	4.39E+04	0.23	-
Z-08101E	Generator Turbine E	2.38	2.38	0.66	3.41	1.98	1.43	4.39E+04	0.23	-
GT-A1101	Refrig Turbine A	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
GT-B1101	Refrig Turbine B	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
GT-C1101	Refrig Turbine C	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
GT-D1101	Refrig Turbine D	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
GT-E1101	Refrig Turbine E	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
GT-F1101	Refrig Turbine F	7.05	7.05	0.64	5.67	3.29	2.37	7.29E+04	0.40	-
Z-08001A	Essential Generator Engine A	0.98	0.98	7.29E-02	123.42	17.60	4.69	7,840.31	7.54E-02	-
Z-08001B	Essential Generator Engine B	0.98	0.98	7.29E-02	123.42	17.60	4.69	7,840.31	7.54E-02	-
Z-08001C	Essential Generator Engine C	0.98	0.98	7.29E-02	123.42	17.60	4.69	7,840.31	7.54E-02	-
Z-05001	<i>Flare Cap</i>									
Z-05001	Wet Flare Pilot + Purge	6.98E-03	6.98E-03	1.79E-05	6.37E-02	0.29	1.15E-04	193.38	7.18E-08	-
Z-05001	Wet Flare SU	32.25	32.25	4.20	294.34	1,341.86	36.81	5.14E+05	1.54	-
Z-05001	Dry Flare Pilot + Purge	5.48E-03	5.48E-03	1.41E-05	5.00E-02	0.23	9.03E-05	151.75	5.63E-08	-
Z-05001	Dry Flare SU	29.01	29.01	2.20	264.74	1,206.92	32.96	4.62E+05	1.34	-
Z-05001	Spare Flare Pilot + Purge	6.98E-03	6.98E-03	1.79E-05	6.37E-02	0.29	1.15E-04	193.38	2.89E-08	-
Z-05101	Marine Flare Pilot + Purge	8.48E-03	8.48E-03	2.18E-05	7.74E-02	0.35	1.40E-04	235.02	3.51E-08	-
Z-05101	Marine Flare Warm Ship	6.34	6.34	-	57.87	263.80	-	1.01E+05	-	-
P-04402A	Fresh Water Fire Pump A	0.17	0.17	1.09E-02	5.25	1.78	9.90E-02	1,171.04	1.13E-02	-
P-04402B	Fresh Water Fire Pump B	0.17	0.17	1.09E-02	5.25	1.78	9.90E-02	1,171.04	1.13E-02	-
P-04405A	Brackish Water Fire Pump A	0.17	0.17	1.09E-02	5.25	1.78	9.90E-02	1,171.04	1.13E-02	-
P-04405B	Brackish Water Fire Pump B	0.17	0.17	1.09E-02	5.25	1.78	9.90E-02	1,171.04	1.13E-02	-
Z-06601	Hot Oil Heater	0.43	0.43	5.61E-02	7.99	4.80	0.44	5,733.44	0.11	2.85E-05
Z-07002A & Z-07002B	<i>Thermal Oxidizer Cap</i>									
Z-07002A	Thermal Oxidizer A	0.25	0.25	9.92	1.65	2.77	1.14	1.68E+05	0.14	1.65E-05
Z-07002B	Thermal Oxidizer B	0.25	0.25	9.92	1.65	2.77	1.14	1.68E+05	0.14	1.65E-05
	Component Fugitives									
	Tanks									



**Table 22: Total Annual Emissions  
Summary  
(Criteria Pollutants & GHG)**

Source ID	Source Name	Average Hourly Emissions (Pound per Hour)								
		PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	CO <sub>2e</sub>	Total HAP	Pb
Z-08101A	Generator Turbine A	2.16	2.16	0.60	3.07	1.78	1.29	3.96E+04	0.21	-
Z-08101B	Generator Turbine B	2.16	2.16	0.60	3.07	1.78	1.29	3.96E+04	0.21	-
Z-08101C	Generator Turbine C	2.16	2.16	0.60	3.07	1.78	1.29	3.96E+04	0.21	-
Z-08101D	Generator Turbine D	2.16	2.16	0.60	3.07	1.78	1.29	3.96E+04	0.21	-
Z-08101E	Generator Turbine E	2.16	2.16	0.60	3.07	1.78	1.29	3.96E+04	0.21	-
GT-A1101	Refrig Turbine A	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
GT-B1101	Refrig Turbine B	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
GT-C1101	Refrig Turbine C	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
GT-D1101	Refrig Turbine D	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
GT-E1101	Refrig Turbine E	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
GT-F1101	Refrig Turbine F	6.03	6.03	0.54	4.86	2.82	2.03	6.24E+04	0.34	-
Z-08001A	Essential Generator Engine A	0.85	0.85	6.34E-02	107.32	15.31	4.08	6,817.66	6.56E-02	-
Z-08001B	Essential Generator Engine B	0.85	0.85	6.34E-02	107.32	15.31	4.08	6,817.66	6.56E-02	-
Z-08001C	Essential Generator Engine C	0.85	0.85	6.34E-02	107.32	15.31	4.08	6,817.66	6.56E-02	-
Z-05001	Flare Cap	3.89	3.89	0.40	35.48	161.77	4.41	7.00E+04	0.21	-
Z-05001	Wet Flare Pilot + Purge	5.37E-03	5.37E-03	1.38E-05	4.90E-02	0.22	5.75E-05	96.69	6.24E-08	-
Z-05001	Wet Flare SU	24.81	24.81	3.23	226.42	1,032.20	28.31	4.47E+05	1.34	-
Z-05001	Dry Flare Pilot + Purge	4.21E-03	4.21E-03	1.08E-05	3.85E-02	0.18	4.51E-05	75.87	4.90E-08	-
Z-05001	Dry Flare SU	22.31	22.31	1.70	203.65	928.40	25.35	4.02E+05	1.16	-
Z-05001	Spare Flare Pilot + Purge	5.37E-03	5.37E-03	1.38E-05	4.90E-02	0.22	5.75E-05	96.69	2.51E-08	-
