

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 9914/PSD-TX-861

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 *	Source	Air Contaminant	<u>Emission Rates</u>	
<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
H-1	No. 1 Crude Heater (283.5 MMBTU/hr)	VOC	1.2	5.2
		NO _x	34.0	149.0
		SO ₂	10.7	46.9
		PM ₁₀	2.8	12.4
		CO	8.0	34.9
H-2	No. 1 Vacuum Heater (51.7 MMBTU/hr)	VOC	0.2	1.0
		NO _x	6.2	27.2
		SO ₂	2.0	2.6
		PM ₁₀	0.5	2.3
		CO	1.5	6.4
H-3	Naphtha Reboiler Heater (43.2 MMBTU/hr)	VOC	0.2	0.8
		NO _x	5.2	22.7
		SO ₂	1.6	7.1
		PM ₁₀	0.4	1.9
		CO	1.2	5.3
H-5	PDA Asphalt Heater (8.9 MMBTU/hr)	VOC	<0.1	0.2
		NO _x	1.8	7.7
		SO ₂	0.3	0.4
		PM ₁₀	0.1	0.4
		CO	0.3	1.1
H-6	PDA Gas Oil Heater (25.6 MMBTU/hr)	VOC	0.1	0.5
		NO _x	3.1	13.5
		SO ₂	1.0	1.3
		PM ₁₀	0.3	1.1
		CO	0.7	3.2

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<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
H-9	No. 2 Crude Heater (43.0 MMBTU/hr)	VOC	0.2	0.8
		NO _x	5.2	22.6
		SO ₂	1.6	2.1
		PM ₁₀	0.4	1.9
		CO	1.2	5.3
H-11	No. 2 Crude Heater (60.4 MMBTU/hr)	VOC	0.3	1.1
		NO _x	2.7	11.9
		SO ₂	2.3	3.0
		PM ₁₀	0.6	2.6
		CO	1.7	7.4
H-13	Gas Oil Heater (36.5 MMBTU/hr)	VOC	0.2	0.7
		NO _x	11.8	51.7
		SO ₂	1.4	6.0
		PM ₁₀	1.0	4.5
		CO	1.0	4.5
H-26	No. 2 Vacuum Heater (61.6 MMBTU/hr)	VOC	0.2	1.1
		NO _x	2.8	12.1
		SO ₂	2.3	3.1
		PM ₁₀	0.6	2.7
		CO	1.7	7.6
H-40	PDA Asphalt Heater (50.0 MMBTU/hr)	VOC	0.2	0.9
		NO _x	6.0	26.3
		SO ₂	1.9	2.5
		PM ₁₀	0.5	2.2
		CO	1.4	6.2
H-41	No. 2 Crude Heater (219.5 MMBTU/hr)	VOC	0.9	4.1
		NO _x	26.3	115.4
		SO ₂	8.3	10.9

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<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
		PM ₁₀	2.2	9.6
		CO	6.2	27.0
S-1	Storage Tank 120M1	VOC	4.6	13.8
S-2	Storage Tank 133	VOC	3.6	8.7
S-6	Storage Tank 157	VOC	4.5	11.7
S-7	Storage Tank 168	VOC	0.1	0.4
S-9	Storage Tank 1003	VOC	2.9	6.9
S-10	Storage Tank 1501	VOC	0.2	0.4
S-11	Storage Tank 1502	VOC	0.2	0.4
S-12	Storage Tank 3001	VOC	3.2	7.9
S-13	Storage Tank 3002	VOC	3.6	8.7
S-14	Storage Tank 6701	VOC	4.1	11.1
S-15	Storage Tank 6702	VOC	4.4	11.7
S-20	Storage Tank 167	VOC	0.1	0.3
S-21	Storage Tank 101	VOC	4.1	10.7
S-22	Storage Tank 120M2	VOC	2.5	6.3
S-30	Storage Tank 131	VOC	6.1	3.9

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Point No. (1)	Name (2)	Name (3)	lb/hr	TPY
S-31	Storage Tank 132	VOC	6.9	3.8
S-53	Storage Tank 222	VOC	0.8	0.3
S-140	Storage Tank 181	VOC	0.4	0.4
S-143	Storage Tank 5505	VOC	3.7	9.6
S-144	Storage Tank 5504	VOC	3.7	9.6
S-176	Storage Tank 200M1	VOC	2.2	7.9
S-195	Storage Tank T101	VOC	0.8	2.7
S-196	Storage Tank T102	VOC	0.8	2.7
S-197	Storage Tank T109	VOC	0.5	1.3
V-5	No. 1 SRU Incinerator	SO ₂	295	1292
E-5	PDA Solvent Comp. Engine 1.8	VOC		0.4
		NO _x	10.3	45.2
		SO ₂	0.1	0.1
		CO	1.5	6.4
F-1	Crude No. 1 Fugitives (4) 25.3	VOC		5.77
F-2	PDA Fugitives (4)	VOC	11.79	51.7
F-15	SRU No. 1 Fugitives (4)	VOC	<0.01	0.01
		H ₂ S	0.01	0.03

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<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
F-28	Vacuum No. 2 Fugitives (4) 13.6	VOC		3.12
F-29	Crude No. 2 Fugitives (4) 26.7	VOC		6.11
F-30	Gas Oil Frac Fugitives (4) 6.3	VOC		1.43
F-31	Crude Preheat Fugitives (4) 16.0	VOC		3.66
F-32	Naphtha No. 1 Frac Fugitives (4) 12.4	VOC		2.82
F-33	LSR No. 1 Frac Fugitives (4) 4.3	VOC		0.97
F-34	Vacuum No. 1 Fugitives (4) 11.1	VOC		2.53
F-41	Hex MinAlk Fugitives (4) 3.3	VOC		0.75
F-47	No. 4 Refinery Cooling Tower 7.7	VOC		1.76
F-51	LTFU Fugitives (4)	VOC	5.07	22.2
F-52	LSR No. 2 Fugitives (4)	VOC	1.72	7.5
F-71	TF Merox Fugitives (4)	VOC	0.91	4.0

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<u>Point No. (1)</u>	<u>Name (2)</u>	<u>Name (3)</u>	<u>lb/hr</u>	<u>TPY</u>
F-77	Naphtha No. 4 Fugitives (4) 13.4	VOC	3.03	
F-79	WWTU Fugitives (4)	VOC	0.67	2.9
FL-1	Emergency Flare	only	For emergency use	
FL-6	WWT Flare	VOC	4.9	6.4
		NO _x	0.6	0.8
		SO ₂	0.1	0.2
		CO	4.9	6.4
		H ₂ S	<0.01	<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 General Rule 101.1

NO_x - total oxides of nitrogen

SO₂ - sulfur dioxide

PM₁₀ - particulate matter less than 10 microns

CO - carbon monoxide

H₂S - hydrogen sulfide

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

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:
Hrs/year 8,760

Dated_____