Emission Sources - Maximum Allowable Emission Rates

Permit Number 106921

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	
			lbs/hour	TPY (4)
ENG-05	Frac-2 Emergency Generator	VOC	0.89	0.05
		NO_x	0.89	0.05
		CO	0.77	0.04
		SO_2	<0.01	<0.01
		PM	0.04	<0.01
		PM_{10}	0.04	<0.01
		$PM_{2.5}$	0.04	<0.01
ENG-06	Frac-2 Firewater Pump	VOC	3.80	0.19
		NO_x	3.80	0.19
		CO	3.30	0.17
		SO_2	0.01	<0.01
		PM	0.19	0.01
		PM_{10}	0.19	0.01
		$PM_{2.5}$	0.19	0.01
ENG-07	Frac-3 & 4 Emergency Air Compressor	VOC	3.70	0.19
		NO_x	3.70	0.19
		CO	3.20	0.16
		SO_2	<0.01	<0.01
		PM	0.19	0.01
		PM_{10}	0.19	0.01
		$PM_{2.5}$	0.19	0.01

Emission Sources - Maximum Allowable Emission Rates

ENG-08	Frac-3 & 4 Firewater Pump	VOC	3.60	0.18
		NO_x	3.60	0.18
		CO	3.10	0.16
		SO_2	<0.01	<0.01
		PM	0.18	<0.01
		PM_{10}	0.18	<0.01
		$PM_{2.5}$	0.18	<0.01
ENG-09	Frac-3 & 4 Emergency Generator	VOC	0.86	0.04
		NO_x	1.60	0.08
		CO	3.20	0.16
		SO_2	<0.01	<0.01
		PM	0.05	<0.01
		PM_{10}	0.05	<0.01
		$PM_{2.5}$	0.05	<0.01
H-04	Hot Oil Heater 4 (6)	VOC	0.48	---
		NO_x	1.54	---
		CO	5.76	---
		SO_2	10.21	---
		H_2S	0.02	---
		NH_3	0.71	---
		PM	0.77	---
		PM_{10}	0.77	---
		$PM_{2.5}$	0.77	---
	Heater MSS Emissions	NO_x	7.68	---
		CO	46.10	---
H-05	Hot Oil Heater 5 (6)	VOC	0.48	---
		NO_x	1.54	---
		CO	5.76	---
		SO_2	10.21	---
		H_2S	0.02	---
		NH_3	0.71	---

Emission Sources - Maximum Allowable Emission Rates

		PM	0.77	---
		PM_{10}	0.77	---
		$PM_{2.5}$	0.77	---
	Heater MSS Emissions	NO_x	7.68	---
		CO	46.10	---
H-06	Hot Oil Heater 6 (6)	VOC	0.48	---
		NO_x	1.54	---
		CO	5.76	---
		SO_2	10.21	---
		H_2S	0.02	---
		NH_3	0.71	---
		PM	0.77	---
		PM_{10}	0.77	---
		$PM_{2.5}$	0.77	---
	Heater MSS Emissions	NO_x	7.68	---
		CO	46.10	---
H-04/H-05/H-06	Hot Oil Heater Cap	VOC	---	4.45
		NO_x	---	18.45
		CO	---	69.12
		SO_2	---	35.02
		H_2S	---	0.10
		NH_3	---	8.49
		PM	---	9.21
		PM_{10}	---	9.21
		$PM_{2.5}$	---	9.21
	Heater MSS Emissions (6)	NO_x	---	0.34
		CO	---	2.02
H-07		VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---

Hot Oil Heater 7 (6)

Emission Sources - Maximum Allowable Emission Rates

		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---
H-08	Hot Oil Heater 8 (6)	VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---
		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---
H-09	Hot Oil Heater 9 (6)	VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---
		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---

Emission Sources - Maximum Allowable Emission Rates

H-10	Hot Oil Heater 10 (6)	VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---
		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---
H-11	Hot Oil Heater 11 (6)	VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---
		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---