Z-05101	Marine Flare Pilot + Purge	6.53E-03	6.53E-03	1.67E-05	5.96E-02	0.27	6.98E-05	117.51	3.05E-08	-
Z-05101	Marine Flare Warm Ship	4.88	4.88	-	44.51	202.93	-	8.78E+04	-	-
P-04402A	Fresh Water Fire Pump A	0.15	0.15	9.47E-03	4.57	1.54	8.61E-02	1,018.30	9.79E-03	-
P-04402B	Fresh Water Fire Pump B	0.15	0.15	9.47E-03	4.57	1.54	8.61E-02	1,018.30	9.79E-03	-
P-04405A	Brackish Water Fire Pump A	0.15	0.15	9.47E-03	4.57	1.54	8.61E-02	1,018.30	9.79E-03	-
P-04405B	Brackish Water Fire Pump B	0.15	0.15	9.47E-03	4.57	1.54	8.61E-02	1,018.30	9.79E-03	-
Z-06601	Hot Oil Heater	0.38	0.38	3.74E-02	6.95	4.17	0.39	4,985.60	9.40E-02	2.48E-05
Z-07002A & Z-07002B	Thermal Oxidizer Cap	0.24	0.24	7.70	1.59	2.67	1.15	1.69E+05	0.14	1.59E-05
Z-07002A	Thermal Oxidizer A	0.22	0.22	6.62	1.43	2.41	0.99	1.46E+05	7.61E-02	1.43E-05
Z-07002B	Thermal Oxidizer B	0.22	0.22	6.62	1.43	2.41	0.99	1.46E+05	7.61E-02	1.43E-05
	Component Fugitives									
	Tanks									



**Table 23: Total Annual Emissions Summary (HAP & TAP)**

Source ID	Source Name	Annual Emissions (Ton per Year)																
		1,3 Butadiene	2-Methylnaphthalene	3-Methylcholanthrene	7,12-Dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Acetaldehyde	Acrolein	Anthracene	Arsenic	Benz(a)anthracene	Benzene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Beryllium
Z-08101A	Generator Turbine A	5.80E-04	-	-	-	-	-	5.40E-02	8.64E-03	-	-	-	1.62E-02	-	-	-	-	-
Z-08101B	Generator Turbine B	5.80E-04	-	-	-	-	-	5.40E-02	8.64E-03	-	-	-	1.62E-02	-	-	-	-	-
Z-08101C	Generator Turbine C	5.80E-04	-	-	-	-	-	5.40E-02	8.64E-03	-	-	-	1.62E-02	-	-	-	-	-
Z-08101D	Generator Turbine D	5.80E-04	-	-	-	-	-	5.40E-02	8.64E-03	-	-	-	1.62E-02	-	-	-	-	-
Z-08101E	Generator Turbine E	5.80E-04	-	-	-	-	-	5.40E-02	8.64E-03	-	-	-	1.62E-02	-	-	-	-	-
GT-A1101	Refrig Turbine A	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
GT-B1101	Refrig Turbine B	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
GT-C1101	Refrig Turbine C	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
GT-D1101	Refrig Turbine D	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
GT-E1101	Refrig Turbine E	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
GT-F1101	Refrig Turbine F	9.47E-04	-	-	-	-	-	8.81E-02	1.41E-02	-	-	-	2.64E-02	-	-	-	-	-
Z-08001A	Essential Generator Engine A	-	-	-	-	9.75E-06	1.92E-05	5.25E-05	1.64E-05	2.56E-06	-	1.62E-03	5.35E-07	2.31E-06	1.16E-06	4.54E-07	-	-
Z-08001B	Essential Generator Engine B	-	-	-	-	9.75E-06	1.92E-05	5.25E-05	1.64E-05	2.56E-06	-	1.62E-03	5.35E-07	2.31E-06	1.16E-06	4.54E-07	-	-
Z-08001C	Essential Generator Engine C	-	-	-	-	9.75E-06	1.92E-05	5.25E-05	1.64E-05	2.56E-06	-	1.62E-03	5.35E-07	2.31E-06	1.16E-06	4.54E-07	-	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	2.47E-08	-	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	-	7.84E-02	-	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	1.94E-08	-	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	-	6.51E-02	-	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	2.47E-08	-	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	3.00E-08	-	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	-	-	1.46E-06	2.87E-06	7.84E-06	2.45E-06	3.83E-07	-	2.41E-04	8.00E-08	3.45E-07	1.73E-07	6.78E-08	-	-
P-04402B	Fresh Water Fire Pump B	-	-	-	-	1.46E-06	2.87E-06	7.84E-06	2.45E-06	3.83E-07	-	2.41E-04	8.00E-08	3.45E-07	1.73E-07	6.78E-08	-	-
P-04405A	Brackish Water Fire Pump A	-	-	-	-	1.46E-06	2.87E-06	7.84E-06	2.45E-06	3.83E-07	-	2.41E-04	8.00E-08	3.45E-07	1.73E-07	6.78E-08	-	-
P-04405B	Brackish Water Fire Pump B	-	-	-	-	1.46E-06	2.87E-06	7.84E-06	2.45E-06	3.83E-07	-	2.41E-04	8.00E-08	3.45E-07	1.73E-07	6.78E-08	-	-
Z-06601	Hot Oil Heater	-	4.29E-07	3.22E-08	2.86E-07	3.22E-08	3.22E-08	-	-	4.29E-08	3.57E-06	3.22E-08	3.75E-05	2.14E-08	3.22E-08	2.14E-08	3.22E-08	2.14E-07
Z-07002A	Thermal Oxidizer A	-	2.68E-06	-	1.79E-06	2.01E-07	2.01E-07	-	-	2.68E-07	2.23E-05	2.01E-07	0.29	1.34E-07	2.01E-07	1.34E-07	2.01E-07	1.34E-06
Z-07002B	Thermal Oxidizer B	-	6.70E-07	-	4.46E-07	5.02E-08	5.02E-08	-	-	6.70E-08	5.58E-06	5.02E-08	7.16E-02	3.35E-08	5.02E-08	3.35E-08	5.02E-08	3.35E-07
