

Emission Sources - Maximum Allowable Emission Rates

Permit Number 19296

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)
1	Molecular Sieve Heater 11.72 MMBtu/hr fired duty	CO	0.70	3.08
		NO _x	1.17	5.13
		PM	0.09	0.38
		PM ₁₀	0.09	0.38
		PM _{2.5}	0.09	0.38
		SO ₂	0.16	0.72
		VOC	0.06	0.28
2	Regen. Heater 6.07 MMBtu/hr fired duty	CO	0.36	1.60
		NO _x	0.61	2.66
		PM	0.05	0.20
		PM ₁₀	0.05	0.20
		PM _{2.5}	0.05	0.20
		SO ₂	0.09	0.37
		VOC	0.03	0.14
3	No. 1 Boiler 95 MMBtu/hr	CO	5.70	
		NO _x	11.40	
		PM	0.71	
		PM ₁₀	0.71	
		PM _{2.5}	0.71	
		SO ₂	1.33	
		VOC	0.40	

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
BLR-21	No. 2 Boiler 81 MMBtu/hr	CO	5.79	
		NO _x	2.84	
		PM	0.60	
		PM ₁₀	0.60	
		PM _{2.5}	0.60	
		SO ₂	1.13	
		VOC	0.45	
BLR-22	No. 3 Boiler 81 MMBtu/hr	CO	5.79	
		NO _x	2.84	
		PM	0.60	
		PM ₁₀	0.60	
		PM _{2.5}	0.60	
		SO ₂	1.13	
		VOC	0.45	
3 BLR-21 BLR-22	No. 1, 2, and 3 Boilers Combined Annual (6)	CO		39.48
		NO _x		42.99
		PM		4.45
		PM ₁₀		4.45
		PM _{2.5}		4.45
		SO ₂		8.29
		VOC		2.93

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			lbs/hour	TPY (4)
4	Sulfur Recovery Incinerator	CO	0.26	1.14
		H ₂ S	<0.01	0.01
		NO _x	0.16	0.68
		PM	0.02	0.10
		PM ₁₀	0.02	0.10
		PM _{2.5}	0.02	0.10
		SO ₂	0.43	1.89
		VOC	0.02	0.07
5	Flare	CO	70.36	49.55
		CO (7), (8)	752.50	
		NH ₃	4.35	0.07
		H ₂ S	18.97	0.05
		NO _x	28.10	15.16
		NO _x (7)	163.16	
		NO _x (8)	360.93	
		SO ₂	0.30	3.60
		SO ₂ (7), (8)	18.13	
		SO ₂ (9)	780.41	
		VOC	4.27	36.98
		VOC (7)	770.52	
VOC (8)	1554.03			
7	Cooling Tower	VOC	1.32	5.78
		PM	4.32	18.93
		PM ₁₀	1.20	5.28
		PM _{2.5}	<0.01	0.03

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
8	Butylene Converter Steam Super Heater 3.1 MMBtu/hr	CO	0.25	1.10
		NO _x	0.30	1.30
		PM	0.02	0.10
		PM ₁₀	0.02	0.10
		PM _{2.5}	0.02	0.10
		SO ₂	0.04	0.19
		VOC	0.02	0.07
FUG-6	Process Fugitives (5)	VOC	10.22	44.77
DEGAS	Post Control Degassing	VOC	30.98	0.07
DEGAS MSS	Equipment MSS Venting	VOC	30.98	0.07
CATCHANGE	MSS Catalyst Change-out Events	PM	0.07	<0.01
		PM ₁₀	0.04	<0.01
		PM _{2.5}	<0.01	<0.01
PIGVOC	Pig Receiver	VOC	1.22	<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 Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO₂ - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}
PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}
CO - carbon monoxide
H₂S - hydrogen sulfide
NH₃ - 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) Combined annual limits were calculated based upon all three boilers operating at maximum firing rates for 2,160 hours per year (hrs/yr) plus EPN 3, and either BLR-21 or BLR-22 firing at 48 MMBtu/hr each for 6,600 hrs/yr. A year is defined as January through December.
- (7) Flare maximum short term allowable during off-gas combustion, Sulfurox bypass periods and planned maintenance, startup and shutdown; including short stops.
- (8) Flare maximum short term allowable during plantwide turnaround periods.
- (9) Flare maximum short term allowable during planned Butylene Conversion Unit and C5/HDS Unit maintenance, startup and shutdown clearing periods.

Date: DRAFT February 2020