

FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO
Corpus Christi Liquefaction, LLC

AUTHORIZING THE OPERATION OF
Corpus Christi Liquefaction
Corpus Christi Liquefaction Stage 3
Natural Gas Distribution

LOCATED AT
San Patricio County, Texas
Latitude 27° 54' 0" Longitude 97° 16' 14"
Regulated Entity Number: RN104104716

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: O4592 Issuance Date: _____

For the Commission

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General Terms and Conditions

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

Special Terms and Conditions:

Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting

1. Permit holder shall comply with the following requirements:
 - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
 - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
 - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.
 - D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.
 - E. Emission units subject to 40 CFR Part 63, Subpart ZZZZ or DDDDD as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113,

Subchapter C, § 113.1090 or 113.1130, respectively, which incorporate the 40 CFR Part 63 Subparts by reference.

2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
 - A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
 - B. Title 30 TAC § 101.3 (relating to Circumvention)
 - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
 - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
 - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
 - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
 - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
 - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
 - I. Title 30 TAC § 101.222 (relating to Demonstrations)
 - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
 - A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:
 - (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
 - (ii) Title 30 TAC § 111.111(a)(1)(E)
 - (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
 - (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that

does not obstruct the transmission of light. Vents, as specified in the “Applicable Requirements Summary” attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:

- (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
- (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
- (3) Records of all observations shall be maintained.
- (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer’s eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.
- (5) Compliance Certification:
 - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is

determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.
- B. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.
- C. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
 - (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
 - (ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)
 - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- 4. For storage vessels maintaining working pressure as specified in 30 TAC Chapter 115, Subchapter B, Division 1: "Storage of Volatile Organic Compounds," the permit holder shall comply with the requirements of 30 TAC § 115.112(c)(1).
- 5. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:
 - A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
 - B. Title 40 CFR § 60.8 (relating to Performance Tests)
 - C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
 - D. Title 40 CFR § 60.12 (relating to Circumvention)
 - E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
 - F. Title 40 CFR § 60.14 (relating to Modification)
 - G. Title 40 CFR § 60.15 (relating to Reconstruction)
 - H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)

6. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.

New Source Review Authorization Requirements

7. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:
 - A. Are incorporated by reference into this permit as applicable requirements
 - B. Shall be located with this operating permit
 - C. Are not eligible for a permit shield
8. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
9. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

Compliance Requirements

10. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
11. Use of Discrete Emission Credits to comply with the applicable requirements:
 - A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) If applicable, offsets for Title 30 TAC Chapter 116

- (iv) Temporarily exceed state NSR permit allowables
- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
 - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
 - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
 - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
 - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

Protection of Stratospheric Ozone

- 12. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:
 - A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.

Permit Location

- 13. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

Permit Shield (30 TAC § 122.148)

- 14. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

Attachments

Applicable Requirements Summary

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

Unit Summary 9

Applicable Requirements Summary 11

Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
GRPMSAGRU	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	MSAGRU1, MSAGRU2, MSAGRU3, MSAGRU4, MSAGRU5, MSAGRU6, MSAGRU7	R5121-1	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
GRPMSFURN	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	MSFURN1, MSFURN2, MSFURN3, MSFURN4, MSFURN5, MSFURN6, MSFURN7	60Dc-1	40 CFR Part 60, Subpart Dc	No changing attributes.
GRPMSFURN	PROCESS HEATERS/FURNACES	MSFURN1, MSFURN2, MSFURN3, MSFURN4, MSFURN5, MSFURN6, MSFURN7	63DDDD-1	40 CFR Part 63, Subpart DDDD	No changing attributes.
GRPMSFWP	SRIC ENGINES	MSFWP1, MSFWP2	60IIII-1	40 CFR Part 60, Subpart IIII	No changing attributes.
GRPMSFWP	SRIC ENGINES	MSFWP1, MSFWP2	63ZZZZ-1	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPMSGEN	SRIC ENGINES	MSGEN1, MSGEN2, MSGEN3, MSGEN4, MSGEN5, MSGEN6, MSGEN7	60IIII-2	40 CFR Part 60, Subpart IIII	No changing attributes.
GRPMSGEN	SRIC ENGINES	MSGEN1, MSGEN2, MSGEN3, MSGEN4, MSGEN5, MSGEN6, MSGEN7	63ZZZZ-2	40 CFR Part 63, Subpart ZZZZ	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
MSGFLR1	FLARES	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MSGFLR2	FLARES	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MSGFLR3	FLARES	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
MSGFLRVTEX	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-2	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
MSGFLRVTR5	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-3	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
GRPMSAGRU	EP	R5121-1	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(c)(1)(C) § 115.127(c)(1)	A vent gas stream having a concentration of the VOC specified in §115.121(c)(1)(B) and (C) of this title less than 30,000 ppmv is exempt from the requirements of §115.121(c)(1) of this title.	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2) § 115.126(4)	None
GRPMSFURN	EU	60Dc-1	PM	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
GRPMSFURN	EU	60Dc-1	PM (Opacity)	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
GRPMSFURN	EU	60Dc-1	SO ₂	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a)
GRPMSFURN	EU	63DDDD-1	112(B) HAPS	40 CFR Part 63, Subpart DDDDD	§ 63.7500(a)(1)-Table 3.3 § 63.7500(a)(1) § 63.7500(a)(3) § 63.7505(a) § 63.7540(a) [G]§ 63.7540(a)(10) § 63.7540(a)(13)	A new or existing boiler or process heater without a continuous oxygen trim system and with heat input capacity of 10 million Btu per hour or greater must conduct a tune-up of the boiler or process heater	§ 63.7510(g) § 63.7515(d) [G]§ 63.7521(f) [G]§ 63.7521(g) § 63.7521(h) § 63.7521(i) § 63.7530(g) § 63.7540(a)	§ 63.7555(a) § 63.7555(a)(1) § 63.7555(a)(2) § 63.7555(g) § 63.7555(h) § 63.7560(a) § 63.7560(b) § 63.7560(c)	[G]§ 63.7521(g) § 63.7530(e) § 63.7530(f) § 63.7545(a) § 63.7545(b) § 63.7545(c) [G]§ 63.7545(e) [G]§ 63.7545(f)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						annually as specified in § 63.7540. Units in either the Gas 1 or Metal Process Furnace subcategories will conduct this tune-up as a work practice for all regulated emissions.	[G]§ 63.7540(a)(10) [G]§ 63.7540(c)		§ 63.7550(a) [G]§ 63.7550(b) [G]§ 63.7550(c) [G]§ 63.7550(h)
GRPMSFW P	EU	60III-1	NMHC and NO _x	40 CFR Part 60, Subpart IIII	§ 60.4205(c)-Table 4 § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary fire pump CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 560 KW and a displacement of less than 30 liters per cylinder and is a 2009 model year and later must comply with an NMHC+NO _x emission limit of 4.0 g/KW-hr, as listed in Table 4 to this subpart.	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPMSFW P	EU	60III-1	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(c)-Table 4 § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary fire pump CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 560 KW and a displacement of less than 30 liters per cylinder and is a 2009 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as listed in Table 4 to this subpart.	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPMSFW P	EU	63ZZZZ-1	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source	None	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			
GRPMSGEN	EU	60III-2	CO	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPMSGEN	EU	60III-2	NMHC and NO _x	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						a 2007 model year and later must comply with an NMHC+NOx emission limit of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.			
GRPMSGEN	EU	60III-2	PM	40 CFR Part 60, Subpart IIII	§ 60.4205(b) § 1039-Appendix I § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 1039-Appendix I.	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
GRPMSGEN	EU	63ZZZZ-2	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(b)(1) § 63.6595(c) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)	An affected source which meets either of the criteria in paragraphs §63.6590(b)(1)(i)-(ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).	None	None	§ 63.6645(f)
MSGFLR1	CD	R1111-1	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						the provisions under §101.222(b).			
MSGFLR2	CD	R1111-1	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to the provisions under §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
MSGFLR3	CD	R1111-1	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to the provisions under §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
MSGFLRVT EX	EP	R5121-2	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(c)(1)(C) § 115.127(c)(1)	A vent gas stream having a concentration of the VOC specified in §115.121(c)(1)(B) and (C) of this title less than 30,000 ppmv is exempt from the requirements of §115.121(c)(1) of this title.	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2) § 115.126(4)	None
MSGFLRVT EX	EP	R5121-2	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.127(c)(1)(B) § 115.127(c)(1)	A vent gas stream having a combined weight of the VOC or classes of compounds specified in §115.121(c)(1)(B)-(C) of this title equal to or less than 100 lbs in a continuous 24-hour period is exempt from the requirements of §115.121(c)(1) of this title.	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2) § 115.126(4)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
MSGFLRVT R5	EP	R5121-3	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(c)(1) § 115.121(c)(1) § 115.122(c)(1)(B) § 60.18	For all persons in Aransas, Bexar, Calhoun, Matagorda, San Patricio, and Travis Counties, any vent gas streams affected by §115.121(c)(1) must be controlled properly using one of the control requirements specified in §115.122(c)(1)(A)-(C).	[G]§ 115.125 § 115.126(2)	§ 115.126 § 115.126(2)	None

