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
		NO_x	0.33	0.65

Emission Sources - Maximum Allowable Emission Rates

		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
		SO_2	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

		VOC	2.97	0.47
10FLR-ALT	Alternative Flare for 10FLR-005	CO	5.56	1.96
		NH3	0.05	0.02
		NOx	0.89	0.29
		SO2	<0.01	<0.01
		VOC	6.36	2.18
10FLRALTF	Fugitives from Alternative Flare for 10FLR-005 (5)	NH3	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_2S	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
		CL2	0.06	0.01
		H2O2	0.01	0.01
		HCl	0.08	0.01
		NH_3	2.13	0.02

Emission Sources - Maximum Allowable Emission Rates

		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 Unloading	VOC	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

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
10TFX-049A	Methanol Solution	VOC	1.32	0.03

Emission Sources - Maximum Allowable Emission Rates

	Mix Tank			
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
		VOC	0.41	0.19

Emission Sources - Maximum Allowable Emission Rates

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	PM10	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
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented

Emission Sources - Maximum Allowable Emission Rates

$PM_{2.5}$ - 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: August 9, 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_2O (5)	0.02
		CO_2e	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_2O (5)	0.01
		CO_2e	3,962.37
10FLR-004	Ammonia Startup Flare	CO_2 (5)	196.87
		CH_4 (5)	0.49
		N_2O (5)	0.01
		CO_2e	212.10
10FLR-004	Ammonia Startup Flare MSS Emissions	CO_2 (5)	1,673.50
		CH_4 (5)	4.13
		N_2O (5)	0.01
		CO_2e	1,779.73
10FLR-004A	Ammonia Tank Flare	CO_2 (5)	466.97
		CH_4 (5)	8.40
		N_2O (5)	0.01
		CO_2e	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_2O (5)	0.01
		CO_2e	123.51
10FLR-004B	Butadiene Flare	CO_2 (5)	4,171.65
		CH_4 (5)	10.25
		N_2O (5)	0.01
		CO_2e	4,430.88
10FLR-004B	Butadiene Flare MSS Emissions	CO_2 (5)	460.53
		CH_4 (5)	1.08
		N_2O (5)	0.01
		CO_2e	490.51
10FLR-005	Adiponitrile Flare	CO_2 (5)	326,117.42
		CH_4 (5)	98.78
		N_2O (5)	1.76
		CO_2e	329,111.40
10FLR-005	Adiponitrile Flare MSS Emissions	CO_2 (5)	19,413.61
		CH_4 (5)	29.31
		N_2O (5)	0.02
		CO_2e	20,152.32
10FLR-TMP	TEMP Flare (6)	CO_2 (5)	91.81
		CH_4 (5)	0.10
		N_2O (5)	0.01
		CO_2e	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_2O (5)	0.01
		CO_2e	548.14
10FUG	ADN Fugitives (5)	CO_2 (5)	0.99
		CH_4 (5)	14.57
		CO_2e	365.24
10FUG	ADN Fugitives (5) MSS Emissions	CO_2 (5)	0.06
		CH_4 (5)	0.01
		CO_2e	0.31
10MSS-001	MSS in ADN Area MSS Emissions	CO_2 (5)	0.18
		CH_4 (5)	0.60
		CO_2e	15.18
10MSS-002	MSS in 311 Area MSS Emissions	CO_2 (5)	0.10
		CO_2e	0.10
10VNT-001	Feed Gas Analyzer Vent	CO_2 (5)	0.01
		CH_4 (5)	0.28
		CO_2e	7.01
10VNT-002	HCN Sample Blower Vent	CO_2 (5)	0.01
		CH_4 (5)	0.01
		CO_2e	0.26
10VNT-003	BD Column GCs	CH_4 (5)	0.01
		CO_2e	0.25
10VNT-255	Pump Tank Scrubber and Closed Sump	CO_2 (5)	4.60
		CH_4 (5)	0.01
		CO_2e	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_2e	37.75

(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) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
HFCs - hydrofluorocarbons
PFCs - perfluorocarbons
SF_6 - sulfur hexafluoride
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015): CO_2 (1), N_2O (298), CH_4(25), SF_6 (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