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>8.58E-03</b>	<b>3.78E-06</b>	<b>3.22E-08</b>	<b>2.52E-06</b>	<b>3.54E-05</b>	<b>6.95E-05</b>	<b>0.80</b>	<b>0.13</b>	<b>9.60E-06</b>	<b>3.15E-05</b>	<b>2.83E-07</b>	<b>0.75</b>	<b>2.12E-06</b>	<b>8.60E-06</b>	<b>4.36E-06</b>	<b>1.92E-06</b>	<b>1.89E-06</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Annual Emissions (Ton per Year)																
		Cadmium	Chromium	Chrysene	Cobalt	Dibenzo(a,h) Janthracene	Dichloroben- zene	Ethylbenze- ne	Fluoranthene	Fluorene	Formaldehy- de	Hexane	Indeno(1,2, 3-cd)pyrene	Lead	Manganese	Mercury	Naphthalen- e	Nickel
Z-08101A	Generator Turbine A	-	-	-	-	-	-	4.32E-02	-	-	0.49	-	-	-	-	-	1.75E-03	-
Z-08101B	Generator Turbine B	-	-	-	-	-	-	4.32E-02	-	-	0.49	-	-	-	-	-	1.75E-03	-
Z-08101C	Generator Turbine C	-	-	-	-	-	-	4.32E-02	-	-	0.49	-	-	-	-	-	1.75E-03	-
Z-08101D	Generator Turbine D	-	-	-	-	-	-	4.32E-02	-	-	0.49	-	-	-	-	-	1.75E-03	-
Z-08101E	Generator Turbine E	-	-	-	-	-	-	4.32E-02	-	-	0.49	-	-	-	-	-	1.75E-03	-
GT-A1101	Refrig Turbine A	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
GT-B1101	Refrig Turbine B	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
GT-C1101	Refrig Turbine C	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
GT-D1101	Refrig Turbine D	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
GT-E1101	Refrig Turbine E	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
GT-F1101	Refrig Turbine F	-	-	-	-	-	-	7.05E-02	-	-	0.79	-	-	-	-	-	2.86E-03	-
Z-08001A	Essential Generator Engine A	-	-	3.19E-06	-	-	-	-	8.40E-06	2.67E-05	1.64E-04	-	8.63E-07	-	-	-	2.71E-04	-
Z-08001B	Essential Generator Engine B	-	-	3.19E-06	-	-	-	-	8.40E-06	2.67E-05	1.64E-04	-	8.63E-07	-	-	-	2.71E-04	-
Z-08001C	Essential Generator Engine C	-	-	3.19E-06	-	-	-	-	8.40E-06	2.67E-05	1.64E-04	-	8.63E-07	-	-	-	2.71E-04	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	2.45E-07	-	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	-	0.35	-	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	1.92E-07	-	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	8.11E-08	-	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	9.86E-08	-	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	4.76E-07	-	-	-	-	1.25E-06	3.98E-06	2.46E-05	-	1.29E-07	-	-	-	4.05E-05	-
P-04402B	Fresh Water Fire Pump B	-	-	4.76E-07	-	-	-	-	1.25E-06	3.98E-06	2.46E-05	-	1.29E-07	-	-	-	4.05E-05	-
P-04405A	Brackish Water Fire Pump A	-	-	4.76E-07	-	-	-	-	1.25E-06	3.98E-06	2.46E-05	-	1.29E-07	-	-	-	4.05E-05	-
P-04405B	Brackish Water Fire Pump B	-	-	4.76E-07	-	-	-	-	1.25E-06	3.98E-06	2.46E-05	-	1.29E-07	-	-	-	4.05E-05	-
Z-06601	Hot Oil Heater	1.97E-05	2.50E-05	3.22E-08	1.50E-06	2.14E-08	2.14E-05	-	5.36E-08	5.00E-08	1.34E-03	3.22E-02	3.22E-08	8.94E-06	6.79E-06	4.65E-06	1.09E-05	3.75E-05
Z-07002A	Thermal Oxidizer A	1.23E-04	1.56E-04	2.01E-07	9.37E-06	1.34E-07	2.34E-04	-	3.35E-07	3.12E-07	8.37E-03	1.39E-02	2.01E-07	5.58E-05	4.24E-05	2.90E-05	6.81E-05	2.34E-04
Z-07002B	Thermal Oxidizer B	3.07E-05	3.91E-05	5.02E-08	2.34E-06	3.35E-08	5.86E-05	-	8.37E-08	7.81E-08	2.09E-03	3.49E-03	5.02E-08	1.39E-05	1.06E-05	7.25E-06	1.70E-05	5.86E-05
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>1.73E-04</b>	<b>2.20E-04</b>	<b>1.18E-05</b>	<b>1.32E-05</b>	<b>1.89E-07</b>	<b>3.14E-04</b>	<b>0.64</b>	<b>3.07E-05</b>	<b>9.64E-05</b>	<b>7.20</b>	<b>0.71</b>	<b>3.39E-06</b>	<b>7.87E-05</b>	<b>5.98E-05</b>	<b>4.09E-05</b>	<b>2.70E-02</b>	<b>3.30E-04</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Annual Emissions (Ton per Year)										
		Phenanthrene	Propylene Oxide	Pyrene	Selenium	Toluene	Xylenes	Ammonia	Barium	Copper	Zinc	Hydrogen sulfide
Z-08101A	Generator Turbine A	-	3.91E-02	-	-	0.18	8.64E-02	9.96	-	-	-	-
Z-08101B	Generator Turbine B	-	3.91E-02	-	-	0.18	8.64E-02	9.96	-	-	-	-
Z-08101C	Generator Turbine C	-	3.91E-02	-	-	0.18	8.64E-02	9.96	-	-	-	-
Z-08101D	Generator Turbine D	-	3.91E-02	-	-	0.18	8.64E-02	9.96	-	-	-	-
Z-08101E	Generator Turbine E	-	3.91E-02	-	-	0.18	8.64E-02	9.96	-	-	-	-
GT-A1101	Refrig Turbine A	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
GT-B1101	Refrig Turbine B	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
GT-C1101	Refrig Turbine C	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
