EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 20509/PSD-TX-790

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 (5)
CASE I: Turbines Only Firing Natural Gas (7)				
23 ** (HPU-T1)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine	NO_x	11.00	30.10
		CO	16.30	24.90
		SO_2	0.64	0.30
		VOC	0.30	1.31
		PM_{10}	0.224	0.98
		HCl	0.01	0.05
24 ** (HPU-T2)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine	NO_x	11.00	30.10
		CO	16.30	24.90
		SO_2	0.64	0.30
		VOC	0.30	1.31
		PM_{10}	0.224	0.98
		HCl	0.01	0.05
25 ** (HPU-T3)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine	NO_x	11.00	30.10
		CO	16.30	24.90
		SO_2	0.64	0.30
		VOC	0.30	1.31
		PM_{10}	0.224	0.98
		HCl	0.01	0.05

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr (4)	TPY (5)
CASE II: Turbines Firing Natural Gas and Fired Waste Heat Recovery Unit Burners Firing Isomerization Off-gas and Natural Gas and/or Merox Off-gas and Natural Gas				
23 ** (HPU-T1)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine and 1/3 of 84.5 million Btu/hr HRU	NO_x	14.38	39.55
		CO	17.88	32.76
		SO_2	3.55	11.10
		VOC	0.93	4.07
		PM_{10}	0.85	3.73
		HCl	0.01	0.05
24 ** (HPU-T2)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine and 1/3 of 84.5 million Btu/hr HRU	NO_x	14.38	39.55
		CO	17.88	32.76
		SO_2	3.55	11.10
		VOC	0.93	4.07
		PM_{10}	0.85	3.73
		HCl	0.01	0.05
25 ** (HPU-T3)	42.1 million Btu/hr @ 30°F T4500 Solar Centaur Turbine and 1/3 of 84.5 million Btu/hr HRU	NO_x	14.38	39.55
		CO	17.88	32.76
		SO_2	3.55	11.10
		VOC	0.93	4.07
		PM_{10}	0.85	3.73
		HCl	0.01	0.05
23, 24, 25 **	Maximum Combined Annual Emissions From All Turbines and Waste Heat Recovery Unit Burners	NO_x		118.65
		CO		98.28
		SO_2		33.30
		VOC		12.21
		PM_{10}		11.19
		HCl		0.15

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr (4)	TPY (5)
OTHER EMISSIONS				
FL-4	Plant Flare (9) (Flare-4)	NO_x	0.09	0.40
		CO	0.02	0.08
		SO_2	0.04	0.19
		VOC	1.38	6.05
		PM_{10}	0.07	0.33
F-19 (F-HPU)	900 Deisobutanizer/ Heat Pump Area Fugitives	VOC	1.02	4.47
F-20 (F-B-RXTR)	800 Butamer Reactor Unit Area Fugitives (Includes Hydrotreater, Pentane Stripper Emissions) (8)	VOC	2.09	9.17
F-23 (F-DIB700)	700 Deisobutanizer (8) Area Fugitives	VOC	1.73	7.58
	Total Project Annual (6) Fugitive Emissions	VOC		21.39

(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) NO_x - total oxides of nitrogen
CO - carbon monoxide
SO_2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
PM_{10} - particulate matter less than 10 microns
HCl - hydrogen chloride
(4) Turbine hourly emission rates were calculated based on an ambient temperature of 30°F.

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(5) Turbine annual emission rates were calculated based on an ambient average temperature of 60°F, which is conservatively lower than actual site annual average ambient temperature (approximately 68°F).
(6) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
(7) All references to firing rates are Lower Heating Value (LHV).
(8) Fugitive monitoring requirements included for purpose of obtaining federal enforceability of emission limits.
(9) Incremental Plant Flare Emissions from this project and other facilities regulated by this permit.

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

** Emissions from each turbine are commingled and emitted through Emission Point Nos. 23, 24, and 25.

Dated December 20, 2004