

# Emission Sources - Maximum Allowable Emission Rates

Permit Number 20160

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.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
HK-F5-004	Boiler H-K2-004 (Normal operation) Max. Heat Input: 286 MMBtu/hr, HHV	NO <sub>x</sub>	4.29	18.33
		SO <sub>2</sub>	4.05	11.62
		CO	12.84	54.86
		VOC	2.90	12.69
		PM	2.15	9.40
		PM <sub>10</sub>	2.15	9.40
		PM <sub>2.5</sub>	2.15	9.40
		NH <sub>3</sub>	1.56	6.83
	Boiler H-K2-004 (MSS)	NO <sub>x</sub>	28.57	3.06
		CO	25.68	2.75
	Boiler H-K2-004 Total Annual Emissions (6)	NO <sub>x</sub>	-	21.39
		CO	-	57.61
H-K2-004-FUG	Boiler H-K2-004 Fugitives (5)	VOC	0.12	0.51
		NH <sub>3</sub>	0.04	0.19
POFLARE	PO Ground Flare	NO <sub>x</sub>	7.63	8.36
		CO	54.29	56.97
		VOC	107.91	42.67
		SO <sub>2</sub>	0.09	0.38
HK-F5-003	Boiler H-K2-003	NO <sub>x</sub>	22.80	57.99
		CO	21.06	46.11
		VOC	1.54	6.74
		SO <sub>2</sub>	1.60	6.99
		PM	1.78	7.80
		PM <sub>10</sub>	1.78	7.80
		PM <sub>2.5</sub>	1.78	7.80

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HK-F5-003-FUG	Boiler Fugitives (5)	VOC	0.01	0.05
		Exempt Solvents	<0.01	0.02
STEAMGEN	Steam Generator Nos. 1 and 2 (Separate stacks for boilers H-K2-001 and H-K2-002)	NO <sub>x</sub>	28.60	125.20
		CO	28.57	37.34
		VOC	2.86	6.05
		SO <sub>2</sub>	3.77	7.01
		PM	3.22	14.11
		PM <sub>10</sub>	3.22	14.11
		PM <sub>2.5</sub>	3.22	14.11
PODUST	Catalyst Prep Dust Filter	PM	0.06	0.01
		PM <sub>10</sub>	0.06	0.01
		PM <sub>2.5</sub>	0.06	0.01
POCATNH3	Catalyst Prep Scrubber	VOC	0.09	0.02
		NH <sub>3</sub>	0.01	<0.01
POTK001	Catalyst Solution Tank	VOC	1.49	0.05
POTK003	Catalyst Solution Tank	VOC	1.49	0.05
POTK007	TBA Day Tank	VOC	0.33	1.46
POTK008	Dry TBA Tank	VOC	0.43	1.89
POTK009	i-Octane Tank	VOC	0.15	0.55
POPERFUG	Peroxidation Unit Fugitives (5)	VOC	0.54	2.36
POEPOFUG	Epoxidation Unit Fugitives (5)	VOC	0.39	1.71
POPURFUG	PO Purification Unit Fugitives(5)	VOC	0.37	1.63
POMTFUG	MTBE One-Step Unit Fugitives(5)	VOC	0.36	1.58
POCPFUG	Catalyst Prep Area Fugitives (5)	VOC	0.14	0.60
POTRAFUG	TBA Removal Area Fugitives (5)	VOC	0.24	1.05
POCRFUG	Catalyst Recovery Fugitives (5)	VOC	0.10	0.44
POPRFUG	Propylene Refrigeration Area Fugitives (5)	VOC	0.09	0.38
MTBFUG-2	MTBE Synth. Unit Fugitives (5)	VOC	0.17	0.74
WWSFUG	Wastewater Stripper Fugitives (5)	VOC	0.06	0.25
POLODFUG	Railcar/Tankwagon Loading Fugitives (5)	VOC	0.04	0.19

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RSELSFUG	Barge Loading Fugitives (5)	VOC	0.02	0.08
TKEFUG	PO/MTBE Tankage Fugitives (5)	VOC	0.20	0.90
BUTFUG	Butane Bullets Fugitives (5)	VOC	0.04	0.18
MTBEFUG	MTBE Storage Fugitives (5)	VOC	0.07	0.24
SGFUG	Steam Generators Area Fugitives (5)	VOC	0.06	0.25
CTFUG	Cooling Tower	VOC	5.80	23.57
		NH <sub>3</sub>	0.08	0.33
		PM	0.70	2.85
		PM <sub>10</sub>	0.70	2.85
		PM <sub>2.5</sub>	0.70	2.85
RSELDLFR	Dock Flare	VOC	12.37	3.87
		NO <sub>x</sub>	4.53	2.69
		CO	9.04	5.36
		SO <sub>2</sub>	0.04	<0.01
PODOWSUMP	Wastewater Sump/Pond	VOC	18.20	3.35
		NH <sub>3</sub>	0.01	0.01
T-O-28	EGME Tank	VOC	0.04	0.07
CRFUG	Catalyst Recycle Fugitives (5)	VOC	0.07	0.29
EGMEFUG	EGME Storage Fugitives (5)	VOC	0.10	0.44
PRCOFUG	Propylene Recovery Column Overhead (5)	VOC	0.07	0.30
PROFUG	Propylene Recovery Overhead (5)	VOC	0.14	0.61
POFUG	PO Fugitives (5)	VOC	0.07	0.29
POFUG-1	PO Fugitives (Primary Fractionator) (5)	VOC	0.01	0.04
POFUG-2	PO Fugitives (T&I) (5)	VOC	0.21	0.93
PLNTFUG	Plant Fugitives (5)	VOC	0.23	1.00
MSS CAP	TBA Storage Tank MSS	VOC	15.37	0.02
T-F-023	TBA Storage Tank	VOC	1.34	0.47

(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

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

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PM	- total particulate matter, suspended in the atmosphere, including PM <sub>10</sub> and PM <sub>2.5</sub> , as represented
PM <sub>10</sub>	- total particulate matter equal to or less than 10 microns in diameter, including PM <sub>2.5</sub> , as represented
PM <sub>2.5</sub>	- particulate matter equal to or less than 2.5 microns in diameter
CO	- carbon monoxide
NH <sub>3</sub>	- ammonia

- (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) Emissions cap of normal operation and MSS activities for Boiler H-K2-004.

Date: March 7, 2019