

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 7186 and PSDTX1079M1

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)
10FLR-001 10FLR-002 10FLR-003 10FLR-003A	Converter Flares (7)	CO	1.29	5.66
		NH ₃	0.01	0.03
		NO _x	0.16	0.72
		SO ₂	0.01	0.04
		VOC	0.28	1.23
10FLR-001 10FLR-002 10FLR-003 10FLR-003A	Converter Flares MSS (8)	CO	331.84	24.50
		NH ₃	125.46	8.22
		NO _x	133.24	9.79
		SO ₂	0.22	0.02
		VOC	347.29	13.91
10FLR-004	Ammonia Startup Flare	CO	0.19	0.80
		NH ₃	0.05	0.20
		NO _x	0.03	0.10
		SO ₂	0.01	0.01
		VOC	0.04	0.16
10FLR-004	Ammonia Startup Flare MSS Emissions	CO	116.00	10.58
		NH ₃	95.80	8.75
		NO _x	55.66	5.62
		SO ₂	0.13	0.02
		VOC	22.54	1.32
10FLR-004A	Ammonia Tank Flare	CO	0.77	2.10
		NH ₃	0.47	0.80

Emission Sources - Maximum Allowable Emission Rates

		NO _x	0.33	0.65
		SO ₂	0.01	0.01
		VOC	0.45	1.31
10FLR-004A	Ammonia Tank Flare MSS Emissions	CO	22.08	0.68
		NH ₃	21.33	0.54
		NO _x	15.10	0.37
		SO ₂	0.03	0.01
		VOC	8.71	0.30
10FLR-004B	Butadiene Flare	CO	9.32	10.51
		NO _x	2.21	3.65
		SO ₂	0.01	0.02
		VOC	2.74	3.40
10FLR-004B	Butadiene Flare MSS Emissions	CO	15.61	1.59
		NO _x	5.23	0.29
		SO ₂	0.03	0.01
		VOC	9.64	0.53
10FLR-005	Adiponitrile Flare	CO	1,637.33	2,568.92
		NH ₃	1.32	1.04
		NO _x	140.91	184.18
		SO ₂	0.04	0.08
		VOC	623.36	517.16
10FLR-005	Adiponitrile Flare MSS Emissions	CO	1,069.32	81.50
		NH ₃	0.01	0.01
		NO _x	231.63	14.00
		SO ₂	0.63	0.07
		VOC	1,042.13	65.17
10FLR-TMP	TEMP Flare (6)	CO	1.98	0.32
		NH ₃	0.05	0.01
		NO _x	0.41	0.07

Emission Sources - Maximum Allowable Emission Rates

		SO ₂	0.01	0.01
		VOC	2.97	0.47
10FLR-ALT	Alternative Flare for 10FLR-005	CO	5.56	1.96
		NH ₃	0.05	0.02
		NO _x	0.89	0.29
		SO ₂	<0.01	<0.01
		VOC	6.36	2.18
10FLRALTF	Fugitives from Alternative Flare for 10FLR-005 (5)	NH ₃	0.02	0.01
		VOC	1.89	0.01
10CLT-040	Cooling Tower	NH ₃	3.83	16.75
		PM ₁₀	1.10	4.21
		VOC	3.83	16.75
10FUG	ADN Fugitives (5)	CO	0.17	0.53
		H ₂ S	0.01	0.01
		NH ₃	2.48	8.07
		VOC	53.85	194.03
10FUG	ADN Fugitives (5) MSS Emissions	CO	0.01	0.01
		NH ₃	0.01	0.01
		VOC	0.04	0.15
10FUG2	311 Fugitives (5)	HCl	0.02	0.07
		NH ₃	0.03	0.06
		VOC	1.26	5.41
10FUGMSS2	Ammonia Flare 10FLR004A, propane supplemental and pilot fuel	VOC	0.38	0.02
10MSS-001	MSS in ADN Area MSS Emissions	CO	0.02	0.01
		CL ₂	0.06	0.01
		H ₂ O ₂	0.01	0.01
		HCl	0.08	0.01