GT-D1101	Refrig Turbine D	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
GT-E1101	Refrig Turbine E	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
GT-F1101	Refrig Turbine F	-	6.39E-02	-	-	0.29	0.14	15.76	-	-	-	-
Z-08001A	Essential Generator Engine A	8.50E-05	-	7.73E-06	-	5.85E-04	4.02E-04	-	-	-	-	-
Z-08001B	Essential Generator Engine B	8.50E-05	-	7.73E-06	-	5.85E-04	4.02E-04	-	-	-	-	-
Z-08001C	Essential Generator Engine C	8.50E-05	-	7.73E-06	-	5.85E-04	4.02E-04	-	-	-	-	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	4.03E-09	-	-	-	-	-	5.55E-07
Z-05001	Wet Flare SU	-	-	-	-	4.05E-02	1.33E-02	-	-	-	-	6.63E-03
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	3.16E-09	-	-	-	-	-	4.35E-07
Z-05001	Dry Flare SU	-	-	-	-	3.58E-02	1.18E-02	-	-	-	-	1.89E-03
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	4.03E-09	1.97E-10	-	-	-	-	5.55E-07
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	4.90E-09	2.39E-10	-	-	-	-	6.74E-07
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	1.27E-05	-	1.15E-06	-	8.74E-05	6.01E-05	-	-	-	-	-
P-04402B	Fresh Water Fire Pump B	1.27E-05	-	1.15E-06	-	8.74E-05	6.01E-05	-	-	-	-	-
P-04405A	Brackish Water Fire Pump A	1.27E-05	-	1.15E-06	-	8.74E-05	6.01E-05	-	-	-	-	-
P-04405B	Brackish Water Fire Pump B	1.27E-05	-	1.15E-06	-	8.74E-05	6.01E-05	-	-	-	-	-
Z-06601	Hot Oil Heater	3.04E-07	-	8.94E-08	4.29E-07	6.08E-05	-	-	7.86E-05	1.52E-05	5.18E-04	2.59E-04
Z-07002A	Thermal Oxidizer A	-	-	5.58E-07	2.68E-06	0.15	4.32E-02	-	5.65E-04	1.09E-04	3.72E-03	6.75E-03
Z-07002B	Thermal Oxidizer B	-	-	1.39E-07	6.70E-07	3.86E-02	1.08E-02	-	1.41E-04	2.73E-05	2.73E-05	1.69E-03
	Component Fugitives											
	Tanks											
	<b>Total</b>	<b>3.06E-04</b>	<b>0.58</b>	<b>2.86E-05</b>	<b>3.78E-06</b>	<b>2.87</b>	<b>1.36</b>	<b>144.37</b>	<b>7.84E-04</b>	<b>1.52E-04</b>	<b>4.27E-03</b>	<b>1.72E-02</b>

**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Maximum Hourly Emissions (Pound per Hour)																
		1,3 Butadiene	2-Methylnaphthalene	3-Methylcholanthrene	7,12-Dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Acetaldehyde	Acrolein	Anthracene	Arsenic	Benz(a)anthracene	Benzene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Beryllium
Z-08101A	Generator Turbine A	1.46E-04	-	-	-	-	-	1.36E-02	2.17E-03	-	-	-	4.07E-03	-	-	-	-	-
Z-08101B	Generator Turbine B	1.46E-04	-	-	-	-	-	1.36E-02	2.17E-03	-	-	-	4.07E-03	-	-	-	-	-
Z-08101C	Generator Turbine C	1.46E-04	-	-	-	-	-	1.36E-02	2.17E-03	-	-	-	4.07E-03	-	-	-	-	-
Z-08101D	Generator Turbine D	1.46E-04	-	-	-	-	-	1.36E-02	2.17E-03	-	-	-	4.07E-03	-	-	-	-	-
Z-08101E	Generator Turbine E	1.46E-04	-	-	-	-	-	1.36E-02	2.17E-03	-	-	-	4.07E-03	-	-	-	-	-
GT-A1101	Refrig Turbine A	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
GT-B1101	Refrig Turbine B	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
GT-C1101	Refrig Turbine C	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
GT-D1101	Refrig Turbine D	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
GT-E1101	Refrig Turbine E	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
GT-F1101	Refrig Turbine F	2.53E-04	-	-	-	-	-	2.35E-02	3.76E-03	-	-	-	7.05E-03	-	-	-	-	-
Z-08001A	Essential Generator Engine A	-	-	-	-	2.24E-04	4.42E-04	1.21E-03	3.78E-04	5.89E-05	-	-	3.72E-02	1.23E-05	5.32E-05	2.66E-05	1.04E-05	-
Z-08001B	Essential Generator Engine B	-	-	-	-	2.24E-04	4.42E-04	1.21E-03	3.78E-04	5.89E-05	-	-	3.72E-02	1.23E-05	5.32E-05	2.66E-05	1.04E-05	-
Z-08001C	Essential Generator Engine C	-	-	-	-	2.24E-04	4.42E-04	1.21E-03	3.78E-04	5.89E-05	-	-	3.72E-02	1.23E-05	5.32E-05	2.66E-05	1.04E-05	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	6.49E-09	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	-	-	0.25	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	5.09E-09	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	-	-	0.21	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	6.49E-09	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	7.88E-09	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	-	-	3.35E-05	6.61E-05	1.80E-04	5.64E-05	8.80E-06	-	-	5.55E-03	1.84E-06	7.94E-06	3.98E-06	1.56E-06	-
