Emission Sources - Maximum Allowable Emission Rates

Permit Number 22046

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.

Pre-Startup of Thermal Oxidizer and Backup Flare System (EPNs H-001 & FR-001) (Project No. 347018)

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
156-FUG	Process Fugitives (5)	VOC	3.37	14.76
		HCl	0.06	0.27
		H_2S	<0.01	0.01
		Na_2S	0.02	0.08
		S	0.02	0.08
		Cl_2	0.04	0.17
		S_2Cl_2	0.02	0.07
FI-06	Thermal Oxidizer (7)	VOC	0.11	0.37
		NO_x	0.83	3.65
		CO	0.70	3.07
		SO_2	0.01	0.02
		PM	0.06	0.28
		PM_{10}	0.06	0.28
		$PM_{2.5}$	0.06	0.28
FI-07	Thermal Oxidizer (8)	VOC	0.03	0.11
		H_2S	0.04	0.01
		SO_2	67.10	2.23
		NOx	0.68	2.98
		CO	0.46	2.03

Emission Sources - Maximum Allowable Emission Rates

		PM	0.03	0.12
		PM_{10}	0.03	0.12
		$PM_{2.5}$	0.03	0.12
S-60	Acid Gas Absorber (9)	VOC	0.41	0.01
		H_2S	0.01	0.01
SD-31	D-31 Scrubber	VOC	0.02	0.02
		H_2S	0.02	0.02
		NaHS	0.01	0.01
		NA_2S	0.01	0.01
		NA_2CO_3	0.01	0.01
AG-5	Storage Tank	VOC	0.01	0.01
		H_2S	0.01	0.01
SC-FI-10	Thermal Oxidizer	NO_x	1.52	6.66
		CO	1.28	5.59
		VOC	0.62	2.98
		HRVOC	0.47	2.06
		SO_2	2.78	13.36
		H_2S	0.02	0.02
		HCl	0.85	3.81
		PM	0.12	0.51
		PM_{10}	0.12	0.51
		$PM_{2.5}$	0.12	0.51
13	Process Flare (6)	NO_x	1.42	1.26
		CO	7.06	5.70
		VOC	10.86	3.96

Emission Sources - Maximum Allowable Emission Rates

		HRVOC	9.33	3.39
		SO_2	2.79	1.02
		H_2S	0.03	0.01
		HCl	0.65	1.02
B-SH1	Start-up Heater	NO_x	0.78	0.05
		CO	0.66	0.04
		VOC	0.04	0.01
		SO_2	0.01	0.01
		PM	0.06	0.01
		PM_{10}	0.06	0.01
		$PM_{2.5}$	0.06	0.01
CT-13	Cooling Tower	VOC	0.73	1.19
		PM	0.09	0.31
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.01	0.01
J-4 and J-5	Filter Feed Tanks	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-2	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-10	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
OS-2	Alkylated Benzene Tank	VOC	0.15	0.03

Emission Sources - Maximum Allowable Emission Rates

OS-3	Alkylated Benzene Tank	VOC	0.15	0.03
West P&F	Plate and Frame Filter	VOC	0.18	Please see *Plate and Frame Filter Cap*
P&F-3	Plate and Frame Filter	VOC	0.21	Please see *Plate and Frame Filter Cap*
	Plate and Frame Filter Cap	VOC	--	0.47
S-03	Spray Column Absorber	VOC	1.38	0.36
		H_2S	0.01	0.01
S-23	Water Spray Column	HCl	0.03	0.03
S-25B	Venturi Scrubber	HCl	0.01	0.01
		SO_2	0.01	0.01
		Cl_2	0.01	0.01
S-51	Absorber	H_2S	0.02	0.01
		SO_2	0.11	0.02
156-ALKLR	Loading	VOC	0.45	0.01
156-SAMPLE	Loading	VOC	0.20	0.01
156-WOLR	Loading	VOC	0.06	0.01
156-CT13-1	Cooling tower tote	VOC	0.26	0.01
156-CT13-3	Cooling tower tote	H_2SO_4	0.01	0.01
156-CT13-2	Cooling tower tote	NaOCl	0.30	0.01
156-WO	Tank	VOC	0.45	0.01
156-MSS	Planned Maintenance	VOC	3.73	0.09

