Emission Sources - Maximum Allowable Emission Rates

Permit Number 1733A

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)
1-1-Barge	Barge Loading Fugitives (previously EPNs 1-1-Barge and 11-1-52)	VOC	7.59	1.52
7-1-1	500 NSP Neut Standpipe	VOC	0.02	0.09
7-1-2	700 NSP Neut Standpipe	VOC	0.02	0.09
7-1-4	CR500A	VOC	0.02	0.01
7-1-5	CRY500B	VOC	0.23	0.01
7-1-6	CRY500C	VOC	0.23	0.01
7-1-8	S300-Benz Scrubber Vent	VOC (including benzene)	5.00	0.21
		Benzene	5.00	0.21
7-1-9	D400 Slurry Settling Drum	VOC	0.03	<0.01
7-1-15	D508 Neut Separator Drum	VOC	0.01	<0.01
7-1-16	D509 Neut Circ	VOC	0.07	<0.01
7-1-17	D511 Crude Tank	VOC	0.11	0.11
7-1-21	D523A Distillat'n Lights Tank	VOC	<0.01	<0.01
7-1-23	D525A Product Check Tank	VOC	0.62	0.03
7-1-25	D526L, D56M, D526P, D526Q Storage Tank Vent	VOC	2.83	0.17
7-1-26	D529 Kettle Ovhds Tank	VOC	0.17	<0.01
7-1-27	D534 Kettle Feed	VOC	0.58	0.14

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	Tank			
7-1-28	D540 Jet H2O Stg Tank	VOC	<0.01	<0.01
7-1-29	D111 & D701A AnoneTanks	VOC	0.93	0.11
7-1-31	D705 Oxime Holdup Tank	VOC	0.90	0.08
7-1-32	D708 Neut Sptr Drum	VOC	0.01	<0.01
7-1-33	D709 Neut Circ Drum	VOC	0.07	<0.01
7-1-34	D711 Crude Stg Tank	VOC	0.19	0.19
7-1-36	D723A Dist Lights Tank	VOC	0.61	0.37
7-1-37	D724 Dist Heavies Tank	VOC	0.52	0.23
7-1-38	D725A Product Check Tank	VOC	0.49	0.04
7-1-40	D734 Dist Lights Tank	VOC	0.05	<0.01
7-1-41	D745B Poly Return Stg Tank	VOC	<0.01	<0.01
7-1-42	D745C Storage Tank	VOC	0.17	0.03
7-1-43	D745D Storage Tank	VOC	0.07	0.01
7-1-45	D-909 Jet Water Storage	VOC	0.01	<0.01
7-1-46	S400 (NH4)2SO4 Scrubber	PM	4.86	21.29
		VOC	4.98	21.81
7-1-48	T909 Jet Vent	VOC	0.12	0.18
7-1-50	HW400-CR400 OHDS Receiver	VOC	0.01	0.05
7-1-51	HW500-CR500 OHDS Receiver	VOC	0.01	0.05
7-1-53	T504 Jet Water Receiver (HW504)	VOC	0.10	0.44

Emission Sources - Maximum Allowable Emission Rates

7-1-54	T506 Jet Water Receiver (HW505)	VOC	0.01	0.05
7-1-55	T705 Jet Water Receiver (HW705)	VOC	0.01	0.05
7-1-56	HW803 Jet Water Receiver	VOC	0.01	0.05
7-1-58	K500A Jet System	VOC	0.05	0.22
7-1-59	K500D Jet System	VOC	0.05	0.22
7-1-60	T504 Jet System	VOC	0.02	0.09
7-1-61	T506 Jet System	VOC	0.01	0.05
7-1-62	T706 Jet System	VOC	0.03	0.14
7-1-63	T707 Jet System	VOC	0.02	0.09
7-1-65	T907 Jet System	VOC	0.01	0.05
7-1-66	Capro 1 Fugitives (5)	VOC (including benzene)	0.41	1.79
		Benzene	0.34	1.48
		NH_3	0.03	0.15
7-1-71/7-1-72	Capro 1 Rail and Truck Loading	VOC	4.84	0.10
7-1-73	SO_x Scrubber S500	Benzene	0.17	0.76
		NH_3	0.60	2.65
		SO_2	2.40	10.52
		SOx	2.67	11.69
		VOC	0.75	3.27
7-1-74	Ammonium Sulfate Loading	PM	0.60	0.41
		$PM_{10}/PM_{2.5}$	<0.01	<0.01
		VOC	<0.01	<0.01
7-1-75	Kettle Dump	VOC	0.54	0.04
7-1-80	D600	VOC	1.26	0.15

