Emission Sources - Maximum Allowable Emission Rates

Permit Number 18897

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)
XF1010	No. 10 Boiler	NO_X (10)	51.92	227.41
		CO (10)	4.13	18.09
		PM (10)	0.88	3.85
		VOC (10)	0.64	2.79
		SO_2 (10)	3.47	5.63
		H_2S (10)	0.04	0.06
XF1011	No 11 Boiler	NO_X	13.73	60.13
		CO	3.64	15.94
		PM	0.77	3.39
		VOC	0.56	2.46
		SO_2	3.06	4.96
		H_2S	0.03	0.05
XF1601	No. 6 Crude Unit Furnace 1	NO_X (8)	24.90	109.07
		NOx (9)	5.93	25.97
		CO	5.93	25.97
		PM	1.26	5.53
		VOC	0.91	4.00
		SO_2	4.98	8.08
		H_2S	0.05	0.09

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XF1602	No. 6 Crude Unit Furnace 2	NO_X	6.16	26.98
		CO	5.28	23.13
		PM	1.31	5.74
		VOC	0.95	4.16
		SO_2	5.18	8.40
		H_2S	0.06	0.09
XF3804	Plant 38 Feed Furnace	NO_X	2.59	11.34
		CO	0.92	4.05
		PM	0.20	0.86
		VOC	0.14	0.62
		SO_2	0.78	1.26
		H_2S	0.01	0.01
XF3901	Plant 39 Diesel Furnace	NO_X	2.59	11.34
		CO	2.59	11.34
		PM	0.55	2.42
		VOC	0.40	1.75
		SO_2	2.18	3.81
		H_2S	0.02	0.04
XF4131	Naphtha Hydrotreater Furnace No. 1	NO_X	3.68	16.10
		CO	1.31	5.75
		PM	0.28	1.22
		VOC	0.20	0.89
		SO_2	1.10	1.79
		H_2S	0.01	0.02

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XF4132	Naphtha Hydrotreater Furnace No. 2	NO_X	3.68	16.10
		CO	1.31	5.75
		PM	0.28	1.22
		VOC	0.20	0.89
		SO_2	1.10	1.79
		H_2S	0.01	0.02
XF4150-60	Rheniformer Reactor Furnace (F-4150)	NO_X	7.07	24.99
		CO	6.06	21.42
		PM	1.51	5.32
		VOC	1.09	3.85
		SO_2	5.94	7.78
		H_2S	0.06	0.08
XF4150-60	Rheniformer Reactor Furnace (F-4160)	NO_X	5.71	24.99
		CO	4.89	21.42
		PM	1.21	5.32
		VOC	0.88	3.85
		SO_2	4.80	7.78
		H_2S	0.05	0.08
XF4170-80	Rheniformer Reactor Furnace (F-4170)	NO_X	7.28	31.89
		CO	2.80	12.26
		PM	1.04	4.57
		VOC	0.75	3.31
		SO_2	4.12	6.68
		H_2S	0.04	0.07

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XF4170-80	Rheniformer Reactor Furnace (F-4180)	NO_X	4.29	18.79
		CO	2.89	12.65
		PM	0.61	2.69
		VOC	0.44	1.95
		SO_2	2.43	3.94
		H_2S	0.03	0.04
6	Boiler No. 1 (H-901)	NO_X	32.94	144.28
		CO	6.41	28.05
		PM	1.36	5.97
		VOC	0.99	4.32
		SO_2	5.38	8.73
		H_2S	0.06	0.09
8	Boiler No. 3 (H-903)	NO_X	10.81	47.35
		CO	6.10	26.73
		PM	1.30	5.69
		VOC	0.94	4.12
		SO_2	5.13	8.32
		H_2S	0.05	0.09
109	Vacuum Unit Heater (H-1601)	NOx	21.62	51.30
		CO	6.31	27.62
		PM	1.34	5.88
		VOC	0.97	4.26
		SO2	5.30	8.60
		H2S	0.06	0.09
125	Vacuum Preflash Heater (H-1101)	NOx	3.31	14.48
		CO	1.18	5.17
		PM	0.25	1.10
		VOC	0.18	0.80
		SO2	0.99	1.61

