Emission Sources - Maximum Allowable Emission Rates

Permit Number 6825A, PSDTX49M1, N65

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 Caps (11)				
		SO_2	771.9	1,977 (12)
		SO_2	705.4 (12)	1,503 (6) (12)

Emission Sources - Maximum Allowable Emission Rates

		NO_x	885.8	3,191 (12)
		NO_x	859.9	1,611 (6) (12)
		CO	1207	3,780.00 (12)
		CO	1174	2,950 (6) (12)
		PM	132.6	538.00
		PM	120.8	455.00 (6)
		Ammonia	0.10	0.20
		Ammonia (5)	1.43	4.87
		Ammonia (6)	2.66	8.99
		H_2S	4.64	11.40
		Benzene	2.77	9.39
		HF	0.33	1.64
		MTBE	12.11	27.89
		VOC	564	1,592
		VOC (14)	562.2	1,557
		VOC (18)		1,729
Emissions not in permit emission caps:				
BH15MSS	Burner Installation (15)	NO_x	130.50	1.44
		CO	283.10	3.11
E-01-1241	Heater 1241-H1 MSS	VOC	0.10	0.40
		NO_x	0.20	0.90
		SO_2	0.01	0.01
		CO	0.20	0.90
		PM	0.10	0.40
E-02-1241	Heater 1241-H2 MSS	VOC	0.10	0.40

Emission Sources - Maximum Allowable Emission Rates

		NO_x	0.20	0.90
		SO_2	0.01	0.01
		CO	0.20	0.90
		PM	0.10	0.40
E-01-245	Heater 245	NO_x	1.44	6.31
		VOC	0.18	0.77
		SO_2	0.85	3.73
		SO_2 (20)	0.85	0.96
		CO	2.48	10.84
		PM	0.26	1.07
		PM_{10}	0.26	1.07
		$PM_{2.5}$	0.26	1.07
E-V54	CCR Regen Vent	HCl	0.02	0.07
		VOC	0.16	0.70
F-20-Flare	Flare 20 MSS	VOC	0.06	0.28
		NO_x	0.87	3.81
		SO_2	0.80	3.50
		CO	2.40	10.50
F-PIPE	F-PIPE	VOC	0.18	0.78
F-943, F-7843, F-7945, F-8748-SWS, E-26-FLARE, T-CX2-SW-2, T-CX2-CRUDE-1, T-CX2-CRUDE-2, T-CX2-NAPTH-1, T-CX2-GASOL-1, T-CX2-GASOL-2, T-2186, T-CX2-RESID-1, T-CX2-RESID-2, T-CX2-Amine-1, T-CX2-Amine-2, E-01-943, E-	COEXII VOC Cap (9)	VOC	37.92	108.25

Emission Sources - Maximum Allowable Emission Rates

02-943, F-432-CT, F-446CT				
1913FUG	Tank 1913 Fugitives (4) (17)	VOC	0.02	0.09
1913	Tank 1913 (17)	VOC	0.32	1.41
T-82	Tank 82	VOC	0.62	0.15
T-283	Tank 283	VOC	6.62	3.05
T-284	Tank 284	VOC	6.62	3.05
T-285	Tank 285	VOC	6.62	3.05
T-106	Tank 106	VOC	8.99	2.70
T-107	Tank 107	VOC	9.01	2.73
T-100	Tank 100	VOC	42.70	2.98
T-103	Tank 103	VOC	31.80	2.98
T-110	Tank 110	VOC	7.26	2.48
T-926	Tank 926	VOC	2.98	6.89
T-1848	Tank 1848	VOC	1.26	0.30
T-2164	Tank 2164	VOC	34.28	10.97
T-2163	Tank 2163	VOC	34.28	10.97
T-2105	Tank 2105	VOC	36.04	7.55
T-99	Tank 99	VOC	26.97	2.98
T-111	Tank 111	VOC	7.26	2.48
T-112	112	VOC	9.49	3.50
		H_2S	0.14	0.24
T-113	113	VOC	9.49	3.50
		H_2S	0.14	0.24
T-114	114	VOC	9.49	3.50
		H_2S	0.14	0.24