Emission Sources - Maximum Allowable Emission Rates

		NH ₃	2.13	0.02
		VOC	164.93	3.23
10MSS-002	MSS in 311 Area MSS Emissions	HCl	6.26	0.06
		NH ₃	2.20	0.05
		VOC	7.32	0.42
10FLT-063	Nickel Addition Bag Filter	PM ₁₀	0.01	0.01
10FLT-063A	Nickel Powder Vacuum System	PM ₁₀	0.05	0.01
10LBA-061B	ADN Barge Loading	VOC	0.18	0.06
10LBA-061D	NH ₃ Barge Loading	NH ₃	0.69	0.05
10LDR-326A	ADN Drum Loading	VOC	0.01	0.01
10LDR-326B	2M3BN Drum Loading	VOC	0.01	0.01
10LRC-041A	ADN Railcar Loading	VOC	0.02	0.02
10LRC-041B	ADN Load/Unload	VOC	0.02	0.02
10LRC-041C	ADN Railcar Loading	VOC	0.02	0.02
10LRC-041E	MGN Railcar Loading	VOC	0.09	0.02
10LRC-041F	2PN Railcar Degassing	VOC	9.42	0.18
10LTR-036	REF MGN Truck Loading	VOC	0.04	0.02
10LTR-056	No. 3 Tank Farm Truck Spot	VOC	4.57	0.15
10LTR-057	2PN Truck Unloading	VOC	0.04	0.01
10LTR-061	Truck Loading	VOC	3.42	0.70
		NH ₃	0.05	0.02
10LTR-062	Misc. Load/Unload	VOC	0.07	0.01
10LTR-072	MDEA Truck Loading/Unloading	VOC	0.03	0.01
10LTR-073	Methanol Brine Truck Loading	VOC	0.32	0.01
10LTR-074	Anti-foulant	VOC	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

	Unloading			
10LTR-087	Oil Unloading	VOC	0.01	0.01
10SCB-154	HCl Scrubber	HCl	0.38	0.05
10TFX-010	Fresh Ligand Tank	VOC	0.01	0.01
10TFX-025A	South WFE Feed Tank	VOC	10.88	3.72
10TFX-025B	North WFE Feed Tank	VOC	10.88	3.72
10TFX-027	REF ADN Tank No. 1	VOC	0.21	0.04
10TFX-028	REF ADN Tank No. 2	VOC	0.21	0.04
10TFX-029	REF ADN Tank No. 3	VOC	0.21	0.04
10TFX-030	REF ADN Tank No. 4	VOC	0.21	0.04
10TFX-031	REF ADN Tank No. 5	VOC	0.21	0.04
10TFX-032	REF ADN Tank No. 6	VOC	0.21	0.04
10TFX-032B	REF ADN Tank No. 7	VOC	0.10	0.12
10TFX-033	North Raffinate Sphere	VOC	17.39	0.70
10TFX-034A	Middle Raffinate Sphere	VOC	17.39	0.70
10TFX-034B	South Raffinate Sphere	VOC	17.39	0.70
10TFX-035A	TG MGN Tank	VOC	1.49	0.56
10TFX-036	REF MGN Tank	VOC	0.04	0.12
10TFX-036A	Promoter PN Sphere	VOC	3.45	1.52
10TFX-037	Crude DN/MGN Tank	VOC	0.07	0.02
10TFX-037A	Crude MGN Sphere	VOC	0.31	0.11
10TFX-038	Ethylene Glycol Tank	VOC	0.15	0.01
10TFX-047	Methanol Tank	VOC	10.38	0.22