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		H2S	0.01	0.02
K501-04	Relief Gas Compressor #1	NOx	4.14	18.13
		CO	11.25	49.28
		PM	0.15	0.65
		VOC	1.80	7.88
		SO2	0.01	0.04
97	Fire Water Pump	NOx	7.25	0.77
		CO	1.56	0.16
		PM	0.51	0.05
		VOC	0.59	0.06
		SO2	0.48	0.05
XH-103	CPS Crude Heater (H-103)	NOx	6.65	29.13
		CO	3.80	16.64
		PM	1.42	6.20
		VOC	1.02	4.49
		SO2	5.32	8.99
		H2S	0.06	0.10
XF3902	Plant 39 Furnace	NOx	1.44	6.33
		CO	1.44	6.33
		PM	0.31	1.35
		VOC	0.22	0.97
		SO2	1.21	2.13
		H2S	0.01	0.02
111	FCCU	NOx	74.41	75.04
		CO	58.88	91.36
		PM	24.00	91.98
		VOC	3.57	14.39
		SO2	33.65	52.21
		H2SO4	3.96	15.18
SVE-TC1	Soil Vapor Extraction - Thermal Combustor 1	NOx	1.37	6.01
		CO	1.15	5.05
		PM	0.10	0.46
		VOC	4.03	17.65
		SO2	0.37	1.64
SVE-TC2	Soil Vapor Extraction - Thermal Combustor 2	NOx	1.37	6.01
		CO	1.15	5.05
		PM	0.10	0.46
		VOC	4.03	17.65
		SO2	0.37	1.64

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PK-853	North Wastewater Collection and Treatment System Thermal Oxidizer	NOx	0.87	3.79
		CO	0.54	2.39
		PM	0.05	0.22
		VOC	0.18	0.77
		SO2	2.48	10.87
		H2S	0.03	0.12
		Benzene	0.02	0.11
T-24	TK-024	VOC	0.41	0.01
T-52	TK-052	VOC	1.48	4.48
		Benzene	0.02	0.06
T-61	TK-061	VOC	0.92	2.39
		Benzene	0.01	0.03
T-69	TK-069	VOC	0.73	1.88
		Benzene	0.01	0.02
T-76	TK-076	VOC	0.81	1.98
		Benzene	0.02	0.03
T-90	TK-090	VOC	0.76	1.50
		Benzene	0.01	0.02
T-92	TK-092	VOC	5.25	2.04
		Benzene	0.02	0.03
T-94	TK-094	VOC	0.75	1.86
		Benzene	0.02	0.02
T-95	TK-095	VOC	1.55	2.43
		Benzene	0.05	0.04
T-96	TK-096	VOC	1.50	2.75
		Benzene	0.04	0.04
T-97	TK-097	VOC	1.50	2.70
		Benzene	0.04	0.04
T-98	TK-098	VOC	0.93	0.10
T-99	TK-099	VOC	0.28	0.08
T-100	TK-100	VOC	2.30	0.92
T-102	TK-102	VOC	2.96	8.60
		Benzene	0.04	0.11
T-106	TK-106	VOC	1.74	1.48
T-107	TK-107	VOC	2.94	8.42
		Benzene	0.05	0.11
T-110	TK-110	VOC	1.84	5.79
		Benzene	0.03	0.07
T-113	TK-113	VOC	1.14	3.61

Emission Sources - Maximum Allowable Emission Rates

		Benzene	0.02	0.04
T-114	TK-114	VOC	0.98	2.36
		Benzene	0.02	0.03
T-115	TK-115	VOC	0.72	2.21
		Benzene	0.01	0.03
T-116	TK-116	VOC	1.27	3.02
		Benzene	0.02	0.04
T-117	TK-117	VOC	0.91	2.46
		Benzene	0.02	0.03
T-118	TK-118	VOC	1.14	3.63
		Benzene	0.02	0.05
T-119	TK-119	VOC	1.00	2.72
T-120	TK-120	VOC	0.79	2.12
		Benzene	0.02	0.03
T-123	TK-123	VOC	0.98	2.90
		Benzene	0.02	0.04
T-124	TK-124	VOC	0.95	2.81
		Benzene	0.02	0.04
T-125	TK-125	VOC	0.87	2.65
		Benzene	0.06	0.15
T-126	TK-126	VOC	0.94	2.99
		Benzene	0.01	0.04
T-127	TK-127	VOC	1.14	3.19
		Benzene	0.02	0.04
T-129	TK-129	VOC	2.12	7.08
		Benzene	0.03	0.09
T-130	TK-130	VOC	1.27	2.99
		Benzene	0.02	0.04
T-140	TK-140	VOC	3.08	8.95
		Benzene	0.06	0.12
T-141	TK-141	VOC	2.11	4.93
		Benzene	0.04	0.07
T-142	TK-142	VOC	1.27	3.46
		Benzene	0.02	0.05
T-143	TK-143	VOC	1.36	3.99
		Benzene	0.02	0.05
T-144	TK-144	VOC	1.39	3.63
		Benzene	0.03	0.05
T-145	TK-145	VOC	1.54	3.96
		Benzene	0.03	0.05
T-146	TK-146	VOC	1.54	4.34
		Benzene	0.02	0.06