Emission Sources - Maximum Allowable Emission Rates

T-8010	Coker 843 sludge tank	VOC	0.04	0.18
T-8400	Coker 844 sludge tank	VOC	0.04	0.18
T-8002	547 Sulfur Tank	H_2S	0.48	0.39
T-2162	Tank 2162	VOC	2.06	1.11
T-896	Tank 896	VOC	2.75	7.26
T-1849	Tank 1849	VOC	1.68	2.30
T-2133	Tank 2133	VOC	4.53	11.15
F-136ACT	Cooling Tower 136A	PM	0.73	2.14
		PM_{10}	0.73	2.14
		$PM_{2.5}$	0.73	2.14
F-136BCT	Cooling Tower 136B	PM	0.74	2.17
		PM_{10}	0.74	2.17
		$PM_{2.5}$	0.74	2.17
F-366CT	Cooling Tower 366	PM	0.56	1.64
		PM_{10}	0.56	1.64
		$PM_{2.5}$	0.56	1.64
E-01-844	DCU 844 Coker Furnace #1	NO_x	3.45	13.75
		NO_x (MSS)	34.55	(22)
		VOC	1.24	4.94
		SO_2	5.34	3.93
		CO	16.57	32.97
		CO (MSS)	82.83	(22)
		PM	1.84	6.99
		PM_{10}	1.84	6.99
		$PM_{2.5}$	1.84	6.99

Emission Sources - Maximum Allowable Emission Rates

		NH_3	1.01	4.00
E-02-844	DCU 844 Coker Furnace #2	NO_x	3.45	13.75
		NO_x (MSS)	34.55	(22)
		VOC	1.24	4.94
		SO_2	5.34	3.93
		CO	16.57	32.97
		CO (MSS)	82.83	(22)
		PM	1.84	6.99
		PM_{10}	1.84	6.99
		$PM_{2.5}$	1.84	6.99
		NH_3	1.01	4.00
F-LOADING	SRU 547 Truck Sulfur Loading	H_2S	0.72	0.62

Emission Sources - Maximum Allowable Emission Rates

E-05-SCOT	SRU 547	VOC	0.45	1.96
		NO_x	6.63	29.03
		CO	36.19	63.41
		SO_2	81.46	142.72
		PM	1.23	5.41
		PM_{10}	1.23	5.41
		$PM_{2.5}$	1.23`	5.41
		H_2S	0.88	3.85
CSV844	Coker Unit 844 Steam Vent	VOC	55.00	35.50
		PM	1.31	0.85
		PM_{10}	1.31	0.85
		$PM_{2.5}$	1.31	0.85
		H_2S	3.13	2.02
CSV843	Coker Unit 843 Steam Vent	VOC	55.00	61.38
		PM	7.72	8.61
		PM_{10}	7.72	8.61
		$PM_{2.5}$	7.72	8.61
		H_2S	18.38	20.51
		PM (21)	2.28	1.75
		PM_{10} (21)	2.28	1.75
		$PM_{2.5}$ (21)	2.28	1.75
		H_2S (21)	5.43	4.18
F-844PM	Unit 844 coke handling (FINS F-844-1 to F-844-6)	PM	0.26	0.40
		PM_{10}	0.12	0.19
		$PM_{2.5}$	0.02	0.03
WWC	Coker 844	VOC	0.01	0.03

Emission Sources - Maximum Allowable Emission Rates

	Wastewater Collection System			
MSS	Coker 844 Project MSS (23)	VOC	542.76	5.49
		NO_x	29.03	0.51
		CO	194.71	3.27
		SO_2	299.15	8.97
		H_2S	3.18	0.19
		PM	1.48	<0.01
		PM_{10}	1.48	<0.01
		$PM_{2.5}$	1.48	<0.01
Emissions in permit emission caps:				
E-01-BH 15	Boiler 15-41, Pre-mod. (7)	NO_x	26.10	114.32
		VOC	2.35	9.97
		SO_2	19.58	21.63
		CO	35.82	72.33
		PM	3.05	13.34
E-02-BH 15, E-03-BH 15, E-04-BH 15	Boilerhouse 15 Subcap, Pre-mod (7)	NO_x	213.56	314.3
		VOC	12.30	26.99
		SO_2	129.01	211.9
		CO	101.29	222.21
		PM	8.62	37.78
E-01-BH 15, E-02-BH 15, E-03-BH 15	Boilerhouse 15 Subcap, Post-mod Phase I (8)	NO_x	78.03	247.5
		VOC	7.05	22.27
		SO_2	58.74	37.12
		CO	107.46	169.9
		PM	9.15	31.09

