Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 50607, PSDTX331M1, PSDTX804, and PSDTX1017M1

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)
Emission Cap	Combustion Units, Cooling Towers, Flares/Vapor Combustor, Fugitives (5), Loading, Process Vents, Storage Tanks, and Wastewater	VOC	397.68	1025.33
		Benzene	18.41	37.28
Emission Cap	Combustion Units, Flares/Vapor Combustor, and Process Vents	NO_x	254.11	537.84
		CO	534.26	775.50
		SO_2	189.76	237.01
Emission Cap	Combustion Units, Cooling Towers, and Process Vents	PM/PM_{10}	54.84	155.27
Emission Cap	Combustion Units, Flares/Vapor Combustor, Fugitives, Process Vents, and Storage Tanks	H_2S	3.35	12.60
F-028	DHT/ASU (5)	NH_3	0.01	0.01
F-100	No. 1 Crude (5)	NH_3	0.01	0.02
F-500	No. 1 Reformer	NH_3	0.01	0.01
F-850	South Merox Unit (5)	NH_3	0.01	0.01
F-1000	POU (5)	NH_3	0.01	0.01
F-1400	Vacuum (5)	NH_3	0.01	0.01
F-1500	HCU (5)	NH_3	0.01	0.02
F-2000	ROSE Unit (5)	NH_3	0.01	0.01
F-2200	DOT/Reformate Splitter (5)	NH_3	0.17	0.76

Emission Sources - Maximum Allowable Emission Rates

F-2300	ATS (5)	NH_3	0.01	0.01
F-2300	SWS (5)	NH_3	0.01	0.04
F-2400	FCCU (5)	NH_3	0.04	0.17
F-2400	FCCU Gas Con (5)	NH_3	0.01	0.01
F-2400	FCCU Merox (5)	NH_3	0.01	0.01
F-3700	HCU (5)	NH_3	0.01	0.01
F-3800	No. 2 HDU (5)	NH_3	0.01	0.02
F-3900	LEU (5)	NH_3	0.01	0.01
F-4000	No. 1 and No. 2 SRU (5)	NH_3	0.01	0.04
F-5400	BTX Unit Fugitives	NH_3	0.05	0.22
H-028	Crude Charge Heater 1	NO_x	11.18	23.41
		CO	14.61	44.41
		VOC	1.10	4.80
		SO_2	6.17	7.56
		PM/PM_{10}	1.51	6.63
H-036	Crude Charge Heater 1	NO_x	11.18	31.56
		CO	14.61	55.54
		VOC	1.10	4.80
		SO_2	7.95	9.23
		PM/PM_{10}	1.51	6.63

Emission Sources - Maximum Allowable Emission Rates

H-016	Vacuum Unit Charge Heater	NO_x	4.95	21.66
		CO	10.16	21.70
		VOC	0.76	3.34
		SO_2	6.82	6.75
		$PM/PM_{10}/PM_{2.5}$	1.05	4.62
H-021	ROSE "DAGO" Heater	NO_x	1.90	8.31
		CO	2.69	4.71
		VOC	0.24	0.84
		SO_2	1.18	1.60
		PM/PM_{10}	0.33	1.17
H-022	Asphalt Heater	NO_x	0.98	4.28
		CO	1.96	3.96
		VOC	0.15	0.64
		SO_2	1.09	1.38
		PM/PM_{10}	0.20	0.89
H-020	Isostripper Reboiler Heater	NO_x	1.99	4.90
		CO	3.12	3.83
		VOC	0.27	0.75
		SO_2	0.47	1.16
		PM/PM_{10}	0.37	1.04

Emission Sources - Maximum Allowable Emission Rates

B-007	"BTX" Boiler	NO_x	12.33	34.16
		CO	18.02	27.76
		VOC	1.26	4.70
		SO_2	0.13	0.44
		PM/PM_{10}	1.74	6.49
H-043	H043 BTX Reboil Heater	NO_x	4.27	9.86
		CO	5.10	5.90
		VOC	0.38	0.89
		SO_2	3.43	1.90
		$PM/PM_{10}/PM_{2.5}$	0.53	1.22
H-044	BTX Reboil Heater	NO_x	1.83	5.75
		CO	3.65	4.93
		VOC	0.28	0.89
		SO_2	1.50	1.68
		PM/PM_{10}	0.39	1.22
B-004	Boiler 6F1-A & Boiler 6F1-B	NO_x	25.97	72.43
		CO	9.28	12.94
		VOC	0.80	2.23
		SO_2	3.79	4.77
		PM/PM_{10}	1.11	3.08