Emission Sources - Maximum Allowable Emission Rates

10TFX-049A	Methanol Solution Mix Tank	VOC	1.32	0.03
10TFX-049B	Methanol Solution Tank (20%)	VOC	1.26	0.01
10TFX-049C	Methanol Solution Tank (70%)	VOC	0.37	0.01
10TFX-059	Ammonium Salt Tank	NH ₃	0.08	0.01
		VOC	0.02	0.01
10TFX-067	Produced Water Tank	NH ₃	0.03	0.02
		VOC	0.01	0.01
10TFX-080	Barge Dock REF ADN Tank	VOC	0.34	0.33
10TFX-085	MDEA Amine Tank	VOC	0.01	0.01
10TFX-086	Anti-foulant Tank	VOC	0.50	0.01
10TFX-087	Oil Storage Skid	VOC	0.05	0.01
10VNT-001	Feed Gas Analyzer Vent	NH ₃	0.09	0.36
		VOC	0.01	0.01
10VNT-002	HCN Sample Blower Vent	CO	0.01	0.01
		NH ₃	0.19	0.01
		VOC	0.26	0.01
10VNT-003	BD Column GCs	VOC	0.01	0.01
10VNT-255	Pump Tank Scrubber and Closed Sump	CO	0.02	0.07
		VOC	0.14	0.53
10VNT-255	Pump Tank Scrubber and Closed Sump MSS Emissions	CO	0.01	0.01
		VOC	66.80	0.68
11TFX-036	HCN/HMD AWST	NH ₃	3.62	1.72
		VOC	1.34	0.65
11TFX-047	HCN/HMD HUT	NH ₃	1.47	0.87
		VOC	0.55	0.33
11TFX-048	Nitrile HUT	NH ₃	1.03	0.46

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.41	0.19
11TFX-053	RPF Filtrate Tank No. 1	NH ₃	0.17	0.05
		VOC	0.01	0.01
11TFX-055	311 Area Wastewater Tank	NH ₃	0.21	0.06
		VOC	0.05	0.02
11SEP-055A	API Decanter	NH ₃	0.18	0.05
		VOC	0.05	0.02
11ODP-055B	Organics Dumpster	VOC	0.01	0.01
11TFX-064	NETZ Filter Feed Tank	NH ₃	0.39	0.28
		VOC	0.17	0.13
11TFX-070	NETZ Effluent Tank	NH ₃	0.47	0.31
		VOC	0.20	0.14
11TFX-076	Waste Collection Tank	NH ₃	0.10	0.07
		VOC	0.03	0.02
11TFX-077	Waste Lift Tank	NH ₃	0.01	0.01
		VOC	0.01	0.01
11TFX-153	Precoat Tank No. 1	NH ₃	0.08	0.01
		VOC	0.03	0.01
10RPF-001	Rotary Precoat Filter No. 1	NH ₃	1.93	3.44
		VOC	0.28	0.54
10RPF-002	RPF Conveyor/Bagger 1	NH ₃	0.01	0.01
		VOC	0.01	0.01
10RPF-005	RPF Diatomaceous Earth Loading	PM ₁₀	0.01	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}, as represented

Emission Sources - Maximum Allowable Emission Rates

PM ₁₀	- total particulate matter equal to or less than 10 microns in diameter, including PM _{2.5} , as represented
PM _{2.5}	- particulate matter equal to or less than 2.5 microns in diameter
CO	- carbon monoxide
HAP	- hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C

- (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) This flare is authorized to operate for 336 hours per year and only when Flare 10FLR-005 is shut down for maintenance during an ADN unit turnaround. (01/08)
- (7) Only one converter can be in startup mode at a time.
- (8) Converter startups are limited to 36 total for all converters in a rolling 12-month period. **(01/08)**

Date: July 15, 2016

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX145

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized 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 authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
10FLR-001 10FLR-002 10FLR-003 10FLR-003A	Converter Flares	CO ₂ (5)	1,389.10
		CH ₄ (5)	3.41
		N ₂ O (5)	0.02
		CO ₂ e	1,480.31
10FLR-001 10FLR-002 10FLR-003 10FLR-003A	Converter Flares MSS	CO ₂ (5)	3,773.39
		CH ₄ (5)	7.44
		N ₂ O (5)	0.01
		CO ₂ e	3,962.37
10FLR-004	Ammonia Startup Flare	CO ₂ (5)	196.87
		CH ₄ (5)	0.49
		N ₂ O (5)	0.01
		CO ₂ e	212.10
10FLR-004	Ammonia Startup Flare MSS Emissions	CO ₂ (5)	1,673.50
		CH ₄ (5)	4.13
		N ₂ O (5)	0.01
		CO ₂ e	1,779.73
10FLR-004A	Ammonia Tank Flare	CO ₂ (5)	466.97
		CH ₄ (5)	8.40
		N ₂ O (5)	0.01
		CO ₂ e	679.95