Emission Sources - Maximum Allowable Emission Rates

E-01-BH 15, E-02-BH 15, E-03-BH 15	Boilerhouse 15 Subcap Post-mod PhaseII (13)	NO_x	78.03	339.0
		VOC	7.05	30.51
		SO_2	58.74	50.85
		CO	107.46	232.8
		PM	9.15	31.09
E-06-BH 16	Boiler 16-34 (10)	NO_x (16)	6.50	28.60
E-07-BH 16	Boiler 16-35 (10)	NO_x (16)	9.00	39.40
E-08-BH 16	Boiler 16-36 (10)	NO_x (16)	42.00	72.67
E-06-BH 16, E-07-BH 16, E-08-BH 16	Boilerhouse 16 Subcap (10)	NO_x	200.41	414.5
		VOC	12.55	27.49
		SO_2	98.37	161.58
		CO	103.35	226.36
		PM	8.79	38.49
E-01-146	Heater 146-H101	NO_x	49.56	146.99
		VOC	3.34	12.18
		SO_2	11.36	18.67
		CO	48.78	67.14
		PM	4.34	16.83
		NO_x (20)	36.85	149.66
		VOC (20)	2.97	12.05
		SO_2 (20)	19.73	14.84
		CO (20)	37.22	75.58
		CO (MSS) (20)	87.97	(22)
		PM (20)	4.10	16.64
		PM_{10} (20)	4.10	16.64

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$ (20)	4.10	16.64
E-02-146	Heater 146-H102AB	NO_x	19.88	52.36
		VOC	1.60	5.04
		SO_2	5.43	8.92
		CO	19.59	27.76
		PM	2.08	6.96
		NO_x (20)	16.12	70.61
		VOC (20)	1.40	6.14
		SO_2 (20)	9.33	7.57
		CO (20)	17.59	38.53
		CO (MSS) (20)	87.97	(22)
		PM (20)	1.94	8.49
		PM_{10} (20)	1.94	8.49
		$PM_{2.5}$ (20)	1.94	8.49
E-01-147	Heater 147-F-1100	NO_x	13.86	60.71
		VOC	2.14	9.35
		SO_2	10.59	17.39
		SO_2 (20)	10.59	7.58
		CO	32.61	68.93
		PM	2.95	12.92
		PM_{10}	2.95	12.92
		$PM_{2.5}$	2.95	12.92
E-02-147	Heater 147-F-1200	NO_x	7.80	17.28
		VOC	0.92	3.29
		SO_2	4.10	5.66

Emission Sources - Maximum Allowable Emission Rates

		SO_2 (20)	4.10	3.29
		CO	10.89	19.25
		PM	1.28	5.60
		PM_{10}	1.28	5.60
		$PM_{2.5}$	1.28	5.60
E-01-1344	Heater 1344-H1	NO_x	34.09	115.39
		VOC	3.65	14.80
		SO_2	11.95	19.64
		SO_2 (20)	11.95	18.53
		CO	40.45	82.24
		PM	5.05	20.45
		PM_{10}	5.05	20.45
		$PM_{2.5}$	5.05	20.45
E-02-1344	Heater 1344-H33	NO_x	3.82	9.06
		VOC	0.28	1.22
		SO_2	0.85	1.39
		CO	4.26	9.33
		PM	0.38	1.69
		PM_{10}	0.38	1.69
		$PM_{2.5}$	0.38	1.69
E-03-1344	Heater 1344-H2_3_32	NO_x	12.80	26.81
		VOC	0.86	2.41
		SO_2	2.89	4.75
		SO_2 (20)	2.89	3.02
		CO	10.64	13.43

Emission Sources - Maximum Allowable Emission Rates

		PM	1.19	3.33
		PM_{10}	1.19	3.33
		$PM_{2.5}$	1.19	3.33
E-01-843	Heater 843-H1	NO_x	16.00	53.40
		VOC	1.44	5.42
		SO_2	6.79	9.32
		SO_2 (20)	6.79	4.38
		CO	21.96	31.76
		PM	1.99	7.50
		PM_{10}	1.99	7.50
		$PM_{2.5}$	1.99	7.50
E-02-843	Heater 843-H2	NO_x	16.00	53.40
		VOC	1.44	5.42
		SO_2	6.79	9.32
		SO_2 (20)	6.79	4.38
		CO	21.96	31.76
		PM	1.99	7.50
		PM_{10}	1.99	7.50
		$PM_{2.5}$	1.99	7.50
E-03-843	Heater 843-H3	NO_x	16.00	53.40
		VOC	1.44	5.42
		SO_2	6.79	9.32
		SO_2 (20)	6.79	4.38
		CO	21.96	31.76
		PM	1.99	7.50