Emission Sources - Maximum Allowable Emission Rates

B-006	East Plant Boiler Emissions	NO_x	13.07	49.82
		CO	7.83	12.98
		VOC	0.59	2.24
		SO_2	3.67	4.52
		PM/PM_{10}	0.81	3.09
H-041	DOT H2 Recycle Furnace	NO_x	3.40	5.70
		CO	3.50	2.92
		VOC	0.27	0.44
		SO_2	2.34	0.78
		$PM/PM_{10}/PM_{2.5}$	0.36	0.60
H-039	No. 1 SRU Hot Oil Heater	NO_x	0.69	1.60
		CO	0.50	2.17
		VOC	0.04	0.16
		SO_2	0.33	0.31
		PM/PM_{10}	0.05	0.23
H-047	No. 2 SRU Hot Oil Heater	NO_x	1.84	6.58
		CO	2.46	4.38
		VOC	0.18	0.65
		SO_2	1.65	1.30
		$PM/PM_{10}/PM_{2.5}$	0.26	0.91

Emission Sources - Maximum Allowable Emission Rates

H-015A	Lubr. Oil Crude Atmospheric Heater (H-1001)	NO_x	0.69	2.60
		CO	1.23	2.15
		VOC	0.11	0.49
		SO_2	0.01	0.05
		PM/PM_{10}	0.16	0.68
H-015B	Lubr. Oil Crude Atmospheric Heater (H-1002)	NO_x	0.38	1.41
		CO	0.67	1.17
		VOC	0.06	0.27
		SO_2	0.01	0.03
		PM/PM_{10}	0.08	0.37
H-037	HDU Charge Heater 2	NO_x	2.68	6.72
		CO	3.28	4.39
		VOC	0.26	0.66
		SO_2	1.34	0.24
		PM/PM_{10}	0.36	0.91
H-038	HDU Reboiler Heater 2	NO_x	1.85	4.65
		CO	2.88	4.18
		VOC	0.25	0.63
		SO_2	0.88	0.99
		PM/PM_{10}	0.34	0.87

Emission Sources - Maximum Allowable Emission Rates

H-014	Naphtha Splitter Reboiler	NO_x	4.16	13.11
		CO	4.60	6.05
		VOC	0.34	1.09
		SO_2	1.96	2.09
		PM/PM_{10}	0.48	1.50
H-026	Glycol Contactor Heater	NO_x	0.33	1.30
		CO	0.24	1.04
		VOC	0.02	0.08
		SO_2	0.16	0.17
		PM/PM_{10}	0.02	0.11
H-034	H.C.U. Recycle Heater	NO_x	3.47	11.24
		CO	4.99	7.02
		VOC	0.37	1.21
		SO_2	2.40	2.24
		PM/PM_{10}	0.52	1.67
H-035	H.C.U. Debutanizer Reboiler Heater	NO_x	3.39	11.67
		CO	6.08	9.26
		VOC	0.46	1.57
		SO_2	4.09	2.81
		$PM/PM_{10}/PM_{2.5}$	0.63	2.17

Emission Sources - Maximum Allowable Emission Rates

H-018	H.C.U. Fractionation Heater	NO_x	4.24	10.52
		CO	2.82	3.05
		VOC	0.21	0.53
		SO_2	1.85	0.93
		PM/PM_{10}	0.29	0.73
H-019	H.C.U. Fractionation Heater	NO_x	2.70	8.02
		CO	4.30	3.47
		VOC	0.33	0.52
		SO_2	2.89	1.51
		$PM/PM_{10}/PM_{2.5}$	0.44	0.72
H-030	No. 2 Reformer Charge Heater	NO_x	19.06	34.30
		CO	15.46	31.64
		VOC	2.38	4.28
		SO_2	11.39	6.24
		$PM/PM_{10}/PM_{2.5}$	3.29	5.92
H-032	No. 2 Reformer Charge Heater	NO_x	12.27	19.78
		CO	10.31	22.86
		VOC	0.97	2.50
		SO_2	8.72	4.60
		$PM/PM_{10}/PM_{2.5}$	1.34	3.45

Emission Sources - Maximum Allowable Emission Rates

H-033	No. 2 Reformer Stab. Reboiler	NO_x	2.25	5.95
		CO	4.05	5.35
		VOC	0.30	0.80
		SO_2	2.71	1.03
		$PM/PM_{10}/PM_{2.5}$	0.42	1.11
H-045	DHT Charge Heater	NO_x	2.05	8.98
		CO	2.95	5.53
		VOC	0.22	0.97
		SO_2	1.93	1.82
		PM/PM_{10}	0.31	1.34
H-046	Fractionator Feed Heater	NO_x	2.88	12.59
		CO	4.59	9.06
		VOC	0.34	1.51
		SO_2	2.87	3.11
		PM/PM_{10}	0.48	2.09
H-023	Tracing Oil Heater	NO_x	0.09	0.27
		CO	0.15	0.22
		VOC	0.01	0.04
		SO_2	0.08	0.08
		PM/PM_{10}	0.02	0.06