Permit Shield

Permit Shield 18

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
GRPMSAMTNK	MSAMTNK1, MSAMTNK2, MSAMTNK3, MSAMTNK4, MSAMTNK5, MSAMTNK6, MSAMTNK7	30 TAC Chapter 115, Storage of VOCs	Storage tank located in San Patricio County stores VOC with TVP less than 1.5 psia.
GRPMSAMTNK	MSAMTNK1, MSAMTNK2, MSAMTNK3, MSAMTNK4, MSAMTNK5, MSAMTNK6, MSAMTNK7	40 CFR Part 60, Subpart Kb	Storage tank has a capacity greater than or equal to 151 cubic meters and stores a liquid with maximum TVP less than 3.5 kPa (0.5 psia).
GRPMSCONCOL	MSCONCOL1, MSCONCOL2, MSCONCOL3, MSCONCOL4, MSCONCOL5, MSCONCOL6, MSCONCOL7	40 CFR Part 60, Subpart NNN	The column does not produce any of the chemicals listed in §60.667 as a product, co-product, by-product, or intermediate.
GRPMSFUG	MSFUG, MSFUG1, MSFUG2, MSFUG3, MSFUG4, MSFUG5, MSFUG6, MSFUG7	40 CFR Part 63, Subpart EEEE	The fugitive components in organic liquid service are not subject to 40 CFR Part 63, Subpart EEEE as there are no storage tanks or transfer racks at the site that meet the applicability criteria for control in Table 2 or 2b.
GRPMSFWPTK	MSFWPTK1, MSFWPTK2	30 TAC Chapter 115, Storage of VOCs	Storage tank located in San Patricio County has a capacity less than or equal to 1,000 gallons.
GRPMSFWPTK	MSFWPTK1, MSFWPTK2	40 CFR Part 60, Subpart Kb	Storage tank has a capacity less than 75 cubic meters.
GRPMSGENTK	MSGENTK1, MSGENTK2, MSGENTK3, MSGENTK4, MSGENTK5, MSGENTK6, MSGENTK7	30 TAC Chapter 115, Storage of VOCs	Storage tank located in San Patricio County stores VOC with TVP less than 1.5 psia.
GRPMSGENTK	MSGENTK1, MSGENTK2, MSGENTK3, MSGENTK4, MSGENTK5, MSGENTK6,	40 CFR Part 60, Subpart Kb	Storage tank has a capacity less than 75 cubic meters.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
	MSGENTK7		
MSGFLR1	N/A	40 CFR Part 60, Subpart A	The flare is not used to comply with applicable subparts of Parts 60 or 61.
MSGFLR1	N/A	40 CFR Part 63, Subpart A	The flare is not used to comply with applicable subparts of Part 63.
MSGFLR2	N/A	40 CFR Part 60, Subpart A	The flare is not used to comply with applicable subparts of Parts 60 or 61.
MSGFLR2	N/A	40 CFR Part 63, Subpart A	The flare is not used to comply with applicable subparts of Part 63.
MSGFLR3	N/A	40 CFR Part 60, Subpart A	The flare is not used to comply with applicable subparts of Parts 60 or 61.
MSGFLR3	N/A	40 CFR Part 63, Subpart A	The flare is not used to comply with applicable subparts of Part 63.

New Source Review Authorization References

New Source Review Authorization References 21

New Source Review Authorization References by Emission Unit 22

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: GHGPSDTX157	Issuance Date: 03/29/2023
PSD Permit No.: PSDTX1496	Issuance Date: 03/29/2023
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 139479	Issuance Date: 03/29/2023

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
MSAGRU1	ACID GAS RECOVERY UNIT VENT TRAIN 1	139479, GHGPSDTX157, PSDTX1496
MSAGRU2	ACID GAS RECOVERY UNIT VENT TRAIN 2	139479, GHGPSDTX157, PSDTX1496
MSAGRU3	ACID GAS RECOVERY UNIT VENT TRAIN 3	139479, GHGPSDTX157, PSDTX1496
MSAGRU4	ACID GAS RECOVERY UNIT VENT TRAIN 4	139479, GHGPSDTX157, PSDTX1496
MSAGRU5	ACID GAS RECOVERY UNIT VENT TRAIN 5	139479, GHGPSDTX157, PSDTX1496
MSAGRU6	ACID GAS RECOVERY UNIT VENT TRAIN 6	139479, GHGPSDTX157, PSDTX1496
MSAGRU7	ACID GAS RECOVERY UNIT VENT TRAIN 7	139479, GHGPSDTX157, PSDTX1496
MSAMTNK1	TRAIN 1 AMINE TANK	139479, PSDTX1496
MSAMTNK2	TRAIN 2 AMINE TANK	139479, PSDTX1496
MSAMTNK3	TRAIN 3 AMINE TANK	139479, PSDTX1496
MSAMTNK4	TRAIN 4 AMINE TANK	139479, PSDTX1496
MSAMTNK5	TRAIN 5 AMINE TANK	139479, PSDTX1496
MSAMTNK6	TRAIN 6 AMINE TANK	139479, PSDTX1496
MSAMTNK7	TRAIN 7 AMINE TANK	139479, PSDTX1496
MSCONCOL1	CONDENSATE STABILIZATION COLUMN TRAIN 1	139479, PSDTX1496
MSCONCOL2	CONDENSATE STABILIZATION COLUMN TRAIN 2	139479, PSDTX1496
MSCONCOL3	CONDENSATE STABILIZATION COLUMN TRAIN 3	139479, PSDTX1496
MSCONCOL4	CONDENSATE STABILIZATION COLUMN TRAIN 4	139479, PSDTX1496
MSCONCOL5	CONDENSATE STABILIZATION COLUMN TRAIN 5	139479, PSDTX1496
MSCONCOL6	CONDENSATE STABILIZATION COLUMN TRAIN 6	139479, PSDTX1496
MSCONCOL7	CONDENSATE STABILIZATION COLUMN TRAIN 7	139479, PSDTX1496

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
MSFUG	COMMON EQUIPMENT FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG1	TRAIN 1 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG2	TRAIN 2 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG3	TRAIN 3 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG4	TRAIN 4 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG5	TRAIN 5 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG6	TRAIN 6 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFUG7	TRAIN 7 FUGITIVES	139479, GHGPSDTX157, PSDTX1496
MSFURN1	TRAIN 1 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN2	TRAIN 2 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN3	TRAIN 3 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN4	TRAIN 4 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN5	TRAIN 5 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN6	TRAIN 6 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFURN7	TRAIN 7 HOT OIL FURNACE	139479, GHGPSDTX157, PSDTX1496
MSFWP1	FIRE WATER PUMP	139479, GHGPSDTX157, PSDTX1496
MSFWP2	FIRE WATER PUMP	139479, GHGPSDTX157, PSDTX1496
MSFWPTK1	FIRE WATER PUMP DIESEL TANK	139479, PSDTX1496
MSFWPTK2	FIRE WATER PUMP DIESEL TANK	139479, PSDTX1496
MSGEN1	TRAIN 1 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGEN2	TRAIN 2 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
MSGEN3	TRAIN 3 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGEN4	TRAIN 4 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGEN5	TRAIN 5 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGEN6	TRAIN 6 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGEN7	TRAIN 7 DIESEL GENERATOR	139479, GHGPSDTX157, PSDTX1496
MSGENTK1	TRAIN 1 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK2	TRAIN 2 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK3	TRAIN 3 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK4	TRAIN 4 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK5	TRAIN 5 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK6	TRAIN 6 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGENTK7	TRAIN 7 GENERATOR DIESEL TANK	139479, PSDTX1496
MSGFLR1	MIDSCALE GROUND FLARE 1	139479, GHGPSDTX157, PSDTX1496
MSGFLR2	MIDSCALE GROUND FLARE 2	139479, GHGPSDTX157, PSDTX1496
MSGFLR3	MIDSCALE GROUND FLARE 3	139479, GHGPSDTX157, PSDTX1496
MSGFLRVTEX	MIDSCALE GROUND FLARE VENT STREAM REG 5 EXEMPT	139479, GHGPSDTX157, PSDTX1496
MSGFLRVTR5	MIDSCALE GROUND FLARE VENT STREAM REG 5	139479, GHGPSDTX157, PSDTX1496