Emission Sources - Maximum Allowable Emission Rates

H-12	Hot Oil Heater 12 (6)	VOC	0.65	---
		NOx	1.54	---
		CO	5.76	---
		SO2	20.51	---
		H2S	0.04	---
		NH3	0.71	---
		PM	0.77	---
		PM10	0.77	---
		PM2.5	0.77	---
	Heater MSS Emissions (6)	NOx	7.68	---
		CO	46.10	---
H-07/H-08/H-09/H-10/H-11/H-12	Hot Oil Heater Cap	VOC	---	8.88
		NOx	---	22.14
		CO	---	138.24
		SO2	---	69.44
		H2S	---	0.19
		NH3	---	16.98
		PM	---	18.42
		PM10	---	18.42
		PM2.5	---	18.42
H-07/H-08/H-09/ H-10/H-11/H-12	Hot Oil Heater MSS Emissions	NOx	---	0.67
		CO	---	4.04
FL-01	Flare (Frac-2)	VOC	0.01	0.06
		NO_x	0.35	1.50
		CO	1.40	6.10
		SO_2	<0.01	0.01
FL-02	Flare (Frac-3 & Frac-4)	VOC	0.01	0.06
		NOx	0.35	1.50
		CO	1.40	6.10
		SO2	<0.01	<0.01
FL-02	MSS Flaring (Frac-3 & Frac-4 Contribution)	VOC	350.01	8.47

Emission Sources - Maximum Allowable Emission Rates

		NOx	117.35	4.30
		CO	672.40	22.22
CT-04	Frac-2 Cooling Tower	VOC	2.53	4.71
		PM	1.50	6.57
		PM_{10}	0.60	2.63
		$PM_{2.5}$	0.15	0.66
CT-05	Frac-3 Cooling Tower	VOC	2.01	3.76
		PM	1.20	5.26
		PM_{10}	0.48	2.10
		$PM_{2.5}$	0.12	0.53
CT-06	Frac-4 Cooling Tower	VOC	2.01	3.76
		PM	1.20	5.26
		PM_{10}	0.48	2.10
		$PM_{2.5}$	0.12	0.53
T-410-2	Spent Caustic Tank (Frac-2)	VOC	0.41	0.01
		H_2S	<0.01	0.01
T-630-2	Wastewater Tank (Frac-2, -3, and -4)	VOC	0.43	0.02
CAS1	Controlled Emissions from Spent Caustic Tank (EPN T-410-2)	VOC	0.02	<0.01
CAS2	Controlled Emissions from Wastewater Tank (EPN T-630-2)	VOC	0.03	<0.01
LOAD-SC	Spent Caustic Loading (Frac-2)	VOC	0.09	<0.01
LOAD WW	Wastewater Loading (Frac-2)	VOC	0.09	<0.01
LOAD-SC-3	Spent Caustic Loading (Frac-3, -4)	VOC	0.09	<0.01
LOAD-WW-3	Wastewater Loading (Frac-3, -4)	VOC	0.09	<0.01
FUG-03	Frac-2 Equipment Leak Fugitives (5)	VOC	0.86	3.78
FUG-04	Frac-3 Equipment Leak Fugitives (5)	VOC	0.71	3.12
FUG-05	Frac-4 Equipment Leak Fugitives (5)	VOC	0.71	3.12

Emission Sources - Maximum Allowable Emission Rates

FL-01	MSS Flaring (Frac-2)	VOC	175.01	2.16
		NO_x	39.41	1.97
		CO	336.40	10.13
		SO_2	<0.01	<0.01
MSS-FUG-2	MSS Opening (Frac-2)	VOC	86.70	3.25
		NH_3	0.24	<0.001
MSS-FUG-3	MSS De-gassing (Frac-3 & 4 Contribution)	VOC	92.50	6.50
		NH_3	0.47	<0.01

(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
H_2S - hydrogen sulfide
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - 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
NH_3 - ammonia

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Annual Emissions for the Hot Oil Heaters represent separate annual emission totals for each group of heaters H-04/H-05/H-06 and H-07/H-08/H-09 H-10/H-11/H-12

Date: January 31, 2018