

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

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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
MSFURN5	Train 5 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

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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
MSFURN7	Train 7 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
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

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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
		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

Emission Sources - Maximum Allowable Emission Rates

		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
		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
MSWDFLR1	Stage 1 Wet/Dry Gas Flare (Continuous)	VOC	0.08	-
		CO	2.35	-

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		NO _x	0.59	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
MSWDFLR2	Stage 2 Wet/Dry Gas Flare (Continuous)	VOC	0.08	-
		CO	2.35	-
		NO _x	0.59	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
MSWDFLR3	Stage 3 Wet/Dry Gas Flare (Continuous)	VOC	0.08	-
		CO	2.35	-
		NO _x	0.59	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
WDFLRCAP	Annual Wet/Dry Gas Flare Cap (Continuous)	VOC	-	0.90
		CO	-	28.08
		NO _x	-	7.05
		H ₂ S	-	<0.01
		SO ₂	-	<0.01
MSGFLR1	Stage 1 Multi-Point Ground Flare	VOC	2.38	-
		CO	14.11	-
		NO _x	3.54	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-

Emission Sources - Maximum Allowable Emission Rates

MSGFLR2	Stage 2 Multi-Point Ground Flare	VOC	2.38	-
		CO	14.11	-
		NO _x	3.54	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
MSGFLR3	Stage 3 Multi-Point Ground Flare	VOC	2.38	-
		CO	14.11	-
		NO _x	3.54	-
		H ₂ S	<0.01	-
		SO ₂	<0.01	-
GFLRCAP	Multi-Point Ground Flare Cap	VOC	-	28.44
		CO	-	168.56
		NO _x	-	42.32
		H ₂ S	-	<0.01
		SO ₂	-	<0.01
MSGFLR1	Stage 1 Multi-Point Ground Flare (MSS)	VOC	802.56	-
		CO	2357.13	-
		NO _x	274.91	-
		SO ₂	<0.01	-
MSGFLR2	Stage 2 Multi-Point Ground Flare (MSS)	VOC	802.56	-
		CO	2357.13	-
		NO _x	274.91	-
		SO ₂	<0.01	-
MSGFLR3	Stage 3 Multi-Point Ground Flare (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: October 22, 2019

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
WDFLRCAP	Annual Wet/Dry Gas Flare Cap (Continuous)	CO ₂	1,954
		N ₂ O	<0.01
		CH ₄	7.30
		CO ₂ e	2,138
GFLRCAP	Multi-Point Ground Flare Cap	CO ₂	11,959
		N ₂ O	0.02
		CH ₄	39.15
		CO ₂ e	12,944
FLMSSCAP	Annual Flare Cap (MSS)	CO ₂	83,602
		N ₂ O	0.08
		CH ₄	91
		CO ₂ e	85,913

Emission Sources - Maximum Allowable Emission Rates

MSFWP1	Firewater Pump	CO ₂	14.10
		N ₂ O	<0.01
		CH ₄	<0.01
		CO ₂ e	14.10
MSFWP2	Firewater Pump	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

Emission Sources - Maximum Allowable Emission Rates

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

Emission Sources - Maximum Allowable Emission Rates

- (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.

Date: October 22, 2019