Emission Sources - Maximum Allowable Emission Rates

7-1-90	Cooling Tower CT-700 (5)	VOC	2.10	9.20
7-1-91	D713C Extract Stg Tank	VOC	0.19	<0.01
7-1-101	D409 Neutralization Circulation Drum	VOC	0.10	0.02
7-1-115	D704A	VOC	0.09	<0.01
7-1-116	D704B	VOC	0.09	<0.01
7-2-2	AN1 Fugitive Emission (5)	NH_3	0.12	0.53
		VOC	1.38	6.06
7-2-3/7-2-4	Anone 1 Truck/Railcar Loading	VOC	10.68	1.24
7-2-6	BR360 Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10
7-2-7	BR370 Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10
7-2-9	D17 Tank	VOC	1.63	0.51
7-2-11	D21A Tech Anol Feed Tank	VOC	0.02	0.06
7-2-12	D21B Tech Anol Storage K	VOC	0.02	0.06
7-2-13	D28 Tank	VOC	2.83	0.12
7-2-14	D30B Dehydro Feed Tank	VOC	0.20	0.02

Emission Sources - Maximum Allowable Emission Rates

7-2-16, 7-2-17, 7-2-19, 7-2-22	D30C, D33A, D33B, D34B, D61 Storage Tanks	VOC	5.99	1.36
7-2-18	D34A Cyclohexanone Tank	VOC	6.02	0.36
7-2-21	D56 Conc Catalyst Tank	VOC	1.88	0.01
7-2-24	D113 Tank	VOC	1.16	0.35
7-2-25	D189 Cyclohexanol Tank	VOC	21.71	2.12
7-2-27	D2A Dilute Catalyst Tank	VOC	0.80	0.01
7-2-101	Dehydrogenation Vent	VOC	18.94	0.45
9-1-24	D60A Oxidation Product Storage	VOC	0.35	0.13
9-1-25	D60B Storage	VOC	1.04	1.16
9-1-26	D60C Storage	VOC	1.04	
9-1-27	D900 Conc Acid Water Tank	Organic Acids	0.26	1.13
		VOC (not including organic acids)	0.77	3.38
9-1-29	D193B IFR	VOC	0.54	0.05
11-1-2	R170 Catalytic Incinerator (8)	CO	17.78	75.86
		NO_x	0.38	1.49
		PM_{10}	0.01	0.03
		VOC	28.29	108.22
11-1-3	BR300 Dehydro Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10

Emission Sources - Maximum Allowable Emission Rates

11-1-4	BR310 Dehydro Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10
11-1-5	BR320 Dehydro Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10
11-1-6	BR330 Dehydro Burner	CO	0.36	1.56
		NO_x	0.42	1.85
		PM_{10}	0.03	0.14
		SO_2	0.01	0.01
		VOC	0.02	0.10
11-1-23	D-404BStorage	VOC	0.25	0.05
11-1-25	D114 Conc Catalyst Tank	VOC	1.79	0.01
11-1-26	D116 Dilute Catalyst Tank	VOC	2.27	0.04
11-1-40	D289	VOC	0.17	0.01
11-1-43	BR340 Dehydro Burner	CO	0.64	2.81
		NO_x	0.76	3.34
		PM_{10}	0.06	0.25
		SO_2	0.01	0.02
		VOC	0.04	0.18
11-1-47	Process Fugitives (5)	VOC	2.87	12.59