Emission Sources - Maximum Allowable Emission Rates

(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
HRVOC - highly reactive volatile organic compounds as defined in 30 TAC § 115.10
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
HCl - hydrogen chloride
S - sulfur
Cl_2 - chlorine
Na_2S - sodium sulfide
S_2Cl_2 - sulfur chloride
H_2S - hydrogen sulfide
NaOCl - sodium hypochlorite
H_2SO_4 - sulfuric acid
NaHS - sodium hydrosulfide
Na_2S - sodium sulfide
Na_2CO3 - sodium carbonate
(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) Flare designated as EPN 13 is authorized to operate as back-up to the Fume Incinerator designated as EPN SC-FI-10 up to 720 hours per year.
(7) Emissions from the CS Vent shall route to Incinerator FI-06 (EPN FI-06) with no less than 99.9% control of VOC.
(8) Emissions from Storage Tank AG-12, Vessels BL-4 and BL-5 shall route to Incinerator FI-07 (EPN FI-07) with no less than 99.9% control of VOC and/or H_2S.
(9) Emissions from Storage Tanks SS-32, SS-33, SS-34, RA-2 shall route to Scrubber S-60 (EPN S-60) with no less than 99% removal of H_2S.

Emission Sources - Maximum Allowable Emission Rates

Phase I – Post Start-up of Thermal Oxidizer and Backup Flare System (EPNs H-001 & FR-001) (10)

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
156-FUG	Process Fugitives (5)	VOC	3.37	14.76
		HCl	0.06	0.27
		H_2S	<0.01	0.01
		Na_2S	0.02	0.08
		S	0.02	0.08
		Cl_2	0.04	0.17
		S_2Cl_2	0.02	0.07
H-001	Incinerator (7)	VOC	0.26	1.04
		NO_x	1.14	5.07
		CO	3.15	14.26
		PM	0.28	1.24
		PM_{10}	0.28	1.24
		$PM_{2.5}$	0.28	1.24
		SO_2	1.97	3.11
		H_2S	<0.01	<0.01
FR-001	Backup Flare (7) (8)	VOC	1.84	0.45
		NO_x	8.04	2.59
		CO	68.89	22.18
		SO_2	2.00	0.27
		H_2S	<0.01	<0.01
FUG	Fugitives (5) (9)	VOC	0.45	1.98
		H_2S	<0.01	<0.01
AG-5	Storage Tank	VOC	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

		H_2S	0.01	0.01
SC-FI-10	Thermal Oxidizer	NO_x	1.52	6.66
		CO	1.28	5.59
		VOC	0.62	2.98
		HRVOC	0.47	2.06
		SO_2	2.78	13.36
		H_2S	0.02	0.02
		HCl	0.85	3.81
		PM	0.12	0.51
		PM_{10}	0.12	0.51
		$PM_{2.5}$	0.12	0.51
13	Process Flare (6)	NO_x	1.42	1.26
		CO	7.06	5.70
		VOC	10.86	3.96
		HRVOC	9.33	3.39
		SO_2	2.79	1.02
		H_2S	0.03	0.01
		HCl	0.65	1.02

Emission Sources - Maximum Allowable Emission Rates

B-SH1	Start-up Heater	NO_x	0.78	0.05
		CO	0.66	0.04
		VOC	0.04	0.01
		SO_2	0.01	0.01
		PM	0.06	0.01
		PM_{10}	0.06	0.01
		$PM_{2.5}$	0.06	0.01
CT-13	Cooling Tower	VOC	0.73	1.19
		PM	0.09	0.31
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.01	0.01
J-4 and J-5	Filter Feed Tanks	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-2	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-10	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
OS-2	Alkylated Benzene Tank	VOC	0.15	0.03
OS-3	Alkylated Benzene Tank	VOC	0.15	0.03
West P&F	Plate and Frame Filter	VOC	0.18	Please see *Plate and Frame Filter Cap*