Appendix A

Acronym List 26

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM	.....	actual cubic feet per minute
AMOC	.....	alternate means of control
ARP	.....	Acid Rain Program
ASTM	.....	American Society of Testing and Materials
B/PA	.....	Beaumont/Port Arthur (nonattainment area)
CAM	.....	Compliance Assurance Monitoring
CD	.....	control device
CEMS	.....	continuous emissions monitoring system
CFR	.....	Code of Federal Regulations
COMS	.....	continuous opacity monitoring system
CVS	.....	closed vent system
D/FW	.....	Dallas/Fort Worth (nonattainment area)
EP	.....	emission point
EPA	.....	U.S. Environmental Protection Agency
EU	.....	emission unit
FCAA Amendments	.....	Federal Clean Air Act Amendments
FOP	.....	federal operating permit
gr/100 scf	.....	grains per 100 standard cubic feet
HAP	.....	hazardous air pollutant
H/G/B	.....	Houston/Galveston/Brazoria (nonattainment area)
H ₂ S	.....	hydrogen sulfide
ID No.	.....	identification number
lb/hr	.....	pound(s) per hour
MACT	.....	Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr	.....	Million British thermal units per hour
NA	.....	nonattainment
N/A	.....	not applicable
NADB	.....	National Allowance Data Base
NESHAP	.....	National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
NO _x	.....	nitrogen oxides
NSPS	.....	New Source Performance Standard (40 CFR Part 60)
NSR	.....	New Source Review
ORIS	.....	Office of Regulatory Information Systems
Pb	.....	lead
PBR	.....	Permit By Rule
PEMS	.....	predictive emissions monitoring system
PM	.....	particulate matter
ppmv	.....	parts per million by volume
PRO	.....	process unit
PSD	.....	prevention of significant deterioration
psia	.....	pounds per square inch absolute
SIP	.....	state implementation plan
SO ₂	.....	sulfur dioxide
TCEQ	.....	Texas Commission on Environmental Quality
TSP	.....	total suspended particulate
TVP	.....	true vapor pressure
U.S.C.	.....	United States Code
VOC	.....	volatile organic compound

Appendix B

Major NSR Summary Table 28

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSFURN1	Train 1 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSFURN2	Train 2 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSFURN3	Train 3 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		SO ₂	0.31	0.81			
MSFURN4	Train 4 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSFURN5	Train 5 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSFURN6	Train 6 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSFURN7	Train 7 Hot Oil Furnace	VOC	0.45	1.18	2, 4, 7, 11, 12, 13, 14, 15	2, 7, 11, 13, 14, 21, 22	2, 12, 13
		CO	3.28	8.54			
		NO _x	2.57	6.70			
		PM	0.63	1.63			
		PM ₁₀	0.63	1.63			
		PM _{2.5}	0.63	1.63			
		SO ₂	0.31	0.81			
MSTO1	Train 1 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSTO2	Train 2 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSTO3	Train 3 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSTO4	Train 4 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		SO ₂	0.30	0.80			
MSTO5	Train 5 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSTO6	Train 6 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSTO7	Train 7 Thermal Oxidizer	VOC	0.12	0.28	7, 8, 11, 12, 13	7, 8, 11, 13, 21, 22	12, 13
		CO	4.70	12.88			
		NO _x	3.36	9.20			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		PM	0.42	1.14			
		PM ₁₀	0.42	1.14			
		PM _{2.5}	0.42	1.14			
		H ₂ S	<0.01	<0.01			
		SO ₂	0.30	0.80			
MSGFLR1	Midscale Ground Flare 1	VOC	3.36	-	27, 9, 10	7, 9, 10, 21	
		CO	9.22	-			
		NO _x	2.31	-			
		H ₂ S	<0.01	-			
		SO ₂	<0.01	-			
MSGFLR2	Midscale Ground Flare 2	VOC	3.36	-	7, 9, 10	7, 9, 10, 21	
		CO	9.22	-			
		NO _x	2.31	-			
		H ₂ S	<0.01	-			
		SO ₂	<0.01	-			
MSGFLR3	Midscale Ground Flare 3	VOC	3.36	-	7, 9, 10	7, 9, 10, 21	
		CO	9.22	-			
		NO _x	2.31	-			
		H ₂ S	<0.01	-			
		SO ₂	<0.01	-			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
GFLRCAP	Midscale Ground Flare Cap	VOC	-	18.48	7, 9, 10	7, 9, 10, 21	
		CO	-	50.31			
		NO _x	-	12.63			
		H ₂ S	-	<0.01			
		SO ₂	-	0.01			
MSGFLR1	Midscale Ground Flare 1 (MSS)	VOC	802.56	-	7, 9, 10, 17, 18, 19, 20	7, 9, 10, 18, 19, 21, 22	
		CO	2357.13	-			
		NO _x	274.91	-			
		SO ₂	<0.01	-			
MSGFLR2	Midscale Ground Flare 2 (MSS)	VOC	802.56	-	7, 9, 10, 17, 18, 19, 20	7, 9, 10, 18, 19, 21, 22	
		CO	2357.13	-			
		NO _x	274.91	-			
		SO ₂	<0.01	-			
MSGFLR3	Midscale Ground Flare 3 (MSS)	VOC	802.56	-	7, 9, 10, 17, 18, 19, 20	7, 9, 10, 18, 19, 21, 22	
		CO	2357.13	-			
		NO _x	274.91	-			
		SO ₂	<0.01	-			
FLMSSCAP	Annual Flare Cap (MSS)	VOC	-	9.80	7, 9, 10, 17, 18, 19, 20	7, 9, 10, 18, 19, 21, 22	
		CO	-	187.62			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		NOX	-	22.82			
		SO ₂	-	0.66			
MSFWP1	Fire Water Pump	VOC	0.22	0.01	2, 3, 6, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	1.58	0.07			
		NO _x	1.59	0.07			
		PM	0.09	<0.01			
		PM ₁₀	0.09	<0.01			
		PM _{2.5}	0.09	<0.01			
		SO ₂	<0.01	<0.01			
MSFWP2	Fire Water Pump	VOC	0.22	0.01	2, 3, 6, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	1.58	0.07			
		NO _x	1.59	0.07			
		PM	0.09	<0.01			
		PM ₁₀	0.09	<0.01			
		PM _{2.5}	0.09	<0.01			
		SO ₂	<0.01	<0.01			
MSGEN1	Train 1 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			
		PM	0.49	0.02			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN2	Train 2 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN3	Train 3 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN4	Train 4 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN5	Train 5 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN6	Train 6 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			
		NO _x	13.66	0.62			
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN7	Train 7 Diesel Generator	VOC	1.86	0.08	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	8.49	0.39			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		NO _x	13.66	0.62			
		PM	0.49	0.02			
		PM ₁₀	0.49	0.02			
		PM _{2.5}	0.49	0.02			
		SO ₂	0.02	<0.01			
MSGEN8	LNG Storage Diesel Generator	VOC	0.58	0.03	2, 3, 5, 7, 11	2, 3, 7, 11, 21, 22	2, 3
		CO	4.24	0.19			
		NO _x	4.27	0.19			
		PM	0.24	0.01			
		PM ₁₀	0.24	0.01			
		PM _{2.5}	0.24	0.01			
		SO ₂	<0.01	<0.01			
MSFUG1	Train 1 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG2	Train 2 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG3	Train 3 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG4	Train 4 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSFUG5	Train 5 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG6	Train 6 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG7	Train 7 Fugitives (5)	VOC	1.72	7.53	16	16, 21, 22	16
		H ₂ S	<0.01	<0.01			
MSFUG	Common Equipment Fugitives (5)	VOC	0.44	1.94	16	16, 21, 22	16
MSGENTK1	Train 1 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK2	Train 2 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK3	Train 3 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK4	Train 4 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK5	Train 5 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK6	Train 6 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK7	Train 7 Generator Diesel Tank	VOC	<0.01	<0.01		21	

Major NSR Summary Table

Permit Numbers: 139479 and PSDTX1496					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSGENTK1	Train 1 Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSGENTK8	LNG Storage Generator Diesel Tank	VOC	<0.01	<0.01		21	
MSFWPTK1	Fire Water Pump Diesel Tank	VOC	<0.01	<0.01		21	
MSFWPTK2	Fire Water Pump Diesel Tank	VOC	<0.01	<0.01		21	
MSAMTNK1	Train 1 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK2	Train 2 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK3	Train 3 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK4	Train 4 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK5	Train 5 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK6	Train 6 Amine Tank	VOC	<0.01	<0.01		21	
MSAMTNK7	Train 7 Amine Tank	VOC	<0.01	<0.01		21	
MSVACTRK	Truck Loading (MSS)	VOC	<0.01	<0.01	18, 19	18, 19, 21, 22	

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
 NOx - total oxides of nitrogen
 SO2 - sulfur dioxide
 PM - total particulate matter, suspended in the atmosphere, including PM10 and PM2.5, as represented

PM10 - total particulate matter equal to or less than 10 microns in diameter, including PM2.5, as represented