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	1.99	7.50
		$PM_{2.5}$	1.99	7.50
E-01-246	Heater 246-H1	NO_x	2.20	7.51
		VOC	0.34	1.06
		SO_2	1.44	1.86
		SO_2 (20)	1.44	0.88
		CO	4.07	6.19
		PM	0.47	1.47
		PM_{10}	0.47	1.47
		$PM_{2.5}$	0.47	1.47
E-01-1241	Heater 1241-H1	NO_x	4.96	1.24
		VOC	0.33	0.08
		SO_2	1.64	0.15
		CO	4.86	0.64
		PM	0.43	0.11
E-02-1241	Heater 1241-H2	NO_x	4.96	1.24
		VOC	0.33	0.08
		SO_2	1.64	0.15
		CO	4.86	0.64
		PM	0.43	0.11

Emission Sources - Maximum Allowable Emission Rates

E-01-241	Heater 241-B101AB	NO_x	7.92	19.51
		VOC	0.53	2.34
		SO_2	2.23	3.66
		SO_2 (20)	2.23	2.93
		CO	8.15	13.49
		PM	0. 73	3.24
		PM_{10}	0. 73	3.24
		$PM_{2.5}$	0. 73	3.24
E-01-242	Heater 242-B201AB	NO_x	6.62	17.45
		VOC	0.36	1.58
		SO_2	1.87	3.11
		SO_2 (20)	1.87	1.80
		CO	4.04	11.91
		PM	0.50	2.00
		PM_{10}	0.50	2.00
		$PM_{2.5}$	0.50	2.00
E-01-243	Heater 243	NO_x	7.10	19.43
		VOC	0.48	1.87
		SO_2	1.78	2.92
		SO_2 (20)	1.78	2.32
		CO	6.74	10.31
		PM	0.66	2.58
		PM_{10}	0.66	2.58
		$PM_{2.5}$	0.66	2.58
E-01-244	Heater 244 F-101/102	NO_x	7.92	34.70

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.36	1.60
		SO_2	1.90	3.11
		SO_2 (20)	1.90	1.80
		CO	5.13	11.91
		PM	0.49	2.00
		PM_{10}	0.49	2.00
		$PM_{2.5}$	0.49	2.00
E-01-942	Heater 942-H1_2_3	NO_x	12.83	45.56
		VOC	1.15	4.55
		SO_2	5.45	7.98
		SO_2 (20)	5.45	3.68
		CO	17.61	26.75
		PM	1.60	6.29
		PM_{10}	1.60	6.29
		$PM_{2.5}$	1.60	6.29
E-01-443	Heater 443	NO_x	14.20	42.83
		VOC	1.09	3.88
		SO_2	3.34	5.49
		SO_2 (20)	3.34	4.86
		CO	16.67	21.44
		PM	1.51	5.35
		PM_{10}	1.51	5.35
		$PM_{2.5}$	1.51	5.35

Emission Sources - Maximum Allowable Emission Rates

REFFUG Includes: F-1241, F-1242, F-1344, F-146, F-147, F-15BH, F-16BH, F-241, F-242, F-243, F-244, F-245, F-246, F-443, F-545, F-546, F-547, F-6341, F-7542, F-7841, F-7842, F-7848, F-843, F-844, F-8746, F-8747, F-942, FUAUCT, F-DOCKS, F-544, F-Fueling Station, F-163PH, F-41PH, F-FGMD, F-SRTF, F-Utilities, F-8741, F-543/4, F-NSTF, F-BH-19, F-7843, F-943-75K, F-844, F-547,	Refinery Fugitives VOC Subcap (4)	VOC	259.49	1132.81
		H_2S	5.60	24.54
		NH_3	1.47	5.06
		HF	0.36	1.75
100, 103, 106, 107, 110, 111, 133, 151, 1848, 1849, 2101, 2105, 2106, 2110, 2111, 2112, 2113, 2117, 2132, 2133, 2137, 2145, 2147, 2148, 2159, 2160, 2161, 2162, 2163, 2164, 2182, 2183, 2588, 2590, 283, 284, 285, 31, 5, 77, 78, 82, 88, 889, 896, 925, 926, 99, T-108, T-109, T-546-1, T-546-2, T-7842-1, T-7842-2	Refinery Tank Subcap	VOC	218.70	153.30
E-05-FLARE, F-13-FLARE, F-15-FLARE, F-18-FLARE, F-19-FLARE, F-20-FLARE, F-22-FLARE, E-23-FLARE, F-103-FLARE	Flares Subcap	NO_x	43.93	48.03
		VOC	65.74	85.10
		SO_2	24.87	13.57
		CO	302.8	309.30
E-05-FLARE, F-13-FLARE, F-15-FLARE, F-18-FLARE, F-19-	Flares Subcap (14)	NO_x	43.93	38.67

