

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 8636/PSD-TX-346M3

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. 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**
V-16	No. 2 SRU Incinerator	VOC	0.02	0.10
		NO _x	0.67	2.94
		SO ₂	10.48	45.34
		CO	0.16	0.69
		PM ₁₀	0.06	0.26
V-17	FCC Catalyst Silo Vent	PM	0.37	1.34
V-20	FCC Regenerator Vent	VOC	10.00	21.90
		NO _x	133.00	233.02
		SO ₂	341.00	1041.94
		CO	22.81	99.91
		PM	66.40	218.23
		PM ₁₀	33.20	109.11
FL-3	FCCU Flare (5)	VOC	35.32	9.81
		NO _x	12.24	3.40
		SO ₂	3.46	1.48
		CO	88.38	24.56
		H ₂ S	0.04	0.02
FL-4	HCU Flare (5)	VOC	1.13	4.96
		NO _x	0.55	2.41
		SO ₂	0.45	1.94
		CO	2.80	12.27
		H ₂ S	<0.01	0.02
F-55	Fugitives - No. 2 Sour Water Stripper (4)	VOC	0.03	0.11
		H ₂ S	<0.01	0.02
		NH ₃	<0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates *</u>	
			lb/hr	TPY**
F-49	Fugitives - No. 2 SRU (4)	VOC	0.01	0.03
		H ₂ S	0.02	0.09
F-6	Fugitives - Alkylation Unit (4)	VOC	25.42	111.32
F-48	Fugitives - Hydrocracker Unit (4)	VOC	15.30	66.99
F-50	Fugitives - FCC Unit (4)	VOC	23.38	102.39
F-53	Fugitives - Diesel Hydrotreater Unit (4)	VOC	7.62	33.39
F-63	Fugitives - TAME Unit (4)	VOC	7.10	31.11
F-66	Fugitives - MTBE Unit (4)	VOC	5.52	24.16
F-37	Fugitives - No. 1 Sour Water Stripper (4)	VOC	0.30	1.30
		H ₂ S	0.03	0.11
		NH ₃	0.02	0.10
H-8	HCU Fractionator Heater H-8 (70.0 MMBtu/hr) (6)	VOC	0.27	
		NO _x	3.15	
		SO ₂	2.65	
		CO	1.97	
		PM ₁₀	0.70	
H-60	HCU Fractionator Heater H-60 (70.0 MMBtu/hr) (6)	VOC	0.27	
		NO _x	3.15	
		SO ₂	2.65	
		CO	1.97	
		PM ₁₀	0.70	

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY**
	H-8 and H-60 - combined heat input limited to 94.0 MMBtu/hr - hourly and annual (6)	VOC NO _x SO ₂ CO PM ₁₀	0.37 4.23 3.55 2.65 0.96	1.62 18.53 4.12 11.56 4.20
H-43	HCU Reboiler Heater H-43 (78.8MMBtu/hr) (6)	VOC NO _x SO ₂ CO PM ₁₀	0.31 3.55 2.98 2.22 0.79	
H-61	HCU Reboiler Heater H-61 (78.8 MMBtu/hr) (6)	VOC NO _x SO ₂ CO PM ₁₀	0.31 3.55 2.98 2.22 0.79	
	H-43 and H-61 - combined heat input limited to 99.0 MMBtu/hr hourly and 85.5 MMBtu/hr annual (6)	VOC NO _x SO ₂ CO PM ₁₀	0.39 4.46 3.73 2.79 1.01	1.48 16.85 3.73 10.52 3.82
H-42	HCU Recycle Heater (77.0 MMBtu/hr hourly, 63.0 MMBtu/hr annual) (6)	VOC NO _x SO ₂ CO PM ₁₀	0.30 3.47 2.91 2.16 0.77	1.08 12.42 2.59 7.76 2.76
H-48	Diesel Hydrotreater Charge Heater (51.68 MMBtu/hr) (6)	VOC NO _x SO ₂ CO PM ₁₀	0.22 4.14 1.95 1.45 0.55	0.96 18.11 2.56 6.34 2.41
H-63	Diesel Hydrotreater	VOC	0.32	1.38

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

	Fractionator Heater (80.0 MMBtu/hr) (6)	NO _x	3.60	15.77
		SO ₂	3.01	3.96
		CO	2.25	9.82
		PM ₁₀	0.86	3.73
B-12 (previously 12-B)	Process Boiler - 600 psig steam (223.0 MMBtu/hr) (6)	VOC	0.50	2.19
		NO _x	43.71	191.45
		SO ₂	8.38	11.02
		CO	4.94	21.64
		PM ₁₀	2.37	10.39
H-24	TAME NRU	VOC	0.03	0.06
	Regenerator Heater (5.99 MMBtu/hr) (6)	NO _x	0.84	1.84
		SO ₂	0.23	0.15
		CO	0.17	0.37
		PM ₁₀	0.07	0.14
H-27	PP Mole Sieve	VOC	0.03	0.06
	Regenerator Heater (6.39 MMBtu/hr) (6)	NO _x	0.90	1.97
		SO ₂	0.25	0.16
		CO	0.18	0.40
		PM ₁₀	0.07	0.15

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

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

(3) VOC - volatile organic compounds as defined in 30 Texas Administrative Code Section 101.1

NO_x - total oxides of nitrogen

SO₂ - sulfur dioxide

CO - carbon monoxide

PM - particulate matter, suspended in the atmosphere, including PM₁₀.

PM₁₀ - particulate matter equals to or less than 10 microns in diameter. Where PM is not listed, it shall

be assumed that no particulate matter greater than 10 microns is emitted.

H₂S - hydrogen sulfide

NH₃ - Ammonia

(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

emission rate.

(5) Emergency use also.

(6) Maximum heater firing rates are on the basis of lower heating value.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

** Compliance with annual emission limits is based on a rolling 12-month period.

_____Hrs/day _____Days/week _____Weeks/year or 8,760 Hrs/year

Dated_____