Emission Sources - Maximum Allowable Emission Rates

11-1-49	Process Fugitives (5)	NH_3	0.17	0.74
11-1-50/11-1-51	Railcar and Truck Loading Losses	VOC	8.24	0.30
11-1-91	Cooling Tower CT-1100 (5)	VOC	0.63	2.76
11-1-100	Vapor Combustor R180	CO	37.44	13.11
		NO_x	14.91	4.50
		PM_{10}	0.60	0.21
		SO_2	0.05	0.02
		VOC	0.89	0.31
11-1-101	Dehydrogenation Vent	VOC	1.44	0.50
11-1-104	Anone 2 Low Pressure Vents	CO	140.00	1.60
		VOC	278.31	3.93
12-1-1	Vent Gas Flare (FL-280)	CO (10)	0.02	0.10
		NO_x (10)	121.51	532.20
		VOC	0.01	0.01
		CO (9)	2.18	8.16
		NO_x (9)	220.25	278.84
12-1-2	Burner Flare 1 (FL-170B)	CO (10)	4.37	19.13
		NO (10)	756.00	(6)
		NO_x (10)	2.19	9.58
		VOC (10)	0.09	0.39
		CO (9)	51.97	38.52
		NO (6)(9)	771.43	31.10
		NO_x (9)	11.23	4.60
		VOC (9)	0.06	0.05

Emission Sources - Maximum Allowable Emission Rates

12-1-29	Catalyst Bldg Jet	PM_{10}	0.01	0.01
12-1-30	Scrubber Vent (T-350)	PM_{10}	0.11	0.02
12-1-31	Catalyst Oven Vent (OV-300A)	PM_{10}	0.01	0.01
12-1-33	Catalyst Oven Vent (OV-300C)	PM_{10}	0.01	0.01
12-1-35	Catalyst Oven Vent (OV-300E)	PM_{10}	0.01	0.01
12-1-44	Catalyst Transfer Station	PM_{10}	1.56	0.25
12-1-45	HA Unit Fugitive (5)	NH_3	0.56	2.47
		NO	6.00	10.00
		H_2SO_4	0.03	0.13
12-1-46	Ammonia Flare (FL-241)	CO (10)	0.28	1.24
		NH_3 (10)	3.06	0.02
		NO_x (10)	27.57	0.85
		VOC (10)	0.01	0.03
		CO (9)	22.51	6.04
		NH_3 (9)	25.50	0.20
		NO_x (9)	37.43	0.98
		VOC (9)	0.01	0.01
12-1-47	Carbon Beds Normal Emissions and (7)	1, 1, Trichloroethane	1.90	0.18
		Carbon Tetrachloride	1.90	0.18
		VOC	2.36	0.23

Emission Sources - Maximum Allowable Emission Rates

12-1-48	Burner Flare 2 (FL-171)	CO (10)	5.80	25.37
		NO (10)	1172.00	(6)
		NO_x (10)	2.90	12.71
		VOC (10)	0.12	0.52
		CO (9)	62.33	52.03
		NO (6)(9)	1207.87	31.10
		NO_x (9)	15.55	6.17
		VOC (9)	0.08	0.06
12-1-49	Nitric Acid Loading/Storage	Nitric Acid	0.76	0.67
12-1-50	HA 2 Nitric Oxide Fugitives	NO	1.51	6.61
12-1-54	HA 2 HNO2/HNO3 Fugitives (5)	HNO_2/HNO_3	0.14	0.63
12-1-60	Anone 2: D244A/B(previously EPN 11-1-72)	VOC	1.41	2.09
12-2-4	Cooling Tower CT-20 (5)	VOC	1.55	6.81
12-2-49/12-2-54	D1402 Deepwell Tank	VOC	0.06	0.04
	D1401 Deepwell Tank		0.06	
12-2-50	D1403 Deepwell Tank	VOC	0.06	<0.01
12-2-53	D1424 Deepwell Tank	VOC	0.02	<0.01
12-2-55	Deepwell Filter Press	VOC	0.56	0.11
14-1-1	Ammonium Sulfate Loading	PM	0.60	0.56
		$PM_{10}/PM_{2.5}$	<0.01	<0.01
		VOC	<0.01	<0.01
14-1-9	Cooling Tower CT-30 (5)	VOC	0.84	3.68