Emission Sources - Maximum Allowable Emission Rates

		VOC	65.74	57.86
		SO_2	24.87	8.11
		CO	302.8	266.50
		H_2S	0.26	0.09
F-DOCK	Uncontrolled Marine Loading F-03-DOCK, F-02-DOCK, F-05-DOCK, F-06-DOCK, F-08-DOCK, F-07-DOCK, F-11-DOCK, F-12-DOCK, F-14-DOCK, F-15-DOCK	VOC	97.92	63.93
E-01-SCOT, E-02-SCOT, E-03-SCOT, E-04-SCOT	SRUs Subcap	NO_x	49.68	118.40
		VOC	64.24	151.90
		SO_2	345.83	1056.82
		CO	192.20	896.29
		PM	24.58	58.60
		PM_{10}	24.58	58.60
		$PM_{2.5}$	24.58	58.60
		H_2S	3.67	11.23
E-01-SCOT	SRU 543	SO_2	57.90	--
		H_2S	0.62	--
E-02-SCOT	SRU 544	SO_2	82.77	--
		H2S	0.88	--
E-03-SCOT	SRU 545	SO_2	137.89	--
		H_2S	1.47	--
E-04-SCOT	SRU 546	SO_2	137.89	--
		H_2S	1.47	--

Emission Sources - Maximum Allowable Emission Rates

E-02-SRK	SRU 543 and 544 sulfur loading	H_2S	0.36	0.28
E-06-843	Two Tank Heaters for Charge Tanks	NO_x	1.18	5.15
		VOC	0.06	0.28
		SO_2	0.31	0.51
		CO	1.02	4.47
		PM	0.09	0.39
E-01-943	HCU - Reactor 1 and Reactor 2 Furnaces	NO_x	7.81	28.51
		VOC (19)	0.60	2.20
		SO_2	8.20	11.23
		SO_2 (20)	8.20	5.87
		CO	14.93	27.27
		PM	1.66	6.07
		PM_{10}	1.66	6.07
		$PM_{2.5}$	1.66	6.07
E-02-943	HCU - Fractionator Feed Furnace	NO_x	5.22	22.86
		NO_x (Start-up)	52.20	(22)
		VOC (19)	1.88	8.22
		SO_2	13.31	17.51
		SO_2 (20)	13.31	10.79
		CO	23.27	50.97
		CO (Start-up)	116.37	(22)
		PM	2.90	11.81
		PM_{10}	2.90	11.81
		$PM_{2.5}$	2.90	11.81
		Ammonia	1.41	6.19
E-26-FLARE	HCU 943 Flare	NO_x	0.31	1.38

Emission Sources - Maximum Allowable Emission Rates

		SO_2	0.01	0.03
		CO	2.27	9.94
E-01-WGS	FCCU Wet Gas Scrubber	NO_x	327.70	271.93
		VOC	15.70	68.80
		SO_2	114.10	256.08
		CO	498.80	896.29
		PM	63.50	278.13
		NH_3	3.19	12.37
		HCN	89.80	347.95
		H_2SO_4	18.26	80.00
E-MC-24-25	DOCK-MC (24)	NO_x	49.68	20.83
		VOC	33.19	20.08
		CO	99.18	41.58
		SO_2	0.19	0.07
		PM	2.68	1.12
		PM_{10}	2.68	1.12
		$PM_{2.5}$	2.68	1.12
F-101CT	Cool Twr 101	VOC	1.30	5.70
F-136ACT	Cool Twr 136A	VOC	2.73	11.96
F-136BCT	Cool Twr 136B	VOC	2.77	11.96
F-233PS	Cool Twr 233	VOC	0.53	1.24
F-314PS	Cool Twr 314	VOC	0.01	0.01
F-316PS	Cool Twr 316	VOC	0.01	0.01
F-354CT	Cool Twr 354	VOC	0.25	1.10
F-360PS	Cool Twr 360	VOC	0.92	4.05