Emission Sources - Maximum Allowable Emission Rates

H-004	Lubr. HDS Charge Heater	NO_x	0.41	1.79
		CO	0.88	3.85
		VOC	0.06	0.27
		SO_2	0.01	0.03
		$PM/PM_{10}/PM_{2.5}$	0.09	0.37
H-031	No. 1 HDU Stripper Reboiler Heater	NO_x	0.79	3.44
		CO	1.57	6.88
		VOC	0.12	0.51
		SO_2	1.06	0.85
		$PM/PM_{10}/PM_{2.5}$	0.16	0.71
H-010	No. 1 HDU Reactor Charge Heater	NO_x	1.05	4.59
		CO	2.10	9.18
		VOC	0.16	0.69
		SO_2	1.41	1.11
		$PM/PM_{10}/PM_{2.5}$	0.22	0.96
H-011	No. 1 Ref. Stabilizer Reboiler Heater	NO_x	0.52	2.26
		CO	0.83	3.61
		VOC	0.06	0.27
		SO_2	0.54	0.59
		PM/PM_{10}	0.09	0.37

Emission Sources - Maximum Allowable Emission Rates

H-012	Reformer Charge Heater	NO_x	5.41	23.72
		CO	7.56	16.86
		VOC	0.57	2.48
		SO_2	4.94	5.34
		PM/PM_{10}	0.78	3.43
H-013	No. 1 Stabilizer Reboiler Heater	NO_x	1.86	8.13
		CO	1.24	2.71
		VOC	0.09	0.40
		SO_2	0.83	0.47
		$PM/PM_{10}/PM_{2.5}$	0.13	0.56
S-007, S-008, S-031, S-032, S-033, S-034, S-035, S-036, S-037, S-038, S-039, S-040, S-041, S-042, S-043, S-044, S-100, S-101, S-102, S-108, S-114, S-115, S-116, S-119, S-120, S-127, S-128, S-129, S-130, S-200, S-201, S-206, S-207, S-208, S-209, S-210, S-211, S-212, S-213, S-214, S-215, S-216, S-217, S-218, S-219, S-220, S-221, S-222, S-223, S-224, S-225, S-300, S-301, S-302, S-303, S-304, S-305, S-306, S-308, S-309, S-310, S-311, S-312, S-313, S-314, S-315, S-316, S-317, S-318, S-319, S-331, S-332, S-333, S-334, S-335, S-336, S-337 S-338, S-339, S-340, S-401 S-402, S-403,	Subcaps for Storage Tanks	VOC	84.69	134.74

Emission Sources - Maximum Allowable Emission Rates

S-680-6, S-680-7, S-680-8, S-680-9				
FL-003, FL-004, FL-006, FL-501, FL-005	Subcaps for Flares	NO_x	16.27	17.32
		CO	84.41	90.11
		VOC	74.9	118.63
		SO_2	5.30	6.42
F-28, F-100 (#1 Crude, Desalter), F-400, F-500, F-620, F-660 (EPltFlareE, EPltFlareS, West Plant Flare System), F-700, F-820, F-830S, F-850 (S Merox Unit, Tank Farm), F-900, F-1000, F-1200, F-1400, F-1500, F-2000, F-2100, F-2200 (DOT/Ref Splitter, East Plant Alky Splitter), F-2300 (ATS, SWS), F-2400 (FCCU, FCCU Gas Con, FCCU Merox), F-2500, F-2600, F-2700, F-2800 (EP Cool Twr, EP Utilities), F-3700 (HCU, HCU Hot Oil Drum), F-3800, F-3900 (LEU, HCU), F-4000, F-4300, F-5400, F-2600N, F-660N, F-660 (EPltFlareW), F-680 (WWTP Tanks), F-680W, F-800E, F-800W, F-830 (RAIL, West Rack), F-830E, F-830N, F-830W, F-850N, F-850S, F-ROSE	VOC Subcaps for Equipment Fugitives (5)(10)	VOC	133.40	584.67
F-0670	West Plant Cooling Tower	VOC	0.25	1.10

Emission Sources - Maximum Allowable Emission Rates

		PM/PM_{10}	0.36	1.58
F-2810	East Plant Cooling Tower (5)	VOC	1.68	7.36
		PM/PM_{10}	2.40	10.52
F-3670	No. 2 West Plant Cooling Tower (5)	VOC	0.59	2.57
		PM/PM_{10}	0.84	3.69
F-0680	F-0680 Open-Top Biotreatment	VOC	23.08	36.23
F-0671	No. 2 API Separator	VOC	0.48	0.95
F-0682	Crude Unit Sump	VOC	3.27	6.50
F-0683	No. 1 Reformer Sump	VOC	1.66	3.31
F-0684	600 Unit Sump	VOC	0.01	0.03
F-0685	R. R. Rack Sump	VOC	0.10	0.20
F-0686	Truck Loading Sump	VOC	0.09	0.18
F-0687	Landfarm	VOC	2.26	4.50
F-0688	Vacuum Unit Sump	VOC	2.08	4.14
F-0689	Crude Unload Sump	VOC	0.24	0.47
F-3110	No. 2 Reformer Sump	VOC	0.59	1.18