Emission Sources - Maximum Allowable Emission Rates

14-1-10	Product Storage Drums (D344A, D344B, D344C, D344D)	VOC	0.85	0.39
14-1-11	D204,D600 (previously EPN 14-1-11 and 14-1-8)	VOC	0.01	0.05
14-1-13	D602B	VOC	<0.01	<0.01
14-1-16	D711	VOC	0.02	<0.01
14-1-20	Hot Well Tank (HW410)	VOC	0.25	1.10
14-1-21	Hot Well Tank (HW430)	VOC	0.02	0.09
14-1-22	Hot Well Tank (HW600)	VOC	0.01	0.05
14-1-23	Hot Well Tank (HW720)	VOC	0.01	0.05
14-1-27	D205 Crude Lactam Storage	VOC	0.25	0.18
14-1-29	D300A	VOC	0.25	0.04
14-1-30	D300B	VOC	0.94	0.18
14-1-31	D300C	VOC	4.94	1.16
14-1-35	D343B	VOC	0.90	0.07
14-1-36	D400	VOC	0.26	0.04
14-1-38	D500	VOC	1.27	0.67
14-1-39	D523	VOC	0.07	0.02
14-1-40	D601 Mother Liquor Storage	VOC	0.11	<0.01
14-1-41	D606 Mother Liquor Receiver	VOC	<0.01	<0.01
14-1-44	D630B Water Storage	VOC	<0.01	<0.01
14-1-45	D700	VOC	0.26	0.07
14-1-46	D701A, D701B	VOC	0.19	0.04

Emission Sources - Maximum Allowable Emission Rates

14-1-47	D710 Mother Liquor Storage	VOC	1.30	0.01
14-1-52-1	D203A	VOC	0.06	<0.01
14-1-52-2	D203B	VOC	0.06	<0.01
14-1-54	D-140/EV-140	VOC	<0.01	<0.01
14-1-56	T330 Jet System	VOC	0.39	1.14
14-1-57	T340A Jet System	VOC	0.02	0.09
14-1-58	T510 Jet System	VOC	0.02	0.09
14-1-60	T430 Jet System	VOC	0.02	0.09
14-1-61	K520 Jet System	VOC	0.05	0.22
14-1-64	EV-720 Jet System	VOC	0.01	0.05
14-1-68/14-1-83	Truck and Rail Loading	VOC	4.39	0.99
14-1-69	Scrubber S601	PM	5.14	15.00
		VOC	4.98	21.81
14-1-70	K530 Jet System	VOC	0.05	0.22
14-1-73	Capro 2 Process Fugitives (5)	Benzene	0.25	1.09
		NH_3	0.01	0.04
		VOC (including benzene)	0.37	1.62
14-1-75	Benzene Crude Scrubber S-260	Benzene	5.00	0.61
		VOC (including benzene)	5.00	0.61
14-1-76	SO_x Scrubber S625	Benzene	0.22	0.95
		NH_3	0.60	2.65
		SO_2	2.40	10.52
		SOx	2.67	11.69
		VOC	0.88	3.84

Emission Sources - Maximum Allowable Emission Rates

14-1-78	T1160/D121	VOC	1.53	0.10
14-1-86	Kettle Dump	VOC	0.54	0.02
14-1-90	D806A	VOC (including benzene)	<0.01	<0.01
		Benzene	<0.01	<0.01
14-1-113	D702	VOC	0.10	0.10
14-1-114	D706	VOC	0.06	<0.01
14-1-115	D132, D1140 (previously part of EPN 14-1-78)	VOC	2.58	0.13
14-1-116	Anone 2: D245 (previously EPN 7-2-40)	VOC	8.49	1.13
Planned maintenance, startup, and shutdown (MSS) activities and emissions authorized below this heading				
AN1MSS	Anone 1 MSS Emissions (7)	NH_3	2.30	0.47
		PM/PM_{10}	0.07	0.01
		VOC	57.57	1.33
AN1MSS	Anone 1 Shutdown Emissions (7)	NH_3	1.22	0.10
		VOC	3.51	0.27
AN2MSS	Anone 2 MSS Emissions (7)	NH_3	0.05	0.18
		PM/PM_{10}	0.20	0.01
		VOC	217.50	6.30
AN2MSS	Anone 2 Shutdown Emissions (7)	NH_3	0.92	0.09
		VOC	24.92	0.94
CP1MSS	Caprolactam 1 MSS Emissions (7)	H_2SO_4	0.93	0.01
		NH_3	1.20	0.48
		VOC	32.58	3.08
CP1MSS	Caprolactam 1 Shutdown Emissions (7)	NH_3	0.21	0.08