P-04402B	Fresh Water Fire Pump B	-	-	-	-	3.35E-05	6.61E-05	1.80E-04	5.64E-05	8.80E-06	-	-	5.55E-03	1.84E-06	7.94E-06	3.98E-06	1.56E-06	-
P-04405A	Brackish Water Fire Pump A	-	-	-	-	3.35E-05	6.61E-05	1.80E-04	5.64E-05	8.80E-06	-	-	5.55E-03	1.84E-06	7.94E-06	3.98E-06	1.56E-06	-
P-04405B	Brackish Water Fire Pump B	-	-	-	-	3.35E-05	6.61E-05	1.80E-04	5.64E-05	8.80E-06	-	-	5.55E-03	1.84E-06	7.94E-06	3.98E-06	1.56E-06	-
Z-06601	Hot Oil Heater	-	1.37E-06	1.03E-07	9.14E-07	1.03E-07	1.03E-07	-	-	1.37E-07	1.14E-05	1.03E-07	1.20E-04	6.85E-08	1.03E-07	6.85E-08	1.03E-07	6.85E-07
Z-07002A	Thermal Oxidizer A	-	7.90E-07	-	5.27E-07	5.93E-08	5.93E-08	-	-	7.90E-08	6.59E-06	5.93E-08	8.08E-02	3.95E-08	5.93E-08	3.95E-08	5.93E-08	3.95E-07
Z-07002B	Thermal Oxidizer B	-	7.90E-07	-	5.27E-07	5.93E-08	5.93E-08	-	-	7.90E-08	6.59E-06	5.93E-08	8.08E-02	3.95E-08	5.93E-08	3.95E-08	5.93E-08	3.95E-07
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>2.25E-03</b>	<b>2.95E-06</b>	<b>1.03E-07</b>	<b>1.97E-06</b>	<b>8.07E-04</b>	<b>1.59E-03</b>	<b>0.21</b>	<b>3.48E-02</b>	<b>2.12E-04</b>	<b>2.46E-05</b>	<b>2.21E-07</b>	<b>0.82</b>	<b>4.45E-05</b>	<b>1.92E-04</b>	<b>9.60E-05</b>	<b>3.78E-05</b>	<b>1.48E-06</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Maximum Hourly Emissions (Pound per Hour)																
		Cadmium	Chromium	Chrysene	Cobalt	Dibenzo(a,h)anthracene	Dichlorobenzene	Ethylbenzene	Fluoranthene	Fluorene	Formaldehyde	Hexane	Indeno(1,2,3-cd)pyrene	Lead	Manganese	Mercury	Naphthalene	Nickel
Z-08101A	Generator Turbine A	-	-	-	-	-	-	1.09E-02	-	-	0.12	-	-	-	-	-	4.41E-04	-
Z-08101B	Generator Turbine B	-	-	-	-	-	-	1.09E-02	-	-	0.12	-	-	-	-	-	4.41E-04	-
Z-08101C	Generator Turbine C	-	-	-	-	-	-	1.09E-02	-	-	0.12	-	-	-	-	-	4.41E-04	-
Z-08101D	Generator Turbine D	-	-	-	-	-	-	1.09E-02	-	-	0.12	-	-	-	-	-	4.41E-04	-
Z-08101E	Generator Turbine E	-	-	-	-	-	-	1.09E-02	-	-	0.12	-	-	-	-	-	4.41E-04	-
GT-A1101	Refrig Turbine A	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
GT-B1101	Refrig Turbine B	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
GT-C1101	Refrig Turbine C	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
GT-D1101	Refrig Turbine D	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
GT-E1101	Refrig Turbine E	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
GT-F1101	Refrig Turbine F	-	-	-	-	-	-	1.88E-02	-	-	0.21	-	-	-	-	-	7.64E-04	-
Z-08001A	Essential Generator Engine A	-	-	7.33E-05	-	-	-	-	1.93E-04	6.13E-04	3.78E-03	-	1.98E-05	-	-	-	6.23E-03	-
Z-08001B	Essential Generator Engine B	-	-	7.33E-05	-	-	-	-	1.93E-04	6.13E-04	3.78E-03	-	1.98E-05	-	-	-	6.23E-03	-
Z-08001C	Essential Generator Engine C	-	-	7.33E-05	-	-	-	-	1.93E-04	6.13E-04	3.78E-03	-	1.98E-05	-	-	-	6.23E-03	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	6.42E-08	-	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	-	1.12	-	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	5.04E-08	-	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	-	0.98	-	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	2.13E-08	-	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	2.59E-08	-	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	1.10E-05	-	-	-	-	2.88E-05	9.16E-05	5.65E-04	-	2.96E-06	-	-	-	9.30E-04	-
P-04402B	Fresh Water Fire Pump B	-	-	1.10E-05	-	-	-	-	2.88E-05	9.16E-05	5.65E-04	-	2.96E-06	-	-	-	9.30E-04	-
P-04405A	Brackish Water Fire Pump A	-	-	1.10E-05	-	-	-	-	2.88E-05	9.16E-05	5.65E-04	-	2.96E-06	-	-	-	9.30E-04	-
P-04405B	Brackish Water Fire Pump B	-	-	1.10E-05	-	-	-	-	2.88E-05	9.16E-05	5.65E-04	-	2.96E-06	-	-	-	9.30E-04	-
Z-06601	Hot Oil Heater	6.28E-05	7.99E-05	1.03E-07	4.80E-06	6.85E-08	6.85E-05	-	1.71E-07	1.60E-07	4.28E-03	0.10	1.03E-07	2.85E-05	2.17E-05	1.48E-05	3.48E-05	1.20E-04
Z-07002A	Thermal Oxidizer A	3.62E-05	4.61E-05	5.93E-08	2.77E-06	3.95E-08	6.91E-05	-	9.88E-08	9.22E-08	2.47E-03	4.12E-03	5.93E-08	1.65E-05	1.25E-05	8.56E-06	2.01E-05	6.91E-05
Z-07002B	Thermal Oxidizer B	3.62E-05	4.61E-05	5.93E-08	2.77E-06	3.95E-08	6.91E-05	-	9.88E-08	9.22E-08	2.47E-03	4.12E-03	5.93E-08	1.65E-05	1.25E-05	8.56E-06	2.01E-05	6.91E-05