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T-164	TK-164	VOC	1.14	2.67
		Benzene	0.02	0.04
T-165	TK-165	VOC	2.14	3.97
		Benzene	0.05	0.05
T-166	TK-166	VOC	1.24	2.78
		Benzene	0.02	0.04
T-167	TK-167	VOC	1.51	3.91
		Benzene	0.03	0.05
T-181	TK-181	VOC	4.65	5.50
		Benzene	0.03	0.07
T-182	TK-182	VOC	5.53	14.78
		Benzene	0.07	0.19
T-183	TK-183	VOC	8.23	27.98
		Benzene	0.11	0.35
T-190	TK-190	VOC	8.83	29.66
		Benzene	0.12	0.37
T-191	TK-191	VOC	2.49	7.77
		Benzene	0.04	0.10
T-192	TK-192	VOC	8.58	29.30
		Benzene	0.12	0.37
T-202	TK-202	VOC	0.87	2.36
		Benzene	0.02	0.03
T-210	TK-210	VOC	1.96	6.82
		Benzene	0.05	0.16
T-211	TK-211	VOC	2.09	6.89
		Benzene	0.03	0.09
T3601	TK-3601	VOC	0.80	2.49
		Benzene	0.01	0.03
24	TK-4001	VOC	0.92	2.78
		Benzene	0.02	0.04
70	TK-4007	VOC	6.01	0.44
71	TK-4008	VOC	0.61	0.35
66	TK-4012	VOC	0.76	0.26
52	TK-4013	VOC	0.81	0.35
79	TK-4035	VOC	0.58	1.16
		Benzene	0.01	0.01
22	TK-4040	VOC	1.19	2.79
		Benzene	0.03	0.04
54	TK-4041	VOC	6.00	0.06
55	TK-4044	VOC	6.00	0.05
53	TK-4046	VOC	6.01	0.44

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28	TK-4050	VOC	11.81	39.37
		Benzene	0.17	0.49
67	TK-4051	VOC	1.83	0.41
29	TK-4057	VOC	1.66	0.12
		Benzene	0.01	0.01
T4064	TK-4064	VOC	0.81	0.04
		Benzene	0.01	0.01
45	TK-4065	VOC	4.43	13.44
		Benzene	0.08	0.17
46	TK-4113	VOC	1.83	0.44
41	TK-4114	VOC	4.82	15.95
		Benzene	0.07	0.20
48	TK-4115	VOC	1.71	0.76
49	TK-4116	VOC	1.71	0.87
50	TK-4117	VOC	1.34	3.04
		Benzene	0.03	0.04
38	TK-4118	VOC	2.10	3.84
		Benzene	0.03	0.05
39	TK-4119	VOC	1.38	3.67
		Benzene	0.02	0.05
40	TK-4120	VOC	1.38	3.80
		Benzene	0.02	0.05
42	TK-4121	VOC	1.70	5.16
		Benzene	0.03	0.07
43	TK-4122	VOC	1.64	4.81
		Benzene	0.03	0.06
47	TK-4123	VOC	1.57	3.78
		Benzene	0.02	0.05
44	TK-4124	VOC	1.56	4.45
		Benzene	0.03	0.06
T4270	TK-4270	VOC	0.83	0.20
		Benzene	0.01	0.01
T4272	TK-4272	VOC	1.86	1.30
		Benzene	0.01	0.02
T4273	TK-4273	VOC	1.86	1.30
		Benzene	0.01	0.02
T4276	TK-4276	VOC	0.82	0.03
116	TK-4285	VOC	6.11	6.76
		Benzene	0.04	0.08
118	TK-4601	VOC	2.39	6.03
		Benzene	0.05	0.08

