

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 92928 and HAP63

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)	<u>Emission Rates *</u>	
			lb/hr	TPY**
H-89	H2 Unit Reformer Furnace	NO _x	5.33	15.58
		CO	27.17	59.50
		VOC	1.92	8.40
		SO ₂	5.41	11.86
		PM ₁₀	2.65	11.61
		PM _{2.5}	2.13	9.35
		HAPS	0.66	2.88
		NH ₃	1.65	7.24
F-HYDROGEN	H2 Unit Fugitives (4)	VOC	0.37	1.47
		CO	2.34	10.26
		SO ₂	0.01	0.01
		NH ₃	0.01	0.05
FL-1	H2 Unit MSS Emissions from Flares (5)	NO _x	20.58	3.59
		CO	104.86	17.73
		VOC	0.16	0.01
		SO ₂	1.70	0.03
		NH ₃	18.25	0.44
H2-MSS	H2 Unit MSS (6)	CO	15.34	10.99
		VOC	0.72	0.03
		H ₂ S	0.01	0.01
		PM ₁₀	0.09	0.01
		PM _{2.5}	0.01	0.01
		NH ₃	0.08	0.01
F-20	No. 1 Refinery Cooling Tower (7)	VOC	0.01	0.06
		PM ₁₀	0.01	0.03

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- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
- (2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
- (3)
 - NO_x - total oxides of nitrogen
 - CO - carbon monoxide
 - VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
 - SO₂ - sulfur dioxide
 - PM - particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}
 - PM₁₀ - particulate matter equal to or less than 10 microns in diameter
 - PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter
 - HAPS - hazardous air pollutants as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
 - NH₃ - ammonia
 - H₂S - hydrogen sulfide
- (4) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations.
- (5) Includes only maintenance, startup, and shutdown (MSS) emissions from the activities authorized in the special conditions controlled by the No. 1 Main Flare authorized in Permit Number 9708.
- (6) Includes only MSS emissions from the activities authorized in the special conditions.
- (7) Includes only emissions resulting from increased cooling water flow due to the Hydrogen Plant at the No. 1 Refinery Cooling Tower currently authorized in Permit Number 9708.

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

____Hrs/day ____Days/week ____Weeks/year or 8,760 Hrs/year

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

Dated December 30, 2010