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>1.35E-04</b>	<b>1.72E-04</b>	<b>2.64E-04</b>	<b>1.03E-05</b>	<b>1.48E-07</b>	<b>2.07E-04</b>	<b>0.17</b>	<b>6.95E-04</b>	<b>2.21E-03</b>	<b>1.90</b>	<b>2.21</b>	<b>7.16E-05</b>	<b>6.15E-05</b>	<b>4.67E-05</b>	<b>3.20E-05</b>	<b>2.93E-02</b>	<b>2.58E-04</b>

**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Maximum Hourly Emissions (Pound per Hour)										
		Phenanthrene	Propylene Oxide	Pyrene	Selenium	Toluene	Xylenes	Ammonia	Barium	Copper	Zinc	Hydrogen sulfide
Z-08101A	Generator Turbine A	-	9.84E-03	-	-	4.41E-02	2.17E-02	2.52	-	-	-	-
Z-08101B	Generator Turbine B	-	9.84E-03	-	-	4.41E-02	2.17E-02	2.52	-	-	-	-
Z-08101C	Generator Turbine C	-	9.84E-03	-	-	4.41E-02	2.17E-02	2.52	-	-	-	-
Z-08101D	Generator Turbine D	-	9.84E-03	-	-	4.41E-02	2.17E-02	2.52	-	-	-	-
Z-08101E	Generator Turbine E	-	9.84E-03	-	-	4.41E-02	2.17E-02	2.52	-	-	-	-
GT-A1101	Refrig Turbine A	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
GT-B1101	Refrig Turbine B	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
GT-C1101	Refrig Turbine C	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
GT-D1101	Refrig Turbine D	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
GT-E1101	Refrig Turbine E	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
GT-F1101	Refrig Turbine F	-	1.70E-02	-	-	7.64E-02	3.76E-02	4.20	-	-	-	-
Z-08001A	Essential Generator Engine A	1.96E-03	-	1.78E-04	-	1.35E-02	9.25E-03	-	-	-	-	-
Z-08001B	Essential Generator Engine B	1.96E-03	-	1.78E-04	-	1.35E-02	9.25E-03	-	-	-	-	-
Z-08001C	Essential Generator Engine C	1.96E-03	-	1.78E-04	-	1.35E-02	9.25E-03	-	-	-	-	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	1.06E-09	-	-	-	-	-	2.53E-07
Z-05001	Wet Flare SU	-	-	-	-	0.13	4.26E-02	-	-	-	-	2.12E-02
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	8.30E-10	-	-	-	-	-	1.99E-07
Z-05001	Dry Flare SU	-	-	-	-	0.11	3.77E-02	-	-	-	-	6.05E-03
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	1.06E-09	5.17E-11	-	-	-	-	2.53E-07
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	1.29E-09	6.29E-11	-	-	-	-	3.08E-07
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	2.92E-04	-	2.66E-05	-	2.01E-03	1.38E-03	-	-	-	-	-
P-04402B	Fresh Water Fire Pump B	2.92E-04	-	2.66E-05	-	2.01E-03	1.38E-03	-	-	-	-	-
P-04405A	Brackish Water Fire Pump A	2.92E-04	-	2.66E-05	-	2.01E-03	1.38E-03	-	-	-	-	-
P-04405B	Brackish Water Fire Pump B	2.92E-04	-	2.66E-05	-	2.01E-03	1.38E-03	-	-	-	-	-
Z-06601	Hot Oil Heater	9.71E-07	-	2.85E-07	1.37E-06	1.94E-04	-	-	2.51E-04	4.85E-05	1.66E-03	8.27E-04
Z-07002A	Thermal Oxidizer A	5.60E-07	-	1.65E-07	7.90E-07	4.35E-02	1.22E-02	-	1.45E-04	2.80E-05	9.55E-04	1.66E-03
Z-07002B	Thermal Oxidizer B	5.60E-07	-	1.65E-07	7.90E-07	4.35E-02	1.22E-02	-	1.45E-04	2.80E-05	9.55E-04	1.66E-03
	Component Fugitives											
	Tanks											
	<b>Total</b>	<b>7.04E-03</b>	<b>0.15</b>	<b>6.40E-04</b>	<b>2.95E-06</b>	<b>1.06</b>	<b>0.47</b>	<b>37.82</b>	<b>5.41E-04</b>	<b>1.05E-04</b>	<b>3.57E-03</b>	<b>3.14E-02</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Average Hourly Emissions (Pound per Hour)																
		1,3 Butadiene	2- Methylnaph thalene	3- Methylchol anthrene	7,12- Dimethylbe nz(a) anthracene	Acenapthe ne	Acenaphty lene	Acetaldehy de	Acrolein	Anthracene	Arsenic	Benz(a)anth racene	Benzene	Benzo(a)pyr ene	Benzo(b)flu oranthene	Benzo(g,h,i) perylene	Benzo(k)flu oranthene	Beryllium
Z-08101A	Generator Turbine A	1.32E-04	-	-	-	-	-	1.23E-02	1.97E-03	-	-	-	3.70E-03	-	-	-	-	-
Z-08101B	Generator Turbine B	1.32E-04	-	-	-	-	-	1.23E-02	1.97E-03	-	-	-	3.70E-03	-	-	-	-	-
Z-08101C	Generator Turbine C	1.32E-04	-	-	-	-	-	1.23E-02	1.97E-03	-	-	-	3.70E-03	-	-	-	-	-
Z-08101D	Generator Turbine D	1.32E-04	-	-	-	-	-	1.23E-02	1.97E-03	-	-	-	3.70E-03	-	-	-	-	-
Z-08101E	Generator Turbine E	1.32E-04	-	-	-	-	-	1.23E-02	1.97E-03	-	-	-	3.70E-03	-	-	-	-	-
GT-A1101	Refrig Turbine A	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
GT-B1101	Refrig Turbine B	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
GT-C1101	Refrig Turbine C	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
GT-D1101	Refrig Turbine D	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