PM2.5 - particulate matter equal to or less than 2.5 microns in diameter

CO - carbon monoxide

H2S - hydrogen sulfide

MSS - maintenance, startup, and shutdown emissions

- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period. Annual emission rates for each source include planned MSS emissions, unless otherwise noted.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSFURN1	Train 1 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSFURN2	Train 2 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSFURN3	Train 3 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSFURN4	Train 4 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		CO ₂ e	-	27,391			
MSFURN5	Train 5 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSFURN6	Train 6 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSFURN7	Train 7 Hot Oil Furnace	CO ₂	-	27,268	23, 24, 29	24, 29, 30, 31, 32	29
		N ₂ O	-	0.29			
		CH ₄	-	1.45			
		CO ₂ e	-	27,391			
MSTO1	Train 1 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO2	Train 2 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO3	Train 3 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO4	Train 4 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO5	Train 5 Thermal	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
	Oxidizer	N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO6	Train 6 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
MSTO7	Train 7 Thermal Oxidizer	CO ₂	-	71,471	25, 29	25, 29, 30, 31, 32	29
		N ₂ O	-	0.04			
		CH ₄	-	6.11			
		CO ₂ e	-	71,636			
GFLRCAP	Multi-Point Ground Flare Cap	CO ₂	-	12,252	29	29, 30, 31, 32	29
		N ₂ O	-	0.03			
		CH ₄	-	27.18			
		CO ₂ e	-	12,938			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
FLMSSCAP	Annual Flare Cap (MSS)	CO ₂	-	83,602	29	29, 30, 31, 32	29
		N ₂ O	-	0.08			
		CH ₄	-	91			
		CO ₂ e	-	85,913			
MSFWP1	Firewater Pump	CO ₂	-	14.10	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	14.10			
MSFWP2	Firewater Pump	CO ₂	-	14.10	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	14.10			
MSGEN1	Train 1 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		CO ₂ e	-	76.00			
MSGEN2	Train 2 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN3	Train 3 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN4	Train 4 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN5	Train 5 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN6	Train 6 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN7	Train 7 Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			
MSGEN8	LNG Storage Diesel Generator	CO ₂	-	75.30	26, 29	26, 29, 30, 31, 32	29
		N ₂ O	-	<0.01			
		CH ₄	-	<0.01			
		CO ₂ e	-	76.00			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSFUG1	Train 1 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG2	Train 2 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG3	Train 3 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG4	Train 4 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG5	Train 5 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			

Major NSR Summary Table

Permit Number: GHGPSDTX157					Issuance Date: March 29, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Condition/Application Information	Special Condition/Application Information
MSFUG6	Train 6 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG7	Train 7 Fugitives (5)	CO ₂	-	4.52	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	14.59			
		CO ₂ e	-	369			
MSFUG	Common Equipment Fugitive Emissions (5)	CO ₂	-	0.03	27, 28, 29	27, 29, 30, 31, 32	27, 29
		CH ₄	-	7.79			
		CO ₂ e	-	195			
MSBOGMSS	BOG Compressor MSS	CH ₄	-	0.26	29	29, 31	29
		CO ₂ e	-	7.00			

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) CO₂ - carbon dioxide N₂O - nitrous oxide CH₄ - methane

CO₂e - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, as published on

November 29, 2013 (78 FR71904): CO₂ (1), CH₄ (25), and N₂O (298)

- (4) Compliance with annual CO₂e emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits includes normal and planned maintenance, startup, and shutdown (MSS) emissions. For all non-CO₂e GHG emissions, listed emission rates are given for informational purposes only and do not constitute an enforceable limit.
- (5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.



Texas Commission on Environmental Quality Air Quality Permit

A Permit Is Hereby Issued To
Corpus Christi Liquefaction, LLC
Authorizing the Construction and Operation of
Liquefied Natural Gas Terminal
Located at Gregory, San Patricio County, Texas
Latitude 27.9 Longitude -97.270555

Permits: 139479, GHGPSDTX157, and PSDTX1496

Amendment Date: March 29, 2023

Expiration Date: February 14, 2027

A handwritten signature in black ink that reads "Erin E. Chamalor".

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]¹
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and

operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

1. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources-- Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]¹
2. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC § 116.115(b)(2)(G)]
3. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
4. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
5. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
6. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
7. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.¹

¹ Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

Common Acronyms in Air Permits

°C = Temperature in degrees Celsius	GLC ^{max} = maximum (predicted) ground-level concentration
°F = Temperature in degrees Fahrenheit	gpm = gallon per minute
°K = Temperature in degrees Kelvin	gr/100scf = grain per 1000 standard cubic feet
µg = microgram	gr/dscf = grain per dry standard cubic feet
µg/m ³ = microgram per cubic meter	H ₂ CO = formaldehyde
acfm = actual cubic feet per minute	H ₂ S = hydrogen sulfide
AMOC = alternate means of control	H ₂ SO ₄ = sulfuric acid
AOS = alternative operating scenario	HAP = hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
AP-42 = Air Pollutant Emission Factors, 5th edition	HC = hydrocarbons
APD = Air Permits Division	HCl = hydrochloric acid, hydrogen chloride
API = American Petroleum Institute	Hg = mercury
APWL = air pollutant watch list	HGB = Houston/Galveston/Brazoria
BPA = Beaumont/ Port Arthur	hp = horsepower
BACT = best available control technology	hr = hour
BAE = baseline actual emissions	IFR = internal floating roof tank
bbl = barrel	in H ₂ O = inches of water
bbl/day = barrel per day	in Hg = inches of mercury
bhp = brake horsepower	IR = infrared
BMP = best management practices	ISC3 = Industrial Source Complex, a dispersion model
Btu = British thermal unit	ISCST3 = Industrial Source Complex Short-Term, a dispersion model
Btu/scf = British thermal unit per standard cubic foot or feet	K = Kelvin; extension of the degree Celsius scaled-down to absolute zero
CAA = Clean Air Act	LACT = lease automatic custody transfer
CAM = compliance-assurance monitoring	LAER = lowest achievable emission rate
CEMS = continuous emissions monitoring systems	lb = pound
cfm = cubic feet (per) minute	lb/day = pound per day
CFR = Code of Federal Regulations	lb/hr = pound per hour
CN = customer ID number	lb/MMBtu = pound per million British thermal units
CNG = compressed natural gas	LDAR = Leak Detection and Repair (Requirements)
CO = carbon monoxide	LNG = liquefied natural gas
COMS = continuous opacity monitoring system	LPG = liquefied petroleum gas
CPMS = continuous parametric monitoring system	LT/D = long ton per day
DFW = Dallas/ Fort Worth (Metroplex)	m = meter
DE = destruction efficiency	m ³ = cubic meter
DRE = destruction and removal efficiency	m/sec = meters per second
dscf = dry standard cubic foot or feet	MACT = maximum achievable control technology
dscfm = dry standard cubic foot or feet per minute	MAERT = Maximum Allowable Emission Rate Table
ED = (TCEQ) Executive Director	MERA = Modeling and Effects Review Applicability
EF = emissions factor	mg = milligram
EFR = external floating roof tank	mg/g = milligram per gram
EGU = electric generating unit	mL = milliliter
EI = Emissions Inventory	MMBtu = million British thermal units
ELP = El Paso	MMBtu/hr = million British thermal units per hour
EPA = (United States) Environmental Protection Agency	MSDS = material safety data sheet
EPN = emission point number	MSS = maintenance, startup, and shutdown
ESL = effects screening level	MW = megawatt
ESP = electrostatic precipitator	NAAQS = National Ambient Air Quality Standards
FCAA = Federal Clean Air Act	NESHAP = National Emission Standards for Hazardous Air Pollutants
FCCU = fluid catalytic cracking unit	NGL = natural gas liquids
FID = flame ionization detector	NNSR = nonattainment new source review
FIN = facility identification number	NO _x = total oxides of nitrogen
ft = foot or feet	NSPS = New Source Performance Standards
ft/sec = foot or feet per second	PAL = plant-wide applicability limit
g = gram	
gal/wk = gallon per week	
gal/yr = gallon per year	
GLC = ground level concentration	

PBR = Permit(s) by Rule
PCP = pollution control project
PEMS = predictive emission monitoring system
PID = photo ionization detector
PM = periodic monitoring
PM = total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented
PM_{2.5} = particulate matter equal to or less than 2.5 microns in diameter
PM₁₀ = total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented
POC = products of combustion
ppb = parts per billion
ppm = parts per million
ppmv = parts per million (by) volume
psia = pounds (per) square inch, absolute
psig = pounds (per) square inch, gage
PTE = potential to emit
RA = relative accuracy
RATA = relative accuracy test audit
RM = reference method
RVP = Reid vapor pressure
scf = standard cubic foot or feet
scfm = standard cubic foot or feet (per) minute
SCR = selective catalytic reduction
SIL = significant impact levels
SNCR = selective non-catalytic reduction
SO₂ = sulfur dioxide
SOCMI = synthetic organic chemical manufacturing industry
SRU = sulfur recovery unit
TAC = Texas Administrative Code
TCAA = Texas Clean Air Act
TCEQ = Texas Commission on Environmental Quality
TD = Toxicology Division
TLV = threshold limit value
TMDL = total maximum daily load
tpd = tons per day
tpy = tons per year
TVP = true vapor pressure
VOC = volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
VRU = vapor recovery unit or system

Special Conditions

Permit Numbers 139479, PSDTX1496, and GHGPSDTX157

1. This permit authorizes emissions only from those emission points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. Also, this permit authorizes the emissions from planned maintenance, startup and shutdown.