Emission Sources - Maximum Allowable Emission Rates

F-363CT	Cool Twr 363	VOC	0.42	0.89
F-366CT	Cool Twr 366	VOC	2.10	2.45
CT-100	Cool Twr 100	VOC	1.05	4.60
E-432-CT	Cool Twr 432	VOC	0.84	3.68
		PM	0.01	0.02
		PM_{10}	0.01	0.02
		$PM_{2.5}$	0.01	0.02
E-433-CT	Cool Twr 433	VOC	1.26	0.69
		VOC (20)	1.89	8.28
		PM (20)	0.56	1.97
		PM_{10} (20)	0.56	1.95
		$PM_{2.5}$ (20)	0.13	0.44
CT-244	Cool Twr 244	VOC	1.18	5.15
		VOC (20)	1.60	6.99
		PM (20)	0.48	6.99
		PM_{10} (20)	0.47	1.64
		$PM_{2.5}$ (20)	0.11	0.37
F-446CT	Cooling Tower 446	PM	0.03	0.11
		PM_{10}	0.03	0.11
		$PM_{2.5}$	0.03	0.11
		VOC (19)(20)	1.99	8.72
		PM (20)	0.59	8.72
		PM_{10} (20)	0.59	2.05
		$PM_{2.5}$ (20)	0.13	0.47
F-843PM	Unit 843 coke storage and loading (FINS	PM	2.41	10.56

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	0.06	0.26
		PM (20)	5.17	8.71
		PM_{10} (20)	2.48	4.26
		$PM_{2.5}$ (20)	0.37	0.63

(1) Emission point identification - either specific equipment designation or emission point number (EPN) from a plot plan per Attachment 1.
(2) Specific point source names. 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
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
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).
N_2O - nitrous oxide
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
H_2S - hydrogen sulfide
HCl - hydrogen chloride
HF - hydrogen fluoride
MTBE - methyl-tertiary-butyl ether
N_2O - nitrous oxide
NH_3 - ammonia
HCN - hydrogen cyanide
H_2SO_4 - sulfuric acid
(4) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations.
(5) Rates effective after facilities associated with COEX II Project are operating.
(6) Caps effective after sources associated with COEX II Project and EPNs E-01-19BH, E 02 19BH, and E-03-19BH are operating. Boilerhouse 15 low NO_x burner project and shutdown of Boilerhouse 16 combustion units must be complete.
(7) Allowable emission rates prior to the Boilerhouse 15 low NO_x burner project (Pre-mod).
(8) Post-mod Phase I: Allowable emission rates after the Boilerhouse 15 low NO_x burner project authorized by Standard Permit 91911. The turbine GTG-1 shall be shutdown as part of this project.
(9) These facilities were subject to nonattainment review for VOC for Permit N65. The MSS emissions associated with the COEX II facilities authorized in Permit Number 80812 must also be added to the routine emissions from the COEX II facilities to determine compliance with this annual emission cap.
(10) The Boilerhouse 16 units must be shutdown and the Boilerhouse 15 low NO_x burner project completed prior to the end of the 180 day shakedown period for Boilerhouse 19 Boilers 1, 2, and 3 {authorized by Permit 103765).

Emission Sources - Maximum Allowable Emission Rates

(11) These emission caps have been carried forward from the flexible permit. With the exception of VOC emissions from COEXII facilities, these caps apply to the sum total of all emissions of that pollutant from the facilities listed on Attachment I. In addition, the maintenance, startup, and shutdown (MSS) emissions authorized in Permit Number 80812 must also be added to the routine emissions from the facilities in Attachment I to determine compliance with these emission caps unless the cap is designated with a footnote (12). The emission caps that are not designated with a footnote (12) are those that are more limiting than the sum of the individual emission rate limits for those facilities. VOC MSS emissions from COEX II facilities do not need to be included when showing compliance with the annual VOC cap.