Emission Sources - Maximum Allowable Emission Rates

10FLR-004A	Ammonia Tank Flare MSS Emissions	CO ₂ (5)	118.03
		CH ₄ (5)	0.10
		N ₂ O (5)	0.01
		CO ₂ e	123.51
10FLR-004B	Butadiene Flare	CO ₂ (5)	4,171.65
		CH ₄ (5)	10.25
		N ₂ O (5)	0.01
		CO ₂ e	4,430.88
10FLR-004B	Butadiene Flare MSS Emissions	CO ₂ (5)	460.53
		CH ₄ (5)	1.08
		N ₂ O (5)	0.01
		CO ₂ e	490.51
10FLR-005	Adiponitrile Flare	CO ₂ (5)	326,117.42
		CH ₄ (5)	98.78
		N ₂ O (5)	1.76
		CO ₂ e	329,111.40
10FLR-005	Adiponitrile Flare MSS Emissions	CO ₂ (5)	19,413.61
		CH ₄ (5)	29.31
		N ₂ O (5)	0.02
		CO ₂ e	20,152.32
10FLR-TMP	TEMP Flare (6)	CO ₂ (5)	91.81
		CH ₄ (5)	0.10
		N ₂ O (5)	0.01
		CO ₂ e	97.29
10FLR-ALT	Alternative Flare for 10FLR-005	CO ₂ (5)	544.91
		CH ₄ (5)	0.01

Emission Sources - Maximum Allowable Emission Rates

		N ₂ O (5)	0.01
		CO ₂ e	548.14
10FUG	ADN Fugitives (5)	CO ₂ (5)	0.99
		CH ₄ (5)	14.57
		CO ₂ e	365.24
10FUG	ADN Fugitives (5) MSS Emissions	CO ₂ (5)	0.06
		CH ₄ (5)	0.01
		CO ₂ e	0.31
10MSS-001	MSS in ADN Area MSS Emissions	CO ₂ (5)	0.18
		CH ₄ (5)	0.60
		CO ₂ e	15.18
10MSS-002	MSS in 311 Area MSS Emissions	CO ₂ (5)	0.10
		CO ₂ e	0.10
10VNT-001	Feed Gas Analyzer Vent	CO ₂ (5)	0.01
		CH ₄ (5)	0.28
		CO ₂ e	7.01
10VNT-002	HCN Sample Blower Vent	CO ₂ (5)	0.01
		CH ₄ (5)	0.01
		CO ₂ e	0.26
10VNT-003	BD Column GCs	CH ₄ (5)	0.01
		CO ₂ e	0.25
10VNT-255	Pump Tank Scrubber and Closed Sump	CO ₂ (5)	4.60
		CH ₄ (5)	0.01
		CO ₂ e	4.85
10VNT-255	Pump Tank Scrubber and Closed Sump MSS Emissions	CO ₂ (5)	0.25
		CH ₄ (5)	1.50

Emission Sources - Maximum Allowable Emission Rates

		CO ₂ e	37.75
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- (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) CO₂ - carbon dioxide
 N₂O - nitrous oxide
 CH₄ - methane
 HFCs - hydrofluorocarbons
 PFCs - perfluorocarbons
 SF₆ - sulfur hexafluoride
 CO₂e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015):
 CO₂ (1), N₂O (298), CH₄(25), SF₆ (22,800), HFC (various), PFC (various)
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
- (5) Emission rate is given for informational purposes only and does not constitute enforceable limit.

Date: July 15, 2016