Federal Applicability

2. Affected facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources, Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
 - A. Subpart A: General Provisions.
 - B. Subpart Dc: Standards of Performance for Small Industrial Commercial Institutional Steam Generation Units. **(06/19)**
 - C. Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels.
 - D. Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
3. Affected facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63: **(06/19)**
 - A. Subpart A: General Provisions.
 - B. Subpart ZZZZ: National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

Emission Standards and Operating Specifications

4. This permit authorizes seven (7) liquefied natural gas (LNG) liquefaction trains and associated support facilities. Each train contains the following equipment: a gas-fired furnace (Emission Point Nos. (EPNs) MSFURN1 through MSFURN7), a thermal oxidizer (EPNs MSTO1 through MSTO7), a standby diesel generator (EPNs MSGEN1 through MSGEN7) with diesel storage day tank (EPNs MSGENTK1 through MSGENTK7), and an amine storage tank (MSAMTNK1 through MSAMTNK7). This permit also authorizes the following support facilities: one standby diesel generator (EPN MSGEN8) and associated diesel storage day tank (EPN MSGENTK8), two (2) fire water pumps and diesel storage tanks (EPNs MSFWP1 and MSFWP2 and MSFWPTK1 and MSFWPTK2, respectively), three (3) multi-point ground flares (EPNs MSGFLR1 through MSGFLR3), and eight (8) fugitive emission sources (EPNs MSFUG and MSFUG1 through MSFUG7). Emissions from flares and MSS activities are authorized under caps (EPNs GFLCAP, FLMSSCAP, MSSVACTRK) as appropriate. **(03/23)**

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Permit Numbers 139479, PSDTX1496 and GHGPSDTX157

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- A. The concentration of nitrogen oxides (NO_x) from EPNs MSFURN1 through MSFURN7 shall not exceed 0.0306 pounds per Million British thermal units (lb/MMBtu) per furnace on a one-hour average, except during startup or shutdown.
 - B. The concentration of carbon monoxide (CO) from EPNs MSFURN1 through MSFURN7 shall not exceed 50 ppmvd, corrected to 3% O₂, per furnace on a one-hour average, except during startup and shutdown.
5. The standby generators (EPNs MSGEN1 through MSGEN8) are limited to no more than 100 hours each of non-emergency operation per calendar year. **(06/19)**
 6. The firewater pump engines (EPNs MSFWP1 and MSFWP2) are limited to no more than 100 hours each of non-emergency operation per calendar year. **(06/19)**
 7. Fuel for the facilities authorized by this permit is limited to the following:
 - A. Thermal oxidizers and flare pilots are limited to fuel containing no more than 4 ppmv H₂S. **(06/19)**
 - B. The furnaces are limited to fuel containing no more than 4 ppmv H₂S. **(06/19)**
 - C. The standby generators and firewater pump engines are limited to ultra-low sulfur diesel containing no more than 15 ppm by weight sulfur.
 - D. Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel or shall allow air pollution control agency representatives to obtain a sample for analysis.
 8. Vents from each Acid Gas Removal Unit must be directed to the thermal oxidizers (TO). The TO combustion chamber outlet temperatures for EPNs MSTO1 through MSTO7 shall be continuously monitored when waste gas is directed to the TO. The minimum combustion zone temperature shall be 1400 degrees Fahrenheit, until a minimum operating temperature is established by the testing required in Special Condition No. 13, when waste gas is directed to the TO. The combustion zone temperature must be recorded at least four times an hour (once per quarter of the hour) when waste gas is directed to the TO. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device accuracy shall be the greater of either 1 percent of the temperature being measured or 4.5 degrees Fahrenheit. During periods when the TO is not operational, vents from the Acid Gas Removal Unit shall be directed to the Low-Pressure (Acid Gas) Flare burners within each of the Multi-Point Ground Flares (MPGFs) (EPNs MSGFLR1 through MSGFLR3). **(03/23)**
 9. The Low-Pressure (Acid Gas) Flare burners within each of the Multi-Point Ground Flares (EPNs MSGFLR1 through MSGFLR3), except as set forth herein, shall be designed and operated in accordance with the following requirements:**(03/23)**
 - A. The low-pressure flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications

Special Conditions

Permit Numbers 139479, PSDTX1496 and GHGPSDTX157

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of minimum heating value and maximum tip velocity under normal maintenance, startup and shutdown flow conditions. The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements. **(03/23)**

- B. The low-pressure flares shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, infrared, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with the manufacturer's specifications. **(03/23)**

- C. The low-pressure flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. **(03/23)**

The requirements above are not applicable during emission events. Emission events are not authorized by this permit.

- D. The permit holder shall install a continuous flow monitor and composition analyzer or calorimeter that provide a record of the vent stream flow and composition (total VOC or Btu content) to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition (or Btu content) shall be recorded each hour.

The monitors shall be calibrated or have a calibration check performed on an annual basis to meet the following accuracy specifications: the flow monitor shall be $\pm 5.0\%$, temperature monitor shall be $\pm 2.0\%$ at absolute temperature, and pressure monitor shall be ± 5.0 mm Hg.

If the VOC content of the vent stream is monitored for purposes of compliance with this Special Condition, calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR §60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

Notwithstanding any contrary part of this paragraph, for a gas chromatograph or mass spectrometer for compositional analysis for net heating value, the calibration error (CE) of the net heating value (NHV) measured versus the cylinder tag value NHV as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE may be used in accordance with 40 CFR § 63.2450(e)(5)(x).

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Permit Numbers 139479, PSDTX1496 and GHGPSDTX157

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A calorimeter may be used to directly measure the heating value of the flared gas. If used, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12 month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR §§60.18(f)(3) and 60.18(f)(4) shall be recorded at least once every hour. Hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated November 29, 2022 and subsequent application updates associated with TCEQ Project No. 350743. **(03/23)**

10. The high-pressure (dry flare header and wet flare header streams) burners within each of the Multi-Point Ground Flares (EPNs MSGFLR1 through MSGFLR3), except as set forth herein, shall be designed with six (6) wet vent gas high-pressure (HP) stages, nine (9) dry vent gas HP stages, associated pilots (2 per stage), and a total of 240 Zeeco MJ-4 burners with no assist air or assist steam, and shall operate in accordance with the following requirements when regulated materials are routed to each flare, to achieve at least 99% VOC, methane, and H₂S destruction and removal efficiencies (DREs). **(03/23)**

A. Operating Requirements: The net heating value of the flare vent gas combustion zone (NHV_{cz}) must be greater than or equal to 800 British thermal units per standard cubic foot (Btu/scf), which shall be demonstrated by continuously monitoring (i.e., at least once every 15 minutes), as follows:

- (1) Net Heating Values NHV_{cz} and NHV_{vg}. Determine the concentration of individual components and effects of assist media in the flare vent gas using the methods in 40 CFR §§ 63.670(j), (l)(1), (m)(1), and Table 12 and Table 13 of 40 CFR 63 Subpart CC (MACT CC), as applicable. Alternatively, the net heating value of the flare vent gas and hydrogen concentration may be directly monitored following the methods provided in 40 CFR §63.670(l)(2)-(3), as applicable. Different monitoring methods may be used to determine vent gas composition for different gaseous streams provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined following the options in this condition.

Notwithstanding any contrary part of this paragraph, for a gas chromatograph or mass spectrometer for compositional analysis for net heating value, the calibration error (CE) of net heating value (NHV) measured versus the cylinder tag value NHV as the measure of agreement for daily calibration and quarterly audits in lieu of determining the compound-specific CE may be used in accordance with 40 CFR § 63.2450(e)(5)(x).

- (2) Maximum Flare Tip Velocity (V_{tip}). Calculation of V_{tip} is not applicable to the HP MPGF burners consistent with 40 CFR § 63.1103(e)(4)(vii)(A) or § 63.2450(e)(5)(viii)(A).

Special Conditions

Permit Numbers 139479, PSDTX1496 and GHGPSDTX157

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- (3) Flare Vent Gas Flow Rate Requirements. Install, operate, calibrate, and maintain a monitoring system capable of continuously measuring calculating, and recording the cumulative volumetric flow rates in the flare header or headers that feed the flare, including any supplemental natural gas used with the flare. The flow rate monitoring systems must comply with 40 CFR § 63.670(i), as applicable. The monitors shall meet the measurement location, accuracy, and calibration requirements of Table 13 to 40 CFR Part 63, Subpart CC.
- B. Pilot Flame Requirements: Operate each stage of the pressure-assisted multi-point flare with a flame present at all times when regulated material is routed to that stage of burners. Each stage of burners that cross-lights in the pressure-assisted multi-point flare must have at least two pilots with at least one continuously lit and capable of igniting all regulated material that is routed to that stage of burners. The pilot flame(s) on each stage of burners that use cross-lighting must be continuously monitored by a thermocouple, ultraviolet beam sensor, or infrared sensor, used to detect the presence of a flame. If a stage of burners on the flare uses cross-lighting, the distance between any two burners in series on that stage shall be no more than 6 feet when measured from the center of one burner to the next burner.
- C. Visible Emission Requirements: When any HP flare stage is receiving regulated materials, the MPM shall be operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours and meet 40 CFR § 63.670(c) and (h).
- D. Pressure Monitor and Stage Valve Position Indicator Requirements: Install and operate pressure monitor(s) on the main flare header, as well as a valve position indicator monitoring system for each staging valve to ensure that the flares operate within the proper range of conditions as specified by the manufacturer. The pressure monitor must meet the requirements in Table 13 to 40 CFR Part 63, Subpart CC.
- E. Closed Vent Capture Systems: The following requirements apply to capture systems for the Multi-Point Ground Flares.