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119	TK-4602	VOC	4.92	1.40
120	TK-4603	VOC	4.92	1.41
124	TK-4605	VOC	4.28	13.91
		Benzene	0.06	0.18
T4607	TK-4607	VOC	0.21	0.21
		Benzene	0.01	0.01
TANK504	TK-504	VOC	2.54	0.04
		Benzene	0.03	0.01
TANK506	TK-506	VOC	0.33	0.01
VENT507	TK-507	VOC	0.33	0.01
TANK508	TK-508	VOC	1.11	1.35
		Benzene	0.04	0.02
TANK509	TK-509	VOC	48.41	6.68
		Benzene	2.23	0.24
PRV512	TK-512	VOC	0.13	0.01
		Benzene	0.01	0.01
TANK513	TK-513	VOC	1.33	1.44
		Benzene	0.05	0.02
TANK514	TK-514	VOC	0.92	1.16
		Benzene	0.03	0.02
TANK515	TK-515	VOC	0.72	1.08
		Benzene	0.02	0.02
TANK516	TK-516	VOC	0.66	1.11
		Benzene	0.02	0.02
TK-517	TK-517	VOC	2.30	0.15
VENT518	TK-518	VOC	2.30	0.11
VENT519	TK-519	VOC	2.30	0.07
TANK520	TK-520	VOC	1.26	1.14
		Benzene	0.05	0.02
TANK521	TK-521	VOC	1.31	1.62
		Benzene	0.05	0.03
TANK522	TK-522	VOC	1.20	1.79
		Benzene	0.04	0.03
T-803	TK-803	VOC	2.16	7.21
		Benzene	0.03	0.09
T-804	TK-804	VOC	1.92	6.41
		Benzene	0.03	0.08
DEATANK	DEATANK	VOC	0.01	0.01
F-38	Plant 38 Piping Fugitives	VOC	2.31	10.12
F-39	Plant 39 Fugitives	VOC	8.24	30.51

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		H2S	0.02	0.09
		Benzene	0.02	0.01
F-16N	No. 6 Crude Unit Piping Fugitives	VOC	9.66	42.31
		H2S	0.01	0.01
		Benzene	0.05	0.21
F-71-72	North Sulfur Recovery Unit Fugitives	VOC	1.41	6.18
		H2S	0.01	0.01
F-10N	North Plant Utilities Fugitives	VOC	5.64	24.70
WWCTS	North API Separator Fugitives	VOC	2.00	8.75
		Benzene	0.01	0.01
F-20N	North Isom Piping Fugitives	VOC	1.28	5.60
LE-FUG	LER Unit Fugitives	VOC	5.18	22.70
		Benzene	0.23	1.00
F-41	Rheniformer/NHT/LSR Splitter Fugitives	VOC	9.02	39.51
		Benzene	0.18	0.81
TNK-FUG	Tank Field Piping Fugitives	VOC	14.25	62.44
		Benzene	0.12	0.51
F-8	South Poly Plant Fugitives	VOC	3.04	13.31
		Benzene	0.13	0.59
F-9	Jet Fuel Treating Fugitives	VOC	0.76	3.31
F-5	Alkylation Fugitives	VOC	5.79	25.36
F-20S	Alky II Fugitives	VOC	4.05	17.73
W-2	South API Separator Fugitives	VOC	0.71	3.12
		Benzene	0.01	0.01
F-23	South Utilities Fugitives	VOC	3.99	17.46
F-19	Butamer Fugitives	VOC	2.39	10.47
F-11	FCCU Fugitives	VOC	8.76	38.37
		H2S	0.01	0.01
		Benzene	0.09	0.41
F-1/2	CPS/DCU Fugitives	VOC	5.42	23.76
		H2S	0.01	0.01
		Benzene	0.03	0.12
F-22	Merox III Fugitives	VOC	0.67	2.96
		Benzene	0.01	0.03

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F-18	Vacuum Distillation Fugitives	VOC	4.33	18.96
F-16S	Receiving, Pumping, and Shipping Fugitives	VOC	10.26	44.95
		Benzene	0.09	0.38
FUG	Terminal Fugitives	VOC	4.62	20.26
		Benzene	0.04	0.17
F-13	South SRU Fugitives	VOC	0.52	2.30
		H_2S	0.01	0.01
F-101	FCCU Piping and Drains	VOC	3.17	13.89
F-3/4	CRU Fugitives	VOC	1.84	8.07
		H_2S	0.01	0.05
F-14-5-6	5-6 Cooling Tower	VOC	0.78	3.41
		Benzene	0.01	0.01
F-14-7	7 Cooling Tower	VOC	0.34	1.47
		Benzene	0.01	0.01
F-14-8	8 Cooling Tower	VOC	1.09	4.76
		Benzene	0.01	0.01
F-14-9	9 Cooling Tower	VOC	0.48	2.11
		Benzene	0.01	0.01
F-21	Alky Cooling Tower	VOC	0.79	3.44
		Benzene	0.01	0.01
F-7	Main Cooling Tower	VOC	0.96	4.21
		Benzene	0.01	0.01
SLR1	South Railcar Loading Rack	VOC	15.53	8.24
SLR2	South LPG Tanktruck Loading Rack	VOC	0.10	0.04
SLR4	South Acid/Caustic Tanktruck Loading Rack	VOC	25.23	2.55
NLR2-5	North Railcar and Tanktruck Loading Rack	VOC	25.54	3.29
NLR2-5	North Caustic Loading Rack	VOC	12.65	0.46
NLR-6	Solid Waste Gondola Loading Rack	PM	16.20	0.21
NLR-7	North Asphalt Feed Loading Rack	VOC	0.90	0.48
LLPG-TC	North LPG Railcar	VOC	0.40	0.09