(12) These emission caps are the sum of the individual and subcap emission rates for the pollutant and are shown for information only.

(13) Post-mod Phase II: These allowable emission rates shall apply in lieu of those designated with footnote (8) (aka Post-mod Phase I) if the permit holder samples these facilities for $PM_{2.5}$ per Special Condition 40 after completing the Boilerhouse 15 low NO_x burner project and the results show $PM_{2.5}$ emissions are less than 73 percent of the maximum hourly total PM emission rate limit.

(14) Caps effective after start of operation of entire flare gas recovery system.

(15) Installation of low NO_x burners in Boilerhouse 15 boilers authorized by Standard Permit 91911.

(16) Installation of low NO_x burners in Boilerhouse 16 boilers authorized by Standard Permit 94365.

(17) Tank authorized by PBR Registration 84905.

(18) This emission cap applies to the sum of VOC emissions from all facilities listed in Attachment 1 and MSS activities authorized in this permit and from all facilities and MSS activities authorized in Permit 80812.

(19) Emissions are a subcap of COEXII VOC Cap.

(20) Emissions shall supersede all existing authorized limits of that pollutant upon completion of the facility's modification as represented in the Coker Project, PI-1 dated February 27, 2018. The modification shall be completed preceding the initial startup of the Coker Unit's DCU 844. **(11/18)**

Emission Sources - Maximum Allowable Emission Rates

(21) Limits apply January 1, 2019.
(22) Annual emissions are included as part of annual emissions authorized for normal facility operation.
(23) Hourly emissions from Flare EPNs E-23-Flare and E-26-Flare are a subcap of the emissions authorized for the flare in MSS permit 80812.
(24) Includes emissions from marine vapor combustors E-MC-24 and E-MC-25.

* Emission rates are based on operating 8,760 hrs/year.

** Compliance with annual emission limits is based on a rolling 12-month period

Date: November 16, 2018

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX167

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	
			lbs/hour	TPY (4)
E-01-245	Heater 245	CO_2 (5)	--	18,687.00
		N_2O (5)	--	0.03
		CH_4 (5)	--	0.32
		CO_2e	--	18,704.00
T-112	112	CH_4 (5)	-	0.03
		CO_2e	-	0.87
T-113	113	CH_4 (5)	-	0.03
		CO_2e	-	0.87
T-114	114	CH4 (5)	-	0.03
		CO_2e	-	0.87
E-01-844	DCU 844 Coker Furnace #1	CO_2 (5)	--	119,242.00
		N_2O (5)	--	0.20
		CH_4 (5)	--	2.02
		CO_2e	--	119,353.00
E-02-844	DCU 844 Coker Furnace #2	CO_2 (5)	--	119,242.00
		N_2O (5)	--	0.20
		CH_4 (5)	--	2.02
		CO_2e	--	119,353.00

Emission Sources - Maximum Allowable Emission Rates

E-05-SCOT	SRU 547	CO_2 (5)	--	90,029.00
		N_2O (5)	--	0.08
		CH_4 (5)	--	0.80
		CO_2e	--	90,072.00
CSV844	Coker Unit 844 Steam Vent	CH4 (5)	--	161.38
		CO_2e	--	4,034.00
CSV843	Coker Unit 843 Steam Vent	CH_4 (5)	--	279.00
		CO_2e	--	6,975.00
MSS	Coker 844 Project MSS	CO_2 (5)	--	1,101.00
		N_2O (5)	--	<0.01
		CH_4 (5)	--	0.02
		CO_2e	--	1,102.00
E-01-146	Heater 146-H101	CO_2 (5)	--	290,556
		N_2O (5)	--	0.49
		CH_4 (5)	--	4.92
		CO_2e	--	290,826.00
E-02-146	Heater 146-H102AB	CO_2 (5)	--	148,127.00
		N_2O (5)	--	0.25
		CH_4 (5)	--	2.51
		CO_2e	--	148.264.00
E-01-147	Heater 147-F-1100	CO_2 (5)	--	225,609.00
		N_2O (5)	--	0.38
		CH_4 (5)	--	3.82
		CO_2e	--	225,818.00
E-02-147	Heater 147-F-1200	CO_2 (5)	--	97,764.00