Emission Sources - Maximum Allowable Emission Rates

P&F-3	Plate and Frame Filter	VOC	0.21	Please see *Plate and Frame Filter Cap*
	Plate and Frame Filter Cap	VOC	--	0.47
S-03	Spray Column Absorber	VOC	1.38	0.36
		H_2S	0.01	0.01
S-23	Water Spray Column	HCl	0.03	0.03
S-25B	Venturi Scrubber	HCl	0.01	0.01
		SO_2	0.01	0.01
		Cl_2	0.01	0.01
S-51	Absorber	H_2S	0.02	0.01
		SO_2	0.11	0.02
156-ALKLR	Loading	VOC	0.45	0.01
156-SAMPLE	Loading	VOC	0.20	0.01
156-WOLR	Loading	VOC	0.06	0.01
156-CT13-1	Cooling tower tote	VOC	0.26	0.01
156-CT13-3	Cooling tower tote	H_2SO_4	0.01	0.01
156-CT13-2	Cooling tower tote	NaOCl	0.30	0.01
156-WO	Tank	VOC	0.45	0.01
156-MSS	Planned Maintenance	VOC	3.73	0.09

(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
HRVOC - highly reactive volatile organic compounds as defined in 30 TAC § 115.10
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide

Emission Sources - Maximum Allowable Emission Rates

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
HCl	-	hydrogen chloride
S	-	sulfur
Cl_2	-	chlorine
Na_2S	-	sodium sulfide
S_2Cl_2	-	sulfur chloride
H_2S	-	hydrogen sulfide
NaOCl	-	sodium hypochlorite
H_2SO_4	-	sulfuric acid
Na_2S	-	sodium sulfide

(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) Flare designated as EPN 13 is authorized to operate as back-up to the Fume Incinerator designated as EPN SC-FI-10 up to 720 hours per year.
(7) The Incinerator (EPN H-001) and Backup Flare System (EPN FR-001) shall control the CS Vent, Vessels BL-4, BL-5, AG-12, and Storage Tank D-31 with 99.9% DRE for the Incinerator and 98% DRE for the Backup Flare System.
(8) The Backup Flare (EPN FR-001) shall operate as a back-up to the Incinerator (EPN H-001) up to 720 hours per year.
(9) Emissions are for Project No. 347018 Amendment only. The emissions are in addition to those authorized for EPN 156-FUG
(10) Phase I emission rates shall apply at the start-up of Thermal Oxidizer H-001 and shutdown of Thermal Oxidizers FI-06 and FI-07, in accordance with Special Condition No. 26. The permit holder shall submit a permit application to remove references to Pre-Construction limits within 180 days of start-up, Thermal Oxidizer H-001 start-up and Thermal Oxidizers FI-06 and FI-07 shutdown.

Emission Sources - Maximum Allowable Emission Rates

Phase II – Post Shutdown of Scrubber S-60 (EPN S-60) (10)

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
156-FUG	Process Fugitives (5)	VOC	3.37	14.76
		HCl	0.06	0.27
		H_2S	<0.01	0.01
		Na_2S	0.02	0.08
		S	0.02	0.08
		Cl_2	0.04	0.17
		S_2Cl_2	0.02	0.07
H-001	Incinerator (7)	VOC	0.29	1.04
		NO_x	1.14	5.07
		CO	3.16	14.27
		PM	0.28	1.24
		PM_{10}	0.28	1.24
		$PM_{2.5}$	0.28	1.24
		SO_2	6.02	3.52
		H_2S	<0.01	<0.01
FR-001	Backup Flare (7) (8)	VOC	2.39	0.46
		NO_x	8.04	2.59
		CO	68.91	22.20
		SO_2	5.97	0.30
		H_2S	0.01	<0.01
FUG	Fugitives (5) (9)	VOC	0.45	1.98
		H_2S	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