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	and Tanktruck Loading Rack			
CA-SK	Terminal Tank Truck Loading Rack VRU	VOC	0.79	3.04
LRACK-FUG	Terminal Loading Rack Hose Fugitives	VOC	0.16	0.33
PK-854	North Wastewater Collection and Treatment System Carbon Canister	VOC	4.05	17.75
		H2S	0.01	0.01
		NH3	0.01	0.05
		Benzene	0.03	0.14
98	South API Oil Water Separator	VOC	2.75	12.03
CA-SK	Marketing Terminal Sump-1	VOC	0.14	0.60
CA-SK	Marketing Terminal Sump-2	VOC	0.14	0.60
RHENSCRUB	Rheniformer Catalyst Regeneration	HCl	0.09	0.02
Compliance Caps - Interim (8)	NOx	277.00	842.00	
	PM	49.00	97.00	
	VOC	434.00	856.00	
	Benzene	1.46	4.78	
Compliance Caps - Final (9)	NOx	189.00	499.00	
	PM	49.00	97.00	
	VOC	373.00	856.00	
	Benzene	1.46	4.78	
Individual Emission Rate Limits				
D-2914	Relief Gas North Main Flare (6)	VOC	9.86	-
		NOx	18.48	-
		CO	46.20	-
		SO2	72.90	-
		H2S	0.77	-
R-2911	Rheniformer Flare (6)	VOC	0.01	-
		NOx	18.24	-
		CO	46.35	-
		SO2	0.01	-
		H2S	0.77	-
		NOx	-	1.42
		CO	-	5.58

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		SO2	-	0.45
		H2S	-	0.01
112	Plant Emergency/AAG/Main South Flare (7)	VOC	0.01	0.01
		NOx	0.02	0.07
		CO	0.11	0.49
		SO2	0.01	0.01
XF8801/2	Steam Reformer Heater F-8801 Steam Reformer Heater F-8802	VOC	0.70	2.61
		NOx	4.52	16.96
		CO	4.52	16.96
		PM	0.96	3.61
		SO2	3.81	1.92
		H2S	0.08	0.04
H2FUG	Hydrogen Plant Fugitives (5)	CO	0.01	0.06
		VOC	1.54	1.69
		H2S	0.01	0.01

Planned Maintenance, Startup, and Shutdown Emission Rate Limits							
MSS CAP	Sitewide MSS Sources Excluding Flares	VOC	485.89	70.41	NOx	3.87	19.92
		NOx	3.87	19.92	CO	209.09	13.19
		CO	209.09	13.19	SO2	21.36	1.68
		SO2	21.36	1.68	PM10	61.07	5.79
		PM10	61.07	5.79	H2S	0.05	0.03
		H2S	0.05	0.03	NOx	41.24	9.81

D-2914/R-2911	North Flares [Including North Relief Gas Flare (EPN D-2914) and Rheniformer Flare (EPN R-2911)]	VOC	92.90	0.89
		NOx	41.24	9.81
		CO	164.24	30.55
		SO2	587.61	5.66
		H2S	6.24	0.06
112	South Main Flare	VOC	227.54	2.38
		NOx	48.38	3.24
		CO	192.70	12.92
		SO2	1,471.87	23.27
		H2S	15.64	0.25

Emission Sources - Maximum Allowable Emission Rates

(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
CO - carbon monoxide
HCl - hydrochloric acid
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
(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) Planned MSS activities described in Special Condition 38 and pilot emissions are authorized.
(7) Only pilot emissions are authorized for these combustion sources.
(8) Interim emission limitation applies before April 4, 2013.
(9) Final emission limitation applies on and after April 4, 2013.
(10) Emission limitations apply through July 3, 2013, after which this emission unit will no longer be authorized.

Date: April 9, 2013