Emission Sources - Maximum Allowable Emission Rates

		N_2O (5)	--	0.17
		CH_4 (5)	--	1.66
		CO_2e (5)	--	97,855.00
E-01-1344	Heater 1344-H1	CO_2 (5)	--	356,986.00
		N_2O (5)	--	0.61
		CH_4 (5)	--	6.05
		CO_2e	--	357,317.00
E-02-1344	Heater 1344-H33	CO_2 (5)	--	29,568.00
		N_2O (5)	--	0.05
		CH_4 (5)	--	0.50
		CO_2e	--	29,596.00
E-03-1344	Heater 1344-H2_3_32	CO_2 (5)	--	58,111.00
		N_2O (5)	--	0.10
		CH_4 (5)	--	0.98
		CO_2e	--	58,165.00
E-01-843	Heater 843-H1	CO_2 (5)	--	130,921.00
		N_2O (5)	--	0.22
		CH_4 (5)	--	2.22
		CO_2e	--	131,043.00
E-02-843	Heater 843-H2	CO_2 (5)	--	130,921.00
		N_2O (5)	--	0.22
		CH_4 (5)	--	2.22
		CO_2e	--	131,043.00
E-03-843	Heater 843-H3	CO_2 (5)	--	130,921.00
		N_2O (5)	--	0.22

Emission Sources - Maximum Allowable Emission Rates

		CH_4 (5)	--	2.22
		CO_2e	--	131,043.00
E-01-246	Heater 246-H1	CO_2 (5)	--	25,637.00
		N_2O (5)	--	0.04
		CH_4 (5)	--	0.43
		CO_2e	--	25,661.00
E-01-241	Heater 241-B101AB	CO_2 (5)	--	56,516
		N_2O (5)	--	0.10
		CH_4 (5)	--	0.96
		CO_2e	--	56,569
E-01-242	Heater 242-B201AB	CO_2 (5)	--	34,924.00
		N_2O (5)	--	0.06
		CH_4 (5)	--	0.59
		CO_2e	--	34,956.00
E-01-243	Heater 243	CO_2 (5)	--	45,065
		N_2O (5)	--	0.08
		CH_4 (5)	--	0.76
		CO_2e	--	45,107
E-01-244	Heater 244 F-101/102	CO_2 (5)	--	34,924.00
		N_2O (5)	--	0.06
		CH_4 (5)	--	0.59
		CO_2e	--	34,956.00

Emission Sources - Maximum Allowable Emission Rates

E-01-942	Heater 942-H1_2_3	CO_2 (5)	--	109,785.00
		N_2O (5)	--	0.19
		CH_4 (5)	--	1.86
		CO_2e	--	109,887.00
E-01-443	Heater 443	CO_2 (5)	--	93,377.00
		N_2O (5)	--	0.16
		CH_4 (5)	--	1.58
		CO_2e	--	93,464.00
REFFUG Includes: F-1241, F-1242, F-1344, F-146, F-147, F-15BH, F-16BH, F-241, F-242, F-243, F-244, F-245, F-246, F-443, F-545, F-546, F-547, F-6341, F-7542, F-7841, F-7842, F-7848, F-843, F-844, F-8746, F-8747, F-942, FUAUCT, F-DOCKS, F-544, F-Fueling Station, F-163PH, F-41PH, F-FGMD, F-SRTF, F-Utilities, F-8741, F-543/4, F-NSTF, F-BH-19, F-7843, F-943-75K, F-844, F-547,	Refinery Fugitives VOC Subcap (4)	CH_4 (5)	-	113.03
		CO_2e	-	2826.00
E-01-943	HCU - Reactor 1 and Reactor 2 Furnaces	CO_2 (5)	--	105,968.00
		N_2O (5)	--	0.18
		CH_4 (5)	--	1.80
		CO_2e	--	106,066.00

Emission Sources - Maximum Allowable Emission Rates

E-02-943	HCU - Fractionator Feed Furnace	CO_2 (5)	--	198,262.00
		N_2O (5)	--	0.34
		CH_4 (5)	--	3.36
		CO_2e	--	198,446.00
E-MC-24-25	DOCK-MC	CO_2 (5)	--	184450.00
		N_2O (5)	--	0.35
		CH_4 (5)	--	3.48
		CO_2e	--	184,640.00

(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
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (GWP) found in Table A-1 of Subpart A 40 CFR Part 98 (78 FR 71904) for each pollutant: CO_2 (1), N_2O (298), CH_4(25)
(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: November 16, 2018