GT-E1101	Refrig Turbine E	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
GT-F1101	Refrig Turbine F	2.16E-04	-	-	-	-	-	2.01E-02	3.22E-03	-	-	-	6.03E-03	-	-	-	-	-
Z-08001A	Essential Generator Engine A	-	-	-	-	1.95E-04	3.85E-04	1.05E-03	3.28E-04	5.13E-05	-	-	3.23E-02	1.07E-05	4.63E-05	2.32E-05	9.08E-06	-
Z-08001B	Essential Generator Engine B	-	-	-	-	1.95E-04	3.85E-04	1.05E-03	3.28E-04	5.13E-05	-	-	3.23E-02	1.07E-05	4.63E-05	2.32E-05	9.08E-06	-
Z-08001C	Essential Generator Engine C	-	-	-	-	1.95E-04	3.85E-04	1.05E-03	3.28E-04	5.13E-05	-	-	3.23E-02	1.07E-05	4.63E-05	2.32E-05	9.08E-06	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	5.64E-09	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	-	-	0.22	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	4.43E-09	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	-	-	0.18	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	5.64E-09	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	-	-	6.86E-09	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	-	-	2.91E-05	5.74E-05	1.57E-04	4.90E-05	7.66E-06	-	-	4.83E-03	1.60E-06	6.91E-06	3.46E-06	1.36E-06	-
P-04402B	Fresh Water Fire Pump B	-	-	-	-	2.91E-05	5.74E-05	1.57E-04	4.90E-05	7.66E-06	-	-	4.83E-03	1.60E-06	6.91E-06	3.46E-06	1.36E-06	-
P-04405A	Brackish Water Fire Pump A	-	-	-	-	2.91E-05	5.74E-05	1.57E-04	4.90E-05	7.66E-06	-	-	4.83E-03	1.60E-06	6.91E-06	3.46E-06	1.36E-06	-
P-04405B	Brackish Water Fire Pump B	-	-	-	-	2.91E-05	5.74E-05	1.57E-04	4.90E-05	7.66E-06	-	-	4.83E-03	1.60E-06	6.91E-06	3.46E-06	1.36E-06	-
Z-06601	Hot Oil Heater	-	1.19E-06	8.94E-08	7.94E-07	8.94E-08	8.94E-08	-	-	1.19E-07	9.93E-06	8.94E-08	1.04E-04	5.96E-08	8.94E-08	5.96E-08	8.94E-08	5.96E-07
Z-07002A	Thermal Oxidizer A	-	6.87E-07	-	4.58E-07	5.15E-08	5.15E-08	-	-	6.87E-08	5.73E-06	5.15E-08	7.03E-02	3.44E-08	5.15E-08	3.44E-08	5.15E-08	3.44E-07
Z-07002B	Thermal Oxidizer B	-	6.87E-07	-	4.58E-07	5.15E-08	5.15E-08	-	-	6.87E-08	5.73E-06	5.15E-08	7.03E-02	3.44E-08	5.15E-08	3.44E-08	5.15E-08	3.44E-07
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>1.96E-03</b>	<b>2.57E-06</b>	<b>8.94E-08</b>	<b>1.71E-06</b>	<b>7.02E-04</b>	<b>1.38E-03</b>	<b>0.19</b>	<b>3.04E-02</b>	<b>1.85E-04</b>	<b>2.14E-05</b>	<b>1.92E-07</b>	<b>0.71</b>	<b>3.87E-05</b>	<b>1.67E-04</b>	<b>8.35E-05</b>	<b>3.29E-05</b>	<b>1.28E-06</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Average Hourly Emissions (Pound per Hour)																
		Cadmium	Chromium	Chrysene	Cobalt	Dibenzo(a,h) Janthracene	Dichloroben zene	Ethylbenze ne	Fluoranthene	Fluorene	Formaldehy de	Hexane	Indeno(1,2, 3-cd)pyrene	Lead	Manganese	Mercury	Naphthalen e	Nickel
Z-08101A	Generator Turbine A	-	-	-	-	-	-	9.86E-03	-	-	0.11	-	-	-	-	-	4.01E-04	-
Z-08101B	Generator Turbine B	-	-	-	-	-	-	9.86E-03	-	-	0.11	-	-	-	-	-	4.01E-04	-
Z-08101C	Generator Turbine C	-	-	-	-	-	-	9.86E-03	-	-	0.11	-	-	-	-	-	4.01E-04	-
Z-08101D	Generator Turbine D	-	-	-	-	-	-	9.86E-03	-	-	0.11	-	-	-	-	-	4.01E-04	-
Z-08101E	Generator Turbine E	-	-	-	-	-	-	9.86E-03	-	-	0.11	-	-	-	-	-	4.01E-04	-
GT-A1101	Refrig Turbine A	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
GT-B1101	Refrig Turbine B	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
GT-C1101	Refrig Turbine C	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
GT-D1101	Refrig Turbine D	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
GT-E1101	Refrig Turbine E	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
GT-F1101	Refrig Turbine F	-	-	-	-	-	-	1.61E-02	-	-	0.18	-	-	-	-	-	6.54E-04	-
Z-08001A	Essential Generator Engine A	-	-	6.38E-05	-	-	-	1.68E-04	5.33E-04	3.29E-03	-	1.73E-05	-	-	-	-	5.42E-03	-
Z-08001B	Essential Generator Engine B	-	-	6.38E-05	-	-	-	1.68E-04	5.33E-04	3.29E-03	-	1.73E-05	-	-	-	-	5.42E-03	-
Z-08001C	Essential Generator Engine C	-	-	6.38E-05	-	-	-	1.68E-04	5.33E-04	3.29E-03	-	1.73E-05	-	-	-	-	5.42E-03	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	5.58E-08	-	-	-	-	-	-	-
Z-05001	Wet Flare SU	-	-	-	-	-	-	-	-	-	0.98	-	-	-	-	-	-	-
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	4.38E-08	-	-	-	-	-	-	-
Z-05001	Dry Flare SU	-	-	-	-	-	-	-	-	-	0.85	-	-	-	-	-	-	-
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	1.85E-08	-	-	-	-	-	-	-