 - (1) Conduct a visual, audible, and/or olfactory inspection of the capture system at least once per month to verify there are no leaking components in the capture system; or
 - (2) Verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21, at least once per year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.
 - (3) If there is a bypass for the control device, comply with either of the following requirements:

 - (a) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if

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Permit Numbers 139479, PSDTX1496 and GHGPSDTX157

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opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

(b) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals prevent flow out the bypass.

(4) Records of the inspections required shall be maintained and if the results of any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.

F. Continuous Monitoring Requirements: Follow the specifications, calibration, and maintenance procedures according to the following:

(1) At all times, all monitoring equipment must operate and be maintained in a manner consistent with 40 CFR §§ 60.11(d), 63.6(e)(1)(i), 63.671(a), and Table 13 of MACT CC with the TCEQ as the Administrator.

(2) Any monitor downtime must comply with 40 CFR §§ 63.671(a)(4) and 63.671(c). The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12 month period.

(3) Unless otherwise specified, each measurement taken by the monitoring systems shall comply with 40 CFR §63.671(d).

G. Recordkeeping Requirements: Keep records according to 40 CFR § 63.655(i)(9)(i) through (x), except for the flare tip velocity and dilution operating limits requirements of §63.655(i)(9)(vii), and sufficient records to demonstrate compliance with this Special Condition.

H. Emission Determinations: Calculations of hourly and annual emissions to determine compliance with the MAERT limitations shall be determined and recorded using the monitoring data collected pursuant to this Special Condition applying the direct calculation method specified by §63.670(l)(5)(ii) and the emission factors and emissions methodology represented in the permit application, PI-1 dated November 29, 2022 and subsequent application updates associated with TCEQ Project No. 350743. Annual emissions shall be calculated by the end of the current month for the previous rolling 12-month period. To calculate CH₄, CO₂, and N₂O greenhouse gas emissions, use the methodology specified in Special Condition No. 30.D.

11. Opacity of emissions from any one stack, other than the flares, authorized by this permit shall not exceed five percent averaged over a six-minute period from each stack, except during planned maintenance, startup, and shutdown where it shall not exceed 15 percent. This determination shall be made by first observing for visible emissions while each facility is in operation. Observations shall be made at least 15 feet and no more than 0.25 miles from the emission point(s). Up to three emissions points may be read concurrently, provided that all three emissions points are within a 70 degree viewing sector or angle in front of the observer such that the proper sun position (at the observer's back) can be maintained for all three emission points.

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If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours for that emission point using Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Appendix A, Test Method 9. Instead of determining opacity as described above, the permit holder may choose to consider any observed visible emissions a violation of the opacity limit and record it as such. Observations shall be performed and recorded quarterly. If the opacity exceeds five percent or 15 percent, as applicable, corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.

Initial Determination of Compliance

12. Sampling ports and platforms shall be incorporated into the design of all thermal oxidizers and hot oil furnaces exhaust stacks according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director. **(06/19)**
13. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs MSFURN1 through MSFURN7 and MSTO1 through MSTO7 and to determine initial compliance with all emission limits for EPNs MSFURN1 through MSFURN7 established in this permit. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Reference Methods to be determined during the pretest meeting. **(06/19)**

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

- A. The TCEQ Corpus Christi Regional Office shall be contacted as soon as testing is scheduled but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.
- (6) Procedure used to determine turbine loads during and after the sampling period.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. A written proposed description of any deviation from sampling procedures specified in permit conditions, or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any

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pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have EPA approval shall be submitted to the EPA and copied to TCEQ Regional Director.

- B. For EPNs MSFURN1 through MSFURN7, air contaminants and diluents to be sampled and analyzed include (but are not limited to) NO_x, O₂, CO. **(06/19)**
- C. For EPNs MSTO1 through MSTO7, a VOC destruction efficiency of at least 99.9% or a VOC outlet concentration of 10 ppmvd or less at 3 percent oxygen on a one-hour average must be demonstrated. The minimum operating temperature shall be the average temperature at which compliance with the above was demonstrated.
- D. Sampling as required by this condition shall occur within 60 days after achieving the maximum production rate at which each facility will be operated, but no later than 180 days after initial start-up of each facility. Additional sampling may be required by TCEQ or EPA.
- E. The facility being sampled shall operate at maximum firing rate (i.e. 90% load +/- 10%) during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the firing rate (or production rate) is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region. **(06/19)**

- F. Within 60 days after the completion of the testing and sampling required herein, one copy of the sampling report shall be sent to the TCEQ Corpus Christi Regional Office.

Continuous Demonstration of Compliance

- 14. The holder of this permit shall install, calibrate, maintain, and operate a system to continuously monitor and record the fuel consumption in the furnaces (EPNs MSFURN1 through MSFURN7). The systems shall be accurate to ± 5.0 percent of the unit's maximum flow. **(06/19)**
- 15. The holder of this permit shall perform stack testing in accordance with the requirements of 40 CFR Part 60, Subpart Dc. **(06/19)**

Piping, Valves, Connectors, Pumps, and Compressors – 28VHP

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16. Except as may be provided for in the special conditions of this permit, the following requirements apply to all piping, valves, connectors, pumps, and compressors:

- A. These conditions shall not apply (1) where the VOC have an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure; or (3) to components in pipeline quality natural gas or BOG service. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- (1) piping and instrumentation diagram (PID);
 - (2) a written or electronic database;
 - (3) color coding;
 - (4) a form of weatherproof identification; or
 - (5) designation of exempted process unit boundaries.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling or

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other such periods where flow through the valve(s) is necessary for maintenance, both valves shall be closed. If the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 24 hours. If the repair or replacement is not completed within 24 hours, the line or valve must have a cap, blind flange, plug, or second valve installed.

- F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOCs to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.
- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced

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or repaired. A first attempt to repair the leaks described in this paragraph must be made within 5 days. Records of the first attempt to repair shall be maintained.

- I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager, and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.
- J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. Records of physical inspections shall be noted in the operator's log or equivalent.
- K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 and 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.
- L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

Maintenance, Startup, and Shutdown

17. Each liquefaction train is limited to no more than five planned de-inventory and startup events per rolling 12-month period. No more than one train may be in planned simultaneous startup or shutdown in any given hour. **(06/19)**
18. The permit holder shall establish, implement, and update, as appropriate, a program to maintain and repair facilities. The minimum requirements of this program must include:
 - A. A maintenance program developed by the permit holder for all equipment that is consistent with good air pollution control practices, or alternatively, manufacturer's

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- specifications and recommended programs applicable to equipment performance and the effect on emissions;
 - B. Cleaning and routine inspection of all equipment;
 - C. Repair of equipment on timeframes that minimize equipment failures and maintain performance;
 - D. Training of personnel who implement the maintenance program; and
 - E. Records of conducted planned MSS activities.
19. Sections of the plant handling ethylene or propane undergoing shutdown or maintenance that requires breaking a line or opening a vessel shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.
- A. The process equipment shall be emptied to the pressurized refrigerant storage vessels, pumping as much liquid as practicable to the storage vessels, prior to venting to atmosphere, degassing, or draining liquid. Facilities shall be degassed using good engineering and best management practices as developed per Special Condition No. 18 to ensure air contaminants are removed from the system through the control device (EPNs MSGFLR1 through MSGFLR3) to the extent allowed by process equipment or storage vessel design. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.
(06/19)
 - B. The locations and/or identifiers where the purge gas enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement).
 - C. If the process equipment requires purging, it will be conducted using best management and good air pollution control practices.
20. All contents from process equipment or storage tanks must be removed to the maximum extent possible practicable prior to opening equipment to commence degassing and maintenance. Liquid and solid removal must be directed to covered containment, recycled, sent off-site as product, or disposed of properly. If it is necessary to drain liquid into an open pan or the sump, the liquid must be covered and transferred to a covered vessel within one hour of being drained.

Recordkeeping

21. The following records must be kept at the plant for the life of the permit. All records required in this permit must be made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction:

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- A. A copy of this permit.
 - B. Permit application dated June 27, 2018 and subsequent representations submitted to the TCEQ. **(06/19)**
 - C. A complete copy of the testing reports and records of performance testing completed pursuant to Special Condition No. 13.
22. The following information must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:
- A. Records of continuous monitoring of fuel usage for EPNs MSFURN1; MSFURN2; MSFURN3; MSFURN4; MSFURN5; MSFURN6; MSFURN7. **(06/19)**
 - B. For records of MSS:
 - (1) Date, time and duration of the event; and
 - (2) Emissions from the event.
 - C. Records of visible emission checks and opacity readings as required by Special Condition No. 11 and any corrective actions taken.
 - D. Hours of operation on a monthly and calendar year periods for the standby generators and the firewater pumps.
 - E. Records of thermal oxidizer temperature as required by Special Condition No. 8.
 - F. Records required by the monitoring program in Special Condition No. 16.