Emission Sources - Maximum Allowable Emission Rates

		VOC	47.04	2.14
CP2MSS	Caprolactam 2 MSS Emissions (7)	H_2SO_4	0.93	0.01
		NH_3	1.20	0.49
		VOC	14.99	3.09
CP2MSS	Caprolactam 2 Shutdown Emissions (7)	NH_3	0.20	0.08
		VOC	35.86	1.66
HAMSS	Hydroxylamine MSS Emissions (7)	NO	76.36	1.26
		NH_3	1.03	0.93
		PM/PM_{10}	0.12	0.01
		VOC	0.16	0.17
HAMSS	Hydroxylamine Shutdown Emissions (7)	NO	309.89	4.96
7-1-8	Caprolactam 1 MSS Emissions	Benzene	5.00	0.38
9-1-24	D-60A IFR MSS (7)	VOC	2.37	0.14
9-1-25	D-60B IFR MSS (7)	VOC	10.11	0.03
9-1-26	D-60C IFR MSS (7)	VOC	10.11	0.03
9-1-29	D-193B IFR MSS (7)	VOC	6.65	0.15
11-1-100	Anone 1 Shutdown Emissions (7)	CO	39.99	0.96
		NO_x	10.04	0.24
		VOC	36.06	1.17
11-1-100	Anone 2 Shutdown Emissions (7)	CO	66.45	2.81
		NO_x	16.69	0.71
		VOC	50.71	3.44
11-1-100	Anone 2 Incinerator MSS (7)	CO	37.44	6.29
		NO_x	14.91	2.16

Emission Sources - Maximum Allowable Emission Rates

		VOC	1.06	0.18
12-1-1	Hydroxylamine MSS Emissions (7)	NO	211.21	22.18
12-1-1	Hydroxylamine Shutdown Emissions (7)	CO	7.79	0.75
		NO_x	3.90	0.37
12-1-46	Hydroxylamine MSS Emissions (7)	CO	22.07	0.81
		NH_3	27.53	1.28
		NO_x	16.34	0.73
		VOC	0.25	0.02
12-1-46	Hydroxylamine Shutdown Emissions (7)	CO	11.04	2.12
		NH_3	2.08	0.40
		NO_x	2.33	0.45
		VOC	0.12	0.02
14-1-75	Caprolactam 2 MSS Emissions	Benzene	5.00	0.56

(1) Emission point identification - either specific equipment designation or emission point number (EPN) from plot plan.
(2) Specific point source name. For fugitive sources use area name or fugitive source name.
(3) CO - carbon monoxide
H_2SO_4 - sulfuric acid
NO_x - total oxides of nitrogen. This does not include any NO emissions listed separately.
NH_3 - ammonia
HNO_2 - nitrous acid
HNO_3 - Nitric acid
NO - nitric oxide
PM - particulate matter, suspended in the atmosphere, including PM_{10}.
PM_{10} - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
SO_2 - sulfur dioxide
SO_x - total oxides of sulfur. This includes SO_2 and SO_3 (sulfur trioxide).
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1, including benzene.
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations.
(6) Total combined annual nonpilot/nonassist gas NO emissions from EPNs 12-1-2 and 12-1-48 shall not exceed 31.10 tons per year. Compliance with the annual emissions limit is based on a rolling 12-month average.

Emission Sources - Maximum Allowable Emission Rates

(7) Planned maintenance, startup, and shutdown activity(ies).
(8) Planned MSS activities and emissions of each air contaminant are authorized with normal emissions from this EPN.
(9) Emission limits per Special Condition 34.
(10) Emission limits identified in the permit issue date May 11, 2010.

Date: June 30, 2015