Emission Sources - Maximum Allowable Emission Rates

V-006	No. 1 Reformer Regeneration	CO	37.5	1.50
		VOC	1.40	0.06
		Cl_2	0.40	0.02
V-007	No. 2 Reformer Regeneration	CO	5.00	14.02
		VOC	0.04	0.13
		Cl_2	0.01	0.04
V-010	FCCU Regeneration Vent	NOx	62.69	28.82
		CO	195.47	184.29
		VOC	6.16	14.51
		SO_2	43.64	52.65
		PM/PM_{10}	30.00	69.98
		H_2SO_4	13.69	59.96
		O_3	7.22	31.62
V-008, V-009	Subcaps for Sulfur Plants	NO_x	6.16	14.12
		CO	29.09	116.32
		VOC	12.21	38.43
		SO_2	48.13	98.22
		PM/PM_{10}	0.37	1.58
		TRS	2.26	9.94
V-003	A.T.S. Secondary Absorber	SO_2	0.09	0.01
L-001	Oil Truck Loading Rack	VOC	0.02	0.02
L-002	Gasoline Truck Loading Rack	VOC	16.20	8.30
L-004	Tank Car Loading Rack	VOC	0.01	0.01
L-005	Aromatic Rail Load Rack	VOC	7.56	2.05

Emission Sources - Maximum Allowable Emission Rates

	Fugitives			
VCU-1	Loading Rack Vapor Combustor	NO_x	0.88	0.55
		CO	2.52	1.60
		VOC	9.60	5.92
Planned Maintenance, Startup, and Shutdown (MSS) Emission Limitations				
Cooling Towers, Combustion Units, Flares/Vapor Combustor Fugitives (5), Loading, Process Vents, Storage Tanks, and Wastewater		VOC (6) (8)	4711.24	99.82
		NO_x (6) (8)	305.53	17.71
		CO (6) (8)	1,187.84	42.14
		SO_2 (6) (8)	894.13	61.54
		$PM/PM_{10}/PM_{2.5}$ (6) (8)	3.14	0.57
		H_2S (6) (8)	2.65	0.52
		Benzene (6) (8) (9)	90.70	2.90
		CS_2 (8)	0.33	0.02
		COS (8)	1.89	0.11
Standard Permit (SP) sources incorporated by reference. Sources remain authorized by the SP(s) as listed below:				
Registration Number 83511				
B-010	BTX Boiler	NO_x	5.10	22.34
		CO	12.31	53.93
		VOC	1.83	8.03
		NH_3	1.49	6.55
		SO_2	4.55	19.93
		$PM/PM_{10}/PM_{2.5}$	2.53	11.10

(1) Emission point identification - either specific equipment designation or emission point number (EPN) from a plot plan.

Emission Sources - Maximum Allowable Emission Rates

(2) Specific point source names. For fugitive sources, use an 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
CO - carbon monoxide
SO_2 - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$
PM_{10} - particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
Cl_2 - chlorine
COS - carbonyl sulfide
CS_2 - carbon disulfide
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
NH_3 - ammonia
TRS - total reduced sulfur
O_3 - ozone

(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) Planned MSS VOC, NO_x, CO, SO_2, PM_{10}, H_2S, and Benzene allowable emissions are NOT included in the Emission Caps (Normal Operations) allowable emissions.

(7) The MSS emission rates from January 1, 2010 through December 31, 2010, shall be the sum of the monthly MSS emissions for calendar year (CY) 2010. The MSS emissions for this period shall not include the MSS emissions prior to January 1, 2010. Beginning January 1, 2011, MSS emissions shall be based on a rolling 12-month period.

(8) The MSS emission rates beginning January 1, 2012 through December 31, 2012, shall be the sum of the monthly MSS emissions for CY 2012. The MSS emissions for this period shall not include the MSS emissions prior to January 1, 2012. Beginning January 1, 2013, MSS emissions shall be based on a rolling 12-month period.

(9) Benzene MSS allowables are included in the VOC allowables.

(10) Ammonia fugitive allowable emissions are specified by EPN.

(11) These emission caps have been carried forward from the flexible permit and do not include MSS emissions. The caps have been lowered to equal the sum of the normal operation individual limits and subcaps. The caps do not include emissions from EPN B-010, incorporated by reference from Standard Permit 83511.

Dated: December 14, 2012