Additional GHG Specific Conditions

23. Hot oil furnaces (EPNs MSFURN1 through MSFURN7) shall adhere to the following emissions standards and operating specifications.
- A. The applicant represented the following design choices that will improve efficiency and decrease GHG emissions: limiting furnace fuel to natural gas or equivalent (based on CO₂ lb/MMBTU) fuel gas and Implementing vendor's recommended comprehensive inspection and maintenance program for the furnaces. **(06/19)**
 - B. Emissions of CO_{2e} shall not exceed the maximum allowable emission rates specified in the MAERT under all operating scenarios, including periods of authorized MSS activities.
24. The permit holder shall continuously monitor and record the average hourly fuel consumption of the furnaces with individual flow measurements being taken no less frequently than once every 15 minutes. The fuel flow meters shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. The flow meters shall be accurate to ± 5.0 percent of the unit's maximum flow. Alternatively, fuel flow meters that meet the installation, certification, and quality assurance requirements of Appendix D to Part 75 are acceptable. Fuel flow meter data shall be automatically

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recorded with a data acquisition and handling system. The monitoring system data shall be used to demonstrate continuous compliance with the emission limits of CO_{2e} in the attached MAERT.

25. The permit holder shall continuously monitor and record (1) the average hourly flow rate to each thermal oxidizer from the vent of each Acid Gas Removal Unit and (2) the average hourly fuel consumption of each TO with individual flow measurements being taken no less frequently than once every 15 minutes. The flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. The flow meters shall be accurate to ± 5.0 percent of the unit's maximum flow. **(06/19)**
26. The permit holder shall monitor and record the operating hours of the standby generator engines and firewater pump engines.

GHG- Piping, Valves, Connectors, Pumps, Agitators, and Compressors – 28M LDAR

27. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment in pipeline quality natural gas service:
 - A. The requirements of paragraphs F and G shall not apply where the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

 - (1) piping and instrumentation diagram (PID);
 - (2) a written or electronic database or electronic file;
 - (3) color coding;
 - (4) a form of weatherproof identification; or
 - (5) designation of exempted process unit boundaries.
 - B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
 - C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.
 - D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the

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methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- (a) a cap, blind flange, plug, or second valve must be installed on the line or valve; or
 - (b) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.
- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. Replacements

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for leaking components shall be re-monitored within 15 days of being placed back into methane service.

- G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of methane from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.
- H. Damaged or leaking valves, pump seals, compressor seals, agitator seals or connectors found to be emitting methane in excess of 10,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.
- I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.
- J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

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- K. Alternative monitoring frequency schedules of 30 TAC § 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.
 - L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.
28. Piping and valves in natural gas service within the operating area must be checked daily for leaks using AVO sensing for natural gas leaks.

GHG Continuous Demonstration of Compliance

29. The Facility will demonstrate compliance with CO₂e emissions via annual EPA GHG reporting program requirements of 40 CFR Part 98. Emission calculation methodologies and monitoring and quality assurance/quality control requirements related to GHG emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit. **(06/19)**

If any condition of this permit conflicts with applicable requirements in 40 CFR Part 98, then for the purposes of complying with this permit, the requirements in 40 CFR Part 98 shall govern and be the standard by which compliance shall be demonstrated. All fuels identified in this permit as authorized fuels for the furnaces, flare pilots, and thermal oxidizers, with the exception of diesel and rich amine flash gas or other vent streams from the Acid Gas Removal Unit, shall be considered natural gas for purposes of calculating GHG emission in accordance with 40 CFR 98.

GHG Calculation Methodology

30. Calculations of emissions of CO₂, CH₄, and N₂O to determine compliance with the MAERT CO₂e emission limitation shall be calculated in the following manner by the end of the current month for the previous rolling 12-month basis.
- A. Any referenced methodology of 40 CFR Part 98 is modified as follows:
 - (1) References to annual measurements are to be construed as a rolling 12-month total if the variable is measured on a monthly or more frequent basis.
 - (2) References to annual measurements that are not measured at a frequency greater than one month (e.g. quarterly or semiannual) are to be construed as the average of the most recent measurements based on a rolling twelve month period (e.g. average of 4 quarterly or 2 semiannual).
 - B. For each hot oil furnace (EPN MSFURN1 through MSFURN7):
 - (1) Use the rolling 12-month total fuel flow rate.
 - (2) Use the methodology in 40 CFR § 98.33(a)(2)(i) (Equation C-2) with CO₂ converted to short tons.

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- (3) Use the default CH₄ and N₂O emission factors contained in Table C-2 and Equation C-9a of 40 CFR Part 98.
 - C. For each TO (EPNs MSTO1 through MSTO7):
 - (1) For the acid gas stream, to calculate unburned CH₄ emission use
 - (a) The rolling 12-month total flow rate and CH₄ content, based on process knowledge, of acid gas sent to the TO.
 - (b) A DRE of 99.9% for CH₄.
 - (2) Use the default CO₂, CH₄, and N₂O emission factors contained in Table C-1 and Table C-2 and Equation C-9a of 40 CFR Part 98 for TO fuel and pilot gas.
 - D. For each flare system (EPNs MSGFLR1 through MSGFLR3): **(03/23)**
 - (1) To calculate CH₄ and CO₂ emissions, use the methodology in 40 CFR § 98.233(n)(4) – (6) with
 - (a) The rolling 12-month average CH₄ content, based on process knowledge, and total volumetric gas flow to the flare.
 - (b) A DRE of 99% for methane and 100% for all other hydrocarbon compounds. **(03/23)**
 - (2) To calculate N₂O emissions use
 - (a) The methodology in 40 CFR § 98.233(z)(2) (Equation W-40).
 - (b) The rolling 12-month average volumetric gas flow.
 - E. For the standby generators (EPNs MSGEN1 through MSGEN8) and firewater pump engines (EPNs MSFWP1 and MSFWP2):
 - (1) Use the default CO₂, CH₄, and N₂O emission factors contained in Table C-1 and Table C-2 of 40 CFR Part 98.33.
 - (2) Using hours of non-emergency runtime is acceptable if maximum fuel consumption is assumed.
 - F. For Fugitive Equipment Leaks (EPN MSFUG1 through MSFUG7 and MSFUG):
 - (1) Use the methodology used in the permit application.
31. Permittee shall calculate the CO₂e emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1, as published on November 29, 2013 (78 FR 71904).

Additional GHG Recordkeeping Requirements

32. The following information must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction: **(06/19)**

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- A. Records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. Records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a).
- B. Records for each hot oil furnace (EPNs MSFURN1 through MSFURN7) of:
 - (1) Monthly and rolling 12-month CO₂ and CO_{2e} emissions data in tons.
 - (2) Monthly and rolling 12-month fuel flow data.
- C. For each thermal oxidizer (EPNs MSTO1 through MSTO7), records of: **(10/19)**
 - (1) One-hour average combustion chamber outlet temperature.
 - (2) Monthly, and rolling 12-month fuel consumption.
 - (3) Monthly, and rolling 12-month vent flow from each Acid Gas Removal Unit.
- D. For the flares (EPN MSGFLR1 through MSGFLR3), records of:
 - (1) Monthly and rolling 12-month CO_{2e} emissions data in tons.
 - (2) Monthly and rolling 12-month vent gas flow measurement data.
- E. For fugitive emissions (EPN MSFUG1 through MSFUG7 and MSFUG), records required by the monitoring program in Special Condition No. 27.
- F. Records of parameters used in calculations and the calculations required in Special Condition No. 30.
- G. If a CEMS is selected to measure CO₂ emissions from the TOs pursuant to Special Condition No. 29, then raw data files of all CEMS data shall be kept, including calibration checks, adjustments, and maintenance performed on these systems in a permanent form suitable for inspection.