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	-	-	-	-	-	2.25E-08	-	-	-	-	-	-	-
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	-	-	9.52E-06	-	-	-	2.51E-05	7.97E-05	4.91E-04	-	2.58E-06	-	-	-	-	8.09E-04	-
P-04402B	Fresh Water Fire Pump B	-	-	9.52E-06	-	-	-	2.51E-05	7.97E-05	4.91E-04	-	2.58E-06	-	-	-	-	8.09E-04	-
P-04405A	Brackish Water Fire Pump A	-	-	9.52E-06	-	-	-	2.51E-05	7.97E-05	4.91E-04	-	2.58E-06	-	-	-	-	8.09E-04	-
P-04405B	Brackish Water Fire Pump B	-	-	9.52E-06	-	-	-	2.51E-05	7.97E-05	4.91E-04	-	2.58E-06	-	-	-	-	8.09E-04	-
Z-06601	Hot Oil Heater	5.46E-05	6.95E-05	8.94E-08	4.17E-06	5.96E-08	5.96E-05	1.49E-07	1.39E-07	3.72E-03	8.94E-02	8.94E-08	2.48E-05	1.89E-05	1.29E-05	3.03E-05	1.04E-04	-
Z-07002A	Thermal Oxidizer A	3.15E-05	4.01E-05	5.15E-08	2.41E-06	3.44E-08	6.01E-05	8.59E-08	8.02E-08	2.15E-03	3.58E-03	5.15E-08	1.43E-05	1.09E-05	7.44E-06	1.75E-05	6.01E-05	-
Z-07002B	Thermal Oxidizer B	3.15E-05	4.01E-05	5.15E-08	2.41E-06	3.44E-08	6.01E-05	8.59E-08	8.02E-08	2.15E-03	3.58E-03	5.15E-08	1.43E-05	1.09E-05	7.44E-06	1.75E-05	6.01E-05	-
	Component Fugitives																	
	Tanks																	
	<b>Total</b>	<b>1.18E-04</b>	<b>1.50E-04</b>	<b>2.30E-04</b>	<b>8.98E-06</b>	<b>1.28E-07</b>	<b>1.80E-04</b>	<b>0.15</b>	<b>6.04E-04</b>	<b>1.92E-03</b>	<b>1.66</b>	<b>1.92</b>	<b>6.23E-05</b>	<b>5.35E-05</b>	<b>4.06E-05</b>	<b>2.78E-05</b>	<b>2.55E-02</b>	<b>2.25E-04</b>



**Table 23: Total Annual Emissions  
Summary  
(HAP & TAP)**

Source ID	Source Name	Average Hourly Emissions (Pound per Hour)										
		Phenanthrene	Propylene Oxide	Pyrene	Selenium	Toluene	Xylenes	Ammonia	Barium	Copper	Zinc	Hydrogen sulfide
Z-08101A	Generator Turbine A	-	8.94E-03	-	-	4.01E-02	1.97E-02	2.28	-	-	-	-
Z-08101B	Generator Turbine B	-	8.94E-03	-	-	4.01E-02	1.97E-02	2.28	-	-	-	-
Z-08101C	Generator Turbine C	-	8.94E-03	-	-	4.01E-02	1.97E-02	2.28	-	-	-	-
Z-08101D	Generator Turbine D	-	8.94E-03	-	-	4.01E-02	1.97E-02	2.28	-	-	-	-
Z-08101E	Generator Turbine E	-	8.94E-03	-	-	4.01E-02	1.97E-02	2.28	-	-	-	-
GT-A1101	Refrig Turbine A	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
GT-B1101	Refrig Turbine B	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
GT-C1101	Refrig Turbine C	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
GT-D1101	Refrig Turbine D	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
GT-E1101	Refrig Turbine E	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
GT-F1101	Refrig Turbine F	-	1.46E-02	-	-	6.54E-02	3.22E-02	3.60	-	-	-	-
Z-08001A	Essential Generator Engine A	1.70E-03	-	1.55E-04	-	1.17E-02	8.04E-03	-	-	-	-	-
Z-08001B	Essential Generator Engine B	1.70E-03	-	1.55E-04	-	1.17E-02	8.04E-03	-	-	-	-	-
Z-08001C	Essential Generator Engine C	1.70E-03	-	1.55E-04	-	1.17E-02	8.04E-03	-	-	-	-	-
Z-05001	Wet Flare Pilot + Purge	-	-	-	-	9.20E-10	-	-	-	-	-	1.27E-07
Z-05001	Wet Flare SU	-	-	-	-	0.11	3.70E-02	-	-	-	-	1.84E-02
Z-05001	Dry Flare Pilot + Purge	-	-	-	-	7.22E-10	-	-	-	-	-	9.94E-08
Z-05001	Dry Flare SU	-	-	-	-	9.95E-02	3.28E-02	-	-	-	-	5.26E-03
Z-05001	Spare Flare Pilot + Purge	-	-	-	-	9.20E-10	4.50E-11	-	-	-	-	1.27E-07
Z-05101	Marine Flare Pilot + Purge	-	-	-	-	1.12E-09	5.47E-11	-	-	-	-	1.54E-07
Z-05101	Marine Flare Warm Ship	-	-	-	-	-	-	-	-	-	-	-
P-04402A	Fresh Water Fire Pump A	2.54E-04	-	2.31E-05	-	1.75E-03	1.20E-03	-	-	-	-	-
P-04402B	Fresh Water Fire Pump B	2.54E-04	-	2.31E-05	-	1.75E-03	1.20E-03	-	-	-	-	-
P-04405A	Brackish Water Fire Pump A	2.54E-04	-	2.31E-05	-	1.75E-03	1.20E-03	-	-	-	-	-
P-04405B	Brackish Water Fire Pump B	2.54E-04	-	2.31E-05	-	1.75E-03	1.20E-03	-	-	-	-	-
Z-06601	Hot Oil Heater	8.44E-07	-	2.48E-07	1.19E-06	1.69E-04	-	-	2.18E-04	4.22E-05	1.44E-03	7.19E-04
Z-07002A	Thermal Oxidizer A	4.87E-07	-	1.43E-07	6.87E-07	3.78E-02	1.06E-02	-	1.26E-04	2.43E-05	8.30E-04	1.10E-03
Z-07002B	Thermal Oxidizer B	4.87E-07	-	1.43E-07	6.87E-07	3.78E-02	1.06E-02	-	1.26E-04	2.43E-05	8.30E-04	1.10E-03
	Component Fugitives											
	Tanks											
	<b>Total</b>	<b>6.12E-03</b>	<b>0.13</b>	<b>5.57E-04</b>	<b>2.57E-06</b>	<b>0.92</b>	<b>0.41</b>	<b>32.97</b>	<b>4.70E-04</b>	<b>9.09E-05</b>	<b>3.10E-03</b>	<b>2.66E-02</b>