SC-FI-10	Thermal Oxidizer	NO_x	1.52	6.66
		CO	1.28	5.59
		VOC	0.62	2.98
		HRVOC	0.47	2.06
		SO_2	2.78	13.36
		H_2S	0.02	0.02
		HCl	0.85	3.81
		PM	0.12	0.51
		PM_{10}	0.12	0.51
		$PM_{2.5}$	0.12	0.51
13	Process Flare (6)	NO_x	1.42	1.26
		CO	7.06	5.70
		VOC	10.86	3.96
		HRVOC	9.33	3.39
		SO_2	2.79	1.02
		H_2S	0.03	0.01
		HCl	0.65	1.02
B-SH1	Start-up Heater	NO_x	0.78	0.05
		CO	0.66	0.04
		VOC	0.04	0.01
		SO_2	0.01	0.01
		PM	0.06	0.01
		PM_{10}	0.06	0.01
		$PM_{2.5}$	0.06	0.01
CT-13	Cooling Tower	VOC	0.73	1.19

Emission Sources - Maximum Allowable Emission Rates

		PM	0.09	0.31
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.01	0.01
J-4 and J-5	Filter Feed Tanks	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-2	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
J-10	Filter Feed Tank	PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
OS-2	Alkylated Benzene Tank	VOC	0.15	0.03
OS-3	Alkylated Benzene Tank	VOC	0.15	0.03
West P&F	Plate and Frame Filter	VOC	0.18	Please see *Plate and Frame Filter Cap*
P&F-3	Plate and Frame Filter	VOC	0.21	Please see *Plate and Frame Filter Cap*
	Plate and Frame Filter Cap	VOC	--	0.47
S-03	Spray Column Absorber	VOC	1.38	0.36
		H_2S	0.01	0.01
S-23	Water Spray Column	HCl	0.03	0.03
S-25B	Venturi Scrubber	HCl	0.01	0.01
		SO_2	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

		Cl_2	0.01	0.01
S-51	Absorber	H_2S	0.02	0.01
		SO_2	0.11	0.02
156-ALKLR	Loading	VOC	0.45	0.01
156-SAMPLE	Loading	VOC	0.20	0.01
156-WOLR	Loading	VOC	0.06	0.01
156-CT13-1	Cooling tower tote	VOC	0.26	0.01
156-CT13-3	Cooling tower tote	H_2SO_4	0.01	0.01
156-CT13-2	Cooling tower tote	NaOCl	0.30	0.01
156-WO	Tank	VOC	0.45	0.01
156-MSS	Planned Maintenance	VOC	3.73	0.09

(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
HRVOC - highly reactive volatile organic compounds as defined in 30 TAC § 115.10
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
HCl - hydrogen chloride
S - sulfur
Cl_2 - chlorine
Na_2S - sodium sulfide
S_2Cl_2 - sulfur chloride
H_2S - hydrogen sulfide
NaOCl - sodium hypochlorite
H_2SO_4 - sulfuric acid
Na_2S - sodium sulfide

Emission Sources - Maximum Allowable Emission Rates

(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) Flare designated as EPN 13 is authorized to operate as back-up to the Fume Incinerator designated as EPN SC-FI-10 up to 720 hours per year.
(7) The Incinerator (EPN H-001) and Backup Flare System (EPN FR-001) shall control the CS Vent, Vessels BL-4, BL-5, AG-12, and Storage Tanks D-31, SS-32, SS-33, SS-34, RA-2, SA-6, AG-5, D-4, D-62, D-78, D-82.
(8) The Backup Flare (EPN FR-001) shall operate as a back-up to the Incinerator (EPN H-001) up to 720 hours per year.
(9) Emissions are for Project No. 347018 Amendment only. The emissions are in addition to those authorized for EPN 156-FUG
(10) Phase II emission rates shall apply at the shutdown of Scrubber S-60, in accordance with Special Condition No. 35. The permit holder shall submit a permit application to remove references to Pre-Construction limits within 180 days of Scrubber S-60 shutdown.

Date: December 6, 2023

Emission Sources - Maximum Allowable Emission Rates