Date: March 29, 2023

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 139479 and PSDTX1496

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lb/hr	TPY (4)
MSFURN1	Train 1 Hot Oil Furnace	VOC	0.45	1.18
		CO	3.28	8.54
		NOX	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81
MSFURN2	Train 2 Hot Oil Furnace	VOC	0.45	1.18
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81

Emission Sources - Maximum Allowable Emission Rates

MSFURN3	Train 3 Hot Oil Furnace	VOC	0.45	1.18
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81
MSFURN4	Train 4 Hot Oil Furnace	VOC	0.45	1.18
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81

Emission Sources - Maximum Allowable Emission Rates

VOC	0.45	1.18		
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81
MSFURN6	Train 6 Hot Oil Furnace	VOC	0.45	1.18
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81

Emission Sources - Maximum Allowable Emission Rates

VOC	0.45	1.18		
		CO	3.28	8.54
		NO _x	2.57	6.70
		PM	0.63	1.63
		PM ₁₀	0.63	1.63
		PM _{2.5}	0.63	1.63
		SO ₂	0.31	0.81
MSTO1	Train 1 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSTO2	Train 2 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSTO3	Train 3 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88

Emission Sources - Maximum Allowable Emission Rates

		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSTO4	Train 4 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSTO5	Train 5 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80

Emission Sources - Maximum Allowable Emission Rates

MSTO6	Train 6 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSTO7	Train 7 Thermal Oxidizer	VOC	0.12	0.28
		CO	4.70	12.88
		NO _x	3.36	9.20
		PM	0.42	1.14
		PM ₁₀	0.42	1.14
		PM _{2.5}	0.42	1.14
		H ₂ S	<0.01	<0.01
		SO ₂	0.30	0.80
MSGFLR1	Midscale Ground Flare 1	VOC	3.36	-
		CO	9.22	-
		NO _x	2.31	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-

Emission Sources - Maximum Allowable Emission Rates

MSGFLR2	Midscale Ground Flare 2	VOC	3.36	-
		CO	9.22	-
		NO _x	2.31	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
MSGFLR3	Midscale Ground Flare 3	VOC	3.36	-
		CO	9.22	-
		NO _x	2.31	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
GFLRCAP	Midscale Ground Flare Cap	VOC	-	18.48
		CO	-	50.31
		NO _x	-	12.63
		H ₂ S	-	<0.01
		SO ₂	-	0.01
MSGFLR1	Midscale Ground Flare 1 (MSS)	VOC	802.56	-
		CO	2357.13	-
		NO _x	274.91	-
		SO ₂	<0.01	-
MSGFLR2	Midscale Ground Flare 2 (MSS)	VOC	802.56	-
		CO	2357.13	-
		NO _x	274.91	-
		SO ₂	<0.01	-
MSGFLR3	Midscale Ground Flare 3 (MSS)	VOC	802.56	-
		CO	2357.13	-

Emission Sources - Maximum Allowable Emission Rates

		NO _x	274.91	-
		SO ₂	<0.01	-
FLMSSCAP	Annual Flare Cap (MSS)	VOC	-	9.80
		CO	-	187.62
		NO _x	-	22.82
		SO ₂	-	0.66
MSFWP1	Fire Water Pump	VOC	0.22	0.01
		CO	1.58	0.07
		NO _x	1.59	0.07
		PM	0.09	<0.01
		PM ₁₀	0.09	<0.01
		PM _{2.5}	0.09	<0.01
		SO ₂	<0.01	<0.01
MSFWP2	Fire Water Pump	VOC	0.22	0.01
		CO	1.58	0.07
		NO _x	1.59	0.07
		PM	0.09	<0.01
		PM ₁₀	0.09	<0.01
		PM _{2.5}	0.09	<0.01
		SO ₂	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

MSGEN1	Train 1 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01
MSGEN2	Train 2 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01
MSGEN3	Train 3 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01

Emission Sources - Maximum Allowable Emission Rates

MSGEN4	Train 4 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01
MSGEN5	Train 5 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01
MSGEN6	Train 6 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01

Emission Sources - Maximum Allowable Emission Rates

MSGEN7	Train 7 Diesel Generator	VOC	1.86	0.08
		CO	8.49	0.39
		NO _x	13.66	0.62
		PM	0.49	0.02
		PM ₁₀	0.49	0.02
		PM _{2.5}	0.49	0.02
		SO ₂	0.02	<0.01
MSGEN8	LNG Storage Diesel Generator	VOC	0.58	0.03
		CO	4.24	0.19
		NO _x	4.27	0.19
		PM	0.24	0.01
		PM ₁₀	0.24	0.01
		PM _{2.5}	0.24	0.01
		SO ₂	<0.01	<0.01
MSFUG1	Train 1 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG2	Train 2 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG3	Train 3 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG4	Train 4 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG5	Train 5 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG6	Train 6 Fugitives (5)	VOC	1.72	7.53

Emission Sources - Maximum Allowable Emission Rates

		H ₂ S	<0.01	<0.01
MSFUG7	Train 7 Fugitives (5)	VOC	1.72	7.53
		H ₂ S	<0.01	<0.01
MSFUG	Common Equipment Fugitives (5)	VOC	0.44	1.94
MSGENTK1	Train 1 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK2	Train 2 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK3	Train 3 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK4	Train 4 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK5	Train 5 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK6	Train 6 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK7	Train 7 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK1	Train 1 Generator Diesel Tank	VOC	<0.01	<0.01
MSGENTK8	LNG Storage Generator Diesel Tank	VOC	<0.01	<0.01
MSFWPTK1	Fire Water Pump Diesel Tank	VOC	<0.01	<0.01
MSFWPTK2	Fire Water Pump Diesel Tank	VOC	<0.01	<0.01
MSAMTNK1	Train 1 Amine Tank	VOC	<0.01	<0.01
MSAMTNK2	Train 2 Amine Tank	VOC	<0.01	<0.01
MSAMTNK3	Train 3 Amine Tank	VOC	<0.01	<0.01
MSAMTNK4	Train 4 Amine Tank	VOC	<0.01	<0.01
MSAMTNK5	Train 5 Amine Tank	VOC	<0.01	<0.01
MSAMTNK6	Train 6 Amine Tank	VOC	<0.01	<0.01
MSAMTNK7	Train 7 Amine Tank	VOC	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

MSVACTRK	Truck Loading (MSS)	VOC	<0.01	<0.01
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- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
- NO_x - total oxides of nitrogen
- SO₂ - sulfur dioxide
- PM - total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented
- PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented
- PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter
- CO - carbon monoxide
- H₂S - hydrogen sulfide
- MSS - maintenance, startup, and shutdown emissions
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period. Annual emission rates for each source include planned MSS emissions, unless otherwise noted.
- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: March 29, 2023

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX157

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for sources of GHG air contaminants on the applicant's property authorized by this permit. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
MSFURN1	Train 1 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN2	Train 2 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN3	Train 3 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN4	Train 4 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN5	Train 5 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN6	Train 6 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSFURN7	Train 7 Hot Oil Furnace	CO ₂	27,268
		N ₂ O	0.29
		CH ₄	1.45
		CO ₂ e	27,391
MSTO1	Train 1 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636

Emission Sources - Maximum Allowable Emission Rates

MSTO2	Train 2 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
MSTO3	Train 3 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
MSTO4	Train 4 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
MSTO5	Train 5 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
MSTO6	Train 6 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
MSTO7	Train 7 Thermal Oxidizer	CO ₂	71,471
		N ₂ O	0.04
		CH ₄	6.11
		CO ₂ e	71,636
GFLRCAP	Multi-Point Ground Flare Cap	CO ₂	12,252
		N ₂ O	0.03
		CH ₄	27.18
		CO ₂ e	12,938
FLMSSCAP	Annual Flare Cap (MSS)	CO ₂	83,602
		N ₂ O	0.08
		CH ₄	91
		CO ₂ e	85,913
MSFWP1	Firewater Pump	CO ₂	14.10
		N ₂ O	<0.01
		CH ₄	<0.01
		CO ₂ e	14.10

Emission Sources - Maximum Allowable Emission Rates

Emission Sources - Maximum Allowable Emission Rates

Emission Sources - Maximum Allowable Emission Rates

CO ₂	14.10			
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	14.10
MSGEN1	Train 1 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN2	Train 2 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN3	Train 3 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN4	Train 4 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN5	Train 5 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN6	Train 6 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN7	Train 7 Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSGEN8	LNG Storage Diesel Generator		CO ₂	75.30
			N ₂ O	<0.01
			CH ₄	<0.01
			CO ₂ e	76.00
MSFUG1	Train 1 Fugitives (5)		CO ₂	4.52

Emission Sources - Maximum Allowable Emission Rates

		CH ₄	14.59
		CO _{2e}	369
MSFUG2	Train 2 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG3	Train 3 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG4	Train 4 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG5	Train 5 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG6	Train 6 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG7	Train 7 Fugitives (5)	CO ₂	4.52
		CH ₄	14.59
		CO _{2e}	369
MSFUG	Common Equipment Fugitive Emissions (5)	CO ₂	0.03
		CH ₄	7.79
		CO _{2e}	195
MSBOGMSS	BOG Compressor MSS	CH ₄	0.26
		CO _{2e}	7.00

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) CO₂ - carbon dioxide
N₂O - nitrous oxide
CH₄ - methane
CO_{2e} - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, as published on November 29, 2013 (78 FR71904): CO₂ (1), CH₄ (25), and N₂O (298)
- (4) Compliance with annual CO_{2e} emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits includes normal and planned maintenance, startup, and shutdown (MSS) emissions. For all non-CO_{2e} GHG emissions, listed emission rates are given for informational purposes only and do not constitute an enforceable limit.
- (5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.

Emission Sources - Maximum Allowable Emission Rates

Date: March 29, 2023