

# Emission Sources - Maximum Allowable Emission Rates

Permit Number 97022

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)
HTR1	Regeneration Heater No. 1 (6)	VOC	0.10	0.44
		NO <sub>x</sub>	0.65	2.87
		CO	1.12	4.91
		PM <sub>10</sub>	0.14	0.61
		PM <sub>2.5</sub>	0.14	0.61
		SO <sub>2</sub>	0.03	0.12
HTR2	Regeneration Heater No. 2 (6)	VOC	0.10	0.44
		NO <sub>x</sub>	0.65	2.87
		CO	1.12	4.91
		PM <sub>10</sub>	0.14	0.61
		PM <sub>2.5</sub>	0.14	0.61
		SO <sub>2</sub>	0.03	0.12
HTR3	Regeneration Heater No. 3 (6)	VOC	0.10	0.44
		NO <sub>x</sub>	0.65	2.87
		CO	1.12	4.91
		PM <sub>10</sub>	0.14	0.61
		PM <sub>2.5</sub>	0.14	0.61
		SO <sub>2</sub>	0.03	0.12
HTR1, HTR2 & HTR3 CAP	Regeneration Heaters 1, 2 & 3 Cap (6)	VOC	0.20	0.88
		NO <sub>x</sub>	1.30	5.74

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		CO	2.24	9.82
		PM <sub>10</sub>	0.28	1.22
		PM <sub>2.5</sub>	0.28	1.22
		SO <sub>2</sub>	0.06	0.24
HTR4	Regeneration Heater No. 4	VOC	0.39	1.69
		NO <sub>x</sub>	1.79	7.84
		CO	4.30	18.82
		PM <sub>10</sub>	0.53	2.34
		PM <sub>2.5</sub>	0.53	2.34
		SO <sub>2</sub>	0.11	0.46
WSAC1	WSAC System	PM	0.34	1.50
		PM <sub>10</sub>	0.15	0.66
		PM <sub>2.5</sub>	< 0.01	< 0.01
WSAC3	WSAC – Train 3	PM <sub>10</sub>	0.27	1.20
		PM <sub>2.5</sub>	0.01	0.01
FUG	Process Fugitives (5)	VOC	0.90	3.95
FUG2	Expansion Process Fugitives (5)	VOC	0.91	3.98
FUG4	Train #3 Fugitives (5)	VOC	2.00	8.77
FLARE3	Flare 3 Routine Emissions	VOC	127.36	(10)
		NO <sub>x</sub>	13.13	(10)
		CO	26.21	(10)
		SO <sub>2</sub>	0.02	(10)
FLARE3-MSS	Flare 3 MSS	VOC	437.06	(10)
		NO <sub>x</sub>	118.72	(10)
		CO	237.00	(10)

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FLARE2	Flare 2 Routine Emissions	VOC	127.36	(10)
		NO <sub>x</sub>	13.13	(10)
		CO	26.21	(10)
		SO <sub>2</sub>	0.02	(10)
FLARE2-MSS	Flare 2 MSS	VOC	437.06	(10)
		NO <sub>x</sub>	118.72	(10)
		CO	237.00	(10)
MSS FLARE	Portable Flare (9)	VOC	5.46	(10)
		NO <sub>x</sub>	0.91	(10)
		CO	1.82	(10)
		SO <sub>2</sub>	<0.01	(10)
MSS VCU	Portable VCU (9)	VOC	5.46	(10)
		NO <sub>x</sub>	0.89	(10)
		CO	1.74	(10)
		PM	< 0.01	(10)
		PM <sub>10</sub>	< 0.01	(10)
		PM <sub>2.5</sub>	< 0.01	(10)
		SO <sub>2</sub>	< 0.01	(10)
FLARE2, FLARE3, and MSS VCU/MSS FLARE Cap	Flare Normal Operation and MSS VCU/MSS FLARE Annual Cap (9)	VOC	--	36.75
		NO <sub>x</sub>	--	14.20
		CO	--	37.51
		PM	--	0.01
		PM <sub>10</sub>	--	0.01
		PM <sub>2.5</sub>	--	0.01
		SO <sub>2</sub>	--	0.02

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MSS-ATM	MSS	VOC	11.91	0.01
MSS-ATM2	MSS	VOC	9.84	0.06
HTR1-MSS	Regeneration Heater No. 1 Startup and Shutdown Emissions (7)	NO <sub>x</sub>	1.31	(8)
		CO	2.24	(8)
HTR2-MSS	Regeneration Heater No. 2 Startup and Shutdown Emissions (7)	NO <sub>x</sub>	1.31	(8)
		CO	2.24	(8)
HTR3-MSS	Regeneration Heater No. 3 Startup and Shutdown Emissions (7)	NO <sub>x</sub>	1.31	(8)
		CO	2.24	(8)
HTR1-MSS HTR2-MSS HTR3-MSS	Regeneration Heater Startup and Shutdown Emissions Cap (7)	NO <sub>x</sub>	2.62	(8)
		CO	4.48	(8)
HTR4-MSS	Regeneration Heater No. 4 Startup and Shutdown Emissions	NO <sub>x</sub>	3.58	(8)
		CO	8.60	(8)

- (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  
CO - carbon monoxide  
PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>  
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  
SO<sub>2</sub> - sulfur dioxide
- (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) Hourly and annual routine and MSS emissions from heater EPNs HTR1, HTR2, and HTR3 (excluding hourly NO<sub>x</sub> and CO during MSS activities) shall not exceed the hourly and annual Regeneration Heater Cap.
- (7) Hourly NO<sub>x</sub> and CO emissions during MSS activities from heater EPNs HTR1, HTR2, and HTR3 shall not exceed the Regeneration Heater Startup and Shutdown Emissions Cap.
- (8) Annual MSS NO<sub>x</sub> and CO emissions from heater EPNs HTR1-MSS, HTR2-MSS, HTR3-MSS, and HTR4-MSS, shall not exceed the routine annual emissions (EPNs HTR1, HTR2, HTR3, and HTR4).
- (9) See Attachment C in special conditions for MSS activities that are authorized to be routed to EPN MSS VCU or MSS FLARE.
- (10) Combined annual emissions from EPNs FLARE2, FLARE2-MSS, FLARE3, FLARE3-MSS, MSS VCU, and MSS FLARE shall not exceed the Flare Normal Operation and MSS Annual Cap (EPN FLARE2, FLARE3, and MSS VCU/MSS FLARE Cap).

Date: March 10, 2021